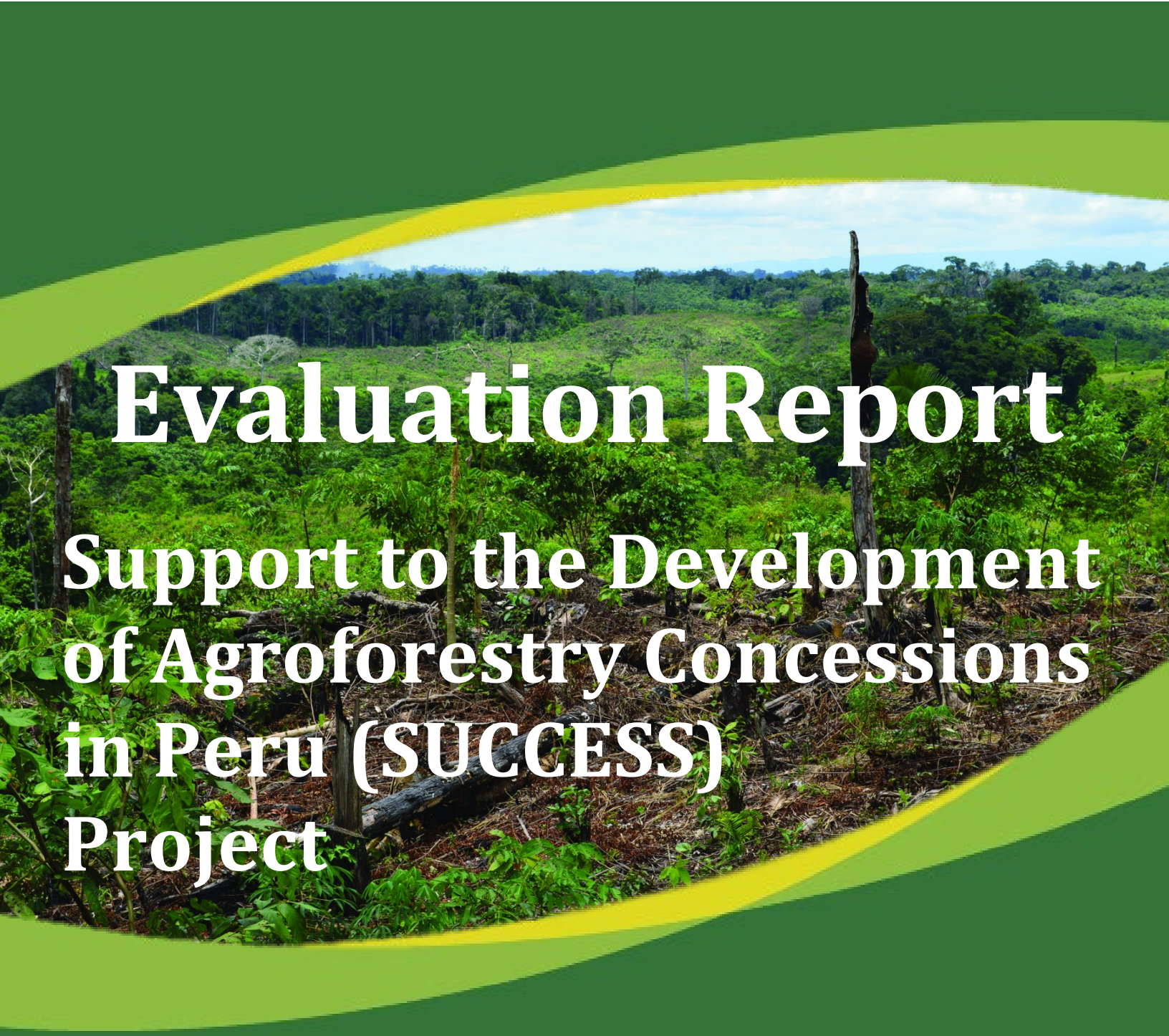

Evaluation Report

Support to the Development of Agroforestry Concessions in Peru (SUCCESS) Project

Royal Roads UNIVERSITY

Sustainability Research Effectiveness

CGIAR

RESEARCH PROGRAM ON Forests, Trees and Agroforestry

CIFOR

World Agroforestry

Cover photo: Land clearance is a major source of greenhouse gas emissions. Padre Abad, Peru. Photo: World Agroforestry

This research was carried out by the Sustainability Research Effectiveness Program at Royal Roads University as part of the CGIAR Research Program on Forests, Trees and Agroforestry (FTA). FTA is the world's largest research for development program to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. CIFOR leads FTA in partnership with ICRAF, the Alliance of Bioversity International and CIAT, CATIE, CIRAD, INBAR, and TBI.

FTA's work is supported by the CGIAR Trust Fund.

Claus, R., Davel, R., & Belcher, B. (2019). *Evaluation Report: Support to the Development of Agroforestry Concessions in Peru (SUCCESS) Project*. Bogor, Indonesia: The CGIAR Research Program on Forests, Trees and Agroforestry (FTA). DOI: 10.17528/cifor/007935

Produced for

CGIAR Research Program on Forests, Trees and Agroforestry
CIFOR Headquarters
Jalan CIFOR
Situ Gede, Sindang Barang
Bogor Barat 16115
Indonesia

T +62-251-8622-622
E cgiarforestsandtrees@cgiar.org
foreststreesagroforestry.org

We would like to thank all funding partners who supported this research through their contributions to the CGIAR Fund. For a full list of the 'CGIAR Fund' funding partners, please see: https://www.cgiar.org/funders/

Any views expressed in this publication are those of the authors. They do not necessarily represent the views of the CGIAR Research Program on Forests, Trees and Agroforestry, the editors, authors' institutions, the financial sponsors, or the reviewers.

Acknowledgements

The Sustainability Research Effectiveness Program is supported by the Canada Research Chairs Program and the Canadian Social Sciences and Humanities Research Council (SSHRC). This case study evaluation was supported by the CGIAR Research Program on Forests, Trees and Agroforestry. We thank the SUCCESS Project team for their contributions to the Theory of Change and sense-making workshops, interviews, and feedback on the report. We also thank Bethany Davies for her input during the Theory of Change and sense-making workshops. We thank Vincent Gitz, Alexandre Meybeck, and Fergus Sinclair for their feedback on the report. Special thanks to Elena Borasino, Felipe Gomez, and Sebastian Arze for their assistance with data collection, transcription, and translation. Finally, we thank all interview informants who participated in the evaluation.

Table of Contents

List of Tables

List of Figures

Acronyms

AFC	Agroforestry Concessions
ARA	*Articulación Regional Amazónica* (Regional Amazonian Articulation)
BMZ	*Bundesministerium fur wirtschaftliche Zusammenarbeit und Entwicklung* (Federal Ministry for Economic Cooperation and Development, Germany)
CGIAR	Consultative Group on International Agricultural Research
CIFOR	Center for International Forestry Research
COP	Conference of Parties
CRP	Consortium Research Program
CUSAF	*La Cesión en Uso para Sistemas Agroforestales* (Agroforestry Usufruct Concessions)
DCI	*Declaración Conjunta de Intención entre Perú, Noruega, y Alemania* (Joint Declaration of Intention between Peru, Norway, and Germany)
DEVIDA	*Comisión Nacional para el Desarrollo y Vida sin Drogas* (National Commission for Development and Life Without Drugs)
DIE	*Deutsches Institut für Entwicklungspolitik* (German Development Institute)
EII	Earth Innovation Institute
FAO	Food and Agriculture Organization
FLARE	Forests & Livelihoods: Assessment, Research, and Engagement
FTA	Forests, Trees and Agroforestry
FUNDAVI	*Fundación Amazónica Viva* (Living Amazon Foundation)
GEIRS	Gender Equality in Research Scale
GGGI	Global Green Growth Institute
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit* (German Society for International Cooperation)
GPS	Geographic Positioning System
ICRAF	World Agroforestry
IDO	Intermediate Development Outcome
INRENA	*Instituto Nacional de Recursos Naturales* (National Institute of Natural Resources)
ISPC	Independent Science and Partnership Council
ITDG	*Soluciones Prácticas* (Practical Action; formerly Intermediate Technology Development Group)
MDA	*Mechanismo de Desarollo Alternos* (Alternative Development Mechanism)
MEF	Ministry of Economy and Finance
MELIA	Monitoring, Evaluation, Learning and Impact Assessment
MINAGRI	Ministry of Agriculture
MINAM	Ministry of Environment
MOU	Memorandum of Understanding
NAMA	Nationally Appropriate Mitigation Actions
NDC	*Contribuciones Nacionales Determindadas* (National Climate Targets)
NGO	Non-Governmental Organization
NICFI	Norway's International Climate and Forest Initiatives
PGIS	Participatory Geographic Information System
ProAmbiente	Contribución a las Metas Ambientales del Perú (Contribution to the Environmental Objectives of Peru)
QAF	Quality Assessment Framework
QoR4D	Quality of Research for Development framework
SERFOR	*Servicio Nacional Forestal y de Fauna Silvestre* (National Forest and Wildlife Service)
SPDA	*Sociedad Peruana de Derecho Ambiental* (Peruvian Society of Environmental Law)
SUCCESS	Support to the Development of Agroforestry Concessions in Peru
SUNARP	*Superintendencia Nacional de los Registros Públicos* (National Superintendence of Public Registries)
ToC	Theory of Change

Executive Summary

Introduction

The Consultative Group on International Agricultural Research's (CGIAR) cooperative consortium research program (CRP) on Forests, Trees and Agroforestry (FTA) has a strong organizational commitment to systematically assess and learn from efforts to influence policies and practices (i.e., achieve outcomes) on the basis of rigorous science. FTA's Monitoring, Evaluation, Learning and Impact Assessment (MELIA) team are responsible for leading assessments of FTA initiatives to: i) demonstrate the program's effectiveness; and ii) generate lessons to improve the design and implementation of research-for-development programs in the future. The case under evaluation was selected primarily for the learning potential that would arise. There were indications that the project employed a successful approach to policy engagement, the research team was interested to learn from the process, and there was an opportunity to apply a theory-based evaluation methodology to an appropriate project within the Livelihood Systems Flagship 2 research portfolio that had been under-represented in the MELIA portfolio.

This report assesses the project design, implementation, and outcome achievements of World Agroforestry's (ICRAF) project entitled 'Support to the Development of Agroforestry Concessions in Peru (SUCCESS)'. The report documents and empirically tests whether and how intended outcomes were achieved, with specific attention to the characteristics of the project design and implementation that contributed to changes in agroforestry policy and practice.

Agroforestry concessions (AFC) present a unique opportunity to alleviate economic and environmental challenges faced by informal[1] smallholders residing on public forest land prior to 2011. Under the Peruvian Forest and Wildlife Law of 2011 (No˚29763), an enabling title (*derecho de aprovechamiento*) is provided in the form of a 40-year renewable lease. Formalization is intended to incentivize smallholders to establish and maintain agroforestry systems in the concession area to promote restoration (e.g., through soil and water conservation, reforestation, etc.), and simultaneously facilitate access to formal markets for their products and services (e.g., timber, non-timber, ecosystem services, carbon sequestration, etc.) to improve livelihoods.

SUCCESS was initiated in 2016 with the intent to provide information and support processes that would contribute to better policy, governance, and implementation of AFCs that would result in ecological and socio-economic benefits.

Methodology

The evaluation investigates how the SUCCESS Project generated new knowledge, attitudes, skills, and relationships among key actors to influence AFC decision-making, policy-making, implementation, and practice. The objective of this evaluation is to critically assess the project by collecting and analyzing information about its activities, outputs, and outcomes to support learning for research effectiveness.

The evaluation uses a project theory of change (ToC) as the main analytical framework. A ToC is a set of projected causal relations, hypotheses, and assumptions that model how and why a project is expected to lead or contribute to a change process. The evaluation team led a participatory workshop in May 2018 to define the scope of the evaluation, retrospectively document (i.e., make explicit) the implicit ToC for the SUCCESS Project (Figure 1), and identify possible sources of evidence to empirically test the ToC. We conducted 24 interviews and reviewed a series of relevant documents to answer the following question and sub-questions:

To what extent and how were outcomes of the project achieved?

- *Did theory of change assumptions hold true?*
- *Were there any unexpected positive or negative outcomes?*
- *Are the changes in forestry practices likely to contribute to intended development outcomes (CGIAR IDOs and sub-IDOs)?*

[1] This term was chosen as it conveys that smallholders are not formally recognized by the law and do not have legally-recognized ownership of the land on which they have settled.

The research design and implementation were characterized using Belcher et al.'s (2016) Transdisciplinary Research Quality Assessment Framework (QAF). The QAF was used to highlight elements of research design and implementation that contributed to the achievement of outcomes. This assessed the degree to which the project incorporated recognized quality criteria of transdisciplinary research, organized under the principles of *Relevance*, *Credibility*, *Legitimacy*, and *Effectiveness*, and guided by the following questions and sub-questions:

How was the project designed and implemented to maximize knowledge translation?

- *To what extent did the project engage effectively with relevant stakeholders?*
- *How well did the project integrate gender and youth considerations?*
- *To what extent was the science produced sufficiently relevant to achieve its aims?*
- *To what extent are target audiences aware of project outputs?*
- *Are target audiences/stakeholders using project outputs and how are they using them?*

Results were analyzed and grounded in the context of theories of policy change to explain the implications of outcome achievement.

Project Theory of Change

The SUCCESS Project intended to raise attention to and influence policy change for better informed and more context-specific implementation of AFCs in Peru (Figure 1).

The project aimed to develop both smallholder knowledge and government capacities for AFCs. Working at the community-scale, the project directly engaged approximately 200 smallholders from seven communities across the Ucayali and San Martín regions in the Peruvian Amazon through workshops, surveys, interviews, and participatory geographic information system (PGIS) activities. Direct project influence on smallholders was confined to participating groups. Apart from consultative engagement with local non-governmental organizations (NGO) and municipal actors, the project predominantly interacted with regional and national-level government actors through workshops and meetings to broaden the scale of project influence. The project sought "to enable forest and agricultural authorities to successfully implement the 'formalization through agroforestry' processes proposed in the new Forest Law" (Doc1). Project objectives were:

1. To identify eligible zones for AFC implementation;
2. To characterize smallholder profiles and illustrate smallholder heterogeneity; and
3. To advance knowledge about AFC contextuality in Ucayali and San Martín.

The research estimated the number of potential beneficiaries of the mechanism, quantified potential carbon emissions reductions, tested AFC land suitability zoning methods, surveyed smallholders, mapped the study communities, and analyzed the technical procedures for AFC implementation.

PGIS-generated maps helped build smallholder understanding of the extent and value of their land, and could later be used by them to register for AFC contracts. Smallholder participation in the research process was expected to build their interest in registration and capacity for compliance with AFC requirements to support the ecological restoration and livelihood potential of the mechanism.

SUCCESS results demonstrated AFCs would affect upwards of 120,000 smallholder households, help sustainably manage over 450,000 hectares of forest, and reduce carbon emissions from unregulated activities (including shifting cultivation and illegal logging) by 20 percent across Peru (Doc5). Aligning the findings with national objectives for climate change was expected to capture government attention and frame the mechanism's value for widespread uptake and implementation by other regional governments in Peru.

As a result of access to contextual information, government actors were expected to acquire a better understanding of implementation challenges, develop a roadmap for effective implementation of the technical guidelines, and refine policy according to smallholder needs to ensure registration and subsequent compliance.

The team's engagement approach intended to increase recognition of their expertise and establish their key role in the AFC network. The project worked to build coalitions with NGOs and key government agencies in order to align objectives to coordinate action so that the mechanism would realize its potential. The SUCCESS Project

also engaged NGOs working on climate change to build support for AFCs, and access networks in the communities. Through ICRAF's enhanced perceived expertise as well as access to and presence in networks as a result of project engagement, research findings would have better reach and new relationships would be formed. As a result, new commitments would be established to support continued work on AFCs, including new research questions and advocacy that would support future integration of findings into policy.

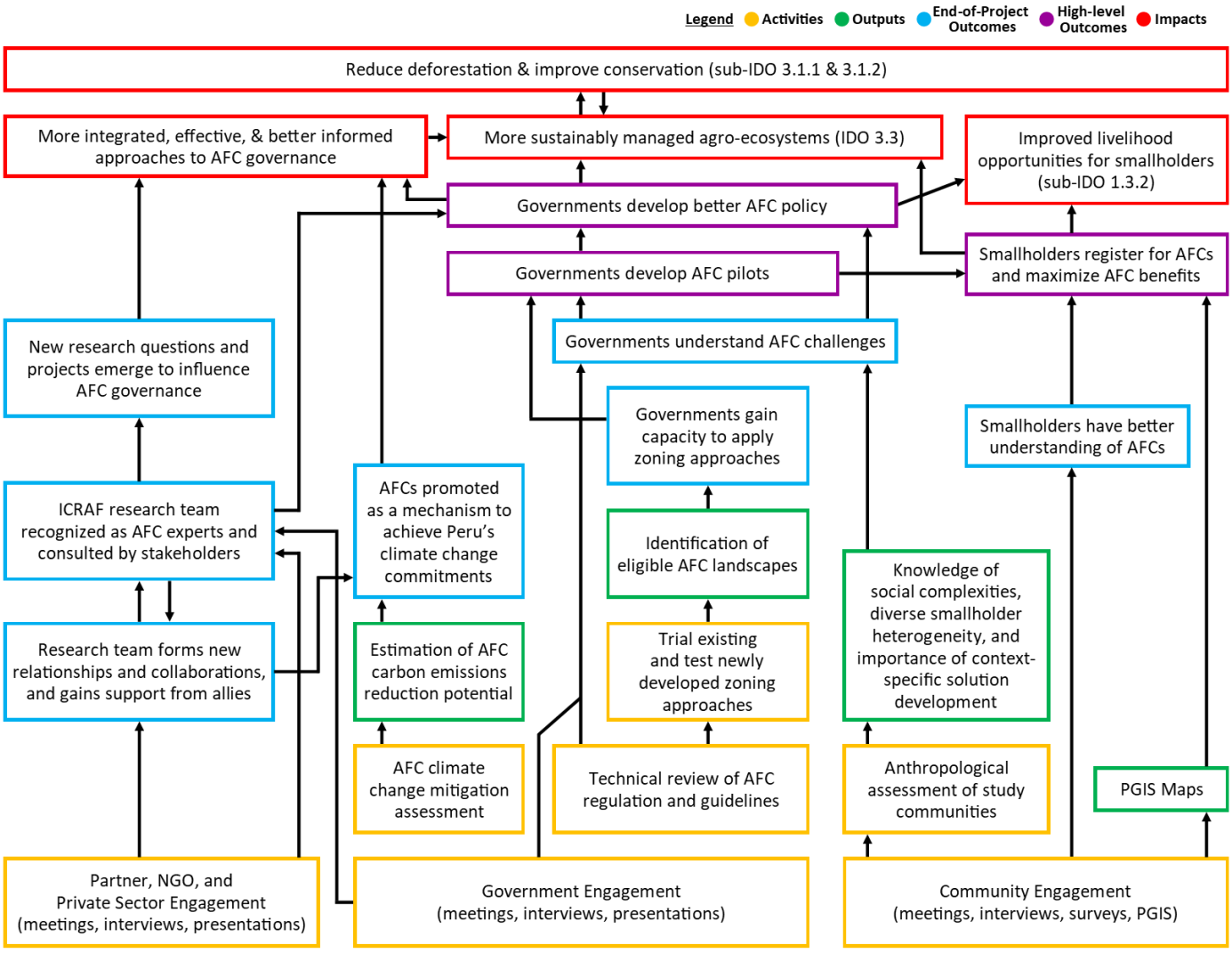

Figure 1. Simplified SUCCESS Project Theory of Change

The project anticipated its contributions would occur through a policy and governance impact pathway. Smallholder and government capacity, advocacy coalitions, and support via research team recognition and expertise emerged through the analysis as relevant sub-pathways to achieve policy change for SUCCESS. Overall, with new knowledge and methods to support improved government and smallholder capacity, it is expected that better top-down governance and bottom-up management of AFCs will contribute to conservation, reduce deforestation, and improve livelihood opportunities for smallholders.

Results

Outcome Evaluation: *To what extent and how were outcomes of the project achieved?*

Overall, the project clearly contributed to the partial or full achievement of 9 of the 11 end-of-project outcomes (see Table 4 in Appendix 2 for a full list of SUCCESS Project outcomes) with enough evidence to make a reliable assessment. Outcomes relating to changed understanding, recognition, and support for methods or AFCs (attitudes), and new relationships were mostly achieved. Changes in government policy, laws, and regulations

have not yet been observed, as it is too early in the process to expect these outcomes. Yet, antecedent outcomes pertaining to the policy process were fully or partially achieved (Figure 3). Targeted engagement with key actors built recognition of expertise, created opportunities and access to AFC networks, and developed coalitions to achieve outcomes. These mechanisms supported capacity-building among smallholders, governments, and NGOs to enable their uptake and use of research methods and findings.

There is evidence that SUCCESS contributed to better-informed AFC implementation alongside other activities led by governments and NGOs that support AFC implementation. Key informants noted that progress would have been much slower in the absence of the project, especially with respect to the piloting and awarding of AFC contracts. While public sector discussions would have occurred regardless, those discussions would not have been as well-informed or targeted, thereby hindering progress.

Project Assessment: ***How was the project designed and implemented to maximize knowledge translation?***

SUCCESS demonstrates characteristics of a relevant, credible, legitimate, and effective project that produced knowledge that is useful and used. The project's clear definition of and consideration for the socio-ecological context, building on intensive engagement with the context prior to and during the project, helped ensure project implementation was contextually appropriate and sufficiently flexible to adapt and respond to new opportunities. The project findings had practical application. All informants were aware of the project. Actors involved in SUCCESS and intended target audiences are using project outputs. Data, maps, methods, and analytical outputs have been used, referenced, and applied to inform discussions and action on the topic, such as the current concession pilots in San Martín. The research outputs are thought to be a valuable basis to guide anticipated AFC technical guideline revisions and spark further research investigations.

The team had adequate and diverse competencies to gain recognition as AFC experts and clearly define the research problem. The project genuinely and explicitly included relevant stakeholders in the research process, and effectively collaborated with partners, team members, and target audiences. The research focus of SUCCESS could have been made clearer with more explicit presentation of the research questions and methods and a more complete argumentation from analyses to conclusions.

While the project did collect gender-disaggregated data and provided opportunities for women to participate, it is unclear the extent to which and how intergenerational aspects aspects were integrated into the design of the project. AFCs can create new opportunities for smallholders with potential gender-differentiated impacts (i.e., labour allocation, decision-making, and preferences).

Lessons Learned

The research team requested the evaluators assess the contextual lessons that can be learned from SUCCESS. The evaluation also offers an opportunity to learn lessons about conducting research and evaluations in research-for-development contexts, so the following sub-question was added:

- *What lessons can be learned from this case study?*

SUCCESS research contributed needed technical knowledge of how to implement AFCs. Simultaneously, targeted project engagements resulted in coordinated action through coalition-building. In theory, this will create favourable political conditions to support effective AFC implementation, solution development, and maintain public attention that will open new policy windows on the issue in the future. Project results supported the coupling[2] of better-informed AFC implementation with promotion of the mechanism as a potential solution for issues that are already high on the political agenda (i.e., to mitigate climate change, improve livelihoods for smallholders) in order to garner future support for AFCs.

[2] 'Coupling' is a term used in the multiple streams framework from policy process theory. It describes the matching of a problem and a solution with strong political support for resolution of the problem (Cairney & Jones, 2016).

The project was successful in achieving outcomes to contribute to the policy process through four interconnected mechanisms, by:

1. Informing smallholders such that they become interested in and have the capacity to register for AFCs and comply with the regulations;
2. Building government capacity to better inform policy decisions and better implement AFCs;
3. Convening actors with similar goals in San Martín to build coalitions that sustain progress for the AFC mechanism to realize its potential; and
4. Enhancing ICRAF and the project team's recognition and reputation among government agencies responsible for the legal framework governing AFCs.

Contextual barriers remain. Political will, inter- and intra-governmental turnover, and limited resources remain challenges for research uptake. Priorities are ever shifting. Research-informed decision-making is rare in Peru. Many potential beneficiaries still do not have much information about AFCs, which will hinder the effectiveness of the policy and its implementation.

Evaluation Limitations

The ToC was documented retrospectively, roughly six months after the official end-date of the project. As a result, it was difficult to differentiate initial intentions from evolved thinking about expected contributions of project activities.

This evaluation was done while the research team was still producing outputs and involved in ongoing processes, and there will naturally be time-lags between final results and observable changes. Thus, the evaluation is a snapshot of a continual process – the fact that the majority of interviews were completed from late May to mid-November 2018 may miss evidence resulting from subsequent processes of dissemination and engagement by the researchers.

Interview respondents had limited and varied recall of activities and contributions of the SUCCESS Project. Drawing a coherent narrative of project output and outcome contributions was challenging and required some interpretation by the evaluation team. Often informants shared impressions without concrete or specified evidence to support their perceptions. Therefore, where possible, documents were used to supplement informant knowledge, but this requires that evidence is documented which is not always guaranteed or accessible. Not all stakeholder groups were interviewed, notably smallholders.

Recommendations

The SUCCESS Project incorporated many elements of transdisciplinary research into its design and implementation which supported the achievement of substantial positive outcomes. There were also elements of the project that could be strengthened. The evaluation concludes with the following recommendations for future research processes, which can apply to the next phase of SUCCESS, other research in the Flagship, or research more broadly:

1. *Use strategic engagement*. SUCCESS was effective at building the relationships needed to appreciate the context, build alliances, and position the research findings for use.
2. *Use a ToC to plan and monitor progress*. SUCCESS had an implicit ToC that guided project design and implementation. Making the ToC explicit from the start of a project will help identify key actors, potential partners, challenges, opportunities, and strategies for realizing outcomes.
3. *Anticipate and exploit multiple impact pathways*. SUCCESS deliberately used a range of partnerships and pathways to achieve its aims.
4. *Maintain high scientific credibility*. SUCCESS gained greater access to and attention from key stakeholders as a result of the reputation of the research team and their affiliate organizations. The reputation of a research organization rests on the credibility and defensibility of its data, analyses, and conclusions. As part of this, it is necessary to explicitly document research questions, methods, analytical arguments, conclusions and limitations.

5. *Maximize perceived legitimacy*. SUCCESS engaged a range of government, smallholder, and NGO actors in the project. Increased engagement can help build legitimacy (and relevance), but it also increases risks of unintended harms resulting from power imbalances, exposure of vulnerable people, or other negative outcomes. We recommend that projects working directly with people develop and abide by an ethical review procedure and make explicit (through documentation) considerations of potential for bias in the research.
6. *Understand the social, economic, and policy contexts*. SUCCESS leveraged prior research experiences, expertise, and networks in Peru to develop a comprehensive understanding of the context. Whether working in new or familiar contexts, stakeholder mapping exercises are recommended to systematically identify actors' relative power and interest levels in the project and its problem context, which can inform who to work with and how to work with them.
7. *Capitalize opportunities for mutual learning*. SUCCESS activities supported dialogue and learning between actors engaged in the project. Joint problem formulation, co-design, and knowledge co-production are recommended strategies to create and capitalize on opportunities for mutual learning, which can increase the likelihood that findings are integrated into existing processes.
8. *Continue to build the AFC knowledge base*. SUCCESS addressed relevant knowledge gaps around AFCs and demonstrated how research can better inform contextually relevant policy and practice. As part of discussions that came out of the evaluation process, informants identified future areas for research on AFCs in Peru.

Introduction

This report presents an outcome evaluation of a research project undertaken by World Agroforestry (ICRAF) entitled 'Support to the Development of Agroforestry Concessions in Peru (SUCCESS)'. The focus of the SUCCESS Project was to understand the implications of the new and untested agroforestry concession (AFC) provision for potential beneficiaries and implementing bodies. The work intended to support realistic, context-appropriate policy development and implementation as a way to advance ecological and socio-economic objectives. This evaluation assesses the extent to which and how the SUCCESS Project contributed to changes in AFC policy and practice. The evaluation investigates how the project generated new knowledge, attitudes, skills, and relationships among key actors to inform and support AFC decision-making, policy-making, implementation, and practice. The purpose of this evaluation is to critically assess the project by collecting and analyzing information about its activities, outputs, and outcomes to support learning for research effectiveness.

ICRAF is a key partner in the Consultative Group for International Agricultural Research's (CGIAR) cooperative consortium research program (CRP) on Forests, Trees and Agroforestry (FTA). The FTA CRP contributes to the mission of the CGIAR, the world's largest global agricultural innovation network that connects scientific knowledge with programs to reduce poverty, hunger, and environmental degradation. ICRAF's work on AFCs in Peru is part of the FTA's Flagship research program that investigates sustainable value chains and investments to support forest conservation and equitable development (FTA Flagship 2).

The CGIAR and FTA have strong organizational commitments to systematically assess and learn from their efforts to influence policies and practices (i.e., achieve outcomes) on the basis of rigorous science. This involves understanding how FTA knowledge is understood and used by specific audiences in their decision-making processes, and investigating how these decisions contribute to changes in the state of the environment, rural livelihoods, and health and well-being (i.e., contribute to impacts).

FTA's Monitoring, Evaluation, Learning and Impact Assessment (MELIA) team are responsible for leading appropriate, real-time *ex-post* and *ex-ante* assessments of FTA initiatives to: i) demonstrate the program's effectiveness; and ii) generate lessons to improve the design and implementation of research-for-development programs in the future.

As part of this mandate, the FTA MELIA team conducts participatory qualitative evaluations of initiatives that appear to have achieved policy or practice influence. These evaluations aim to understand how and why this influence occurred and understand the relative contribution of FTA research to observed changes in policy or practice. This is done using theory-based evaluation.

The FTA MELIA team works with scientific staff across FTA to select topics for evaluation and impact assessments based on the following considerations:

- thematic relevance to FTA priority research areas
- significance of FTA investment in the topic and/or whether FTA is a recognized leader in this area
- maturity of the project and the evaluability of the work
- the need to reflect a diversity of outcome levels and types (project outcomes – both policy and practice – as well as programmatic impact)
- the need to reflect a diversity of evaluation methodologies and approaches
- the willingness of the project managers to engage in and learn from the evaluation process
- the learning potential of the case (what can the FTA program more broadly learn from the example)
- ensuring a spread of FTA partner organizations and flagship research programs
- capitalizing on existing FTA and project-level MELIA investments (i.e., theories of change for project design, use of outcome monitoring tools, etc.)

The SUCCESS Project was selected primarily for its learning potential, based on indications that the project employed a successful approach to policy engagement, the research team was interested to learn from the process, and that the Flagship 2 research projects were under-represented in the MELIA portfolio.

The evaluation follows a participatory theory-based evaluation approach, using a theory of change (ToC) as its analytical framework. The ToC articulates the theoretical relationships and sequence of steps through which the research project intended to achieve outcomes and impacts. The evaluation is an empirical test to assess the extent to which and how the outcomes modelled in the ToC were achieved. Research design, implementation, and outputs are assessed using a research quality assessment framework (QAF). The QAF framework is used to highlight elements of the research process that worked well to achieve outcomes and where future considerations should be made in research design. The findings of the evaluation are grounded in broader theories of policy change processes to explain how and why the project contributed to change.

The evaluation has three main objectives, to:

1. Assess the project's influence;
    i. Document intended outcome achievements and pathways;
    ii. Draw conclusions about the extent to which intended outcomes were achieved and mechanisms of achievement with specific attention to research project design and implementation;
2. Provide an opportunity for learning and reflection for ICRAF researchers pertaining to promising research design and implementation practices, and lessons to guide future research; and
3. Critically reflect on the evaluation methodology for future research project evaluations.

Outcome evaluations aim to assess two components of a research project: i) whether or not outcomes are achieved; and ii) the extent of the project's contribution to outcome achievement. The second component of assessing the project's contribution is especially challenging (Mayne, 2001; 2012; Forss, Marra, & Schwartz, 2011). When projects are situated in complex contexts, with multiple actors and processes that affect outcomes in some way, the extent of actual project attribution is ambiguous (Mayne, 2001; 2012). The evaluation deals with this by explicitly considering alternative explanations for the documented results, seeking stakeholder perspectives, and applying expert judgement to assess the project's contribution.

Research contributions are typically framed in terms of new knowledge production, such as testing and improving theory and methods, conceptual framework development, and theoretical and empirical analysis, among others. Increasingly, research-based knowledge contributions are solution-oriented, providing information and options to improve policy and practice. In addition to knowledge, research activities can facilitate and support social processes of change, such as building social and scientific capacities, influencing public discourse and research agendas, and creating new fora or facilitating solution negotiations as ways to influence policy and practice (Belcher, 2017).

The presentation begins with a brief overview of the SUCCESS Project. The methodology section details the guiding evaluation questions, the analytical frameworks used, and how data were collected and analyzed. The results section answers the evaluation questions using evidence from interviews and documentation. The lessons learned section discusses the implications of the findings and what was learned from the case study evaluation. The recommendations section outlines considerations in light of the evaluation findings. The appendices provide supplemental information pertaining to the evaluation methods and results.

The SUCCESS Project

It is estimated that the Peruvian Amazon loses more than 100,000 hectares of forest annually due to smallholders' agricultural expansion on public forestland. Most smallholders do not have legal tenure and their economic activities are not formally recognized. As a result, smallholder activities occur without regulation, which contributes to ecological degradation and their informal[1] status limits their livelihood options.

The latest Peruvian Forest and Wildlife Law of 2011 (No˚29763) states that every person has the right to access, use, and enjoy the forest heritage and wildlife in the nation. It includes a provision to support agroforestry systems and forest plantations through the implementation of AFCs. The objective is to formalize informal smallholder economic activities (agriculture, forestry, animal husbandry, etc.), under the commitment to avoid further agricultural expansion into the forest and instead encourage adoption of agroforestry and sustainable production practices. Its subsidiary law was approved in September 2015, but full implementation requires the development

and approval of technical guidelines. AFCs were proposed as a strategy to address environmental degradation and provide legal and social support to informal smallholder farmers and their families to remain on and work the land. Since passing legislation, the legal mechanism and its implementation remain relatively untested in Peru. ICRAF initiated research under the SUCCESS Project in 2016 to contribute to more informed policy, governance, and implementation of AFCs as a way to contribute to positive ecological and socio-economic impacts.

AFCs present a unique opportunity to alleviate economic and environmental challenges faced by informal smallholders residing on public forest land prior to 2011. Tenure rights via an enabling title (*derecho de aprovechamiento*) are provided in the form of a 40-year renewable lease. Formalization is intended to incentivize smallholders to establish and maintain agroforestry systems in the concession area to promote restoration (e.g., through soil and water conservation, reforestation, etc.), and simultaneously grant access to formal markets for their products and services (e.g., timber, non-timber, ecosystem services, carbon sequestration, etc.) to improve livelihoods. While AFC policy is developed at the national level, implementation has devolved to the regional governments who are required to apply the technical guidelines.

For successful implementation, potential AFC recipients (i.e., smallholders) must understand and be both willing and able to comply with the requirements outlined in the regulations. Governments at each level must understand the characteristics of AFC recipients, where concession eligibility is located, and the diverse challenges that smallholders may face in order to make informed decisions around AFC implementation. The SUCCESS Project aimed to address these needs.

The 18-month project ran from 2016-2017 with a total budget of €125,000 (Doc1, Web1). Collaborations with the University of Freiburg and the German Society for International Cooperation (GIZ) were formed to build collective expertise on the technical management and governance of forest resources in Peru, and align with strategic targets of the preceding ProAmbiente I and II programmes (Web2, Web3), respectively. Working at the community-scale, the project directly engaged approximately 200 smallholders from seven communities across the Ucayali and San Martín regions in the Peruvian Amazon through workshops, surveys, interviews, and participatory geographic information system (PGIS) activities. Direct project influence on smallholders was confined to participating groups. Apart from engagement with local non-governmental organizations (NGO) and municipal actors, the project primarily interacted with regional and national-level government actors through workshops and meetings to broaden the scale of project influence. The project sought "to enable forest and agricultural authorities to successfully implement the 'formalization through agroforestry' processes proposed in the new Forest Law" (Doc1). Project objectives were:

- To identify eligible zones for AFC implementation;
- To characterize smallholder profiles and illustrate smallholder heterogeneity; and
- To advance knowledge about AFC contextuality in Ucayali and San Martín.

To identify their target audiences, the SUCCESS team considered the relevance of actors involved in or affected by AFC policy and implementation, as well as actors whose objectives overlap with project objectives:

1. National Forest and Wildlife Service (SERFOR) of Peru: a national government body responsible for forest policy development (including AFCs);
2. National government ministries with objectives of relevance to AFCs;
    a. Ministry of Environment (MINAM);
    b. Ministry of Agriculture (MINAGRI);
    c. Ministry of Finance (MEF);
3. Regional governments in Ucayali and San Martín (and beyond) who are responsible for the implementation of policy governing AFCs;
4. NGOs interested in environmental conservation, smallholder livelihood development, and tenure issues, among others (e.g., *Sociedad Peruana de Derecho Ambiental* (SPDA), *Fundación Amazónica Viva* (FUNDAVI), PUR Projet, etc.);
5. Smallholder communities as the intended beneficiaries of AFCs; and

6. Partner institutions interested in similar research questions and pursuits (University of Freiburg, GIZ, the German Federal Ministry for Economic Cooperation and Development (BMZ), Global Green Growth Institute (GGGI), etc.).

Evaluation Methodology

This evaluation examines whether and how the SUCCESS Project contributed to policy and practice change that would influence social and environmental change in the study area and beyond. It uses a theory-based evaluation approach to model the intended outputs, outcomes, and impacts; test whether those results were realized; and analyze the mechanisms of change.

The analysis was guided by the following questions:

Research Outcome Evaluation:
To what extent and how were outcomes achieved?

- *Did the project theory of change assumptions hold true?*
- *Were there any positive or negative unexpected outcomes from this project?*
- *Are the changes in forestry practices likely to contribute to intended development outcomes (CGIAR IDOs and sub-IDOs)?*

Research Project Assessment:
How was the project designed and implemented to maximize knowledge translation?

- *To what extent and how did the project engage effectively with relevant stakeholders?*
- *How well did the project integrate gender and youth considerations?*
- *To what extent was the science produced sufficiently relevant to achieve its aims?*
- *To what extent are target audiences aware of the project's outputs?*
- *Are the target audiences/stakeholders using the project's outputs, and how are they using them?*
- *What lessons can be learned from this case study?*

The evaluation uses the SUCCESS Project Theory of Change (ToC) as the main analytical framework (Figure 2). A ToC is a model of a change process. It provides a description and explanation of how and why a project is expected to lead or contribute to a process of change. The ToC details the main project activities and outputs, identifies key actors involved in the change process, specifies their actions as a sequence of steps or stages (outcomes) in the process, and exposes the theoretical reasoning for the expected changes (Earl, Carden, & Smutylo, 2001; Vogel et al., 2007). The ToC aims to explain who (individuals and organizations) is expected to do what differently and why as a result of the project. The evaluation uses empirical data to test the ToC and its underlying assumptions.

The SUCCESS Project did not have an explicit ToC in place. Therefore, as a first step, we worked with the research team to retrospectively document (i.e., make explicit) the implicit ToC. We then used the ToC to specify key outputs and outcomes, and identify the evidence required to empirically test whether or not the outcomes were realized. The focus of the outcome evaluation is on the end-of-project outcomes. End-of-project outcomes are reasonable to expect and observable at the time of the evaluation, and therefore are testable. The ToC also models high-level outcomes to support the causal logic from end-of-project outcomes to impacts and project purpose. The distinction between end-of-project and high-level outcomes is made because higher-level results are expected to require more time to manifest and depend on variables beyond the influence of the project (Halimanjaya, Belcher, & Suryadarma, 2018).

Data (Appendix 1. Evidence Sources) were collected through a review of relevant documents and 24 semi-structured interviews (see Appendix 3 for the interview guide) with 27 informants from four different informant categories (Table 1). At the request of the research team, smallholders from the study communities were not interviewed for the evaluation. It was thought that the evaluation would interfere with on-going project engagement processes, specifically as the results of the SUCCESS Project had not yet been shared with or validated by smallholder participants. Informants from MINAM could not be reached; however, a former

MINAM representative was interviewed. Interviews were recorded with respondents' permission and transcribed. Most interviews were conducted in Spanish. Spanish language transcripts were translated into English by a professional translator.

Table 1. Informant and interview details

Informant Group	*Number of Informants*	*Number of Interviews Conducted*
Researcher	8	8
Partner	5	4
Government	9	8
NGO	5	4
Total	**27**	**24**

The transcripts were coded thematically and analyzed using NVivo to systematically organize data corresponding to the evaluation questions (see Appendix 4 for the codebook). Deductive coding was employed, using codes adapted from previous evaluation experiences and new codes framed by the specific outcomes of the project (see Table 4 in Appendix 2 for a complete list of SUCCESS Project outcomes). The coding process organizes objective and subjective data from a variety of sources to help understand project contributions and how outcomes were realized.

The evaluation team supplemented the research design and implementation assessment by scoring the research according to Belcher et al.'s (2016) Transdisciplinary Research QAF to assess the degree to which the project employed inter- and transdisciplinary principles. The same principles are incorporated in the CGIAR Quality of Research for Development (QoR4D) framework (Independent Science and Partnership Council (ISPC), 2017). The QAF organizes criteria for assessing research design and implementation under the four principles of *Relevance*, *Credibility*, *Legitimacy*, and *Effectiveness*. *Relevance* refers to the appropriateness of the problem positioning, objectives, and approach to the research for intended users. *Credibility* pertains to rigour of the design and research process to produce dependable and defensible conclusions. *Legitimacy* refers to the perceived fairness and representativeness of the research process. *Effectiveness* refers to the utility and actionability of the research's knowledge and social process contributions. Full definitions of the criteria can be found in Appendix 5. Four evaluators reviewed project documentation and interviews prior to scoring. Each evaluator scored the criteria independently on a Likert scale (0 = the criterion was not satisfied; 1 = the criterion was partially satisfied; 2 = the criterion was completely satisfied); and averages were calculated for final scores.

This assessment was complemented with the FTA's Gender Equality in Research Scale (GEIRS) to assess the extent to which the project considered gender in its design and implementation. GEIRS classifies projects as gender-specific, gender-relevant (gender-sensitive, gender-aware), or not gender-relevant.

Results of the analysis are grounded in theories of policy processes to better understand the theoretical explanations of why changes did or did not occur. We apply theoretical principles from the multiple streams (Cairney & Jones, 2016) and advocacy coalition frameworks (Cairney, 2015). The multiple streams theoretical approach treats problems (i.e., issues that require attention), solutions, and politics (capacity and motivation to act) as independent streams, until they are coupled[2] to generate a window of opportunity (favourable conditions) where policy change can occur. Advocacy coalitions are comprised of people from a variety of positions who share a belief system (a set of basic values, causal assumptions, and problem perceptions) and demonstrate a non-trivial degree of coordinated activity over time. In most cases, change happens when beliefs on the routine delivery of specific policies are refined according to new information. In some cases, advocacy coalitions can be key in the process of coupling streams to stimulate policy change. Taking an integrated theoretical approach that acknowledges the role of external information will help explain multiple components of the change process to which the project contributed.

Project Theory of Change

The SUCCESS Project intended to raise attention to and support policy change for better governance and more context-specific implementation of AFCs in Peru (Figure 2). The project's multi-actor engagement approach aimed to develop smallholder knowledge of and government capacities for AFCs, and build coalitions with key

stakeholders to influence the political agenda and align objectives so that the AFC mechanism would realize its socio-ecological potential.

SUCCESS Project Activities and Outputs

SUCCESS communicated with regional governments in Ucayali and San Martín to familiarize actors with the project objectives, get input on the scoping of eight community case study locations (four per region; n.b., only seven communities agreed to participate), and help build local connections. Interviews were conducted with local governments and producer associations in each community to understand land use intentions, desired policy outcomes, and what successful implementation of agroforestry schemes would look like to ascertain indicators of AFC success and failure. These indicators were shared in stakeholder meetings and conference presentations with regional governments, SERFOR, and NGOs.

Community members were invited to meetings and workshops with the team to learn about the project and the AFC mechanism, and encourage participation in SUCCESS. Participants were interviewed and surveyed to characterize smallholder profiles. The team also conducted an anthropological assessment of the study communities to situate the findings based on history, social dynamics, gender, power, and sources of conflict. This produced knowledge of underlying social complexities and smallholder heterogeneity (e.g., community demographics, livelihood strategies, smallholders' capacity to comply with AFC requirements, and compliance incentives). This knowledge was compiled in the final project report and presented to government and NGO audiences in meetings.

In each study site, the project team held community mapping activities using PGIS to produce maps of each participant's plot of land (119 total). These maps were shared with the participants to be used for AFC registration. The research team also conducted larger-scale mapping exercises to identify eligible agroforestry landscapes in the two study regions. The team trialed the meso-zoning approach as specified in the technical guidelines to produce AFC land suitability maps for Ucayali and San Martín at the meso-level (1:100,000 scale). The team also developed and tested a new micro-zoning method (1:25,000 scale), which produced more precise AFC land suitability maps and was more cost-effective than the meso-zoning approach. These maps and lessons of applying the methods were shared in meetings with regional governments. Infographics summarizing the lessons were also produced and disseminated widely in meeting and conference presentations.

To align the project with Peru's national objectives and international commitments for climate change and green growth, such as Initiative 20x20 (Robiglio & Reyes, 2016; Web4), the Joint Declaration of Intention between Peru, Norway, and Germany (DCI) (Doc9), and the Sustainable Development Goals (Web5), SUCCESS conducted a climate change mitigation assessment using meso-level land suitability maps and census data to estimate potential carbon emissions reductions associated with AFC implementation. The results demonstrated AFCs would affect upwards of 120,000 smallholder households, help sustainably manage over 450,000 hectares of forest, and reduce carbon emissions from unregulated activities (including shifting cultivation and illegal logging) by 20 percent across Peru (Doc5). These findings were included in the donor report, and presented in meetings with SERFOR and MINAM, among other key actors.

These activities also developed an expanded agroforestry definition and a recommendation for SERFOR to revise the technical guidelines to govern AFC management at the farm-level. These ideas were shared in meetings and presented at conferences with regional government representatives. Other core findings identified the need to develop contextually relevant incentives and reflect understanding of smallholder heterogeneity and capacity for compliance in the regulatory framework, so the mechanism can realistically achieve its conservation and restoration objectives. These conclusions were shared with regional governments, NGOs, and academics via the final project report, meetings, and conference presentations.

Intended Outcomes for Policy and Governance

The project anticipated its contributions would occur through a policy and governance impact pathway. Smallholder and government capacity, advocacy coalitions, and support via research team recognition and expertise emerged through the analysis as relevant sub-pathways to achieve policy change for SUCCESS.

Smallholder Capacity-building

It is expected that participating smallholders would gain a better understanding of AFC regulations and processes. Participation in research activities would develop their understanding of forest limits (plot boundaries and deforestation restrictions), land value (differences in land use potential), and the opportunities (land use diversification and

expansion, compliance incentives and benefits, etc.) and challenges (eligibility restrictions, compliance requirements, etc.) associated with AFCs. With this knowledge, smallholders are expected to view AFC formalization to be in their interest and move forward with registration. Smallholders who decide to register would also be better positioned to comply with the AFC requirements because of the PGIS maps and their familiarity with the regulations. Greater capacity to comply with the ecological requirements would ensure that active AFCs contribute to the reduction of deforestation and improve conservation management of the land. With the allocation of a concession, smallholders would gain access to benefits of formalization, such as market access, technical assistance, and credit to better support their agroforestry activities and livelihoods. Greater understanding of the AFC process and potential benefits would also enable smallholders to maximize these benefits. Moreover, benefits related to technical assistance (e.g., extension services) would help smallholders to reduce deforestation and employ sustainable practices. It is expected that these practices would contribute to more sustainably managed agro-ecosystems in Peru.

Government Capacity-building

Regional governments and SERFOR are expected to use new knowledge about the technical feasibility of AFC implementation and smallholder contexts and challenges to guide implementation. This understanding, paired with adoption of the project's context-based insights and recommendations to address regulatory shortcomings, would enable regional governments to develop a roadmap for better informed and more effective implementation of the technical guidelines. For example, specific recommendations include the simplification and clarification of the technical procedures to support implementing bodies (i.e., regional governments), and development of alternative incentives to reduce obstacles faced by smallholders. It is expected that such adjustments would contribute to the development of better AFC policy by regional governments and SERFOR.

The meso-zoning trial results would provide regional governments responsible for identifying areas eligible for agroforestry with guidance and knowledge of how to apply the methods, which is expected to contribute to governments' capacities to identify and map AFC land suitability at the meso-level. The research team's successful demonstration of the micro-zoning approach and generation of more precise maps at the farm-level would persuade regional governments of the value of this alternative mapping method. It is expected that regional governments will adopt micro-zoning to take advantage of the proven benefits. One way they may use or adapt micro-zoning is in AFC registration pilots. Regional governments are expected to develop pilots to trial the implementation process because the regulatory framework for the allocation of AFCs is currently untested; pilots would test their current capacities and offer a learning experience. Pilots and experiential learning are expected to inform better AFC policy development (i.e., revisions of the technical guidelines) and contribute to more effective AFC governance in the long-term.

Understanding the importance and implications of smallholders' capacities to comply with AFC requirements, and knowledge of their current (in)capacities to comply, would stimulate regional governments and SERFOR to recognize the need to take an active role in building smallholder capacities. Through this recognition, governments may seek further research inputs to inform strategies to build smallholders' capacities to comply, which would contribute to better AFC policy development. Regional governments and SERFOR are expected to actively develop better AFC policy based on their access to SUCCESS Project findings. The combination of governments' recognition of the value of SUCCESS findings and recommendations, other stakeholders' insights (e.g., NGOs, beneficiary communities, etc.), and their own experiences with AFC implementation, is expected to drive better policy development for AFCs. More intentional and knowledge-based policy development would contribute to more integrated, effective, and informed AFC governance in practice.

Coalition-building

SUCCESS engagement strategies are expected to draw attention to AFC issues, develop a network of stakeholders and working partners, and align objectives to influence the AFC political agenda. The estimate of AFC-related carbon emission reductions is expected to be a key piece of knowledge to persuade stakeholders of the value of the mechanism. It is expected that actors tasked with climate change mitigation, like MINAM, would therefore promote AFCs as a strategy to achieve Peru's national climate change commitments. Promotion in these networks would result in further uptake of SUCCESS Project findings and greater coordination; for example, regional and national government actors could recognize AFC objective alignment with the DCI Joint Declaration (e.g., green growth, sustainable forest management, tenure and formalization rights, etc.). Another example could be reflected in the National Plan, whereby resources for land titling processes, including for agroforestry zones, are allocated. With wider recognition of and

support for the multi-functional objectives of AFCs, it is expected that AFC governance will become more integrated, effective, and better informed over time.

By involving NGOs in the project and exchanging knowledge about community contexts, SUCCESS expected to build support for AFCs amongst local and regional NGOs. One possible expected action taken by producer associations would be to help maintain the territories of concession-holders against the encroachment of other groups, because active AFCs afford smallholders legal rights to the land and legal disputes can be funneled through producer associations. New relationships with NGOs are expected to result in further collaborations, such as one between ICRAF, GGGI, and SPDA based on mutual interests to promote and improve environmental legislation and policy implementation for forests. With ICRAF's existing knowledge exchange partnership with GGGI, GGGI is expected to use and share SUCCESS Project findings; for example, in their engagements with MEF regarding Peru's Green Growth Strategy. Findings related to the potential of AFC carbon emissions mitigation and smallholder livelihood impact, among others, would be of interest to MEF who promotes and allocates funding to green investment projects. This could be an important avenue to influence and increase resource allocation to land titling initiatives, as GGGI lobbies and advises the agricultural section of the national Green Growth Strategy of Peru.

Reputation

As a result of ICRAF's previous research in Peru, former collaborations, active presence and engagement on AFC issues, and extensive engagement with stakeholders through the SUCCESS Project, it is expected that governments and other actors would recognize ICRAF as experts in AFCs and consult them in future engagements. For example, re-initiating a collaboration with GGGI through SUCCESS would contribute to the recognition of collective interests between ICRAF, GGGI, and SPDA to better coordinate work on smallholder farmers in the Amazon.

Academic

As a result of producing new knowledge and disseminating information widely with multiple levels of government, NGOs, and other organizations, the SUCCESS Project would draw target audience attention to existing information gaps and the importance of context in AFC implementation. It is expected that governments would demand and support new research initiatives to inform their decision-making, and therefore new research questions would emerge. Other organizations working on interrelated topics may also engage in new research on AFCs. One of the specific research gaps expected to be filled pertains to the development of indicators to determine smallholder compliance with AFC requirements. This information would be crucial to inform governments to build smallholder capacities to comply and develop better policy to support their compliance.

Improved AFC policy and governance is expected to support better livelihood opportunities for smallholders, limit deforestation and improve conservation, and sustainably manage agro-ecosystems in Peru.

The ToC rests on the following assumptions:

1. Producing relevant information in a credible and timely manner will increase the uptake and use of research;
2. Findings are logically connected, contextually appropriate, and scientifically robust to align with existing target audience initiatives (are fit to purpose);
3. Engagement efforts were sufficient to build important relationships with allies to ensure continuity;
4. People pay attention to numbers (quantification) that give findings relevance;
5. If we understand the enabling conditions to support agroforestry in context, success is more likely ('option-by-context approach'[3] – tailored solutions); and
6. Changes to AFC implementation policy which accommodate smallholder heterogeneity (i.e., informed by diverse smallholder experiences and realities) will have a greater likelihood of improving smallholder livelihoods.

[3] The option-by-context approach describes a new paradigm in agronomy that FTA's Livelihood Systems Flagship has been instrumental in development, which appreciates fine-scale variation in-context to enable the scaling up of agroforestry practice. Application of an option-by-context approach in research aims to improve agricultural system performance by developing new options and matching appropriate options (i.e., things that smallholders can do differently) with specific contexts (affected by political, social, environmental, and economic conditions) (Coe, Sinclair, & Barrios, 2014; Nelson, Coe, & Haussmann, 2019; Sinclair & Coe, 2019).

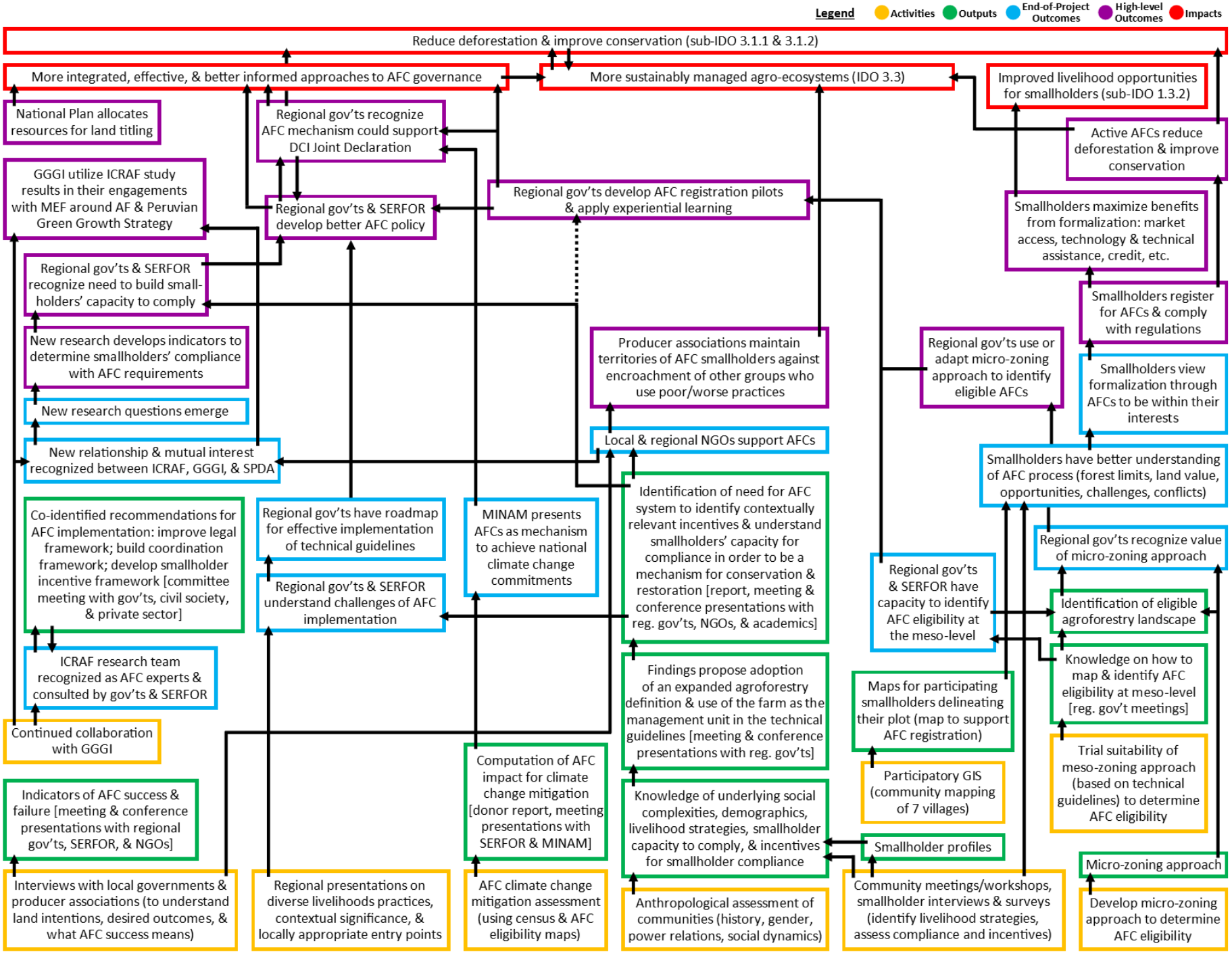

Figure 2. Elaborated SUCCESS Project Theory of Change

Results

Outcome Evaluation: *To what extent and how were the outcomes of the ICRAF SUCCESS Project achieved?*

Extent of Achievement

Detailed results and supporting evidence of outcomes are provided in Appendix 9. The project clearly contributed to the partial or full achievement of 9 of the 11 end-of-project outcomes with sufficient evidence to make a reliable assessment. Outcomes relating to changed understanding, recognition, and support for methods or AFCs (attitudes), and new relationships were mostly achieved. Changes in government policy, laws, and regulations have not yet been observed, as it is too early in the process to expect these outcomes. Yet, antecedent outcomes pertaining to the policy process (e.g., *regional governments and SERFOR understand challenges of AFC implementation*, *regional governments have a roadmap for effective implementation of technical guidelines*, and *regional governments develop AFC registration pilots and apply experiential learning*) were fully or partially achieved. We summarize the findings of the outcome evaluation in Table 2.

Figure 3 illustrates the ToC with outcome achievements and the degree to which the project contributed to outcome achievement.

Table 2. Summary of SUCCESS Project outcome assessment, supporting evidence, and consideration of contextual factors and causal mechanisms affecting outcome achievement (see Appendix 9 for a more detailed assessment).

Results	**Illustrative Evidence**	
Outcome Assessment	**Summary of supporting evidence for the assessment**	**Contextual factors and causal mechanisms affecting how the outcome was achieved**
ICRAF research team recognized as AFC experts & consulted by governments & SERFOR **Achieved, clear contribution of the project**	Interviews: SERFOR and regional government respondents indicated trust and respect for the research team; NGOs noted ICRAF's important role in developing support for the mechanism; partners commented on the essential expertise and insight of ICRAF. Indicator: ICRAF included on AFC consulting committee in San Martín.	The SUCCESS Project positioned ICRAF in the AFC issue. This was supported by ICRAF's long-term involvement (since 1993), previous research, engagement, and international and national reputation for agroforestry research.
Smallholders have a better understanding of AFC process (forest limits, land value, opportunities, challenges, conflicts) **Insufficient evidence, preliminary results indicate achievement with clear contribution of the project**	Interviews: Government informants and project researchers commented that the ~200 smallholders engaged in the research process learned about AFCs (and opportunities), decision-making, registration, and their territory through discussions with the research team and the PGIS.	Interview informants asserted belief that the project contributed to raising attention to AFCs among smallholders who participated in the project (this group was previously unaware of the new forestry law and its implications for them). Indirect project influence on smallholders not engaged by SUCCESS was likely facilitated by NGO allies (e.g., FUNDAVI, *Mechanismo de Desarollo Alternos* (MDA)) whose work overlaps with AFCs. Other NGO and private initiatives will contribute to general smallholder understanding of AFC processes.
Smallholders view formalization through AFCs to be in their interest **Insufficient evidence, unclear contribution of the project**	Interviews: Government informants and researchers noted that smallholders find the registration process complicated and costly (particularly with respect to the annual payment that comes with title) and smallholders currently see little economic benefit in formalizing.	Government informants indicated that the SUCCESS Project helped raise attention to challenges smallholders face within the current legal framework. Sharing smallholder perspectives helped raise awareness and thinking about these challenges among authorities that may result in better policy in the future.

Smallholders register for AFCs & comply with regulations **Partially achieved, indirect contribution of the project**	Interviews: Government and NGO informants noted AFCs allocation in pilots in San Martín; otherwise, no smallholders registered (at the time of the interviews). Registration procedures are still under development. ICRAF Blog: 14 smallholders in San Martín were granted AFCs in late 2018.	Potential beneficiaries remain unaware of AFCs; only SUCCESS participants and smallholders lobbied by NGOs like MDA are aware of AFCs. Incentives outlined in the regulations were found to be unattractive to smallholders. Government bureaucracy has resulted in registration and implementation delays. Decision to grant 14 contracts was fueled by regional government elections.
Smallholders maximize benefits from formalization: market access, technology & technical assistance, credit, etc. **Partially achieved, unclear contribution of the project**	Interviews: The only confirmed access was for smallholders participating in the regional government pilots; NGOs believed more smallholders would recognize existing benefits over time. ICRAF Blog: AFC contracts awarded in San Martín would provide 14 smallholders access to AFC benefits.	Smallholder knowledge of AFCs and benefits is low, and upfront costs (detailed in the *derecho de aprovechamiento*) hinders registration. Smallholder access to benefits may not be leveraged based on limited awareness or underdeveloped government capacity. Diverse smallholder profiles may require different incentives.
Active AFCs reduce deforestation & improve conservation **Not achieved (too early to assess)**	Interviews: NGOs believed AFC contributions to reduced deforestation and improved conservation would take time to manifest, particularly as few pilots have been allocated to date.	Smallholders have little to no education of the degrading effects of their practices on forests. Deforestation and conservation objectives are built into the AFC framework. Government misconceptions of AFCs resulted in belief that the mechanism would facilitate rather than limit deforestation. Climate change and conservation objectives are highly prioritized in Peru.
Regional governments & SERFOR understand challenges of AFC implementation **Achieved, clear contribution of the project**	Interviews: Regional governments expressed appreciation and noted the research was critical to understand how to approach AFC implementation and support arguments to progress on AFC issues. SERFOR informants commented the research was useful for the national plan to understand the need to distinguish smallholders.	Public servants have limited time and resources to process information, and face multiple competing priorities. There was a recent government election in Peru; high political turnover and low institutional learning means new public servants have to learn from scratch.
Regional governments have a roadmap for the effective implementation of technical guidelines **Achieved, clear contribution of the project**	Interviews: Regional government informants confirmed that the project's findings addressed the issues with identifying eligibility, the legal framework, and institutional arrangements. Regional government informants noted the findings were essential for understanding how to implement the technical guidelines for AFCs.	Mismatch between research and policy cycles. Implementation issues with the guidelines were brought to the attention of the national authorities via project findings and presentations, but the technical guidelines remain unaltered. This caused some delays in progressing with AFC implementation in Ucayali.
Regional governments & SERFOR have capacity to identify AFC eligibility at the meso-level **Partially achieved, unclear contribution of the project**	Interviews: Governments and partners confirmed governments have capacity to identify areas eligible for AFCs using the meso-zoning approach detailed in the technical guidelines; governments referred to the June 2016 approval of the methodological guide and pilots as indicators of their capacity; NGOs believed regional governments to have greater capacity than SERFOR.	AFC eligibility is determined by zoning and smallholder capacity to comply. Regional governments are responsible for zoning (agroforestry is one category of zoning), but face regulatory ambiguities in the technical guidelines and lack experience to implement the meso-zoning approach. Determining smallholders' capacity to comply is costly and guidance to do so is absent in the technical guidelines.
Regional governments recognize value of micro-zoning approach **Achieved, clear contribution of the project**	Interviews: NGOs applied the micro-zoning approach in two pilots in San Martín; informants from the regional government noted the utility of the small-scale maps produced by ICRAF. Indicator: San Martín regional government moves forward with a technical group working on zoning.	Informants from the government and NGOs note zoning as a limiting factor for progressing with AFCs.

Regional governments use or adapt micro-zoning approach to identify eligible AFCs **Partially achieved, indirect contribution of the project**	Interviews: NGOs confirmed adoption and application of micro-zoning in their projects and AFC pilots in San Martín, which are run in cooperation with regional government authorities; NGOs also noted micro-zoning training was given by MDA (supported by ICRAF) to San Martín's regional governments.	As NGOs work alongside and support regional government activities, they develop trust and strong working relationships with regional actors; NGOs like MDA promoted the micro-zoning approach and shared ICRAF's experience to demonstrate its utility and application.
Regional governments develop AFC registration pilots & apply experiential learning **Achieved, clear contribution of the project**	Interviews: Government, NGO, and partners were aware of AFC pilots in San Martín, and noted specific data, methodological, and technical contributions of the SUCCESS Project to the pilots; government and NGO representatives reported that additional pilots for San Martín and Ucayali are in preparation.	Pilot testing is common practice to test new legislation in Peru. AFCs were already under discussion without ICRAF's influence, but a government informant believed that San Martín's regional government would not be at the current stage of implementing pilots without the contributions of the project.
Regional governments & SERFOR recognize need to build smallholders' capacity to comply **Partially achieved, clear contribution of the project**	Interviews: Government informants learned about smallholders' incapacities to comply with current AFC requirements from the SUCCESS Project, and a couple identified the general need to address these compliance barriers; one government and one NGO informant suggested governments should develop additional incentives.	Smallholders' differing capacities to comply are not contextualized or accounted for in the regulatory framework for AFCs. Before the project, regional governments and SERFOR did not have data on compliance capacities.
Regional governments & SERFOR develop better AFC policy **Not achieved, preliminary results indicate potential for achievement with clear project contributions**	Interviews: No informants could provide evidence of policy change; one NGO received a request from SERFOR to prepare recommendations for technical guideline revisions (indicator); government, NGO, and partner informants believed the SUCCESS Project findings would be a useful basis to inform technical guideline modifications.	While part of forest policy, AFCs are a hybrid mechanism (application in forestry and agriculture); so confusion exists for actor responsibilities. Policy development is a slow (and politicized) process in Peru. Several actors (including ICRAF) gave feedback to the draft technical guidelines, but this feedback was not incorporated in the published guidelines. Modifications to the technical guidelines and related legislation may follow the results of the pilots, but is contingent on understanding and willingness at the director-level. ICRAF intentionally oriented and shared SUCCESS findings with governments to influence policy change to reflect contextual differences and smallholder heterogeneity.
MINAM presents AFCs as mechanism to achieve national climate change commitments **Partially achieved, clear contribution of the project**	Interviews: NGOs noted that AFC issue is on the agenda of national forestry and climate change strategies; governments noted interest in agroforestry as a means to mitigate and adapt to climate change; partners noted the quantification of potential carbon emissions reductions helps set priorities for climate action.	Climate change is already high on the political agenda amongst national authorities like MINAM and MINAGRI. The project's quantification of potential carbon emissions reductions from the implementation of AFCs strengthens arguments that it is an effective mechanism for achieving climate change commitments to set the agenda for action.
Regional governments recognize AFC mechanism could support DCI Joint Declaration **Insufficient evidence, preliminary results indicate partial achievement with some project contributions**	Interviews: Regional governments did not discuss information related to this outcome; other government, NGO, and partner informants believed SUCCESS Project findings (e.g., 450 thousand hectare potential of AFCs, sustainability of agroforestry-based coffee and cacao production, formalized tenure, etc.) demonstrated AFC alignment with DCI's climate change and sustainable development objectives.	DCI allocates funding to government ministries to implement strategies and proposals to reduce carbon emissions, so Peruvian ministries must be accountable for the implementation of proposals receiving DCI-funding. Aware of the DCI Joint Declaration, ICRAF shared SUCCESS findings with DCI to demonstrate the potential of the AFC mechanism.

National Plan allocates resources for land titling **Not achieved**	No evidence.	Land tenure rights for informal groups is a contentious topic in Peru. Some government actors worry that allocating a title through AFCs may result in legal permission to exhaust the land under the concession without recourse.
Local & regional NGOs support AFCs **Achieved, clear contribution of project**	Interviews: Researchers noted the extended benefits of engaging NGOs to build rapport with communities; governments noted an enhanced interest among NGOs; some NGOs demonstrated an increased commitment to and action around AFCs that would sustain action regardless of Peru's ever volatile political agenda.	Some conservation NGOs were already interested in AFCs, reforestation, and tenure rights. Alignment with broader sustainability goals made it easier to garner support for AFCs among NGOs who were not as active in the context, which supported the development of advocacy coalitions.
Producer associations maintain territories of AFC smallholders against encroachment of other groups who use poor/worse practices **Not achieved**	No evidence.	Smallholder recipients of AFCs would be able to join and organize under producer associations. Producer associations lobby for, act, and protect its members' rights and concerns.
New relationship & mutual interest recognized between ICRAF, GGGI, & SPDA **Achieved, clear contribution of the project**	Interviews: GGGI and SPDA noted that increased support for AFCs was driven by alignment of interests in reducing deforestation, climate change, and livelihood improvements; they attributed their engagement in the topic to the SUCCESS Project. Document: A joint proposal is being submitted to Norway's International Climate and Forest Initiative (NICFI) to continue work on AFC implementation (indicator).	ICRAF had a previous collaboration with GGGI through a consultancy about smallholders (see Doc8). The project's ability to quantify beneficiaries and carbon emissions reductions was critical in aligning AFCs with broader sustainability goals.
GGGI utilize ICRAF study results in their engagements with MEF around AF & the Peruvian Green Growth Strategy **Insufficient evidence, preliminary results indicate partial achievement and indirect project contribution**	Interviews: One researcher (who changed organizations following the project) shared SUCCESS findings supporting AFCs as a potential formalization strategy for green growth under development at MEF; the researcher believed SUCCESS findings were reflected in a diluted way in Peru's Green Growth Strategy, but unclear if GGGI was a contributor.	GGGI is comprised of 27 member states that pool resources to allocate funding in support of green growth policy or proposal implementation. In Peru, GGGI allocates funding to MEF for distribution. Portrayal of AFCs in light of green growth and formalization (noted as MEF's prioritization) contributions was the approach taken to present the mechanism to MEF.
New research questions emerge **Partially achieved, unclear contribution of the project**	Interviews: Informants described new areas of possible research inquiry including: point-by-point analyses of the guidelines to determine solutions, monitoring and enforcement mechanisms, effects of agricultural intervention and growth dynamics of agroforestry systems, and econometric studies about production chains and cost-benefit analyses of formalization.	By contributing to the overall knowledge base of AFCs and implementation, new research questions may emerge in part as a result of the project. Research questions are also shaped by individual experiences and understanding that may or may not draw from the knowledge base. It is unclear whether any of the noted areas of research inquiry have been pursued.
New research develops indicators to determine smallholders' compliance with AFC requirements **Not achieved**	No evidence.	In general, there is little information apart from SUCCESS Project findings on AFCs. As smallholders' differing capacities to comply with AFC requirements was emphasized as a core project finding, governments may request research develop indicators to support and expedite the AFC eligibility identification process.

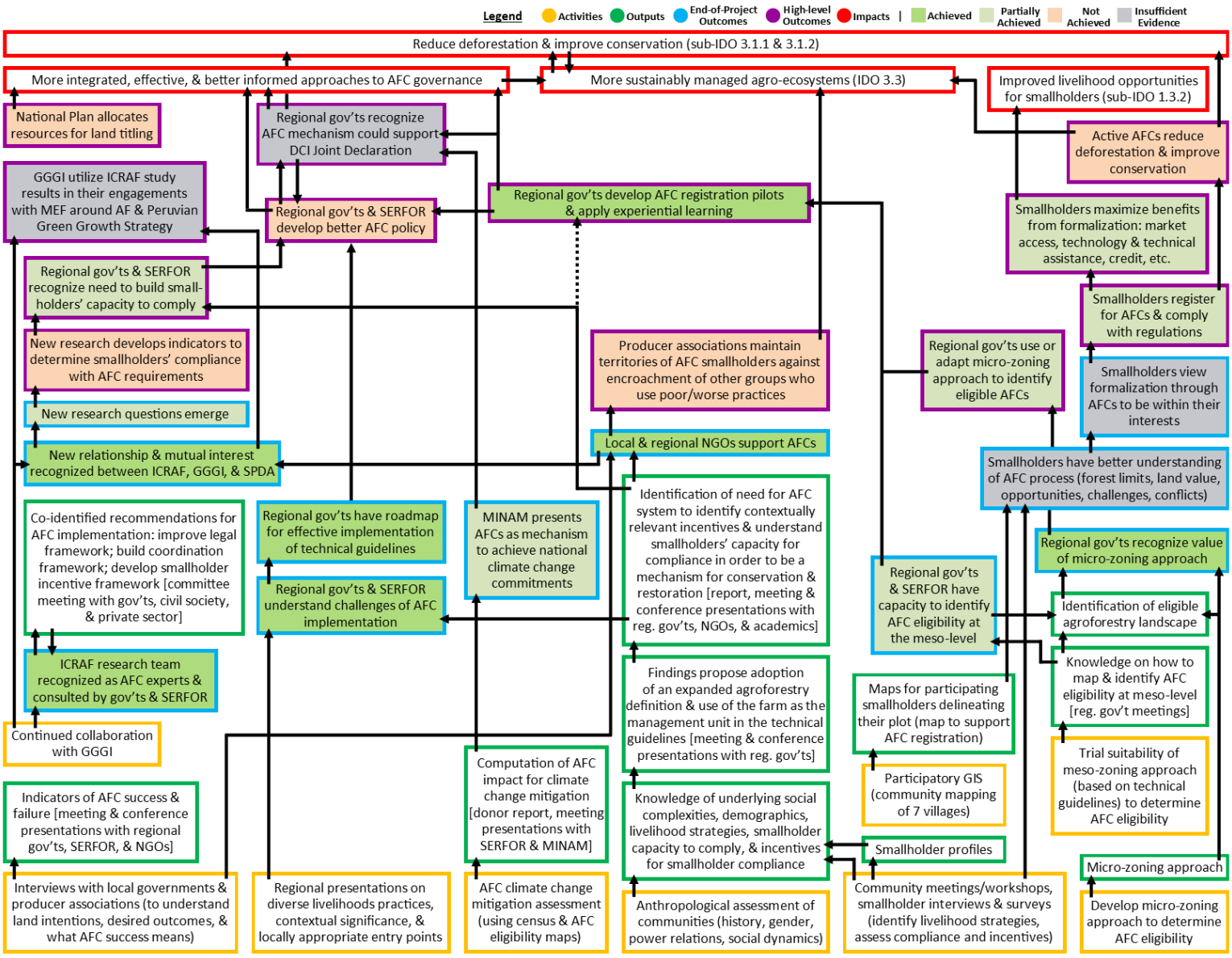

Figure 3. SUCCESS Project Theory of Change, with outcomes colour-coded to reflect extent of outcome achievement and degree of project contribution (green: achieved; light green: achieved; orange: not achieved; grey: insufficient evidence)

Mechanisms of Achievement

Community engagement and participatory activities increased the utility of the research process and products for smallholders (Gov4, Res2). The PGIS activities helped increase smallholders' awareness, understanding of, and therefore interest in the registration process. Preliminary evidence suggests that smallholders acquired a better understanding of the AFC process, and assuming subsequent policy change reflects a better understanding of the challenges smallholders face, locally appropriate incentives will enhance smallholder interest in formalizing and capacity to register and comply with the regulations. A preliminary indicator of this is the issuing of 14 concessions in San Martín to some of the smallholders who participated in the SUCCESS Project (Blog1).

Centralized policy-making is frequently out of touch with the realities and complexities of regional implementation (Par1); SUCCESS helped fill that void. Project engagement with regional and national government actors from relevant agencies and ministries (e.g., SERFOR, MINAM, MINAGRI) facilitated policy and implementation-focused discussions on AFCs between these actors (Gov2, Gov4, Gov6, Gov8, NGO2, NGO3, Par2). By generating case study evidence highlighting the diversity of experiences faced by

potential AFC recipients, the project succeeded in increasing the governments' understanding of the implementation challenges from this angle. The findings minimize implementation risk because there is field data available about how a certain geographic context could react to the guidelines (Par1). In addition, the regulatory focus of SUCCESS findings that came out of the technical review presented government actors with the necessary resources to better inform future policy decisions on AFCs, particularly for the anticipated revisions to the technical guidelines (Gov1, Gov4, Gov7, NGO1, Par2). By raising governments' awareness of implementation feasibility and related challenges, as well as offering practical recommendations, made AFC dialogue spaces more productive and offered actors in decision-making positions with a roadmap to take AFC implementation forward. It is expected that new understandings will influence future policy development regulating AFCs, and governments would be equipped with knowledge and enhanced capacities to better implement AFCs.

The project successfully convened actors with similar goals of reducing deforestation and improving smallholder livelihoods to build informal coalitions that are expected to sustain progress around AFCs. This was accomplished through a variety of workshops, meetings, and presentations with government actors, NGOs, and partner organizations. Many informants discuss the project's contribution to the information base to progress discussions around AFC implementation (Gov1, Gov3, Gov4, Gov7, Gov8, NGO3, NGO4, Res6). "*There would have been a public conversation, but there would not have been data to back it*" (Par4). Positioning AFCs with issues high on the political agenda, like climate change and sustainable development, succeeded in gaining government and participating NGOs' interest. Quantifying AFC's carbon emissions reduction potential and potential recipient impact in each study region provided ICRAF with data-driven evidence to draw support for AFCs based on their ecological and socio-economic potential. Subsequent action for effective AFC implementation among actors with similar goals was observed through increased commitment by NGO allies who are interested in the mechanism for tackling climate change (Gov3, Gov4, NGO4, NGO3, Res1).

Enhanced perception of ICRAF's expertise on the topic was achieved by producing contextual knowledge that filled a knowledge gap. Additionally, the project's responsive engagement helped build relationships with key government actors. Following the formal conclusion of the project, regional governments and SERFOR continue to invite the lead researchers to meetings about AFC policy. For example, ICRAF was invited to join a consulting committee formed by the regional government, Earth Innovation Institute (EII), and other entities working on the AFC issue (Gov4).

The ToC assumes that effective implementation of AFCs will lead to more sustainable agro-ecosystems and improved livelihood opportunities for smallholders. The SUCCESS Project played an instrumental role in informing and participating in ongoing AFC-related processes at multiple levels and with different actors in the system. The project successfully raised national governments' attention to AFC potential, and supported the momentum for AFC dialogue despite competing political agendas (NGO3). However, alternative explanations for why, how, and the extent to which the outcomes were or were not achieved need to be explored.

Alternative Explanations

Many other initiatives underway in Peru made contributions to outcomes targeted by the project, though through different means, and laid important groundwork for SUCCESS. Government respondents noted that progress on AFC implementation would have occurred, but it would have been much slower, notably with respect to the awarding of AFC contracts. One informant noted that the reason people may be reluctant regarding AFC registration and implementation is because of the narrow lens with which the policy regulating AFCs was developed – the mistake that the mechanism was developed with a narrow focus for coffee growers, when the potential is much broader (Gov3). While some informants noted that SUCCESS Project findings helped shape public discourse around AFC implementation, others noted public sector discussions would occur regardless, but those discussions would have been less well-informed and less targeted, thereby hindering progress.

NGOs like the PUR Projet were identified as key project allies. PUR Projet was already interested in AFCs and works with communities in San Martín to grant concession contracts and brand products to indicate commitment

to sustainable production (Gov4, NGO1, NGO4). Positioning the research within broader environmental goals and creating alliances with NGOs who were interested in the topic was strategic. However, corresponding work and experiences by government agencies and NGOs on achieving those commitments (including through the mechanism of effective AFC implementation) likely contributed to enhanced understanding among actors about challenges and opportunities of AFCs, not the understanding that came from engaging with the research and its findings alone (NGO1). Effective lobbying by smallholder cooperatives also contributed to the San Martín regional government's understanding of the issue and willingness to act. There was a specific case where trees planted before 2011 have matured, but smallholders awaiting an AFC are unable to harvest; lobbying on this issue received regional governments' attention (Gov4, Par4).

The project's connection with the strategic targets of GIZ's ProAmbiente programmes and iNAMAzonia was likewise strategic. Operating in the study regions since 2014, these programmes' activities likely would have contributed to similar higher-level outcomes in the absence of SUCCESS, though through different means. For example, ProAmbiente I contributed to goals related to the sustainable use and conservation of ecosystems for the protection of biodiversity, as well as mitigation and adaptation to climate change (Web2). These goals were achieved by building support for the sustainability agenda and strengthening environmental institutions (Blog7). ProAmbiente II is currently underway, basing its programming on the activities and learning from phase I (Web3). iNAMAzonia (2014) introduced crops needed in world markets and livestock to reduce carbon emissions within the framework of sustainable agriculture for smallholders, promoting agroforestry practices as one strategy (Blog6). There are many organizations and institutions that are working towards the successful implementation of Nationally Appropriate Mitigation Actions (NAMAs); ProAmbiente and iNAMAzonia are just some examples of complementary initiatives that have laid important groundwork for SUCCESS to make progress and achieve outcomes, particularly with mobilizing support among institutions interested in addressing climate change. These initiatives are supported by the DCI agreement between Norway and Peru, that has investigated strategies to reduce carbon emissions (Doc9). Preparation of Peru's national climate targets (NDC) has been a long complex process that overlapped with the timeline of the project. NDC deliberation involved multiple stakeholders, including ICRAF, to identify strategies for climate change mitigation and adaptation. These complementary initiatives were leveraged by the SUCCESS team to build support for the mechanism and contribute to change in the context by producing relevant knowledge that is useful and used.

Did the theory of change assumptions hold true?

Four of the six assumptions appear to have held true, one has speculative evidence indicating it held true, and one is too early to assess (Table 3).

Table 3. Project assumptions assessment

Assumption	***Result***	***Evidence***
Producing relevant information in a credible and timely manner will increase the uptake and use of research	Held true	Government and NGO actors found findings to be relevant and credible because the project collected evidence from the field; barriers to uptake of the results were perceived to be contextual: missed policy window, siloed organizational structure of the government, lack of political will
Findings are logically connected, contextually appropriate, and scientifically robust to align with existing target audience initiatives (fit to purpose)	Held true	Findings have logical connection to the legal framework; findings promote smallholder realities; science aligns with state priorities (e.g., climate change)
Engagement efforts were sufficient to build important relationships with allies to ensure continuity	Held true	NGOs and partners viewed their collaborations with SUCCESS positively; ICRAF was invited to join an AFC committee; there is increased commitment to AFCs across actor groups; MEF was not successfully reached

People pay attention to numbers (quantification) that give findings relevance	Held true	AFC climate change mitigation potential findings were well-known and well-received to assist with priority setting
If we understand the enabling conditions to support agroforestry in context, success is more likely ('option-by-context approach' – tailored solutions)	Speculative evidence	ICRAF framed findings by context, which was recognized as useful by government actors
Changes to AFC implementation policy which accommodate smallholder heterogeneity (i.e., informed by diverse smallholder experiences and realities) will have a greater likelihood of improving smallholder livelihoods	Too early to assess	No policy changes have taken place; only 14 concession contracts have been awarded

Were there any unexpected positive or negative outcomes from this project?

There is little indication that there were unexpected outcomes resulting from the project. As the project generated space for discussion on the topic and information to supplement discussions, receptiveness to information, collaboration with research institutes, and trust in AFCs as a sustainable development mechanism increased among government authorities (NGO3, NGO4, Par2).

Researchers and partners characterized the process as one of mutual learning. Members of the research team gained additional field and research experience, and partners (research managers) were equipped with technical information necessary to support decision-making (Par1, Res3). Furthermore, as an NGO informant noted, the reputation of the lead researchers supports the possibility for relevant actors to realize that there is a lot more that these individuals and their affiliate international research organizations can offer to support new ways of working, collaborating, and informing policy in the future (NGO3). More information supports mitigation of risk and error for decision-makers and therefore it should be in their interest to seek researcher expertise (Par1).

One informant suggested a risk that, if smallholders first learned of the AFC mechanism from outside researchers and not their own government, it might be seen as a failure of the government to properly advertise and share information about AFCs. Considering that the policy containing AFCs was legislated in 2011, this could deepen feelings of mistrust in the government (Res6).

Are the changes in forestry practices likely to contribute to intended development outcomes (CGIAR IDOs and sub-IDOs)?

The SUCCESS Project contributed to the advancement of AFC discussions, technical knowledge, and progress for AFC implementation. Positive changes in Peru's forestry practice are expected to result with greater advocacy for and promotion of AFCs, action taken to improve policy and implementation, and the combination of bottom-up management and top-down governance of agroforestry systems. Three areas within CGIAR's IDOs align with the SUCCESS Project ToC, including: i) more sustainably managed agro-ecosystems (IDO 3.3); ii) reduce deforestation and improve conservation (sub-IDO 3.1.1 and 3.1.2); and iii) improved livelihood opportunities for smallholders (sub-IDO 1.3.2). Each IDO will be reviewed to demonstrate how AFCs and SUCCESS Project contributions could or would support their realization.

More sustainably managed agro-ecosystems (IDO 3.3)

Ensuring that agroforestry systems are sustainably managed in Peru, "*it's not enough to start with the recognition of rights alone, it's the whole package. So, if contracts or titles are simply going to be handed out, but there aren't real commitments, or instruments to secure those commitments and make sure they work, the whole thing won't work. So that is why we are very involved in the issue, writing, following up, impact, and everything. The devil is in the details*" (NGO2). Hence, the importance of integrating incentives and support infrastructure for smallholders to maintain their AFCs, such that they are feasible, economically profitable, and ecologically sustainable in the long-term. This support requires effective governance of the concessions. Top-down governance will have an impact on the sustainable management of agroforestry systems on the ground. It is presumed that more integrated and better informed approaches taken by governments in decision-making and

implementation will result in more effective governance, in part because intra-governmental cooperation maximizes the utility of resources (i.e., financial, knowledge, human capital, etc.) to align and streamline activities, and also in part because evidence-based decision-making can give direction and be justified.

Governance for AFCs has not advanced to date (Par3). Ensuring that new policy is integrated with other regulations and guidelines is part of the general policy process (Par2). AFCs were developed to reflect multi-dimensional factors; therefore, there is high potential for governance to become integrated because of collective interests and shared priorities – like land degradation, deforestation, and livelihoods – between actors like MINAM, SERFOR, MINAGRI, and MEF (Gov7, Par4). Governmental integration on AFCs would be strengthened by international commitments (Gov7, NGO1). However, in practice, "*they* [government bodies] *are still not seeing the management of the entire landscape"* (Par3) as there currently "*isn't any coordination between forestry and agriculture* [on] *what the SAF* [agroforestry systems] *are*" (Gov7). Without clearly defined concepts, policies, and responsibilities for AFCs, integrated governance will be difficult to achieve.

Decisions-makers were perceived to have a better understanding of the AFC process and associated issues, as well as a plan of action as a result of the findings and participation in the SUCCESS Project (Gov1, Gov2, Gov4, NGO3, Par2): the project "*allowed us to note that we have to see more,* [so that] *we're able to regulate better*" (Gov1). For example, SERFOR's request to SPDA indicates that key actors are seeking scientific knowledge to better inform decision-making (NGO3). These shifts rely upon political will and the disposition of leadership in facilitating multi-stakeholder engagement (Par3, Par4).

In addition, strengthening bottom-up processes will contribute to sustainable on-the-ground management of agroforestry systems. For example, smallholders' forest activities and production could be enhanced and made sustainable through the delivery of technical assistance and access to extension services (Gov3, NGO2). With technical assistance, smallholders would be able to produce a greater quantity of higher quality products using techniques that are less environmentally degrading. Concession areas would also be monitored and thus degradation can be more efficiently mitigated (NGO2). However, smallholders have not yet accessed technical assistance, likely as the responsibilities for the provision of technical assistance remain unclear and the infrastructure is not yet in place (Gov3, Gov6, Gov7, NGO2, Res3).

Reduce deforestation and improve conservation (sub-IDO 3.1.1 Land, water and forest degradation minimized and reversed; sub-IDO 3.1.2 Enhanced conservation of habitats and resources)

Recovering degraded areas is a central priority for MINAGRI and other ministries in Peru, particularly as deforestation and changing land use are rampant across the Amazon where formal rights have not been allocated and the monitoring of forest activities is difficult (Gov3, Gov7, NGO1, NGO3, NGO4). Deforestation reduction is one of the objectives built into the design of AFCs (Gov1, Gov3, Gov7, NGO1) through conditions requiring smallholders to integrate native tree species in concession areas and enhance biodiversity. However, it should be noted that AFCs do not guarantee a reversal of deforestation, but should be designed and packaged in ways to improve land and resource management while creating enabling conditions for local economic development.

From the bottom-up, smallholders' adherence to the requirements will reduce or limit deforestation and improve conservation practices on areas with active AFCs. With a greater understanding that deforestation and associated degradation will hurt small producers the most, some smallholders have demonstrated attitudes willing to protect and conserve forests if they can reap economic benefits from sustainable practices (NGO2). Smallholders can be supported to limit land, water, and forest degradation on their concession by regulatory provisions that offer technical assistance and credit access (Gov7, NGO1, NGO3). As deforestation is connected to issues of rights, the legal security provided by the enabling title gives smallholders responsibility for and a sense of ownership of land so that they will protect it (Gov7).

From the top-down, public ministries like MINAM and initiatives promoting AFCs to tackle issues of deforestation and conservation, like the national climate change commitments and the Green Growth Strategy, support sub-IDOs 3.1.1 and 3.1.2. The SUCCESS Project findings demonstrated the potential of the mechanism to reduce carbon emissions (Par2, Res1, Res2). AFCs align with formalization strategies reflected in the Green Growth Strategy and the DCI Joint Declaration (Gov7, Par2, Res2). SUCCESS findings fed to MEF – the actor

responsible for the Green Growth Strategy – through one of the research team members, may have potential to be recognized and incorporated into the Strategy (Res2). AFCs are already included in the DCI framework for cacao and coffee production (Gov7, Par2), and SUCCESS findings demonstrate other ways in which AFCs could address several DCI objectives (Gov7, NGO2, Par2).

Improved livelihood opportunities for smallholders (sub-IDO 1.3.2 Increased livelihood opportunities)

AFCs offer tenure security and allow recipients to maximize the productivity of the land as long as requirements are fulfilled (Gov1, Gov4, Gov7, NGO4). Through formalization, smallholders would gain new livelihood opportunities through access to formal market value chains, better prices, and commercialization support (Gov1, Gov6, Gov7, NGO1, NGO4, Par1, Par4). Thus, the concession becomes a source of reliable and sustainable income (NGO1). Smallholders can also create and secure new market links through producer associations, building their trade capacities and social networks (Gov1, Gov7, NGO1). Access to technical assistance can enable diversification and improve yields and product quality for greater profit (Gov1, Gov4, NGO1, NGO2). Moreover, smallholders can learn new techniques and gain capacity in sustainable production practices to extend the productive capacities of the land in the long-term. Financial incentives, such as the annual discount and eventual 'right to benefit' payment exemption, allow smallholders to keep a greater share of their profits over time (Gov1, Gov2, Gov6). Credit access and financing can be reinvested into AFC activities (Gov1, Gov4, Gov7).

While smallholders holding a concession have legal access to these benefits, this does not guarantee actual access (in that they have leveraged services available to them). Not only will smallholders have to be proactive in order to maximize AFC benefits, they will need support from other actors in the system to strengthen production chains, gain capacities in business, source other means of financial support, and build relationships and networks (Gov1, Par4). Creating structures that would support smallholders to comply and benefit the most from the mechanism was identified as a next step for the government to deliberate (Res3).

IDO Summary

Several of the SUCCESS Project outcomes contribute to catalyzing the potential of AFCs, which align with the above-noted IDOs and sub-IDOs, although outcomes at scale will depend on factors beyond the scope of the project. With current project contributions supporting positive changes in forestry practices and more effective implementation of the mechanism, the three identified IDOs have a strong likelihood of being realized in the future. However, this is dependent upon commitment from key stakeholders to continue in support of AFCs. Through the SUCCESS Project, ICRAF positioned itself as an important actor within the AFC network, and should continue to influence the system as a central convener, advocate, knowledge broker, and engaged partner in the process to ensure intended outcomes progress in the right direction.

Research Project Assessment: *How was the project designed and implemented to maximize knowledge translation?*

Overall, the SUCCESS Project's design and implementation aligns with principles and criteria of relevant, credible, legitimate, and effective research for development projects, and it produced knowledge that is useful and used (QAF results and justifications for the project assessment can be found in Appendix 5. Quality Assessment Framework). Most QAF criteria were considered by the research team and satisfied to some degree (see Figure 4).

SUCCESS satisfied most criteria under *Relevance* and *Effectiveness*. The project's clear definition and consideration of the socio-ecological context, as a result of intensive engagement with the context prior to and during the project, helped ensure project implementation was contextually appropriate and sufficiently flexible to adapt and respond to new opportunities. In particular, the flexible design enabled the research team to respond to new opportunities for key stakeholder engagement and alignment with NGO allies' objectives (Res1, Res5, Res7). These elements of research design and implementation supported the achievement of outcomes by involving target audiences and raising awareness of the research and its findings, which made knowledge uptake and subsequent action more likely.

The GGGI consultancy, implemented prior to the SUCCESS Project, facilitated the team's substantial engagement with the problem context (see Doc8 for the results of the consultancy's diagnostic study (in Spanish)). It was discovered that perverse incentives from the titling process were a cause of deforestation, as opposed to previous assumptions that poverty was the key driver (Doc8, Par1). The work also led to preliminary relationships and rapport-building to establish trust with stakeholders, including government actors, local NGOs, and producer associations (Par1, Res3). Regional government stakeholders supported the BMZ proposal for SUCCESS, indicating that the project team played a role in generating and sustaining interest (Res3).

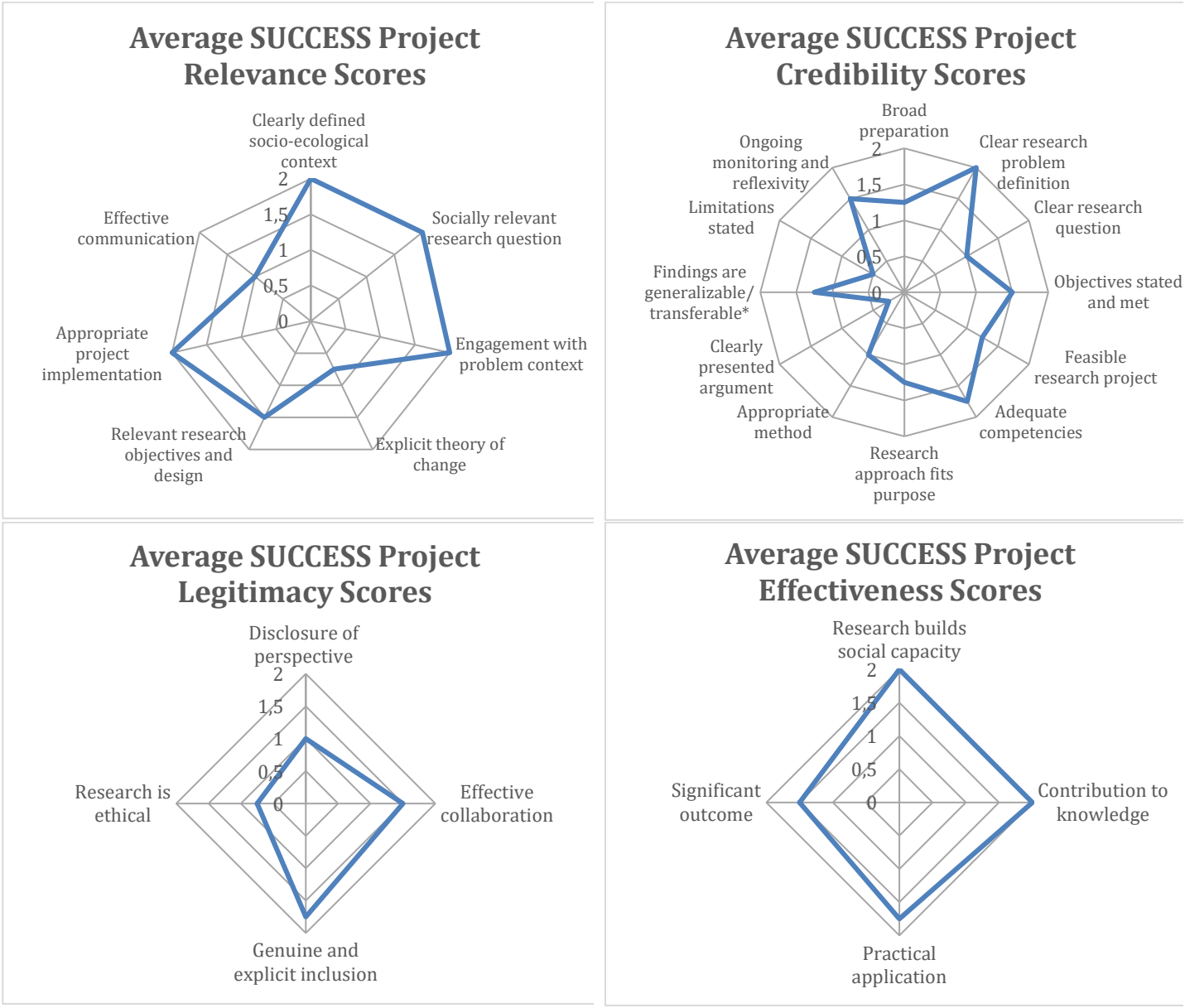

Figure 4. Scoring of SUCCESS Project against QAF principles of *Relevance*, *Credibility*, *Legitimacy*, and *Effectiveness* (0 = the criterion was not satisfied; 1 = the criterion was partially satisfied; and 2 = the criterion was fully satisfied). Criteria marked with an Asterix (*) have been rephrased from the original QAF (Appendix 5) for clarity and presentation.

The project's engagement processes and findings helped build capacity among policy-makers and smallholders by contributing to the technical knowledge base of how to approach AFC implementation (for governments), how to register for AFCs (for smallholders), and identified opportunities for coordinated effort to achieve broader sustainability goals (for governments and NGOs). Target audience use demonstrated that the project's outputs and methods had diverse practical application in the policy discourse. For example, subsequent pilot projects were undertaken by regional governments and NGOs. Piloting the registration process was an effective

way to collect information about eligibility, inform regional authorities about the possible challenges encountered during implementation, and provide an example of how information necessary to inform the process could be collected: "*ICRAF has produced information and that is a good thing because they did it at a small scale, at community and local level. It is not information at a macro level. The way they gathered the information is also good, not through general polls but through workshops with focused activities that allowed information to come directly from small producers, a difficult group in terms of information"* (NGO1). It was suggested that more pilots should be done.

SUCCESS deliberately produced results and proposed methodologies in formats that could be used by target audiences; for example, the spatial data methodologies used inputs and tools available to the public sector (Res7). While concrete social and environmental impacts will take time to materialize, the outcomes achieved by the project over such a short time frame were significant in that they contribute to better-informed AFC implementation. If SUCCESS findings are harnessed by policy-makers and policy-implementers, improved smallholder livelihoods and forest conservation are likely to be realized through AFCs in the long-term.

SUCCESS project design and implementation was not quite as well-aligned with the criteria of research *Credibility* and *Legitimacy*. Low scores are in part an artefact of the QAF's dependence on explicit documentation to satisfy the criteria. For example, SUCCESS received a score of 1 for 'Clear research question'; while the objectives do infer research questions, the small grants project proposal (Doc1) does not present an explicit research question. SUCCESS likewise received a low score (0.75) for 'Research is ethical' as the project did not conduct an ethical review process; however, this is not to say that the research did not uphold principles of ethical research practice. More rigorous application or explicit documentation of research questions, methods, and argumentation from analyses to conclusions would have increased the *Credibility* scores and helped situate SUCCESS findings. Informants may have been better able to articulate the causal logic between changes and research contributions. Explicit documentation of how the project addressed and considered limitations of the research process and its implications for the findings, ethics, and bias through disclosure of perspective would have increased the perceived legitimacy of the research.

SUCCESS scored well for other key *Credibility* and *Legitimacy* criteria. The team had adequate and diverse competencies to gain recognition as AFC experts and clearly define the research problem. The project genuinely and explicitly included relevant stakeholders in the research process, and effectively collaborated with partners, team members, and target audiences. Working with regional NGOs helped build initial rapport within the community (Res1). Community engagement provided firsthand knowledge of smallholder perspectives and experiences, which could be documented and shared with decision-makers. The project co-identified areas with stakeholders so that the research was based on both the research team's judgment and what other key actors, including smallholders, thought was important (Res7). Workshops were designed and developed to raise awareness and understanding among smallholders around AFCs, including the pros and cons of registering (Res6). The research team also engaged with governments to acquire knowledge about the regulatory processes and legal frameworks governing AFCs. This combined approach allowed for effective contextualization of the findings about smallholder realities within the legal framework. This multi-scalar project implementation and engagements were perceived to be effective to supplement substantial information gaps regarding how to go about AFC implementation and apply the technical guidelines by highlighting that different settler typologies needed to be distinguished (Gov1, Gov4).

To what extent did the project engage effectively with relevant stakeholders?

The SUCCESS Project's multi-actor engagement approach played an important role in convening different actors from government, smallholder communities, NGOs, and other organizations to the issue of AFC policy and implementation (NGO2, Par2, Res4). Informants' awareness of actors engaged by SUCCESS and commentary on actors' relevance can be found in Appendix 7. SUCCESS' stakeholder engagement is characterized by four stages of engagement: pre-project, project, end-of-project, and post-project engagement. Informants perceived the engagement approach to be the strength of the project (NGO4, Res5), facilitating

mutual learning processes (Par1) and influencing changes in understanding amongst relevant stakeholders (Par2).

Pre-project Engagement

ICRAF's involvement with GIZ in the ProAmbiente I and II programmes focused on improving Peru's environmental governance, management, conservation, and sustainable forest management (Par3, Res7). Familiarity with policies supporting sustainable livelihoods and production of smallholder farmers in the Peruvian Amazon came out of ICRAF's consultancy with GGGI and the German Development Institute (DIE); the findings (Doc8) of this diagnostic study became "*the basis of this SUCCESS Project*" (Res7). ICRAF learned of the newly legislated mechanism at a workshop hosted by *Soluciones Prácticas* (ITDG), which presented AFCs as a strategy to formalize coffee farmers (Par4, Res7).

ICRAF recognized the ecological and socio-economic potential of AFCs, and proceeded to seek out partnerships to initiate a new project. As part of the BMZ program, the project collaborated with the University of Freiburg. During this stage, ICRAF sought out researchers with relevant experience and expertise to join the research team. ICRAF selected team members with expertise in landscape ecology, forestry engineering, climate change, geography, geomatics, rural livelihoods, and anthropology. Several team members had prior experience with the Peruvian context or the specific case study regions (Res4, Res5, Res6), and were thought to have made significant contributions to the team based on their existing stakeholder networks (Res4, Res5) or access to the communities (Res1, Res4, Res7).

Prior to project launch, ICRAF held meetings in Lima to present the objectives of the research (Res1). ICRAF also collaborated closely with GIZ to coordinate access to and dialogue with actors in the study regions (Par1, Par4, Res7). A member of GIZ recalled this collaboration positively: "*Very good, very, very good. We always developed a good rapport with them while I was at GIZ*" (Par1). Relationships built through previous projects facilitated ICRAF's engagement with actors and communities in the selected case study regions (NGO4, Par1, Res1, Res7): "*particularly for Ucayali, ICRAF in the past – even before us – had a role of kind of advisory, sometimes also informal, and so* […] *we can have very direct access to some people*" (Res7).

Engagement During the Project

Mid-project engagement focused on boundary partners and research participants for data collection. Regional government actors from Ucayali and San Martín helped identify communities to participate in the study and provided data to help situate regional government perspectives and roles. Some entered the communities with ICRAF to build connections (Gov4, Par1, Res1, Res3, Res4, Res5, Res6, Res7). However, one informant relayed that they were unaware of project's connections to the AFC mechanism at this stage (Gov4).

Local NGOs were also engaged to support access to the communities and for data collection (NGO1, Par1, Res1, Res4). The research team utilized shared interests to foster NGO collaboration, such as conservation and livelihood objectives (Res1, Res4). In this sense, NGOs became "*local allies*" (Res1) and played a significant role as brokers and boundary partners to counter the communities' mistrust of outsiders (Par1, Res1, Res4). Overall, these forms of social capital held by regional governments and local NGOs were vital for ICRAF's entry to and presence within the communities (Res7).

The seven participating communities were the core actor group engaged during the fieldwork. Smallholders were invited to workshops hosted by the research team, and participated in interviews, focus groups, surveys, and PGIS activities. Informants perceived smallholder engagement to be useful to the communities because of the information shared about forestry law and the new mechanism, which was unknown to them (Par4, Res6). Despite significant support to access the communities, the research team encountered a few barriers to engagement of this stakeholder group. Firstly, the research team relied on partners for connections and access, and in one instance "*the person in charge did not inform the population--irresponsibly, perhaps maliciously--he had the means to do so. So when we arrived, despite having sent a letter--having told* [him] *twice--nobody was informed, not the secretary, the* vocal*, the vice president, nothing. Nobody knew about the meeting*" (Res6).

Secondly, there is prolific illegal coca production in parts of the study regions, which presented a risk to the security of the team and affected entry to communities that produced coca (Res1, Res6, Res7).

While conducting fieldwork, the technical guidelines informing how the mechanism would be defined and implemented were under discussion. ICRAF took an active role to engage and participate in this dialogue, and provided feedback on the draft guidelines (Gov3, Gov5, Par2, Res1).

Following data collection, the research team utilized ICRAF's in-house expertise for analysis support (Res5, Res7). Opportunities were offered for the communities, regional and municipal governments, and NGOs in San Martín to provide feedback and input to ICRAF's process and preliminary findings (Gov3, Gov4, Gov6, NGO2, Par1, Res1, Res3, Res4, Res5, Res6); however, this early feedback was not undertaken in Ucayali (Res4). One researcher felt that these sessions occurred "*too early, because it was – we had this at that stage nearly nothing to present. And that is not a real good starting point for discussion now. So you remain at a very general and hypothetical level*" (Res3).

End-of-project Engagement

Findings were shared with communities, multiple levels of government, and NGOs at various workshops held in Lima, Ucayali, and San Martín. Not all actors engaged in the research took part, however. The dissemination workshop for the Ucayali community was cancelled (Res1, Res4), and one NGO informant did not recall seeing local authorities participate (NGO1). Upon reflection, one researcher would have liked for the communities to benefit more from the dissemination workshops by having more accessible results and in formats that would be more useful (Res6). Regardless, informants perceived the workshops to be an effective means of sharing findings with key actors, and found that the team explained the results well (Gov6, NGO2, Par3).

The team also presented the findings at various conferences and meetings, including Expo Amazónica (Gov4) and Forests & Livelihoods: Assessment, Research, and Evaluation (FLARE) meetings (Res7). The research team used PowerPoint presentations, posters, and infographics to package findings.

Post-project Engagement

ICRAF continued to engage on AFC topics and maintain dialogue with key stakeholders following the conclusion of SUCCESS. Much of ICRAF's post-project engagement used climate change (Par2, Res1, Res2) and the technical implementation of the guidelines (Gov4) as vectors of engagement. ICRAF continues to share information about the regulations, their research, and the findings, while also assuming a role to provide input, feedback, and training to other actors in the system (Gov3, Gov4, Gov5, NGO1, NGO4, Par1, Par4). Two informants remarked on the impressive role of the lead researchers in actively lobbying on the topic (Gov3, NGO2). Nearly all informants commented on ICRAF's ongoing engagement on agroforestry issues post-research, presence at, and participation in meetings and events. These meetings and events were organized by many major AFC stakeholders, such as SERFOR, MDA, SPDA, GIZ, GGGI, Center for International Forestry Research (CIFOR), and ITDG, among others. However, many of these discussions occurred "*at the national level. But that discussion never came down to the regional level*" (Par4), and not all conversations materialized into actions toward next steps (Gov6). Yet, one partner believed that the meetings would have been less productive without ICRAF's engagement and findings (Par2). ICRAF received presentation requests from NGOs in San Martín, and attended a native community titling meeting in Ucayali to share project results (Gov1, Res1, Res7). The lead researchers were also invited to join a consulting committee led by EII and MDA that assembled to design and develop AFC pilots (Gov2, NGO4). In late 2018, ICRAF was invited to an official meeting where they shared three of their recently published technical modules with high-level authorities (Blog1).

In addition to these invitations, ICRAF's continued participation in fora on AFCs indicates that the SUCCESS team engaged with and established relationships with relevant stakeholders throughout the project, and in turn have become a relevant actor within the Peruvian agroforestry social network.

Perceptions of the Project's Engagement Approach

Informants offered diverse observations of the project's engagement. From a researcher perspective,

understanding of their role changed as the project progressed: "*Originally, I thought it was mostly generating knowledge, useful knowledge for decision-makers, but I was not aware at that time of the need to understand how to communicate that knowledge. It was more, kind of naïve: 'Okay, we'll do those maps, we'll do this, we'll identify people, we'll show that'. And that was it.* […] *then it got that component of communication, which became increasingly important. But it was not totally planned*" (Res7). In addition, building a social network around agroforestry issues was an important engagement strategy for the project (Gov4, Par1, Par4, Res3, Res4, Res7), particularly for interactions with communities during fieldwork and boundary partners like SPDA.

Some described the project as highly participatory (NGO1, Res4). Others appreciated how the project was able to convene diverse actors together (NGO3) and provide shared space for dialogue on prominent issues (NGO2, Res4). One informant commended the project's "*transparency in sharing and complementing efforts*" (Par4). One NGO shared that ICRAF is the actor with whom they have engaged the most on AFCs (NGO2). In contrast, some informants perceived there were not enough opportunities for engagement or that the engagement activities were not as intensive as they could be (Gov2, Gov7, Res3, Res4). Members of the research team believed there could have been more engagement of actors from Ucayali (Res4), and found the time dedicated to the community workshops was insufficient and unrealistic (Res6). Moreover, the project could have engaged smallholders and producer associations in more knowledge sharing activities during the dissemination period and post-project (Par1). One researcher was critical of some approaches used to engage the smallholders, such as using information about the mechanism as bait for the communities' participation in the project (Res6). This informant was also concerned about how communication was not accessible to smallholders' education level or came off as "*aggressive*" (Res6) because of a breakdown in understanding. In response to these observations, the team discussed "*how to treat people, how to enter situations, how to open communication, word usage*" (Res6) to create language bridges and improve one-on-one interactions with participants. One actor remarked upon the lack of recent communication between the research team and the regional governments following the end of the project, which gave the impression that ICRAF had distanced themselves from the topic (Gov4). The short timeline of the project, poorly timed activities, and being overwhelmed with many obligations and prospects, such as the opportunity to contribute feedback to the technical guidelines, were noted engagement challenges (Res2, Res3). Despite extensive governmental engagement, one informant did not think the project was successful in influencing SERFOR's high-level decision-makers (NGO2). In a similar vein, another informant believed engagement would have been more strategic had the research team engaged individuals up the ladder of power (Par2).

Informants were asked which important stakeholders were not engaged during the project, citing the National Superintendence of Public Registries (SUNARP) (Gov5), National Institute of Natural Resources (INRENA) (NGO2), MEF (Res2), and specialists from the case study region municipalities (NGO1). The research team attempted to communicate with some of these stakeholders, but limited recognition of AFCs resulted in a lack of interest (Res7). For example, the team was unsuccessful in gaining MEF's attention (Res2). MINAM was noted as a potential stakeholder, but believed to not be deeply involved with AFCs (Res2). A partner noted that regional governments, who were involved during and at the end of the project, should have been a greater target for post-project engagement (Par4). One of the researchers wished they had considered involving SPDA earlier (Res7). Overall, the research team felt they made significant efforts to engage as diverse a group of stakeholders as possible considering the scope and scale of the project (Res3, Res5). The SUCCESS Project built in flexibility for engagement during the fieldwork phase to take advantage of unexpected opportunities (Res5), and also post-project to participate in ongoing AFC dialogue (Res7). As a result of this post-project flexibility, ICRAF is now a broker and boundary partner for other organizations interested in agroforestry topics (Par1). Several informants conveyed interest of having greater engagement with ICRAF on AFCs moving forward (Gov4, Gov6, Gov7, Gov8, Par4).

Researcher Reflections on Team Collaboration

Researchers commented on inter-team collaboration, noting an overall positive engagement experience with opportunities for regular reflection, discussion, idea sharing, and constructive feedback (Res3, Res5, Res6,

Res7). Any acknowledgement of disagreement or tension was referred to as normal (Res3, Res5). However, one team member raised issue with the stagnation of communication during the fieldwork phase (Res3). This may have been a result of remote collaboration and reliance on digital communication between team members. Another researcher remarked on the lack of engagement following the completion of their contract, wishing that they had been informed about the project's progress, final results, and how their work contributed (Res6). Turnover was one challenge faced by the research team, as a few members were replaced during the course of the project owing to concluded contracts, shifts to new jobs, and other commitments (Res3, Res7).

How well did the project integrate gender and youth considerations?

The SUCCESS proposal details the project's intention to integrate gender and intergenerational aspects into the project. As AFCs can create new opportunities for smallholders with potential gender-differentiated impacts (i.e., labour allocation, decision-making, and preferences), gender-disaggregated data were collected and results were reported and taken into account in the outputs whenever gender differences were observed (Doc1). The project hired an anthropologist to produce a report to support gender elements (Res4, Res6, Res7). Intergenerational aspects were intended to be addressed alongside gender (Doc1). Gender and intergenerational analyses were not central to the focus of the SUCCESS Project, but were auxiliary analytical components that enriched the data. We recognize the scope and scale of the project would not have made robust analysis of these components feasible.

The anthropological report outlines the main lines of research, and a gender analysis was not explicitly stated as part of this design (Doc3). An attempt was made to include both women and men as participants in the study, and fieldwork tools were designed in collaboration with an anthropologist (Res1, Res7). There was a workshop about gender disaggregation in roles (on and off farm) to investigate gender dynamics (Res6). A total of 57 women participated in the focus groups, and 20 women were surveyed and had their landholdings mapped (Blog5). According to the anthropological report, the project made a deliberate effort to ensure that women could participate in the workshops. For example, the workshops were organized at night to facilitate the participation of women (Doc3).

Moreover, findings pertaining to gender were included in the anthropological report. Among them, a rigid division of labour between men and women was identified in the communities, where women are responsible for domestic work and child-rearing while men are most involved in labour and economic activities such as cultivation and market dealings (Doc3). Men also hold greater power in decision-making as a result of the religious orientation of the communities that reinforce strict gender roles. As a result, decisions tend to be made based on individual rather than community benefit. This imbalance explains the limited opportunities for women, both in terms of participation in household decision-making and wider community politics (Doc3). It was found that women's power typically remains behind closed doors with respect to concession contracts, as they are indirectly responsible for AFC acquisition by convincing the head of household (typically the man) to sign the contract (Res6). Findings suggested that women have begun to take up political positions in the communities as men view these roles as costly in terms of time and money (Doc3, Res6). With regards to management, it was found that women have in many cases had far better relationships with municipalities; they are more willing to go through the formalities and can be more persistent (Res6). Existing initiatives for women's empowerment were examined (e.g., a United Nations-led women's chocolate cooperative project, a women's weaving project), and different local actors that support women by providing services were also identified (e.g., distribution of baby formula, education for children, food preparation, etc.) (Doc3).

SUCCESS would be classified as gender-sensitive under GEIRS. While the project did integrate consideration for gender by producing gender-disaggregated data and providing opportunities for participation, it is unclear the extent to which and how intergenerational aspects were integrated into the design of the project. Interview informants did not discuss how intergenerational aspects were addressed, but it was assumed to be handled by the anthropologist (Res7).

To what extent was the science produced sufficiently relevant to achieve its aims?

Appendix 8 summarizes informants' perceptions of the relevance of the SUCCESS Project's outputs. Impressions of the research findings' relevance are inferred from informant comments regarding the entry points of the project. As a highly debated issue within Peru, there are noted misconceptions of AFCs (Par1, Res3). With significant knowledge gaps, such as non-consensus on an agroforestry definition (Gov1); no identification or quantification of eligible regions and potential beneficiaries (Gov1, NGO4, Res5); unknowns regarding the feasibility of and how to implement AFCs (Gov1, Gov7, Gov8, Par2, Res1); and an overall lack of data upon which to base decision-making (Gov7, NGO2), SUCCESS aims were aligned to fill these research lacunae.

To consolidate understanding of agroforestry systems, SUCCESS presented a comprehensive definition and characterization of agroforestry systems based on literature and field data (Gov1). Government actors remarked on the utility of this characterization to differentiate from other land uses (Gov1, Gov5, Gov7).

To identify AFC eligibility in the two case study regions, the research team tested the technical guidelines' meso-zoning approach and developed meso-level land suitability maps (NGO4, Res5, Res7). Paired with census data, potential AFC beneficiary impact was estimated. Informants found the spatial identification and quantification of eligible areas for AFCs valuable to understand the mechanism's potential (Gov4, Gov5, NGO4, Res5). The team also proposed a new micro-zoning methodology to produce more precise maps, which was deemed useful to improve zoning accuracy to delineate at the farm-level (NGO4, Res7).

To understand potential AFC beneficiary heterogeneity, the researchers conducted extensive surveys in each community to develop profiles of smallholders living in and using land in areas eligible for the mechanism (Gov1, Gov6, Res4, Res5, Res7). Informants referenced parts of this characterization that they were aware of or found useful to understand potential AFC recipient needs, such as current land use practices (Gov2, Res4); smallholder realities and challenges (Gov1, Gov6, Par4); potential benefits of the mechanism to smallholders (Res1); smallholders' capacity to comply with the mechanism eligibility requirements (NGO4, Res5, Res7); and smallholder incentives to comply (Res5), among other factors.

To understand the feasibility of AFC implementation, the research team conducted a technical analysis of the regulatory framework and conducted pilots to identify challenges with the implementation process. The combination of a technical review, pilot experience, and smallholder profile data enabled the team to extrapolate AFC viability in practice (Res1). Informants gained understanding of the limitations of the mechanism and its feasibility to achieve purported state objectives (Gov6, Gov7, NGO3, NGO4, Par2, Par4). ICRAF also intended for this knowledge to influence decision-making and potential revisions to the technical guidelines to ultimately inform better AFC implementation (Res3, Res4, Res5, Res6, Res7). Others remarked on the findings' utility to guide implementation processes, such as how regional governments develop their ordinances; experience from the project pilots was noted in particular (Gov1, Gov2, Gov4, Gov6, Par1). Others perceived the findings as relevant for decision-making and policy revisions (Gov1, Gov4, Gov7, NGO1, Par2).

The findings were considered useful by most informants (Gov1, Gov5, Gov6, Gov7, NGO4, Par3, Par4); however, many do not clarify how. In general, the research was described as a "*good exercise*" (Gov6) and "*necessary*" (NGO2). NGOs appreciated the project's participatory methodology as it produced information representing multi-actor perspectives and examined actors at a small-scale (NGO1, NGO2). Informants valued the findings because they produced quantifiable scientific data that included both technical information and field-based evidence (Gov4, Gov5, Gov7, NGO2, NGO3, NGO4, Par2, Par4). Despite having small samples, the findings were still deemed to be 'good' (Gov2). Many thought the findings had utility to guide the implementation of the mechanism, reflecting that the research was fit to purpose (Gov3, Gov4, Gov6, NGO2, NGO4, Par3, Res3, Res6). Moreover, the inclusive scope of the research made the findings relevant to multiple actor groups (Gov7, Res4).

Despite the general appreciation of the findings' relevance, some comments indicate contrasting views. One researcher believed the sample communities were not representative of smallholders throughout Peru, making the findings less relevant for generalizing smallholder profiles even within the sample regions, let alone transferable to other regions in the country (Res3). This critique should be considered against project scope,

size, and budgetary limitations; researchers have to prioritize and be pragmatic about what they can reasonably accomplish under set project constraints. SUCCESS findings did sample seven communities in two different regions, which successfully demonstrated smallholder heterogeneity exists. Follow-up research can address this critique by sampling more communities and regions across Peru. A government actor found the research was too focused on social issues, implying that social data is not useful or used in decision-making with technical and legal foci (Gov1). A final opposing view found the findings were not able to determine the degree of existing agroforestry practices, which was a component of the aim to understand smallholder land use and practice (Res3).

To what extent are target audiences aware of the project's outputs?

SUCCESS Project outputs were shared with target audiences via workshops, meetings, and one-on-one discussions to spread awareness of the research. There is evidence that awareness of SUCCESS and its outputs spread through these networks to people not directly engaged by the project (Gov1, Gov3, Gov4, Gov6). Key content outputs include: a technical review of the AFC mechanism; spatial mapping and estimates of AFC eligibility; smallholder profiles; smallholder capacities to comply with AFC requirements; and concepts of smallholder stability. Key knowledge products include: a methodological guide for cartographic surveying and mapping; the anthropological report (Doc3); infographics generated by the project; four technical modules (Doc4, Doc5, Doc6, Doc7); and the peer-reviewed article published in *World Development Perspectives* (Robiglio & Reyes, 2016).

Awareness of Project Outputs

Elements of the technical review were widely noted by informants, such as the identification of gaps in the regulatory framework (Gov1); the "*diagnosis*" (Gov7) of the feasibility of the guidelines for the mechanism (Gov7, NGO2, NGO3, Par4); the application context (Par4); potential implications of implementation (Gov7, NGO4); barriers to implementation of the mechanism (Gov3, Gov7, NGO2); the technical requirements and recommendations to implement the mechanism (Gov1, Gov3, Gov4, NGO2, NGO4, Par2, Par4); and understanding that the mechanism is not a silver bullet solution (Gov7). While aware that the study made technical and practical recommendations, one informant was unsure of the level of detail contained within these recommendations (Gov3).

Several informants knew of the maps delineating eligible zones for AFCs created by the project (Gov5, Par1, Par4) and others were aware that the project identified areas eligible for AFCs (Gov7, NGO1, NGO2, Par1, Par4). One of the researchers noted that the individual homestead maps shared with communities were well-received, which is indicative of this group's awareness of the map outputs (Res1). Several informants were aware of the estimation of AFC potential in terms of area (Gov7, NGO1, NGO4) and number of potential beneficiaries (NGO1, NGO4). One informant directly quoted the 400 thousand hectare estimate for AFC coverage in both of the study regions (Gov7), and another cited the 35,000 estimate of potential farmsteads in San Martín (NGO4).

Smallholder profiles were also widely known (Gov6, NGO3, NGO4, Par3), specifically awareness of smallholder realities (Gov1, Gov2, Gov5, NGO2, NGO3), smallholder land use (Gov3), and smallholder deforestation practices (NGO2). Only one informant directly referenced project findings pertaining to smallholders' capacity to comply (Gov6), and no informants relayed awareness of smallholder stability outputs.

Informants were aware of many other outputs produced by the SUCCESS Project, such as definitions and descriptions of agroforestry systems (Gov1, Gov5), and the contextual dynamics of agroforestry systems that affect AFC implementation (NGO4, Par4). In addition, other outputs related to smallholders were mentioned by informants, such as social information (Gov1); smallholders' perspectives on AFCs (Par3); the need to incentivize smallholders (Gov3); and the project's recommendations for smallholder incentivization (Gov7, NGO4). One informant lauded the project for distinguishing between smallholder incentivization and governmental incentivization (Gov7). Other informants were aware of findings that discussed the carbon emissions reduction potential of the mechanism (Par2); the connection between AFCs and tenure issues (Gov5); and opportunities to improve agroforestry system productivity and sustainability (Gov7).

Regarding awareness of particular knowledge products, fewer informants mentioned these outputs. Most were aware of and informed about the micro-zoning methodology proposed by the project (Gov2, Gov3, Gov4, Gov5), though one informant did not realize these methods were associated with AFCs (Gov4). One informant referenced the infographics produced by the project (Gov7), and no informants made mention of the anthropological report or the peer-reviewed article. The four technical modules were published after interviews for the evaluation were conducted. However, informants were aware of an ICRAF report (NGO3), an ICRAF AFC policy brief (Gov7), and one of the research team's theses that fed into the SUCCESS Project (Gov4).

Barriers

The project encountered external barriers that affected the sharing of outputs. One researcher noted the persistent

reluctance for action or change amongst some target audiences, leaving a small set of actors trying to progress on the issues (Res1). It is also difficult for actors with many competing demands and responsibilities (Gov4, Gov8). An additional barrier relates to high government personnel turnover whereby actors transition into other roles in different departments or organizations, effectively severing communication channels and their involvement in moving AFCs forward (Gov2).

The project produced a large amount of data and new knowledge, to such an extent that one informant described that "*it can be overwhelming reading and going through everything they have*" (NGO3). Some informants believed the project's outputs are not widely known by target audiences, specifically in the study regions (Gov6, NGO1, Res6). One researcher had the impression that participating communities, despite being a core target audience, had limited access to and were therefore less knowledgeable of final project outputs (Res6). One informant recommended that access to the project's outputs be made more public (NGO1), but did not specify how or through which actors or avenues this could be achieved. At the time of the interviews, informants shared that they did not yet have access to the final project report (Gov5, Gov7, NGO2), and were not aware of the current status of the project (NGO2). Moreover, several members of the research team disclosed that the final outputs had not been shared with them (Res1, Res2, Res5, Res6).

Are the target audiences/stakeholders using the project's outputs, and how are they using them?

Appendix 8 summarizes the evidence of uptake and use of the SUCCESS Project's outputs. Actors involved in SUCCESS and intended target audiences are using outputs generated by the project. Data, maps, methodologies, and analytical outputs have been used, referenced, and applied to inform discussions and action on the topic, such as the current concession pilots in San Martín. The research outputs are thought to be a valuable basis to guide the AFC technical guideline revisions and spark further research investigations.

Use in Dialogue

In addition to their awareness of the project findings, it is evident from the informant interviews that they and other target audiences are using and applying various SUCCESS Project outputs. Outputs have been used to initiate, foster, and propel multi-actor and multi-level discussions related to agroforestry issues, politics, legality, and technical procedures, among others (Gov2, Gov6, Gov8, Par2). To some, project findings promoted new ideas for discussion at the national public policy level (NGO1, Par2), such as how to deal with residual forest stock (NGO2). ICRAF and GIZ were noted to have used diagnostic data from the findings to dialogue directly with government actors based in Lima (Par1). An NGO believed that the project's estimates of potential AFC impact contributed to the prioritization of the issue in the political sphere (NGO4). One partner believed that ICRAF's contributions have gained international interest in agroforestry issues, but the specific attribution is unclear (Par2). As a result of engagement, several informants perceived that key actors like SERFOR, MINAGRI, and regional governments have internalized the findings in some way (NGO3, Par1, Res1). One informant inferred that this internalization will likely facilitate revisions to the regulatory framework for better informed AFC implementation (NGO3).

Use of Project Knowledge Products and Methodologies

Informants discussed using specific knowledge products generated by ICRAF in their work, though it should be

noted that attribution to the SUCCESS Project and how these outputs have been used are largely unclear unless otherwise stated. One partner cited use of ICRAF's spatial diagnosis in a GIZ report (Par1). Others utilized maps (Gov4, NGO4, Par4), and knew of use at the government level (Par4). The AFC potential estimate infographics are cited in DCI's phase II implementation plan (Gov7). In addition, the identification of zones where agroforestry systems could function was noted to "*have been incorporated directly in the* [implementation] *plan*" (Gov7). Several of the implementation protocol recommendations sourced from a team members' thesis were applied in the San Martín pilots (Gov4).

Many of the project methodologies have been adopted and applied. For example, geographic positioning system (GPS) technologies and the georeferencing approach were implemented in the Pachiza pilot, and potentially others in San Martín (Gov4, NGO4). Various elements for map development have been used, such as agroforestry system definitions and variables (Gov5), legends (NGO4), and details defining a methodology to generate small-scale maps (NGO4); the latter was presented in MDA's proposal prepared for *Articulación Regional Amazónica* (ARA)'s pilots (NGO4). ICRAF's experience in how to apply their methods is thought to have been internalized by target audiences (Par1). Two informants used other data collection tools generated by the SUCCESS Project, such as the interview layouts and focus group questions, though it is not specified where these were applied (Gov4, Res4). While MDA has integrated parts of micro-zoning in their pilots, the approach has not yet been incorporated into the technical guidelines (Par4). We anticipate this is because the government awaits the pilot results. Another informant explains that the project methodologies, likely referring to the micro-zoning approach, have not been adopted as the meso-zoning approach already exists within the guidelines (Par1).

Application for Technical Guideline Revisions

It was widely perceived that the SUCCESS Project findings would be or have been used to modify the technical guidelines to inform AFC implementation. It can be inferred from the interviews that informants generally believed the project outputs would be useful to improve the guidelines (Gov7, NGO3). NGOs relayed their impression of SERFOR's intent to revise the guidelines, likely by utilizing SUCCESS approaches and outputs and the concession pilots to inform modifications (NGO2, NGO3, NGO4). The adoption of participatory processes and use of field data evidence were thought to be the bases to inform how SERFOR will make these modifications (NGO3).

Recommendations prepared by ICRAF and SPDA using project outputs were proposed to inform the draft guidelines, but were not taken up (Par2, Res1). One informant, however, believed that these recommendations are still under consideration by SERFOR (Par2). Another informant inferred that SUCCESS findings related to actual smallholder land use practices were used in their organization's proposal requesting modification of the guidelines (NGO2). Several informants held the perception that project outputs have been used to make decisions that are reflected in the guidelines, such as providing contextual field information to reduce errors and inform gaps, as well as influence the flexibility of guideline interpretation and implementation (Gov1, NGO1, NGO2, NGO3, NGO4, Par1, Par4). A government actor believed that the project improved the agroforestry system definition included in the guidelines (Gov1). Other informants thought the findings informed and consolidated the implementation protocol and process (Gov4, Gov6, Par1), evidenced by the fact that "*the implementation files, in San Martín the designs of those files are in the guidelines; many of the things generated for the guidelines are a product of the experience we lived during the initial steps with ICRAF in GIZ in San Martín. No other region had anything like that, so we can say that based on our experience and the people we had with us, SERFOR was able to gather a lot of information to write the guidelines and they also went back to the information to use it as public reference at a national level*" (Par1). Another partner noted that the guidelines reflect potential concession issues that would affect smallholders, which are now integrated with general contract issues (Par2). Reflection of the regions' actors was an additional adjustment made to the guidelines (Par1), though attribution to the project's outputs is unclear. A researcher believed that minor modifications are reflected in the guidelines as a result of the project, but does not specify the changes or how they occurred (Res1). A government actor reiterated this sentiment; however, they found it difficult to pinpoint where modifications have been made: "*I know it's there but I still don't have a document I can cite*" (Gov3).

Several informants identified opportunities where the SUCCESS Project outputs could inform the guidelines, such as to distinguish potential beneficiaries of the mechanism and characterize smallholders before contracts are issued (Gov1, Gov6). Another potential inclusion identified the use of actor characterization maps in the pilot guidelines in San Martín and Ucayali (Par4). In contrast, some informants were adamant that the guidelines have not changed (Gov3, Gov6, Par4, Res3); however, guideline revisions are on the governments' 'to-do' list (Par4). One government actor was of the opinion that the project outputs are known by key decision-makers, but have not been applied or incorporated to inform or improve the guidelines (Gov6), indicating a potential barrier or lapse in the knowledge translation process. Recalling ICRAF's opportunity to provide direct feedback on the draft technical guidelines and subsequent lack of incorporation into the published guidelines (Res1) may be indicative of government attitudes toward policy revisions.

Application in Pilots

The influence of the SUCCESS Project findings on the pilots (led by ARA, with the support of MDA) in San Martín and Ucayali is widely cited, particularly in advancing discussions on and propelling the testing of the pilots (Gov3, Gov4, NGO4). Uptake of the findings also influenced MDA's lobby with San Martín's regional government for the pilots (Gov3). ICRAF's approach has been imitated in the pilots (Gov4, Par1), and the pilots have been informed by the project's technical knowledge, pilot data, and field experiences (Gov4, Gov5, Par4, Res1). More specifically, deforestation data was integrated into an NGO's pilot proposal to broaden the definition of the possible contracts applied for special treatment zones (NGO4). Furthermore, SUCCESS' cartography has been used as a basis to inform where to apply forest zoning (Gov4), and ICRAF's pilot data defined the agroforestry and silvo-pastoral categories used for zoning (Gov5). In the Marisol pilot, both smallholder profiles and the micro-zoning approach were applied (NGO4).

While there are conflicting perceptions as to whether the SUCCESS Project findings have been used to inform the guidelines, there is consensus that the findings have been used as a basis to promote key issues, outline next steps, and influence regional governments and other actors to drive action forward for better AFC implementation (NGO1, NGO3, Par1, Res3). San Martín's regional ordinance (N°012-2018/GRSM/ARA) follows the national guidelines and identifies areas where concessions may be granted. SUCCESS findings are thought to have had the most influence in terms of shifting target audiences' understanding, but this changed understanding is not yet reflected in tangible changes applied in policy at the national or regional level (Par4).

Other Applications

SUCCESS Project outputs have informed other tangential proposals, reports, and projects. One informant remarked upon the project's contributions in strengthening other actors' existing activities (NGO1). GIZ analyzed a set of ICRAF's maps to identify homestead sites compliant with AFC regulations for a project proposal (Par4). GIZ also consulted the smallholder characterization data to identify target groups and ecosystems needing conservation, which will be applied in a project to limit the spread of agricultural activities in forested areas (Par1). DCI integrated project data in their phase II implementation plan to work with small-scale coffee and cacao producers, presenting AFCs as a strategy to access technical assistance (Gov7, Par2). The SUCCESS Project's spatial diagnosis was referenced in a GIZ report (Par1). ICRAF contributed to a series of Food and Agriculture Organization (FAO) studies related to financial opportunities and forest restoration for small-scale producers, likely using findings from the SUCCESS Project to inform alternative forest production strategies (NGO1; note: these reports have not been found for triangulation). Project findings indirectly contributed to the initiation of an MDA project in San Martín focused on ecosystems, changing land use, and regulatory zoning (NGO4). This MDA project also utilized the micro-zoning approach to identify agroforestry zones (NGO4). Data on deforestation practices have been used, but it is unclear how (NGO2). Spatial data has been applied to identify and categorize forested and non-forested areas, though, again, the scope was not explained (NGO4). An informant gave three examples of diverse uses of the outputs for validation purposes: firstly, use of the technical data to substantiate other sources of research on productivity improvements using agroforestry systems; secondly, verification of the types of commodity production and actors within the value

chain; and third, corroboration of the sustainability of agroforestry practices for coffee and cacao production (Gov7).

A few informants indicated that they or their organization had not used SUCCESS Project outputs. For example, project findings have not influenced MEF's work (Res2). Another researcher confirmed that they have not used any data or findings to support their other research projects, but did convey a general appreciation for having expanded their knowledge of the topic from a different geographical context (Res3). Lastly, one government actor was unsure as to whether the project made any concrete impact on SERFOR and their work (Gov7).

Academic Uses

To date, three peer-reviewed articles have cited Robiglio and Reyes' (2016) article published in the *World Development Perspectives* journal, which presents an overview of the problem context, project design, and project results. None of the articles engage with the project findings, which may be explained by either the maturity of the issue or a time-lag effect of researchers engaging on the topic. Sears et al. (2018) reference details of the mechanism as one of the components integrated within Peru's new forest policy. Santos et al. (2019) describe the context of agroforestry systems for use as a legal mechanism and alternative strategy in sustainable natural resource management to recover degraded areas in Peru. van Noordwijk (2019) cites the study in a description of the changed regulatory definition of formal forests which now introduces agroforestry systems.

ICRAF continues to share and apply their findings from SUCCESS as they engage stakeholders and work on the topic (Par2). For example, ICRAF has applied a similar engagement approach and transferred findings in a new activity with AgroBanco to support smallholder livelihood diversification via AFC credit access (Res7).

Lessons Learned

Project Lessons

ICRAF's SUCCESS Project produced contextually relevant information that garnered interest and established new commitment to the effective implementation of AFCs from government agencies and NGOs interested in moving the sustainability agenda forward. SUCCESS contributed to the technical knowledge base for AFC implementation. Simultaneously, project engagements supported coalitions that will continue to create favourable political conditions to support effective AFC implementation. Project results supported the coupling of better-informed AFC implementation with promotion of the mechanism as a potential solution for issues that are already high on the political agenda (i.e., to mitigate climate change, improve livelihoods for smallholders) to garner future support for AFCs.

The multiple streams framework explains the change process to which SUCCESS contributed; its main underlying assumption is that if there is sufficient attention to a problem and a ready-made solution with both technical and political feasibility, policy-makers will act. In a complex world, there are no objective indicators to determine which problems deserve attention. The attention a problem receives depends on how it is framed (Cairney & Jones, 2016). The SUCCESS Project contributed to AFC problem-framing alongside climate change issues by generating findings of AFC-related carbon emissions reduction potential. Research engagements also stimulated reflection on problems pertaining to AFCs and their implementation, which was an effective way to increase attention and awareness to the problems. Policy solutions take time and effort to develop (Cairney & Jones, 2016). Political factors dictate a policy-maker's attention to the problem and receptiveness to the solution. The perceived feasibility of implementing a proposed policy solution is fleeting and contingent on policy-makers' beliefs and feedback they receive from the public and advocacy coalitions (Cairney, 2015; Cairney & Jones, 2016). If the solution is perceived to be technically feasible (i.e., it will work as intended) and politically feasible (i.e., it is acceptable to enough people), the politics stream will favour change (Cairney & Jones, 2016). The research pilots demonstrated the degree to which the current technical guidelines were feasible, and the technical review highlighted areas where revision is needed.

Advocacy coalitions can be effective to mobilize resources to push for policy action, either by raising attention to a problem or developing and promoting a solution. This is achieved when new information implies the

refinement of specific policies and influences perspectives and priorities among key actors (Cairney, 2015). The SUCCESS Project succeeded in changing secondary beliefs[4] by providing new information about AFCs as a mechanism for climate mitigation, where and how to implement AFCs, and what challenges remain to be addressed, thereby stimulating new coordinated activity and commitment among regional governments and NGOs on the topic.

The project was successful in achieving outcomes to contribute to the policy process through four interconnected mechanisms, by:

- Informing smallholders such that they become interested in and have the capacity to register for AFCs and comply with the regulations;
- Building government capacity to better inform policy decisions and better implement AFCs;
- Convening actors with similar goals in San Martín to build coalitions that sustain progress for the AFC mechanism to realize its potential; and
- Enhancing ICRAF and the project team's recognition and reputation among government agencies responsible for the legal framework governing AFCs.

Overall, SUCCESS demonstrated characteristics of a relevant, credible, legitimate, and effective research project, especially considering the relatively small scale and budget of the project. Engagement efforts with smallholders, NGOs, and national and regional governments were pivotal in developing relevance to position the research for use. Framing SUCCESS findings in terms of implications for AFC implementation and Peru's climate change objectives garnered stakeholder interest and influenced dialogue and action. These engagement and framing strategies are likely to support further uptake and scaling up of SUCCESS results. More explicit documentation of research questions, methods, and limitations would enhance credibility. Projects that work directly with people should have an ethical review and explicit consideration of potential for bias documented in the research to increase the perceived legitimacy.

Contextual Lessons

Contextual challenges remain, however. The Peruvian government tends to approach policy-making without consulting (or using) available information or experts, risking ineffective policy development (NGO3, NGO4). In addition, policy formation tends to occur without cross-sector integration; this was the case for AFCs, as the mechanism was developed with a narrow vision for application in coffee production (Gov2, Gov3, NGO3). National bodies who make the guidelines need information from their regional counterparts, but the process is centralized and exclusive. Moreover, despite SERFOR efforts to engage stakeholder feedback for the draft technical guidelines, feedback was not incorporated which can create frustration amongst actors (Gov8, Res1). Therefore, it is challenging to assess what information was used to inform the development of the technical guidelines (Gov3, NGO2). Several years have passed since the law was approved, and only in recent months have the first official concessions been allocated (Blog1). The regulations continue to pose challenges for those intended to receive concession titles; in many cases, they are not eligible or will not have capacity to comply because of the strict requirements. Many potential beneficiaries still do not have much information about AFCs, which will hinder the effectiveness of the policy and its implementation (Par1). Organizational structure and cultural challenges within the government remain. There is no coordination between SERFOR and MINAGRI for AFCs, so it is difficult to have a clear strategy for AFC promotion (Gov7).

Political will, turnover in governmental positions, and limited resources remain challenges for research uptake; informants noted the dismissive attitude of government actors toward the results because uptake of the project findings and recommendations imply more work, and both human and financial resources are limited (Res1, Res2). Workloads are extremely demanding on public servants, and often they do not have time to learn beyond

[4] In the advocacy coalition framework, there are core and secondary beliefs that constitute belief systems guiding actors' decisions and behaviours. Relative to core beliefs, secondary beliefs are narrower in scope, more empirically-based, and more likely to change over time with new information and learning. Examples of secondary beliefs include detailed rules and budgetary decisions (Cairney, 2015).

what they see day-to-day (NGO2). Coordinated efforts and alignment in related initiatives are highlighted as a key to overcoming this challenge (Res2).

Evaluation Lessons

In reflecting on the evaluation process, use of ToC in conjunction with the Transdisciplinary Research QAF as analytical tools was effective. The QAF makes it possible to highlight elements of research design and implementation that contributed to the achievement of outcomes and identify promising practices and areas for subsequent improvement. Assessing the project against individual criteria helps identify which aspects of research design, implementation, documentation, and dissemination could have been strengthened.

Evaluation Limitations

The ToC workshop was conducted with members of the research team in late May 2018, six months after the official end-date of the SUCCESS Project (December 2017). As the ToC was developed retrospectively, it can be difficult to discern initial intentions from evolving understanding of actual project contributions and outcomes. For example, outputs and outcomes resulting from invitations to join committees and working groups were not originally expected by the research team, but were included in the ToC because they support and link the causal logic behind other outcome achievements.

Roles and responsibilities were divided between members of the evaluation team. As such, the member responsible for most of the data collection (i.e., Spanish interviews) was not as closely involved in data analysis and reporting. This may introduce bias or lead to different interpretations of interview data. To mitigate this possibility, the interviewer was involved from the beginning in the ToC documentation, was trained intensively in the interview approach, reviewed the interview guide step-by-step, and participated in periodic check-ins and opportunities to discuss interview progress and obstacles encountered with the larger evaluation team.

The set of informants interviewed for the evaluation do not fully represent all of the project's target audiences. Informants were identified by the research team, and no snowball sampling from informants was sought. No interviews were conducted with smallholders who participated in the SUCCESS Project, so these perspectives are absent; interviews with NGOs and the research team attempted to gauge perceptions of project influence on participating smallholders, but these responses may be biased. In addition, few representatives of regional governments were interviewed, so insight from this actor group is limited. Current representatives from MINAM were not interviewed.

This evaluation relied mainly on interviews with key informants as the primary source of evidence. Interviewees had limited and varied recall of activities and contributions of the SUCCESS Project. Drawing a coherent narrative of project output and outcome contributions was challenging, which required a degree of interpretation by the evaluation team. Often informants shared impressions without concrete or specified evidence to confirm perceptions. Therefore, where possible, documents were used to supplement informant knowledge, but this requires that evidence is documented which is not always guaranteed or accessible. Moreover, informant commentary is presented as perceptions, as not all expectations for a project are reasonable (considering limitations in project scale and budget, for example). Nevertheless, reasonable or not, informant expectations define their perspectives and perceptions of a project, and can be useful anecdotes for future learning.

While the QAF is a useful assessment tool, it has limitations as to how it is applied in this evaluation. The QAF was developed from a systematic review of literature discussing the assessment of inter- and transdisciplinary research qualities. The QAF principles and criteria reflect contemporary theory about the characteristics of an ideal transdisciplinary research project. The framework itself, including the specific criteria and the scoring rubrics, are still being tested and refined. Work is still needed to learn which aspects of research design and implementation are most important in contributing to outcomes and impact. The rubrics were designed to be applied to project documents (proposals for grant adjudication or final reports for project evaluation) and so seek precise language describing each aspect (see: Belcher et al., 2016, Appendix 5). For example, the criterion 'Research is ethical' is assessed by whether or not there was an explicit ethical review. A low score on this criterion does not mean that the research was not ethical; only that it did not have (or did not report) an explicit

ethical review process. Similarly, one of the *Credibility* criteria calls for an explicit research question. In the case of SUCCESS, the BMZ grant did not require specification of a research question in the proposal, so the project received a score of 1 for this criterion, even though project objectives reflect a set of implicit research questions.

Also, SUCCESS did not set out to be an ideal transdisciplinary project, so it would not be fair to disregard this fact in assessment. The evaluation does not intend to judge the project against a transdisciplinary standard; rather, the QAF is used as a tool to characterize the SUCCESS Project. SUCCESS clearly went beyond traditional disciplinary research bounds, with problem-focused research design, a high-degree of engagement of various stakeholders, multiple communication strategies, and various other characteristics of transdisciplinary research approaches. This is true of many research-for-development projects, as recognized in the new CGIAR QoR4D framework (ISPC, 2017). The QAF covers that much broader range of activities, outputs, and impact pathways and provides a useful way to analyze research-for-development project design and implementation. QAF scores should not be interpreted as judgements of the project's excellence, but as assessments of its characteristics.

The full contributions of the SUCCESS Project may take time to manifest, with inevitable time-lags between project outputs and higher-level outcomes and impacts. Also, this evaluation was initiated while the research team was still in the midst of producing outputs and engaging actors. In that sense, this evaluation is a snapshot of a continual process – the fact that the majority of interviews were completed from late May to mid-November 2018 may miss evidence resulting from on-going processes of dissemination and engagement by the researchers. It may be useful to conduct a follow-up evaluation in the future to test the sustainability of the outcomes achieved and explore if progress toward high-level outcomes and impacts has occurred.

Recommendations

The SUCCESS Project demonstrated characteristics of an effective transdisciplinary project by engaging and defining the project context, being flexible and responsive to new opportunities for stakeholder engagement, and generating knowledge with practical application. These elements of project design and implementation helped achieve substantial positive outcomes. The project incorporated many elements of transdisciplinary research into its design and implementation, which contributed to its effectiveness. There were also elements of the project that could be strengthened. The evaluation concludes with the following recommendations for future research processes, which can apply to the next phase of SUCCESS, other research in the Flagship, or research more broadly:

1. *Use strategic engagement*. SUCCESS was effective at building the relationships needed to appreciate the context, build alliances, and position the research findings for use.
2. *Use a ToC to plan and monitor progress*. While SUCCESS did not have an explicit ToC in place, an implicit ToC guided project design and implementation. Making the ToC explicit from the start of a project will help identify key actors, potential partners, challenges, opportunities, and strategies for realizing outcomes. It also provides a basis for monitoring and adaptive management; it is recommended that projects build in deliberate progress monitoring and adapt as needed. SUCCESS was flexible and responsive during and following the official project end; however, this could have been more systematic with use of a ToC. Developing a ToC in a participatory way can also help develop shared vision with partners and collaborators.
3. *Anticipate and exploit multiple impact pathways*. SUCCESS deliberately used a range of partnerships and pathways to achieve its aims.
4. *Maintain high scientific credibility*. SUCCESS gained greater access to and attention from key stakeholders as a result of the reputation of the research team and their affiliate organizations. The reputation of a research organization rests on the credibility and defensibility of its data, analyses, and conclusions. As part of this, it is necessary to explicitly document research questions, methods, analytical arguments, conclusions and limitations.

5. *Maximize perceived legitimacy*. As demonstrated in the SUCCESS Project, process contributions are critical to achieving outcomes. Legitimacy means that the research process is fair and ethical, and is perceived as such by participants and target audiences. Increased engagement can help build legitimacy (and relevance), but it also increases risks of unintended harms resulting from power imbalances, exposure of vulnerable people, or other negative outcomes. We recommend that projects working directly with people develop and abide by an ethical review procedure and make explicit (through documentation) considerations of potential for bias in the research. Research organizations and funders can play a role in supporting such changes in research practice by revising how they frame grant applications, requiring an ethical review process, and reconsidering the types of research projects that they fund.
6. *Understand the social, economic, and policy contexts*. The SUCCESS team had prior research experience and pre-existing networks in Peru that helped identify entry points for the project and supported the team's engagement with relevant stakeholders. Whether working in new or familiar contexts, stakeholder mapping exercises are recommended to systematically identify actors' relative power and interest levels in the project and its problem context, which can inform who to work with and how to work with them. This can help develop an awareness of possible contextual barriers (e.g., competing agendas) or limitations (e.g., government turnover) that may exist; being aware of these challenges can help researchers identify contextually-appropriate mitigation strategies. Likewise, this exercise could guide and identify leverage points for project engagement.
7. *Capitalize opportunities for mutual learning*. Mutual learning occurs through knowledge exchange between researchers and research participants, which increases the likelihood of effective change in the long-term (Mitchell, Cordell, Fam, 2015; Scholz, 2000). While SUCCESS did not deliberately create or engage in activities to maximize the potential for mutual learning, their active engagement and participation in the problem context and existing policy processes contributed to mutual learning with other stakeholders. Joint problem formulation, co-design, and knowledge co-production are recommended strategies to create and capitalize on opportunities for mutual learning, which can increase the likelihood that findings are integrated into existing processes. Mediated processes for knowledge integration would facilitate consensus-building processes by defining roles, objectives, and commitments, while also ensuring accountability between actors. In addition, co-design can support more strategic activity planning and systematic data collection to produce findings that are useful and that will be used.
8. *Continue to build the AFC knowledge base*. SUCCESS addressed relevant knowledge gaps around AFCs and demonstrated how research can better inform contextually relevant policy and practice. Continuing from SUCCESS, there is scope to observe and sample other regional dynamics in Peru, and several informants requested further pilot studies (NGO1, NGO3, Par2). New areas of inquiry were identified by stakeholders involved in the project. Specific studies of interest include an investigation of the recovery of degraded zones and how that could be approached with AFCs (Gov8), and an economic study to quantify AFC benefits (i.e., assess livelihood improvements and economic development) to address concerns with and build incentives for formalization (Gov5, Par4, Res6).

Appendices

Preface

The appendices contain supplementary materials that provide detailed information on the data collection and analysis approaches, which may be of use to the monitoring and evaluation of future research projects. Appendix 1 contains a table detailing the sources of evidence referenced in the evaluation. Appendix 2 lists the SUCCESS Project outcomes under evaluation. Appendix 3 contains the semi-structured interview guide that was used to interview key informants (note: only the English version is provided). Appendix 4 contains the codebook that was used to thematically organize interview data for analysis and details how those themes correspond to the evaluation questions. Appendix 5 contains detailed information of the QAF criteria that were used to score elements of the project design and implementation, and the results of that activity are found in Appendix 6. Appendix 7 contains informants' awareness of actors engaged and perceptions of actor relevance. Appendix 8 summarizes informants' perceptions of relevance of the SUCCESS Project's outputs and evidence of use. Appendix 9 contains an extended and more detailed evidence table for the outcome assessment. Appendix 10 contains the list of references.

Appendix 1. Evidence Sources

Code	Class	Author(s)	Reference	Date
Blog1	Blog post	ICRAF	In the Peruvian Amazon, aspirations become reality with the first Agroforestry Concessions for smallholders [Web page]. (2019). Retrieved from http://www.worldagroforestry.org/news/peruvian-amazon-aspirations-become-reality-first-agroforestry-concessions-smallholders	2019
Blog2	Blog post	Robiglio & Reyes	Robiglio, V., & Reyes, M. (2018, May 29). Agroforestry concessions are a strategic mechanism for smallholders in the Amazon. How do we make it work? [Blog post]. Retrieved from http://blog.worldagroforestry.org/index.php/2018/05/29/agroforestry-concessions-strategic-mechanism-smallholders-amazon-make-work/	2018
Blog3	Blog post	Encinas	Encinas, P. (2018, October 18). Piloto de cession en uso para sistemas agroforestales – CUSAF – en San Martín [Blog post]. Retrieved from https://www.mda.org.pe/2018/10/18/nt2018003/	2018
Blog4	Blog post	ICRAF	ICRAF. (2014, December 9). Peruvian Environment Ministry and the World Agroforestry Centre (ICRAF) Sign a Memorandum of Understanding for Inter-Institutional Cooperation [Blog post]. Retrieved from http://blog.worldagroforestry.org/index.php/2014/12/09/peruvian-environment-ministry-and-the-world-agroforestry-centre-icraf-sign-a-memorandum-of-understanding-for-inter-institutional-cooperation/	2014
Blog5	Blog post	ICRAF	Enhancing decision makers' understanding of policy implications for agroforestry concession holders [Web page]. (n.d.). Retrieved from http://foreststreesagroforestry.org/enhancing-decision-makers-understanding-of-policy-implications-for-agroforestry-concession-holders/	n.d.
Blog6	Blog post	CCAFS	CCAFS. (2014, December 22). Nationally appropriate mitigation actions increasing; Peru launches plan in December [Blog post]. Retrieved from: https://ccafs.cgiar.org/blog/nationally-appropriate-mitigation-actions-increasing-peru-launches-plan-december#.XDzmRlxKiUk	2014
Blog7	Blog post	MINAM	MINAM. (2017, March 3). ProAmbiente Program closes its first stage with important contribution to the achievement of the environmental goals of Peru. [Blog post]. Retrieved from http://www.minam.gob.pe/notas-de-prensa/programa-proambiente-clausura-su-primera-etapa-con-importante-contribucion-al-logro-de-las-metas-ambientales-del-peru/	2017
Doc1	Research proposal	ICRAF	Small grants for international agricultural research (project proposal).	n.d.
Doc2	Draft work program	GGGI	GGGI. (October 2018). Draft work program and budget (WPB) 2019-2020. Retrieved from http://gggi.org/site/assets/uploads/2018/11/4.-C_2018_DC_9-Decision-on-the-WPB-for-the-Period-January-1-2019-December-31-2020.pdf	2018
Doc3	Anthropological report	ICRAF	ICRAF. (n.d.). Reporte final – Investigacion "SUCCESS" en la provincial Padre Abad, Ucayali.	n.d.
Doc4	Technical module (1)	Robiglio & Mesía	Robiglio, V., & Mesía, N. (2018, August). La Cesión en Uso para Sistemas Agroforestales: Aspectos legales, prescripciones téchnicas y de manejo por productores familiares. In: *Apoyo al Desarrollo de Cesión en Uso para Sistemas Agroforestales en Perú*. Lima, Peru: ICRAF. Regional Office for Latin America. Retrieved from https://www.worldagroforestry.org/sites/default/files/users/admin/mo%cc%81dulo%201_PDF%20(2).pdf	2018

Doc5	Technical module (2)	Robiglio, Vargas, & Suber	Robiglio, V., Vargas, R., & Suber, M. (2018, August). La Cesión en Uso para Sistemas Agroforestales: Los potenciales benficiarios, distribución geográfica y estimación del potencial de contribución a las metas climáticas del Perú. In: *Apoyo al Desarrollo de Cesión en Uso para Sistemas Agroforestales en Perú*. Lima, Peru: ICRAF. Regional Office for Latin America. Retrieved from http://www.worldagroforestry.org/sites/default/files/users/admin/Modulo%202_Robiglio_etal_2018_CUSAF_Amazonia_Potenciales_beneficiarios.pdf	2018
Doc6	Technical module (3)	Robiglio & Reyes	Robiglio, V., & Reyes, M. (2018, November). La Cesión en Uso para Sistemas Agroforestales: Identificación de zonas elegibles para su implementación. In: *Apoyo al Desarrollo de Cesión en Uso para Sistemas Agroforestales en Perú*. Lima, Peru: ICRAF. Regional Office for Latin America. Retrieved from http://www.worldagroforestry.org/sites/default/files/users/admin/Mo%CC%81dulo%203_Reyes_etal_2018_Zonas_elegibles.pdf	2018
Doc7	Technical module (4)	Reyes & Robiglio	Reyes, M., & Robiglio, V. (2019, January). La Cesión en Uso para Sistemas Agroforestales: Evaluación de áreas prioritarias y propuesta de intervención en campo a nivel de caserío y de predio. In: *Apoyo al Desarrollo de Cesión en Uso para Sistemas Agroforestales en Perú (SUCCESS)*. Lima, Peru: ICRAF. Regional Office for Latin America. Retrieved from https://www.worldagroforestry.org/sites/default/files/users/admin/M%C3%B3dulo%204_Reyes_etal_2018_Intervencion.pdf	2019
Doc8	Diagnostic study	Robiglio, Reyes, & Castro Simauchi	Robiglio, V., Reyes, M., & Castro Simauchi, E. (2015). Diagnóstico de los productores familiares en la Amazonicá Peruana. Lima, Peru: ICRAF. Regional Office for Latin America. Produced for GGGI and DIE. Retrieved from http://www.worldagroforestry.org/sites/default/files/outputs/Diagnostico-de-los-productores-familiares-en-la-Amazonia-peruana-.compressed.pdf	2015
Doc9	Press release	Norwegian government	The Norwegian Office of the Prime Minister. (2017, June 8). Peru, Norway and Germany reaffirm Joint Declaration for Intent for Green Growth [Press release]. Retrieved from https://www.regjeringen.no/contentassets/2c039f2b25a241e99ddeb53dd560df3d/joint-press-release-dci--english.pdf	2017
Doc10	Report	MINAM	Temporary Multisector Working Group Responsible for Generating Technical Information to Guide the Implementation of NDC. (2018). Final Report. Retrieved from http://www.minam.gob.pe/ cambioclimatico/wp-content/uploads/sites/127/2018/12/Informe-final-GTM-NDC_v17dic18.pdf	2018
Gov1	Interview	Government informant	Unpublished case study interview transcript.	2018
Gov2	Interview	Government informant	Unpublished case study interview transcript.	2018
Gov3	Interview	Government informant	Unpublished case study interview transcript.	2018
Gov4	Interview	Government informant	Unpublished case study interview transcript.	2018
Gov5	Interview	Government informant	Unpublished case study interview transcript.	2018
Gov6	Interview	Government informant	Unpublished case study interview transcript.	2018
Gov7	Interview	Government informant	Unpublished case study interview transcript.	2018

Gov8	Interview	Government informant	Unpublished case study interview transcript.	2018
Par1	Interview	Partner informant	Unpublished case study interview transcript.	2018
Par2	Interview	Partner informant	Unpublished case study interview transcript.	2018
Par3	Interview	Partner informant	Unpublished case study interview transcript.	2018
Par4	Interview	Partner informant	Unpublished case study interview transcript.	2018
NGO1	Interview	NGO informant	Unpublished case study interview transcript.	2018
NGO2	Interview	NGO informant	Unpublished case study interview transcript.	2018
NGO3	Interview	NGO informant	Unpublished case study interview transcript.	2018
NGO4	Interview	NGO informant	Unpublished case study interview transcript.	2018
Res1	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Res2	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Res3	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Res4	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Res5	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Res6	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Res7	Interview	Researcher informant	Unpublished case study interview transcript.	2018
Web1	Website	ICRAF	Support to the Development of Agroforestry Concessions in Peru [Web page]. (n.d.). Retrieved from http://www.worldagroforestry.org/project/support-development-agroforestry-concessions-peru	n.d.
Web2	Website	GIZ	Contribution to the environmental objectives of Peru [Web page]. (n.d.). Retrieved from https://www.giz.de/en/worldwide/13376.html	n.d.
Web3	Website	ProAmbiente	ProAmbiente. El programa. [Web page]. (n.d.). Retrieved from: http://www.proambiente.org.pe/programa.php	n.d.

Web4	Website	World Resources Institute	Healthy lands for food, water and climate [Web page]. (n.d.) Retrieved from https://initiative20x20.org/	n.d.
Web5	Website	United Nations	Sustainable Development Goals [Web page]. (n.d.). Retrieved from https://sustainabledevelopment.un.org/sdgs	n.d.
	Peer-reviewed article	Robiglio & Reyes	Robiglio, V., & Reyes, M. (2016). Restoration through formalization? Assessing the potential of Peru's Agroforestry Concessions scheme to contribute to restoration in agricultural frontiers in the Amazon region. *World Development Perspectives, 3*: 42-46. https://doi.org/10.1016/j.wdp.2016.11.013	2016
	Peer-reviewed article	Santos et al.	Santos, P. Z. F., Crouzeilles, R., & Sansevero, J. B. B. (2019). Can agroforestry systems enhance biodiversity and ecosystem service provision in agricultural landscapes? A meta-analysis for the Brazilian Atlantic Forest. *Forest Ecology and Management, 43*: 140-145. https://doi.org/10.1016/j.foreco.2018.10.064	2019
	Peer-reviewed article	Sears et al.	Sears, R. R., Cronkleton, P., Villaneuva, F. P., Ruiz, M. M., & Pérez-Ojeda del Arco, M. (2018). Farm-forestry in the Peruvian Amazon and the feasibility of its regulation through forest policy reform. *Forest Policy and Economics, 87*: 49:58. https://doi.org/10.1016/j.forpol.2017.11.004	2018
	Peer-reviewed article	van Noordwijk	van Noordwijk, M. (2019). Integrated natural resource management as pathway to poverty reduction: Innovating practices, institutions and policies. *Agricultural Systems, 172*: 60-71. https://doi.org/10.1016/j.agsy.2017.10.008	2017

Appendix 2. SUCCESS Project Outcomes

Table 4. List of outcomes, level, and achievement assessment.

Outcome	*Level of Outcome*	*Assessment of Achievement*
ICRAF research team recognized as AFC experts & consulted by governments & SERFOR	End-of-project outcome	Achieved, clear contribution of the project
Smallholders have a better understanding of AFC process (forest limits, land value, opportunities, challenges, conflicts)	End-of-project outcome	Insufficient evidence, preliminary results indicate achievement with clear contribution of the project
Smallholders view formalization through AFCs to be in their interest	End-of-project outcome	Insufficient evidence, unclear contribution of the project
Smallholders register for AFCs & comply with regulations	High-level outcome	Partially achieved, indirect contribution of the project
Smallholders maximize benefits from formalization: market access, technology & technical assistance, credit, etc.	High-level outcome	Partially achieved, unclear contribution of the project
Active AFCs reduce deforestation & improve conservation	High-level outcome	Not achieved (too early to assess)
Regional governments & SERFOR understand challenges of AFC implementation	End-of-project outcome	Achieved, clear contribution of the project
Regional governments have a roadmap for the effective implementation of technical guidelines	End-of-project outcome	Achieved, clear contribution of the project
Regional governments & SERFOR have capacity to identify AFC eligibility at the meso-level	End-of-project outcome	Partially achieved, unclear contribution of the project
Regional governments recognize value of micro-zoning approach	End-of-project outcome	Achieved, clear contribution of the project
Regional governments use or adapt micro-zoning approach to identify eligible AFCs	High-level outcome	Partially achieved, indirect contribution of the project
Regional governments develop AFC registration pilots & apply experiential learning	High-level outcome	Achieved, clear contribution of the project
Regional governments & SERFOR recognize need to build smallholders' capacity to comply	High-level outcome	Partially achieved, clear contribution of the project
Regional governments & SERFOR develop better AFC policy	High-level outcome	Not achieved, preliminary results indicate potential for achievement with clear project contributions
MINAM presents AFCs as mechanism to achieve national climate change commitments	End-of-project outcome	Partially achieved, clear contribution of the project
Regional governments recognize AFC mechanism could support DCI Joint Declaration	High-level outcome	Insufficient evidence, preliminary results indicate some project contributions
National Plan allocates resources for land titling	High-level outcome	Not achieved
Local & regional NGOs support AFCs	End-of-project outcome	Achieved, clear contribution of the project
Producer associations maintain territories of AFC smallholders against encroachment of other groups who use poor/worse practices	High-level outcome	Not achieved
New relationship & mutual interest recognized between ICRAF, GGGI, & SPDA	End-of-project outcome	Achieved, clear contribution of the project
GGGI utilize ICRAF study results in their engagements with MEF around AF & the Peruvian Green Growth Strategy	High-level outcome	Insufficient evidence, preliminary results indicate partial achievement and indirect contribution of the project
New research questions emerge	End-of-project outcome	Partially achieved, unclear contribution of the project
New research develops indicators to determine smallholders' compliance with AFC requirements	High-level outcome	Not achieved

Appendix 3. Semi-structured Interview Guide

A) General questions (purpose to build trust & clarify the context)

Main Question	Probes	Intent: What we are trying to find out Do NOT ask these directly!
1. What is your role within [organization], and what is the connection to knowledge about agroforestry concessions?	• How long have you been doing this kind of work? • Try to find out their position/status in the community (how long they lived in the community, native or migrant, etc.) • How is your work related to the agroforestry issues? • What role have you and your organization played in the agroforestry concessions discussions/work, and for how long? • What is the intent of your organization in addressing agroforestry concessions policy and implementation issues? • How many people within your organization (what percentage of the organization) work on agroforestry concessions topics?	***Decision-making power, familiarity with their own job/ organization & the relevance of the topic to their work*** The expertise of the person and his/her decision-making power (level of authority within the system in question, which is not necessarily formal power), including their role in decision-making. Knowledge about the organization/ position and its relevance to what they are doing. The relevance of their work and the decision-making power /type of influence they may have on the topic of focus.

B) Recent and/or significant changes & players in agroforestry concessions issues

Main Question	Probes	Intent: What we are trying to find out Do NOT ask these directly!
2. What are the main challenges around agroforestry concessions?	• What makes it/them challenges?	***Personal expertise & perceptions on the topic of focus*** Interviewee's knowledge level, understanding, and perceptions on the problems & issues relevant to the focus of the project – what do they think the problems are and how do they frame the problems.
3. What have been the most important developments related to agroforestry concessions in Peru in the last x* years?	• In the discussions, events, ideas, institutions, policy, and/or practice?[5] • Why do you think these are important?	***Understanding people's perceptions of the situation and identifying possible changes in policy & practice.*** Understanding how issues (e.g., AFCs) are perceived and conceptualized by interviewees (this will allow for an overall characterization of the change process, including but not limited to how respondents think the project contributed. This will help construct narratives about alternative and/or supplementary ToCs.), range of various perspectives, and people's understanding of the developments, causalities, & people's values in relation to issues. QAF: Rel1, Rel2, Rel3

[5] All terminology should be adjusted & verbally explained so it is appropriate to each interviewee (please record any adaptations in the post-interview notes).

4. Who are the key players in discussing, debating, and/or governance of agroforestry concessions?	• What role do government/academic/NGO/international/ private sector/communities play[6]? • In what way have they (each) been influential? • Who does work related to the norms/regulations, implementation, facilitation? • Are there other influential persons or organizations that have a lot of influence in agroforestry concessions issues?	***Understanding people's perceptions of who is who in changing policy & practice.*** Getting an overview of who people consider as key actors in the process. This question will also provide insights about the power dynamics between the stakeholders (e.g. who's got power over whom). Here we want to identify the main actors that have been involved in the developments identified I the previous question. Be careful to not focus on the project and the role of the project until later. QAF: Rel1, Rel3
5. What information/knowledge or process/event has been the most influential in the discussion or media relating to agroforestry concessions in Peru?	• Who is promoting the information/knowledge or event in question? • In your opinion, has the information [what they mentioned] influenced policy and practice? How? Any specific examples?	***Understanding what kind of knowledge is used in decision-making in general.*** Getting a better picture of what kind of knowledge & other factors are influencing agroforestry concessions decision-making and implementation, and where the ideas are coming from. More detailed information about possible changes in policy & practice because of new information/scientific knowledge. QAF: Rel1, Rel2, Rel3

C) Understanding links between knowledge sharing and decision-making processes (purpose to assess important sources of influence on policy and practice)

Main Question	**Probes**	**Intent: What we are trying to find out** **Do NOT ask these directly!**
6. When doing work related to agroforestry concessions, where do you (or your organization) get knowledge you need to do your work?	• Probe to specify to understand what kind of information they mean, if needed • What kinds of information? • How is that information used (to create debate, to be used directly in policy formulation, to guide management decisions and implementation)?	***Understanding what kind of knowledge is used in decision-making in general*** Getting a better picture of what kind of information is seen as important and/or used in decision-making (scientific or non-scientific) QAF: Rel7, Eff2
7. Which of the following factors are the ones that influence the most your (personal and/or organization) decisions and position on agroforestry concessions?	• Political factors • Individual or organizational advocates • Scientific information/ research • Public opinion • Precedent in other jurisdictions • Global pressures/ influences • Are there any additional factors?	***Understanding what other aspects influence decision-making*** Understanding how people see decision-making situations, which aspects matter most in making changes in policy & practice, and how research findings matter in relation to other factors.

[6] It is not necessary to ask all questions to every informant – the list merely illustrates what kind of information we are trying to find out.

8. Do you use scientific information in your work in relation to agroforestry concessions?	• How has it influenced or contributed to your work? • Where did you get that information? (Any specific events, publication, meetings, etc.) • Are there any barriers to using scientific information in this process? • What role do experts, advisory panels, researchers, among others play in providing information to your organization? • How can the role/engagement with experts, advisory panels, researchers for advancing your work in agroforestry concessions implementation be improved?	***Understanding what the role of science is in decision-making*** Getting a better picture of the ways in which scientific knowledge is used by organisations, how they get the science they use, and what prevents them from basing their decision-making on scientific research findings. QAF: Rel7, Eff2, Eff3

D) ICRAF-related questions (purpose to assess outcome achievement and research influence on raising awareness and advancing understanding about agroforestry concessions implementation issues)

Main Question	**Probes**	**Intent: What we are trying to find out** **Do NOT ask these directly!**
9. What do you know about work that ICRAF has done on agroforestry concessions? (If they do not know ICRAF's work, ask what they know about the work of partners on the topic)	[to non-partners] • How did you hear about it? [to partners] • When did you get involved in the ICRAF project on agroforestry concessions? • How did you find the opportunities to participate and be involved? • What was your role? • How much time did you spend in work related to this project? • What was your contribution to this project? (e.g., Did you take part in meetings, workshops? Did you give recommendations to the project?) • Did you think that your input was taken into account? • What were the most important things you learnt? • Do you have any suggestions regarding how engagement and more meaningful participation can be improved?	***Role & length of engagement with project partners*** Finding out to what extent the degree & length of engagement in the project may be associated with changes in policy & practice. QAF: Rel3, Rel7, Cre7, Cre8, Leg1, Leg2, Leg3, Leg4, Eff2
[Ask 10-13 ONLY from partners & those who said they know ICRAF and the project]		
10. Has the work of the Agroforestry concession project led by ICRAF contributed to or influenced your work on agroforestry concessions?	• If yes, how? Why? • Any positive/negative impact on policy/practices/awareness/knowledge/capacity? • In what ways? • Any concrete examples?	***ICRAF's influence on their work (re the topic of focus)*** Please see some background above. Finding out about linkages between ICRAF's work and their work on the topic of focus*, and whether ICRAF has contributed to changes in policy & practice, but also to the

		debate, awareness in the topic, knowledge, capacity, or any other type of contributions. Getting a sense whether the change is perceived as positive or negative. QAF: Rel5, Eff1, Eff2, Eff3, Eff4
11. Has the SUCCESS Project had an influence on agroforestry concessions?	• If yes, why do you think it has? If no, why not? • In what ways? • Knowledge about agroforestry concessions issues/rights/barriers/opportunities? • Attitudes about agroforestry concessions rights? • Technical options and skills related to agroforestry concessions? • Capacity to engage in the issues? • Relationships that affect agroforestry concessions implementation? • Have there been any negative outcomes of ICRAF's work? If yes, please describe them.	***Influence of ICRAF's project on the topic of focus*** This question is ONLY asked IF the person has mentioned that they know about the project in question (or they are/were a research partner). Finding out about the explicit outcomes/impacts of the project in question **anywhere** (in the world) that the interviewee knows of, not just within their own work/organization. QAF: Rel5, Eff1, Eff2, Eff3, Eff4
12. What would have happened in the agroforestry concession debate and policy making in Peru had ICRAF not been working on this topic?	• Probe to clarify if needed (the role of the project in improving collaboration, social networks, participation, engagement)	***Testing "zero hypothesis"*** Using a different angle to understand the true influence of ICRAF by asking what would be different had ICRAF not done its work. QAF: Eff4
13. If ICRAF had more time and resources to work on this issue, what would you recommend to help improve their work on the issue?	• Any specific/concrete examples? • What could ICRAF or other organizations do to help address these challenges?	***Feedback*** Hold to the end of the interview – if the interviewee starts talking about it at the beginning, please lead them back to any of the questions above and ask to return to the question. This Q allows participants to give feedback to ICRAF and helps identify gaps/challenges, but we know many of the problems already and do not want to let this dominate/ mislead the main focus of the interview. Use this opportunity to increase the depth of any previous answers by probing and relating this question to any other points informants raise – if/when appropriate. QAF: Rel3, Rel5, Rel5, Rel7, Cre1, Leg3 (*many elements could come up here – will depend on respondent)

E-I) Closing Questions

[non-partners]

Main Question	**Probes**	**Intent: What we are trying to find out** **Do NOT ask these directly!**
14. Is there anything else you think we should consider with regard to the role of research in the policy process and changing practice?	• Anything else you would like to add?	***Closing*** Last remarks, things they might want to add that were not included, and closure.

E-II) Closing Questions

[partners]

Main Question	**Probes**	**Intent: What we are trying to find out** **Do NOT ask these directly!**
14. How was your partnership experience in the SUCCESS Project led by ICRAF?	• Any examples of positive experiences/what was done well? Any promising practices? • How could we make the partnerships work even better in the future? What could have been done better? (diplomatic way to ask for negative experiences)	***Personal experience & feedback*** Further details of the influence of the project on the personal level, possible additional aspects (re: knowledge translation). Potential for improvement. QAF: Rel7, Leg2, Leg3
15. Is there anything else you think we should consider with regard to the role of research in the policy process and changing practice?	• Anything else you would like to add?	***Closing*** Last remarks, things they might want to add that were not included, and closure.

Appendix 4. Codebook

Code	*Description*	*Comment*
Alternative explanation(s)	Discussion of other reasons or factors not connected to the project (external) that may contribute to or affect the realization of outcomes.	Aligned with questions from interview guide on other developments, factors, and challenges.
Application	Any reference to possible practical applications resulting from the research (or any other related research in the region/topic). Include comments of whether participants have used or applied knowledge from the project (or another project/training) in their work, and how it changed practices. Include any indication of future intentions to apply or use knowledge in academic, policy, or practice contexts.	• Evaluation Research Question 2d: *Are the target audiences/stakeholders using the project's outputs, and how are they using them?* • Eff4. Practical application
Assumptions	Any reference to the project theory of change assumptions. These include: i) producing relevant information in a credible and timely manner will increase the uptake and use of research; ii) findings are logically connected, conceptually appropriate, and scientifically robust to align with target audience initiatives (fit to purpose); iii) engagement efforts were sufficient to build important relationships with allies to ensure continuity; iv) people pay attention to numbers (quantification) that give findings relevance; v) if we understand the enabling conditions to support agroforestry, success is more likely (option-by-context approach, tailored solutions); vi) changes to AFC implementation policy which accommodate smallholder heterogeneity will have a greater likelihood of improving smallholder livelihoods.	• Evaluation Research Question 2g: *Did the project theory of change assumptions hold true?*
Bias	Identification of possible sources of bias: researchers' positions (education, gender, culture, discipline, etc.), sources of support, financing, collaborations, partnerships, research mandate, assumptions, goals, and bounds on research. Includes bias of any partner or relevant stakeholder. Includes biased comments.	• Leg1. Disclosure of perspective
Changes in attitude	Evidence of changes in attitudes.	• Evaluation Research Question 2: *To what extent and how were the intended outcomes of the ICRAF SUCCESS Project achieved?* • Eff1. Builds social capacity
Changes in behaviour	Evidence of changes in behaviour.	• Evaluation Research Question 2: *To what extent and how were the intended outcomes of the ICRAF SUCCESS Project achieved?* • Eff1. Builds social capacity
Changes in knowledge	Evidence of changes in knowledge or understanding.	• Evaluation Research Question 2: *To what extent and how were the intended outcomes of the ICRAF SUCCESS Project achieved?* • Eff1. Builds social capacity • Eff1. Contribution to knowledge

Changes in relationships	Evidence of changes in relationships.	• Evaluation Research Question 2: *To what extent and how were the intended outcomes of the ICRAF SUCCESS Project achieved?* • Eff1. Builds social capacity
Changes in skills	Evidence of changes in skills or capacity.	• Evaluation Research Question 2: *To what extent and how were the intended outcomes of the ICRAF SUCCESS Project achieved?* • Eff1. Builds social capacity
Collaboration	Any aspect related to collaboration (roles, responsibilities, decision-making structures).	• Leg2. Effective collaboration
Communication	Any aspects related to communication: verbal/oral, visual, written, channels of communication, timeliness, inclusiveness, appropriateness, etc. Includes any form of communication between actors in the system.	• Rel7. Effective communication
Competencies for research & policy-making	Comments on appropriate or necessary competencies for producing/ translating knowledge. Comments on appropriate or necessary competencies for incorporating knowledge into policy-making. Includes comments on existing competencies of the research team or actors in the system.	• Cre5. Adequate competencies (re: research team) • Eff1. Builds social capacity (re: changes in capacity)
Context and problem	Discussion about the social and ecological characteristics of the context. This includes respondents' perceptions of the relevance of the research in relation to other problems. Problem identification.	Aligns with questions in interview guide pertaining to challenges and developments (characterization of the context and the problems within that context). • Rel1. Clearly defined socio-ecological context • Rel2. Socially relevant research problem
Decision-making	Any data pertaining to decision-making done during the project, or influences on stakeholder decision-making. Include any reference to 'policy'.	Aligns with questions in the interview guide pertaining to decision-making and knowledge
Dissemination & knowledge sharing	Information on how, where, and with whom the research was shared (planned or unexpected opportunities).	Code aspects of 'knowledge translation' and 'brokering'. • Evaluation Research Question 2c: *To what extent are target audiences aware of the project's outputs?*
Engagement	Discussion of engagement with social actors or ecological factors.	• Evaluation Research Question 2b: *To what extent did the project engage effectively with relevant stakeholders?* • Rel3. Engagement with problem context • Leg3. Genuine and explicit inclusion
Ethics	Any mention of ethical or unethical aspects related to the research project – process, engagement, unintended outcomes, etc.	• Leg4. Research is ethical
Facilitating factors & barriers	Comments related to factors that facilitated/supported or obstructed the research process and its contributions. May include comments about time, funding, human resources, contextual factors, etc. This will include external and internal factors.	• Evaluation Research Question 3: *What lessons can be learned in regards to the project context and outcome achievements from this case study?* • Cre4. Feasible research project

Gender & youth	Comments related to how the project integrated gender and youth considerations.	• Evaluation Research Question 1a: *How well did the project integrate gender and youth considerations?*
Knowledge & knowledge sources	Comments of where people get their knowledge and how they use it in their work. Comments of what type of knowledge/research people perceive to be credible or useful.	• Evaluation Research Question 2a: *To what extent was the science produced sufficiently relevant to achieve its aims?* • Evaluation Research Question 2c: *To what extent are target audiences aware of the project's outputs?*
Lessons	Comments related to project context, design, and implementation that supported the research or how it could be improved.	• Evaluation Research Question 3: *What lessons can be learned in regards to the project context and outcome achievements from this case study?*
Power	Any aspects reflecting power and power dynamics.	
Reflection	Comments related to self-reflection in context of the research, including what the reflection led to (change in direction or the way things were done, who was included, etc.) that address research shortcomings and indicate adaptations.	Note: code may only be useful for researcher interviews (confined to members or collaborators of the research team) • Cre11. Ongoing monitoring and reflexivity
Relevant actors	Identification and information pertaining to actors relevant to the context, whether they be direct participants in the research, actors within the context, actors working on issues/topics within the context/system, or boundary partners.	
Research design	Discussion about objectives, research question(s), design, and methods. Comments on relevance, timeliness, and appropriateness of the research design. Identification of the specific focus or gap being researched and why it is being researched. Reference to research questions. Any discussion about objectives (aims, goals, outcome expectations, expected contributions, donor requirements, etc.).	• Evaluation Research Question 1: *How was the project designed and implemented to maximize knowledge translation?* • Rel1. Clearly defined context • Rel2. Socially relevant research problem • Rel4. Explicit ToC • Rel5. Relevant research objectives and design • Rel6. App. project implementation • Cre1. Broad preparation • Cre2. Clear research problem definition • Cre3. Objectives stated and met • Cre4. Feasible research project • Cre6. Approach fits purpose • Cre7. Appropriate methods • Cre10. Limitations stated
Social networks	Any reference to networks and connections between people or organizations that go beyond knowing about the other's existence.	
Transferability & generalizability	Comments on perceptions or observation of other contexts where the findings or research process, approach, or methods can be applied.	• Cre9. Transferability/generalizability of findings
Trust	Comments related to relationships and trust. Also trust of researcher, findings, organizations, or other actors in the system.	

Unexpected outcomes	Comments of other changes in knowledge, attitudes, skills, relationships, and/or behaviour resulting fully or in part from the research that were not identified by the research team. Can be positive or negative outcomes.	• Evaluation Research Question 4: *Were there any positive or negative unexpected outcomes from this project?*
Case-specific Outcomes Outcomes were identified in the ToC workshop and are reflected in the ToC model. • Eff4. Significant outcome		
ICRAF research team recognized as AFC experts & consulted by governments & SERFOR	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
ICRAF research team invited to formal committee formed to discuss AFCs	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Local & regional NGOs support AFCs	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Producer associations maintain territories of AFC smallholders against encroachment of other groups who use poor/ worse practices	High-level outcome.	
New relationship & mutual interest recognized between ICRAF, GGGI, & SPDA	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
GGGI utilize ICRAF study results in their engagements with MEF around agroforestry & Peruvian Green Growth Strategy	High-level outcome.	
Regional governments & SERFOR understand challenges of AFC implementation	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Regional governments have a roadmap for effective implementation of technical guidelines	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Regional governments & SERFOR develop better AFC technical guidelines	High-level outcome.	
MINAM presents AFCs as mechanism to achieve national climate change commitments	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Regional governments recognize value of micro-zoning approach	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*

Micro-zoning approach integrated into technical guidelines	High-level outcome.	
Regional governments use & adapt micro-zoning approach to identify eligible AFCs	High-level outcome.	
Regional governments & SERFOR have capacity to identify AFC eligibility at the meso-level	High-level outcome.	
Regional governments develop AFC registration pilots	High-level outcome.	
New research questions emerge	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
New research develops indicators to determine smallholders' compliance with AFC requirements	High-level outcome.	
Regional governments & SERFOR recognize need to build smallholders' capacity to comply	High-level outcome.	
National Plan allocates resources for land titling	High-level outcome.	
Regional governments recognize AFC mechanism could support DCI Joint Declaration	High-level outcome.	
More integrated, effective, & better informed approaches to AFC governance	Impact.	
More sustainably managed agro-ecosystems (IDO 3.3)	Impact. Alignment with IDO 3.3 (*More sustainably managed agro-ecosystems*).	• Evaluation Research Question 2f: *Are the changes in forestry practices likely to contribute to intended development outcomes (CGIAR IDO and sub-IDOs)?*
Smallholders have better understanding of AFC process (forest limits, land value, opportunities, challenges, conflicts)	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Smallholders engage in discussions around AFCs	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Smallholders equipped to judge whether to register for AFCs	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*
Smallholders more likely to view formalization through AFCs to be within their interests	End-of-project outcome.	• Evaluation Research Question 2e: *Have the end-of-project outcomes been realized?*

Smallholders register for AFCs	High-level outcome.	
More smallholders comply with AFC requirements	High-level outcome.	
Smallholders have access to technical assistance (e.g., technology, extension services)	High-level outcome.	
Smallholders have access to legal land tenure	High-level outcome.	
Active AFCs reduce deforestation & improve conservation	High-level outcome.	
Reduce deforestation & improve conservation (sub-IDO 3.1.1 & 3.1.2)	Impact. Alignment with sub-IDO 3.1.1 (*Land, water and forest degradation minimized and reversed*). Alignment with sub-IDO 3.1.2 (*Enhanced conservation of habitats and resources*).	• Evaluation Research Question 2f: *Are the changes in forestry practices likely to contribute to intended development outcomes (CGIAR IDO and sub-IDOs)?*
Compliant smallholders are better able to access credit through national development banks	High-level outcome.	
Smallholders maximize benefits from AFCs	Impact.	
Improved livelihood opportunities for smallholders (sub-IDO 1.3.2)	Impact. Alignment with sub-IDO 1.3.2 (*Increased livelihood opportunities*).	• Evaluation Research Question 2f: *Are the changes in forestry practices likely to contribute to intended development outcomes (CGIAR IDO and sub-IDOs)?*

Appendix 5. Quality Assessment Framework

Research Quality Assessment Framework (adapted from Belcher et al., 2016)

Relevance: The importance, significance, and usefulness of the research problem(s), objectives, processes, and findings to the problem context.

Criteria	*Definition*	*Rubric Statement*
Clearly defined socio-ecological context	The context is well defined, described, and analyzed sufficiently to identify research entry points.	The context is well defined, described, and analyzed sufficiently to identify research entry points.
Socially relevant research problem[7]	Research problem is relevant to the problem context[8] and current academic discourse.	The research problem is defined and framed in a way that clearly shows its relevance to the context and demonstrates that consideration has been given to the practical application of the new knowledge generated.
Engagement with problem context	Researchers demonstrate appropriate [9] breadth and depth of understanding of and sufficient interaction with the problem context.	The documentation demonstrates that the research team has interacted appropriately and sufficiently with the problem context to understand it and have potential to influence it (e.g., through site visits, meeting participation, discussion with stakeholders, document review, etc.) and new knowledge is considered and incorporated appropriately as it becomes known.
Explicit theory of change	The research explicitly identifies its main intended outcomes and how they are intended or expected to be realized and how they will contribute to longer-term outcomes and/or impacts.	The research explicitly identifies its main intended outcomes and how they are intended or expected to be realized and how they will contribute to longer-term outcomes and/or impacts.
Relevant research objectives and design	The research objectives and design are relevant and appropriate to the problem context; the research is timely, useful, and appropriate to the societal problem[10]; research design is specific to important context characteristics (includes stakeholder needs and values).	The documentation clearly demonstrates, through sufficient analysis of key factors, needs, and complexity within the context, that the research objectives and design are relevant and appropriate.

[7] **Research problems** are the particular topic, area of concern, question to be addressed, challenge, opportunity, or focus of the research activity. Research problems are related to the societal problem but take on a specific focus, or framing, within a societal problem.

[8] **Problem context** refers to the social and environmental setting(s) that gives rise to the research problem, including aspects of: location; culture; scale in time and space; social, political, economic, and ecological/environmental conditions; resources and societal capacity available; uncertainty, complexity and novelty associated with the societal problem; and the extent of agency that is held by stakeholders (Carew & Wickson, 2010).

[9] Words such as '**appropriate**', '**suitable**', and '**adequate**' are used deliberately to allow for quality criteria to be flexible and specific enough to the needs of individual research projects (Oberg, 2008).

[10] **Societal problem** is 'an area in which the need for knowledge related to empirical and practice-oriented questions arises within society due to an uncertain knowledge base and diffuse as well as controversial perceptions of problems' (Pohl et al., 2007).

Appropriate project implementation	Research execution is suitable to the problem context and the socially relevant research objectives.	The documentation reflects effective project implementation that is appropriate to the context, including ongoing engagement with stakeholders, incorporation of new knowledge, and reflection and adaptation as needed.
Effective communication	Communication during and after the research process [11] is appropriate to the context and accessible to stakeholders, users, and other intended audiences.	The documentation indicates that the research project planned and achieved appropriate communications with all necessary actors during the research process.

Credibility: The research findings are robust and the sources of knowledge are dependable. This includes clear demonstration of the adequacy of the data and the methods used to procure the data, including clearly presented and logical interpretation of findings.

Criteria	*Definition*	*Rubric Statement*
Broad preparation	The research is based on a strong integrated theoretical and empirical foundation that is relevant to the context.	The documentation demonstrates critical understanding and integration of an appropriate breadth and depth of literature and theory from across disciplines relevant to the context, and of the context itself.
Clear research problem definition	The research problem is clearly defined, researchable, and grounded in the academic literature and the problem context.	The research problem is clearly stated and defined, researchable, and grounded in the academic literature and the problem context.
Clear research question	The research question is clearly stated and defined, researchable, and appropriate to address the research problem.	The research question is clearly stated and defined, researchable, and justified as an appropriate way to address the research problem.
Objectives stated and met	Research objectives are clearly stated and met.	The research objectives are clearly stated, logically and appropriately related to the context and the research problem, and achieved, with any necessary adaptation explained.
Feasible research project	The research design and resources are appropriate and sufficient to meet the objectives as stated, and sufficiently resilient to adapt to unexpected opportunities and challenges throughout the research process.	The research design and resources are appropriate and sufficient to meet the objectives as stated, and sufficiently resilient to adapt to unexpected opportunities and challenges throughout the research process.
Adequate competencies	The skills and competencies of the researcher(s), team, or collaboration (including academic and societal actors) are sufficient and in appropriate balance (without unnecessary complexity) to succeed.	The documentation recognizes the limitations and biases of individuals' knowledge and identifies the knowledge, skills, and expertise needed to carry out the research and provides evidence that they are represented in the research team in the appropriate measure to address the problem.

[11] **Research process** refers to the series of decisions and actions taken throughout the entire duration of the research project and encompassing all aspects of the research project.

Research approach fits purpose	Disciplines, perspectives, epistemologies, approaches, and theories are combined appropriately to create an approach that is appropriate to the research problem and is able to meet stated objectives.	The documentation explicitly states the rationale for the inclusion and integration of different epistemologies, disciplines, and methodologies, justifies the approach taken in reference to the context, and discusses the process of integration, including how paradoxes and conflicts were managed.
Appropriate methods	Methods are fit to purpose and well suited to answering the research questions and achieving stated objectives.	Methods are clearly described and documentation demonstrates that the methods are fit to purpose, systematic yet adaptable, and transparent. Novel (unproven) methods or adaptations are justified and explained, including why they were used and how they maintain rigor.
Clearly presented argument	The movement from analysis through interpretation to conclusions is transparently and logically described. Sufficient evidence is provided to clearly demonstrate the relationship between evidence and conclusions.	Results are clearly presented. Analyses and interpretations are adequately explained, with clearly described terminology and full exposition of the logic leading to conclusions, including exploration of possible alternate explanations.
Transferability and/or generalizability of research findings	Appropriate and rigorous methods ensure the study's findings are externally valid (generalizable). In some cases, findings may be too context specific to be generalizable in which case research would be judged on its ability to act as a model for future research.	Document clearly explains how the research findings are transferable to other contexts, OR in cases that are too context-specific to be generalizable, discusses aspects of the research process or findings that may be transferable to other contexts and/or used as learning cases.
Limitations stated	Researchers engage in on-going individual and collective reflection in order to explicitly acknowledge and address limitations.	Limitations are clearly stated and adequately accounted for on an ongoing basis through the research project.
Ongoing monitoring and reflexivity[12]	Researchers engage in ongoing reflection and adaptation of the research process, making changes as new obstacles, opportunities, circumstances, and/or knowledge surface.	Processes of reflection, individually and as a research team, are clearly documented throughout the research process along with clear descriptions and justifications for any changes to the research process made as a result of reflection.

Legitimacy: The research process is perceived as fair and ethical. This encompasses the ethical and fair representation of all involved and the appropriate and genuine inclusion and consideration of diverse participants, values, interests, and perspectives.

Criteria	*Definition*	*Rubric Statement*
Disclosure of perspective	Actual, perceived, and potential bias is clearly stated and accounted for. This includes aspects of: researchers' position, sources of support, financing, collaborations, partnerships, research mandate, assumptions, goals, and bounds placed on commissioned research.	The documentation identifies potential or actual bias, including aspects of researchers' positions, sources of support, financing, collaborations, partnerships, research mandate, assumptions, goals, and bounds placed on commissioned research.

[12] **Reflexivity** refers to an iterative process of formative, critical reflection on the important interactions and relationships between a research project's process, context, and product(s).

Effective collaboration	Appropriate processes are in place to ensure effective collaboration (e.g., clear and explicit roles and responsibilities agreed upon, transparent and appropriate decision-making structures).	The documentation explicitly discusses the collaboration process, with adequate demonstration that the opportunities and process for collaboration are appropriate to the context and the actors involved (e.g., clear and explicit roles and responsibilities agreed upon, transparent and appropriate decision-making structures).
Genuine and explicit inclusion	Inclusion of diverse actors in the research process is clearly defined. Representation of actors' perspectives, values, and unique contexts is ensured through adequate planning, explicit agreements, communal reflection, and reflexivity.	The documentation explains the range of participants and perspectives/cultural backgrounds involved, clearly describes what steps were taken to ensure the respectful and inclusion of diverse actors/views, and explains the roles and contributions of all participants in the research process.
Research is ethical	Research adheres to standards of ethical conduct.	The documentation describes the ethical review process followed and, considering the full range of stakeholders, explicitly identifies any ethical challenges and how they were resolved.

Effectiveness: The research generates knowledge and stimulates actions that address the problem and contribute to solutions and innovations.

Criteria	*Definition*	*Rubric Statement*
Research builds social capacity	Change takes place in individuals, groups, and at the institutional level through shared learning. This can manifest as a change in knowledge, understanding, and/or perspective of participants in the research project.	There is evidence of[13] observed changes in knowledge, behaviour, understanding, and/or perspectives of research participants and/or stakeholders as a result of the research process and/or findings.
Contribution to knowledge	Research contributes to knowledge and understanding in academic and social realms in a timely, relevant, and significant way.	There is evidence[9] that knowledge generated by the research has contributed to the understanding of the research topic and related issues among target audiences.
Practical application	Research has a practical application. The findings, process, and/or products of research are used.	There is evidence that innovations developed through the research and/or the research process have been (or will be applied) in the real world.
Significant outcome	Research contributes to the solution of the targeted problem or provides unexpected solutions to other problems. This can include a variety of outcomes: building societal capacity, learning, use of research products, and/or changes in behaviours.	There is evidence that the research has contributed to positive change in the problem context and/or innovations that have positive social or environmental impacts.

[13] In an *ex ante* evaluation, 'evidence of' would be replaced with 'potential for'.

Appendix 6. QAF Scores and Justification for SUCCESS Project

Table 5. Individual evaluator and average scores for all QAF criteria, with justifications for the score allocated

Principle	Criteria	E1	E2	E3	E4	Avg.	Justification/Comments
Relevance	Clearly defined socio-ecological context	2	2	2	2	2	Research proposal documents and describes the socio-ecological and political contexts of agroforestry practice and law in Peru; researchers have familiarity with the context from former projects in Peru.
	Socially relevant problem	2	2	2	2	2	Project proposal describes target audiences working within the context and the problem they face and what the implications of those problems are (i.e., social, economic, environmental consequences).
	Engagement with problem context	2	2	2	2	2	Previous research supported entry for the project and experience with regional contexts; researchers had pre-existing relationships with stakeholders; researchers were familiar with the capacities of target audiences (e.g., access to types of data); project was timely considering the imminent implementation of the untested mechanism (opportunity to influence).
	Explicit theory of change	1	1	1	0	0.75	Not explicit or documented, but implicit in the objectives and responsive approach taken (not initially planned, but emerged through the research process); project proposal indicates deliberate attempt to contribute to policy change; causal logic is implicit and underdeveloped (broken links).
	Relevant research objectives and design	2	1	2	1	1.5	Informants critiqued the timeliness of research (missed policy window) and the appropriateness of the design/methods for smallholders; documentation was thin regarding design.
	Appropriate project implementation	2	2	2	2	2	Lead researchers committed to extensive ongoing engagement; designed the proposed micro-zoning methodology with consideration of what resources target audiences would have access to if there was uptake or application of methods; did adapt in the field (re: tablets/paper maps) and made adjustments to implementation based on reflections.
	Effective communication	1	1	1	1	1	The project engaged relevant actors in diverse activities (e.g., meetings, workshops, surveys, PGIS, etc.); diverse outputs and media used during and after the project, which were well-received by most target audiences; communication not always accessible to smallholders (e.g., appropriate to education levels); several key research components are not made explicit or clear in project documentation.
Credibility	Broad preparation	1	2	1	1	1.25	Multidisciplinary team; documentation does not reflect the integration that occurred.
	Clear research problem definition	2	2	2	2	2	Research gaps are identified and stated, and the problem is explicitly connected to the context.
	Clear research question	1	1	1	1	1	Overall project research question not explicitly stated in proposal or reports; objectives imply the research questions of the project.
	Objectives stated and met	1	2	1	2	1.5	Objectives stated; of the many objectives for different components of the project, most appear to have been achieved.
	Feasible research project	1	1	2	1	1.25	Project had limited funding (small grant); not enough time dedicated to field workshops (did not go back to share findings with communities); faced significant team turnover (but was resilient to adapt).
	Adequate competencies	2	2	2	1	1.75	Competencies were balanced across the team and a breadth of disciplines were represented; anthropologist's emotional intelligence and engagement skills were useful; recognition of their expertise by target audiences is an indication of their competency.

	Research approach fits purpose	2	1	1	1	1.25	The project did integration of natural and social sciences, but there is an issue of integration not being explicitly documented; approach to include pilots was appropriate as the activity was executed with the communities, demonstrated challenges with registration implementation, and shared insights regarding on-the-ground realities with government actors.
	Appropriate method	1	1	1	1	1	Project documents contain limited discussion of the methods employed; one researcher was highly critical of the surveys (but they functioned to achieve stated aims).
	Clearly presented argument	0	1	0	0	0.25	Informants revealed impressions that the results, analyses, and interpretations were clearly presented; no argument documented in documents to which the evaluation team had access (dissemination processes still underway at time of the evaluation).
	Transferability and generalizability of the findings	2	1	1	1	1.25	Methods/approach was designed for uptake and is therefore transferable; methods are sufficiently documented for replication; informants critiqued that two case studies were insufficient to generalize for all smallholders across Peru.
	Limitations stated	0	1	1	0	0.5	Limitations were not documented in the project outputs or discussed in the context of results, but were disclosed during researcher interviews (in terms of turnover, time, context, etc.).
	Ongoing reflexivity and monitoring	1	2	2	1	1.5	Not explicit or documented, but implicit in the approach taken; clear indication from researcher interviews: adapted to turnover, reflection/discussions took place during the fieldwork.
Legitimacy	Disclosure of perspective	1	2	1	0	1	Proposal acknowledges funding sources and partnerships; bias not made explicit, and no evidence to suggest it was considered.
	Effective collaboration	1	1	2	2	1.5	Members of the research team reflected that collaboration could have been improved, but was overall positive; collaboration with smallholders (as a primary beneficiary) could have been stronger.
	Genuine and explicit inclusion	2	2	1	2	1.75	Extensive effort to engage diverse actor groups (though not always successful); community participation was inclusive; noted strength was broad engagement and mutual learning that came from the project; informants noted requests for earlier and more intensive government engagement (in the project design and development of research questions).
	Research is ethical	1	1	1	0	0.75	No ethical review conducted; researcher interviews reflected on ethical concerns and how addressed.
Effectiveness	Research builds social capacity	2	2	2	2	2	Changes in knowledge and understanding of several actors around AFCs (e.g., SERFOR, smallholder participants); project supported technical training with various stakeholders (e.g., PGIS, micro-zoning approach); research team capacities and skills developed.
	Contribution to knowledge	2	2	2	2	2	Project advanced knowledge on smallholder heterogeneity, AFC issues, AFC potential, implementation challenges, and how to effectively inform AFC policy change (context-dependent, evidence-based); informants conveyed value of SUCCESS findings.
	Practical application	2	2	1	2	1.75	Project results developed for practical application; evidence of uptake/application (e.g., micro-zoning applied in MDA pilots, SUCCESS data/maps referenced in reports, etc.); potential for future incorporation into policy.
	Significant outcome	1	2	2	1	1.5	9 end-of-project outcomes achieved with clear contribution of the project, several partially achieved; high potential for more in the future (too early to assess social/economic/environmental benefits).

Appendix 7. Perceptions of Actor Relevance

Informants shared their knowledge of which actors were engaged by SUCCESS and provided commentary on actors' relevance (see Table 6).

Table 6. Number of informants who commented on actors engaged by SUCCESS and discussed actor relevance

	Informant Group			
Actors in System	*Government*	*NGO*	*Partner*	*Researcher*
SERFOR	4	2	4	4
MINAGRI	1	1	1	2
DEVIDA	–	1	–	–
DCI	1	2	1	1
Regional governments	1	1	2	5
ARA	1	1	1	–
Municipal governments	–	–	–	4
Smallholders	3	2	2	6
Businesses & producer associations	–	1	2	1
SPDA	–	1	2	1
MDA	2	1	–	–
FUNDAVI	1	1	–	3
Other NGOs (Solidaridad, PUR Projet, ITDG, Choba Choba, Fondos de Trabajo, Oro Verde)	–	1	2	2
GIZ	2	_	3	1
GGGI	–	1	2	–

Government actors were widely believed to be relevant stakeholders to engage as decision-makers for their influence on the drafting, interpretation, and implementation of AFC policy. SERFOR's role in managing the national forest stocks, drafting regulation, and cooperating across multiple actor groups left their relevance uncontested amongst informants (Gov5, Gov6, NGO1, Par3, Res1, Res5, Res7). MINAGRI was regarded as a key actor for engagement despite previously not being active in dialogue on agroforestry as they deem forest-related activities to fall outside their realm of responsibility (NGO3, Par4, Res1). The intersection of DCI's relevance relates to their work in native community title registration and address of adverse deforestation practices associated with those titles (NGO1, NGO3, Par2). As a regional environmental authority for San Martín, ARA is responsible for the sustainable natural resource management, so concerns of deforestation and conservation rendered them a relevant stakeholder to engage (Gov8, NGO4, Par1).

Smallholder farmers and the communities in which they lived were considered central groups to include in the research process in order to acquire information about their everyday realities, land use, and current capacities for compliance with AFC regulations (Gov1, Gov6, NGO1, Res4, Res5).

Local NGOs whose work overlapped with various aspects of agroforestry were also regarded as relevant stakeholders to engage as brokers or boundary partners. In particular, SPDA (NGO3, Par2, Par4, Res7) and MDA (Gov2, Gov3, NGO4) were noted, each for their active promotion of policies, mechanisms, and initiatives supporting sustainable development. FUNDAVI, a key partnering NGO in San Martín, was also perceived to be an important actor based on their mandate to support small farmers to participate in and adopt conservation and reforestation practices (Gov4, NGO4, Res1, Res4, Res5).

GIZ was a core partner, playing a significant role as a knowledge and relationship broker throughout the research process (Gov3, Gov4, Par1, Par3, Par4, Res7). Leveraging former relationships with GGGI, ICRAF re-engaged GGGI as a partner and advocate for the SUCCESS Project (NGO3, Par2, Par3).

Appendix 8. Perceptions and Use of SUCCESS Outputs

Informants shared their perceptions of the relevance of research outputs generated by the SUCCESS Project, and provided evidence of uptake and use of these outputs (see Table 7). Specific tailored products are also included in this table, notably Modules 1 through 4, which contain many of the listed SUCCESS knowledge contributions. It will be important to trace the knowledge and use of these tailored products in subsequent evaluations.

Table 7. List of outputs, perceptions of relevance, and evidence of use

Output	*Type*	*Perceptions of Relevance*	*Evidence of Use*
Expanded agroforestry definition	Knowledge contribution	• Useful land use characterization (Gov1, Gov5, Gov7)	• Used for map development (Gov5) • Informed definition of agroforestry and silvo-pastoral zoning categories in San Martín pilots (Gov5)
Micro-zoning approach	New method, method testing	• Farm-level zoning (NGO4) • Improve zoning accuracy (NGO4) • Used data inputs available to public sector (Res7)	• Applied in San Martín pilots (Gov4, NGO4, Par1) • Applied in MDA project (NGO4)

Land area estimation of AFC land suitability (1 million ha of land; 452 000 ha of forest)	Knowledge contribution	• Useful to understand AFC potential (Gov4, Gov5, NGO4)
		• Useful to identify areas eligible for AFCs (NGO4)
		• Useful to inform land use and improve productivity (Gov7)
			• Used in dialogue with regional and national actors (Gov7, NGO4, Par1)
			• Cited in DCI's phase II implementation plan (Gov7)
			• Cited in a GIZ report (Par1)
			• Used agroforestry land suitability maps (Gov4, NGO4, Par4)
			  • Maps used to guide San Martín pilot zoning (Gov4)
			  • Maps used to inform GIZ project proposal (Par4)

AFC beneficiary estimation (123 000 smallholder households)	Knowledge contribution	• Useful to understand AFC potential (Gov4, Gov5, NGO4)	• Used in dialogue with regional and national actors (Gov1, Gov6, NGO4, Par1)
AFC carbon emissions reduction potential (20 percent reduction)	Knowledge contribution	• Useful to understand AFC potential (Gov4, Gov5, NGO4)	• Used in dialogue with regional and national actors (NGO4, Par1, Par2)
Smallholder profiles	Knowledge contribution	• Understanding of smallholders' current land use practices (Gov2) • Understanding of smallholder realities and challenges (Gov1, Gov6, Par4) • Identify smallholder capacity to comply with AFC requirements (NGO4) • Useful to inform land use and improve productivity (Gov7) • Incomplete representativeness of smallholder realities across Peru (Res3)	• Reference to smallholder land use practices used in NGO proposal for revisions to AFC technical guidelines (NGO2) • Referenced in San Martín pilots (NGO4) • Referenced in a GIZ project proposal (Par1) • Used to verify smallholder commodity production and value chains (Gov7) • Informed DCI's plan for small-scale coffee and cacao production (Gov7, Par2)

Technical analysis of AFC regulation	Knowledge contribution	• Demonstrated feasibility of AFC implementation (Gov6, Gov7, NGO2, NGO3, NGO4, Par2, Par4) • Identified AFC implementation challenges (Gov6, Gov7, NGO2, NGO3, NGO4, Par2, Par4) • Useful to inform AFC implementation (Gov1, Gov2, Gov4, Gov6, Par1) • Useful to inform future AFC decision-making and policy revisions (Gov1, Gov4, Gov7, NGO1, Par2) • Fit to purpose (Gov3, Gov4, Gov6, NGO2, NGO4, Par3)	• Used in dialogue with regional and national actors (Gov2, Gov6, NGO1, NGO3, NGO4, Par1, Par2, Par4) • Recommendations for AFC policy revisions under consideration by SERFOR (Par2) • Informed flexibility in interpretation and implementation of AFC regulations (Gov1, NGO1, NGO2, NGO3, NGO4, Par1, Par4) • Consolidated AFC implementation protocol and process (Gov4, Gov6, Par1) • Applied in San Martín pilots (Gov4, Gov5, Par4) • Informed DCI's plan for small-scale coffee and cacao production (Gov7, Par2) • Used to validate other agroforestry system productivity research (Gov7)
World Development Perspectives journal article (Robiglio & Reyes, 2016)	Tailored product	_	• Citation count: 3 (Sears et al., 2018; Santos et al., 2019; van Noordwijk, 2019)
Module 1 (Doc4)	Tailored product	_[14]	_[15, 16]
Module 2 (Doc5)	Tailored product	_[14]	_[15, 16]
Module 3 (Doc6)	Tailored product	_[14]	_[15, 16]
Module 4 (Doc7)	Tailored product	_[14]	_[15, 16]

[14] The majority of interviews conducted for the evaluation (May to November 2018) were done prior to the publication of most of the technical modules (August 2018 to January 2019), so informants did not speak specifically to these tailored products but were aware of components of their content from presentations given by the SUCCESS team.

[15] The number of pageviews can act as a proxy indicator for evidence of use. The webpage where the four SUCCESS technical modules are published online has received 1605 pageviews as of March 21, 2019. It should be noted that the evaluators' visits to the webpage are included in this number.

[16] In addition to pageviews, the evaluators sought data tracking the downloads of each technical module to be used as a proxy indicator for evidence of use; however, the downloads capture has a lower limit of 81 downloads, which has not yet been reached so exact information of the number of downloads for each technical module is not currently available to the evaluators. This is in part explained by the recent publication of the technical modules online, so this would be another aspect for follow-up in a future evaluation of the SUCCESS Project.

Appendix 9. Evidence of Outcome Achievements

Legend: Outcome Achievement

	Green = achieved		Orange = not achieved
	Light green = partially achieved		Grey = insufficient evidence

Table 8. Extent of outcome achievement, supporting evidence, degree of project contribution, and evidence rating for end-of-project and high-level outcomes

Expected Outcome	Summary of Results Achieved	Evidence Supporting Results' Achievement	Evidence Rating: Low (L), Medium (M), High (H); and Justification
ICRAF research team recognized as AFC experts & consulted by governments & SERFOR	The project's engagements contributed to the achievement of this outcome, reflected as a change in attitude of how governments perceive and consult with ICRAF on issues pertaining to AFCs. ICRAF's well-established presence in Peru and other research may have also played a role (Gov4, NGO1, NGO3, Par1, Par4). GGGI has a working relationship with SERFOR to support the development and implementation of the forestry and wildlife plans (Par2). ICRAF brought essential technical expertise about how to conduct the implementation process and practical insight of the implementation realities (Par1). SERFOR continues to engage with ICRAF post-project as they work through mapping land suitability to identify eligible agroforestry zones, giving an indication that ICRAF and other research institutes with relevant expertise will be invited as collaborators to assist the process (Gov5). During a workshop when the pilots were defined, a proposal was made to the regional government to strike a consulting committee between ICRAF, NGOs, and the regional government in San Martín (Gov4, Gov5, NGO4, Par1) with the intent of advancing discussions around AFCs and advising technical teams responsible for implementation. This also was in part achieved as a result of the team being recognized as AFC experts, stimulating more discussions and activity on the topic, and bringing more knowledge to the debate. Once the regional government recognized the research pertained to the law, the decision was made to have the technical group work on forest zoning to move implementation forward (Gov4). The organization has prior research experience in Peru and the case study regions since 1993. ICRAF is a high-profile organization internationally with a clear mandate to provide credible agroforestry science, and participates in key events like the Conference of Parties (COP). Pre-existing relationships and	"*This ICRAF expertise--at the beginning to introduce the subject in San Martín it was fundamental in the sense that they are an institution that conducts a lot of research, they know a lot about the realities, about agroforestry systems and that knowledge acquired from research has been promptly shared with many functionaries and local actors; I mean, they have transferred their best experiences in agroforestry systems to the San Martín region; maybe not from the point of view of development of methodology linked to agroforestry, not that because in San Martín the institutions have developed methodologies for agroforestry systems, methods and models, right. But how to manage, how the process is conducted-- that is the experience ICRAF brought, with SERFOR. That was precisely the training part, the technical expertise that we, professionals, had at that time, and that was so essential to the process*" (Par1) "*Well, ICRAF participated on the guidelines, and they were also somewhat frustrated because it looks like they were going to be limiting the process but afterwards we have seen them asking for information and giving information, they have also been invited to workshops. An impressive job at lobbying from basically two people. But I wouldn't know if that is enough or not*" (Gov3) "*Then, what are the lessons learned and what are the lectures from the regions in the process of implementation? Zero? I don't think so, I believe that the lecture has to have a foundation and institutions like ICRAF are the ones that should give that foundation*" (Gov6) "*In fact, ICRAF workers, we made a small consulting committee with Earth Innovation Institute and them. In a workshop, one of the workshops we had in San Martín when we*	H Clear project contribution. All regional government and SERFOR informants that were interviewed commented on the value of having ICRAF's expertise on the topic and that ICRAF is a key source of information.

	active involvement make ICRAF well-known with the project's target audiences. For example, ICRAF signed a memorandum of understanding (MOU) with MINAM in 2014 for inter-institutional collaboration on issues pertaining to land-use and climate change (Blog4). The team's affiliation with ICRAF likely contributed to the achievement of this outcome as well.	*had defined the pilots, we made a proposal to the regional government to create a consulting committee, so we identified the entities that were working on that issue*" (Gov4) "[when asked why they would call ICRAF for advice regarding AFCs]: *Because who else is working on concession contracts in Ucayali or in Peru? There is no one else right now*" (Gov8)	
Smallholders have a better understanding of AFC process (forest limits, land value, opportunities, challenges, conflicts)	Smallholders learned through the research process about on the new law, and what decision-making was taking place at a higher level without their input (Res6). Smallholders were provided with the opportunity to engage in discussions around AFCs during the research process. While there is evidence that ICRAF's intervention got people (i.e., smallholders and NGOs) talking about AFCs, and the research was of interest to the regional government (Gov4, Gov7, Par2, Res4), the detail of exactly how the discussion on AFC registration has been influenced by the project is unclear and requires interviews with smallholders. It was observed that there was a marked lack of understanding about the mechanism and its implications for communities among smallholders (Gov1). Researchers and partners commented that the main concerns arising from smallholders pertained to how the mechanism was going to work for them, how taxation would apply, and what would happen as a result of their failure to comply once they received a concession (Par4, Res4, Res6). This highlights gaps in the existing guidelines that could inform what kind of technical assistance could be provided to ensure smallholders are equipped to successfully maintain a concession. At the very least, the project played a role in raising awareness of the mechanism and helped strengthen capacity among smallholders who participated in the registration pilots, particularly with respect to the knowledge of their territory (Res6). The research addressed this smallholder awareness gap by hosting workshops at the farm level to both acquire inside information around what the mechanism means, its strengths and weaknesses, and share information about how deforestation contributes to climate change and the potential of the mechanism to mitigate those threats – in other words, mutual learning about how the mechanism could affect smallholders and how the mechanism could be improved to optimize benefits (Res5, Res6). The project's mapping activities that used PGIS brought greater understanding of the extent of smallholders' territories, as the situation on the lands was not well defined (Gov4, Res6). Following the project, discussions initiated by	"*I imagine that when ICRAF just came, you were not discussing the subject of concession contracts among functionaries and regional government, and I also imagine that producers knew even less about it*" (Gov4) "[Producers ended up knowing] *about their territory but not about contracts, no nothing about that because when we go afterwards to work with them on the subject of concession contracts, that is when they were first informed, with the foundation* Fundacion Amazónia Viva*, that is in Juanjui. Then, their technicians helped us talk* [to the producers] *about the subject of economic activities that go in harmony with the forest.* […] *So I believe we have there enough to keep talking about concession contracts, it is not an isolated subject*" (Gov4) "*I think what was achieved was at least informing these four homesteads what is going on, what decision-making was taking place at a higher level that apparently did not include them. I mean, 'sign this' and in five to ten years we'll ask for the impact it may or may not have had, because this isn't something that happens overnight*" (Res6)	L Preliminary results indicate clear project contribution. Other informants shared their perception of smallholders' understanding. However, smallholder perspectives are not reflected as no interviews were conducted with smallholders.

	NGOs and regional governments were raised with smallholders, sharing information on alternative economic activities that are in harmony with forest sustainability (Gov4). The evidence provides some impressions about how smallholder understandings were improved; however, the extent to which this actually advanced understanding needs corroboration with smallholders directly.		
Smallholders view formalization through AFCs to be within their interest	While informants appeared to understand the challenges of building interest for smallholders' formalization through AFCs, specifically with respect to the annual payment that comes with an enabling title (Gov1, Gov2, NGO2, Par3, Par4, Res1, Res6), the evidence is insufficient to assess whether smallholders are more likely to view the mechanism to be within their interest. One government informant noted a marked lack of knowledge about the mechanism has led to an attitude of resistance. Even if smallholders know about it, they may not be inclined to register because of the complexity of the process (Gov1). However, with this shift in understanding and attitude among key actors in the system, it can be speculated that if action is taken to improve incentive schemes, there is a greater likelihood that smallholders would increasingly view formalization to be within their interest. During the research process, it was noted that smallholders did not see any economic benefit in formalizing through concession contracts (Res6). However, formalization would provide smallholders legal grounds to sell products from their concession plot and receive better prices, commercialization support, and certification designations as part of the green economy (NGO1, NGO4). The achievement of this outcome would imply a significant shift in attitude and has implications for whether or not smallholders will register and comply with the regulations. This would need to be assessed by interviewing smallholders to see whether the project had any influence beyond raising awareness of the mechanism.	"*If within the concession contracts they were using the forest resources, there is also the payment for the right to benefit* [*derecho de aprovechamiento*]*, but that payment was something new for the farmers. So we asked ourselves, for the farmer in the field who pays nothing to no one, why would he be interested in an enabling title? It is an enabling title, not a property title. Why would he be interested in having an enabling title and pay the State, and on top of, be supervised by the reports with the possibility of his contract be canceled at any moment. So that worried us, that all those conditions, all that package of rights also came with obligations, and people had to have some training to take that responsibility*" (Gov2) "*Because although the regulations demand payment for the rights, the regulations also stipulate promotional discounts under certain conditions and with certain requirements. So that is how it came out, because there were two projects and we had a meeting with ICRAF, where they also presented their study and findings. What I observed was good, because even if their samples were small, not necessarily under my criteria, their sample population could encompass San Martín's entire population; in their analysis they considered the population's habits, their interests and everything. It was a study that gave us at least a small sample, with a look at what the farmer wanted and what they were hoping for*" (Gov2) "*No* [smallholders did not see any kind of economic benefit]*, they saw it* [formalization through AFCs] *as more binding*" (Res6)	L Unclear project contribution. Smallholder perspectives are not reflected as no interviews were conducted with smallholders. Preliminary evidence indicates more work on the technical guidelines (particularly the incentives) needs to be done to build interest in formalization
Smallholders register for AFCs & comply with regulations	The first evidence of allocated AFCs is demonstrated through the pilots (Gov1, Gov3, Gov4, Gov5, NGO1, NGO2, Par1, Res4). SUCCESS contributed to the pilots through support to actors like MDA who have driven these processes forward (Gov3). Moreover, most contracts for the pilots are in preparation (Gov4, NGO1, Par1). Government actors are still in the process of preparing registration procedures, such as	"*This closes the allocation of some contracts in two zones to which I've referred, in Alonso Alvarado and Pachiza, which are the first at the national level. There is no previous experience, and on this we have shared ICRAF's very work experience in this same issue*" (Gov7) "*I believe we have about thirteen that are ready to be handed their contracts. But before the concession contracts can be*	H Indirect project contribution. Partial achievement as the pilots are in the process of being

	aligning adjoining acts, enacting zoning and titling resolutions, and engaging with potential smallholders to promote the mechanism and develop incentive packages (Gov2, Gov4, Gov5). One researcher commented that "*the use concessions aren't completed just by defining the guidelines, it's there to be applied*" (Res2), implying that there is a lot of preparatory work to support the implementation of the mechanism before smallholders can register. A representative from a regional government noted that there are several issues left to address, as "*we have to guarantee that the contracts will achieve what the regulations have established*" (Gov2); hence why the pilots are such an important step. Apart from the pilots, 14 official concessions have been allocated in San Martín (Blog1). Many informants noted the restrictiveness of the requirements and smallholders' low capacities to comply as the primary barriers that affect their interest and ability to register for a concession (Gov2, Gov3, Gov6, NGO4). However, more smallholders will likely register in the future following successful piloting, modifications to the guidelines, and the provision of incentive packages (Gov5, NGO2, NGO4). Noted as a significant barrier, smallholders' capacities to comply with the requirements limits who has received a concession contract and who is eligible for one (Gov2, Gov3, Gov6, NGO4, Res1). The only evidence confirming that some smallholders are able to comply with the requirements are those who have received a contract under the pilots or from the San Martín government (Blog1, Gov1, Gov3, Gov4, Gov5, NGO1, NGO2, Par1, Res4), though likely more will be able to comply in the future with incentivization (Gov5, NGO4). One informant implied that some smallholders already comply, as they believed it was possible to grant contracts for areas of known agroforestry activities without undergoing the zoning process (Gov5). This is supported by SUCCESS findings from the assessment of the extent of participating smallholders' capacities to comply, indicating that some study participants were able to comply fully with the requirements. However, with unmodified guidelines and slow action to develop incentives for smallholders, little change has occurred whereby more stakeholders than before are able to comply with the requirements.	*granted the ARA must enact a resolution stating that that zone is a special treatment zone*" (Gov4) "*And my understanding is that, in these two spaces, there are around fifty producers who will receive concession contracts through a resolution from the San Martín regional government. But they are still having some problems finishing the process because there are some weaknesses in the regional regulation, and they have to fix them before they can sign them*" (Par1) "Authorities from the Regional Government of San Martín and the National Forest and Wildlife Service (SERFOR), in an official and highly symbolic ceremony, granted the first Agroforestry Concessions to 14 farmers […] Almost 7 years after the approval of the Forestry Law (Law 29763), two years after the approval of the subsidiary law, and one year after the promulgation of the technical regulations for Agroforestry Concessions, a first group of smallholders obtained the legal right to occupation for 40 years" (Blog1) "*Because as part of signing these concessions or contracts with the governments, the farmers have a responsibility. If they have, of course, they have to meet certain, they have to make a sustainable management of this area for the agroforestry concessions and fulfill the minimum area for agroforestry concessions and practices of conservation of resources, water sources, and so many different things that are already part of what they have to do*" (Res5) "*In any case, the requirement to grant concession contracts is to see agricultural activity with forest species within the area. Having that present, I shouldn't have to wait for a zoning process because I can clearly see that those activities are taking place within the area. And in accordance with the guidelines, I could grant that concession contract. Let's say that it should work that way. However, if we think that we have to wait for the zoning to map all the forest areas to only then start promoting, well if that is our choice --to finish mapping-- then you should already have all the promotional package, the incentives for this activity*" (Gov5)	implemented or have already been allocated. 14 official concessions have also been allocated. However, the guidelines have not changed and incentives that would support smallholder compliance have not been capitalized.
Smallholders maximize benefits from formalization:	The regulations provide AFC holders with a form of tenure security to access and use the land through the enabling title (*condición habilitante*) (Gov1, Gov2, Gov7). As a legal	"*because it is an enabling condition* [*condición habilitante*] *to be able to grant that type of suggestions or assistances, a somewhat more technical assistance*" (Gov3)	L Unclear project contribution.

market access, technology & technical assistance, credit, etc.	mechanism, AFCs were designed to address informal land use in unregistered forested areas in combination with aims of sustainability and conservation (Gov1, Gov7). The only evidence of smallholders having access to legal land tenure is through those who have received a concession contract through the pilots (Gov1, Gov3, Gov4, Gov5, NGO1, NGO2, Par1, Res4) or the 14 official concessions (Blog1). One NGO representative had the impression that increasingly more smallholders recognize the advantages of the mechanism for the benefits associated with the enabling title, such as tenure (NGO2). AFC benefits include access to formal market value chains, better prices, and commercialization support for their forest products (Gov1, Gov6, Gov7, NGO1, NGO4, Par1, Par4). Other financial incentives are built into the mechanism's regulatory framework to incentivize smallholders. One is access to credit through the concession, which is intended for smallholders to reinvest into their agroforestry practices (Gov1, Gov4, Gov7). It is unclear if smallholders have taken advantage of this credit access to date. The other financial incentive is a ten percent discount of the 'right to benefit' payment (*derecho de aprovechamiento*) that concession holders are required to pay annually to the government in order to register for and renew the concession contract. By adhering to the AFC requirements, smallholders pay a reduced fee, and after ten years they are exempt from this payment (Gov1, Gov2, Gov6). Smallholders have a demand for technical support structures, like extension services, that would increase their capacities to comply with the concession requirements (Gov7). The regulations contain a provision that would grant smallholders legal access to technical assistance through the enabling title (*condición habilitante*) (Gov1, Gov3). A researcher noted that the next step apart from allocating concessions is to develop the necessary structures and networks for technical assistance, extension services, and other benefits that enable smallholders to register and maintain their concession (Res3). Unfortunately, there was a perception that smallholders are unaware of the benefits and incentive schemes associated with AFCs (Par4). In combination with a limited number of pilot and official concessions to date, evidence of smallholders benefitting and maximizing these benefits is sparse. It is also important to distinguish legal access availed through the concession contract from actual, leveraged access to these	"*it's not only a problem of contracts but the issue of seeing how the networks are organized, which generates the space for the opportunity for technical assistance, supplies, financing*" (NGO2) "*because the regulations have certain technical requirements that I am not that sure the people receiving the enabling titles have the capacity to fulfill. I am also not that sure that they have the finances to do it. Because the issue is that they don't have the technical advice, they don't have many elements that could allow them to access the rights. To go from a position of no payment to one of payment*" (Gov6) "*so we will enter in an agreement, an enabling title, a contract for an enabling title; you will have access to credit, you will have access to this right here in accordance to the regulations*" (Gov4) "*Because although the regulations demand payment for the rights, the regulations also stipulate promotional discounts under certain conditions and with certain requirements*" (Gov2) "*There are also the benefits from the norms; people that have a concession contract in agroforestry systems have to pay a right to benefit for the first ten years. They have a 10% discount every year, so in the end, in ten years they possibly will pay nothing,* [which is] *stipulated in the in the benefit regimen they could be subject to the reduction of their right to benefit payment--another 10% every year; so, in the end, if you see it from the intervention point of view, many people will end up paying absolutely nothing*" (Gov1) "*that is our question, who provides the technical assistance service regarding agroforestry systems. It will be SERFOR or Agriculture. SERFOR says no, they only promote the use concession, the right, but not the technical assistance. And agriculture, of course they are not yet incorporated in the topic of agroforestry systems from a point of view of improving or reducing deforestation*" (Gov7) "*And in the end, agrarian production are the ones that are going to be closest to the farmer because they provide the technical assistance*" (NGO2) "*a large group saw that many of these people maintain good agroforestry systems; that is, they have established their productive activities with forestry activities. So, that is where we saw the issue of legal security, not a title because the state*	Partial achievement as smallholders with a concession (official or pilot) can access formalization benefits. Indirect SUCCESS contributions provided support to the pilots. While smallholders have legal access to credit and technical assistance through the mechanism, it is unclear as to whether smallholders have been able to access and leverage these services.

	services. Smallholders with concession contracts will need to be proactive in accessing and maximizing the benefits from available services, and will likely need initial support from other actors in order to do so.	*cannot grant titles to people that have taken possession--unless there is a law in the past that gave them rights--which is the case.* [Legal possession] *does not exist, and where it does people already have their title. So, in any case, in this case we saw that there was a group of people that could benefit from the establishment of this mechanism. A mechanism that isn't a land title, but it does enable*" (Gov1) "*In Ucayali I have seen it. In the Padre Abad municipality there was an intention to link the mechanism with people that qualify because there is a strong invasion of permanent production forests that could be controlled* […] *there is an intent to formalize through the concession contracts*" (NGO1) "*If they* [smallholders] *have wood they can sell, there are people that have wood that can't sell* […] *because they don't have rights so you can't register your farm--one or two hectares--they can't register it because they don't have rights to the property, but the contract will work for that. The advantages are more and more visible. They are starting to see this*" (NGO2) "*the model isn't well known, the information you can get out about potential benefits was very poor because* [smallholders] *had to understand what a use concession is in order to tell you, 'I feel I'll benefit from accessing credits,'*" (Par4)"	
Active AFCs reduce deforestation & improve conservation	Agroforestry systems are one of many strategies under consideration by the Peruvian government to address the deforestation and conservation of degraded areas (Gov3). Reducing deforestation is a core objective of the mechanism (Gov1, Gov7, Par4). With the allocation of a concession, the government can limit or slow destructive activities while facilitating the management of sustainable forest practice (NGO4, Par4). One informant implied the benefits of reduced deforestation from the concessions will take time to materialize, in part owing to the barriers that remain in the "*large breach between the law and its implementation*" (NGO4). Despite no evidence, there is an indication of a positive change in knowledge and attitudes toward more sustainable forest practices by smallholders in San Martín if agroforestry activities can be both financially and ecologically beneficial (NGO2).	"*in the set of forestry law instruments, I think that one of the most important is the concession contracts because they directly work against the main driver for deforestation in the country, and furthermore it would create further benefits because it improves the supply of ecosystem services that contribute to the reduction of deforestation*" (NGO4) "*And people in San Martín have the right idea. They say, if I can keep growing coffee without having to cut forest, I'll keep the forest*" (NGO2)	L Too early to assess. There is no evidence owing to lag-time effects of the pilot and official AFCs, so effects on deforestation are not yet evident. However, informants believe the mechanism would support these objectives.
Regional governments & SERFOR	Interviews with government informants provided evidence that relevant policy-makers are beginning to understand the	"*That was to fulfill certain breaches in information for the plan, and it helped us in some ways because from there we got--what*	H

understand challenges of AFC implementation	challenges of AFC implementation from the perspective of the target beneficiaries (i.e., smallholders). SUCCESS played a key role in this by bringing local experiences and realities to the attention of the regional governments and SERFOR, which filled certain information gaps in the plan and its implementation. Before the SUCCESS Project, it was not known that the current regulations were not applicable and that regional governments were having trouble applying them (Gov1, Gov4, Gov5, Gov7). Informants from SERFOR demonstrated a broader understanding of the challenges of AFC implementation both for smallholders and regional governments tasked with the implementation of the national law (Gov1, Gov7). Regional governments expressed appreciation for ICRAF's research providing necessary technical information and clarity on how to implement AFCs in the field (Gov4). The regional government in San Martín is now implementing registration pilots to continue learning about challenges that smallholders face to ensure that the benefits of AFC implementation are realized (Gov4, NGO3).	*is it called--information that there are, that you have to distinguish different settlers*" (Gov1) "*I even heard about the concession contracts in a political speech. The subject stayed with him, and there is even a mandate to promote the issue from the regional government with no need of ICRAF or GIZ, but that is because the regional government* [San Martín] *now understands the importance of the subject*" (Par1) "[SUCCESS] *represented the process'* [AFC implementation] *spinal cord because if we didn't have that, darn, it would have been more complicated, we would not have the clarity in the field about how to do it*" (Gov4) "*they* [ICRAF] *supported us with the concepts because we struggled quite a bit to show the authorities why this* [plantation/farm registration] *was needed. So, we used their research to support our argument* [...] *Right now, it's a bit frozen because there is no one interested in actively working on it, but it is part of our working agenda. So, if someone arrives to take over that agenda, they will have input for the ICRAF issue*" (Gov8) "The pilot experience made it possible to identify some challenges. One of them was that the phase of the boundaries of the properties must be carried out in a participatory manner with local actors. The costs implied by this activity make it impractical for the Regional Government to be able to carry out the boundaries throughout the region. It is possible to establish alliances with local organizations (neighborhood associations, NGOs and district governments) to carry out this information survey that requires informing and sensitizing the producer families about the importance and implications of the CUSAF as well as organizing them and carrying out the field work" (Blog3)	Clear project contribution. All informants from the regional governments and SERFOR corroborate the achievement of this outcome and link contributions back to the SUCCESS Project.
Regional governments have a roadmap for effective implementation of technical guidelines	This outcome is supported by the achievement of the outcome pertaining to the understanding AFC implementation challenges. Conducting case study research, which brought information regarding on-the-ground realities and challenged assumptions held by the national government pertaining to the functionality of the regulations, served to enhance the regional government's understanding of the challenges of AFC implementation (Gov1, Gov7, NGO3). Moreover, regional governments were having trouble applying the guidelines in practice. ICRAF shared their findings that the guidelines were not applicable in their current state, what incentives could be	"*And also there was the issue of the SUCCESS project they had, that workshop where they took the key actors to discuss, show the findings of their research on why the guidelines are not so applicable and what are the incentives that should be granted, where is the potential, the zones where the agroforestry systems would work with the crops, so that for me was very interesting. That information has been incorporated directly in the plan. That is what was clearer to us about agroforestry systems in the country*" (Gov7) "*Yes* [information from the SUCCESS Project]*, crucial. As I*	H Clear project contribution. Regional government informants strongly suggested that the SUCCESS Project played a key role in

	granted, and where the potential lies for establishing agroforestry systems for particular crops (via zoning) (Gov1, Gov4, Gov7, Par2). According to a government informant, this information has been incorporated into a plan, but it is unclear which one (Gov7). As the SUCCESS Project's fieldwork was done by piloting implementation, governments were able to use ICRAF's experience and the information about the registration protocol's consolidation, which was well aligned with their goals (Gov4). This provided a framework for how to approach implementation. Through the project's engagements and piloting with regional governments, collaborative relationships were developed and shared knowledge that would function as key resources to guide the implementation of the technical guidelines (Gov4).	*told you it is like the dynamic's spinal cord. We wouldn't have been able to advance. Well, we would have moved forward but more slowly. The results in this region would not have been this year, maybe next year.* [The study's results] *helped us to have all that information in the protocol's consolidation because that was our goal. The field work: Phase 1, which is all about georeferencing; Phase 2, the community, agreements; Phase 3, creation of the community action board. That is what we have to thank the dynamic about*" (Gov4) "*Specifically, I can tell you that if ICRAF hadn't worked in concession contracts we would not have made any progress. What makes me sad is that the national authority should also be interested in this. But what also happens--and the National authority won't say this, but they don't have the capability to understand what a concession contract in the Amazon is, they still don't understand it. And the proof of their lack of understanding is the guidelines they came up with. We have enough input to* […] *present a modification that can open it or can generalize the issue of concession contracts*" (Gov8)	providing the information necessary for advancing AFC implementation.
Regional governments & SERFOR have capacity to identify AFC eligibility at the meso-level	SERFOR and regional governments have the responsibility to "*analyze and determine who is a legal tenant in the area, who can become one in a medium or short time, and who will never be one*" (NGO1). Identification of AFC eligibility has several technical, financial, and logistical components to determine where potential areas for agroforestry systems are located (via zoning) and whether potential beneficiaries in these areas comply with the requirements before a concession contract can be allocated (Gov1, Gov5). Informants mostly spoke to the capacity to identify eligibility. The meso-zoning methodological guide was approved in June 2016 and is reflected in the regulations, so government actors have the legal capacity to determine eligibility (Gov1, Gov5, Gov6). The pilots are being used to "*develop the protocols and procedures to extend* [zoning] *through the region*" (Gov4) and further develop capacity through experiences of applying zoning (Gov5). From SUCCESS, SERFOR and regional governments learned lessons on how to apply meso-zoning, created technical committees for zoning activities, and can prioritize where concessions can be allocated (Gov1, Gov5, Par1, Par2). To date, maps and ground-truthing have been conducted to verify areas identified through meso-zoning (Gov1, Gov3, Gov5, Gov6, NGO1, NGO4); while maps were easy to implement, field verification is more complicated in ensuring that there is	"*Now the agroforestry map is not necessarily the same as where the concession contracts will be granted. Because the issue of concession contracts, as the engineer commented before, to be able to grant them there is a period of time for the fulfillment of requirements* […] *So it is necessary to do more work* […] *every request has to be defined in detail*" (Gov5) "*if someone* [a farmer] *were to ask me, 'I want a concession contract,' then I have to see how to identify his area. So,* [he says] *he only has one crop, and the lady says that is called forestry, and this lady has had practice with fallowing, how do I identify that? A multi-temporal analysis has to be done, over time, to be able to decide, first of all if this person has been here since before 2011, and that can open the door for me to decide that I can give it to him*" (Gov1) "*The methodological* [zoning] *guide was approved 2016. June, 2016. From that date on, we started working with regional governments and channeling the technical cooperation to help in this process. And this is how it started and why San Martín and Apurina were the areas benefited by the cooperation, to be able to go through the entire zoning*" (Gov5) "*With the regulations we released a guide, which is being implemented. It's the operative aspect* […] *within the regulation* […] *that is that the mechanism for how a regional*	M/H Unclear project contribution. Comments reflect that regional governments have capacity to identify eligibility through zoning and determine fulfillment of requirements, which is evidenced by the implementation of pilots, which has been supported by SUCCESS Project findings. There are indications that SERFOR also has some capacity, but not to the same

	no overlap with pre-existing titled land (Gov8): "*there could be an overlap that compromises the legality of the subject. You might be affecting others, a third party*" (Gov5), so further capacity may need to be built in this regard. In determining potential beneficiary compliance with the requirements, regional governments have a "*need* [for] *an action protocol to see how it's characterized, and it has to be balanced with the methodology of zone determination*" (Gov1), indicating that this capacity is currently under-developed. NGO representatives perceived San Martín's regional government to have an advanced capacity to identify eligibility compared to SERFOR (NGO1, NGO4). One partner held the perception that regional governments and SERFOR lack capacity to produce certain information that would aid identification of eligible areas, indicating that they need support from other actors: "*One thing that has been clear to me is that they* [governments] *don't* [have the ability]*, which is precisely the reason we, the organizations, have to help them dedicate time, brainpower, and manpower to the research to give them this information*" (Par4).	*authority can handle someone's request when they come saying they need a concession contract* […] *It has to do with zoning*" (Gov1) "*zoning has advanced a lot* […] *with the recognition of the regional authorities to declare the importance of the zoning process regionally*" (Gov1) "*so they are working the betas* [zoning]*, and in the mountains, but I say that we don't know if we can apply that to the forests* […] *because there are other methodologies* [micro-zoning] *there as well* […] *which I tell you, they* [ICRAF] *gave us a frame*" (Gov1) "*We have already overcome the complexities in the pilots we have done* [to identify eligibility]*; we went from having nothing, to now having something, and that something can continue improving, but it is already there. So now, the new processes that come are going to start with an advantage based on the experience we have gathered*" (Gov5) "*Then there are a series of gaps there, because if the State doesn't have information about where the areas with potential are--where it would be possible to develop coffee, cacao, agroforestry systems --that gap has been identified, regarding not knowing what the most appropriate areas are. And in fact, ICRAF also has its own quantification about where the most potential areas are, more or less where they are, but it is something that the State should incorporate as information, as public data*" (Gov7)	extent as regional governments.
Regional governments recognize value of micro-zoning approach	Interviews with regional government and NGO informants indicate that regional governments recognize the value of micro-zoning as a means to provide necessary information pertaining to the land on which concessions will be granted (Gov4, NGO1, NGO4). Regional governments came to know about the micro-zoning methodology through participation in the Expo Amazónica, where ICRAF's approach was shared. Since then, regional governments have worked with more direction and have created a technical group (Gov4). NGOs also recognize the value and are interested in providing the necessary technical support for micro-zoning; they have supported the initiation of micro-zoning as part of the pilots in the San Martín region (Gov4, NGO1, NGO4).	"*We got involved with the engineers in agriculture, and we realized that it was related with the law, so we decided to move forward with a technical group and started working on the forest zoning. It* [SUCCESS Project] *has been the base for the cartography in the field*" (Gov4) "*I mean, the territorial political ecological zoning has to start from the bottom up. Rural development principles based on observation, guide you in that direction they tell you that all territorial planning must be from the bottom up; we have been able to adopt that methodology, because that will be useful for the ten provinces; in Mariscal Caceres and Lama, they are completely convinced about working with the community neighborhood boards, and we have to start from there, always explaining*" (Gov4) "*Then the cartography zoning is a limiting factor. If we had a clear forest zoning, a clear cartography observation the*	H Clear project contribution. Regional government informants made explicit statements pertaining to SUCCESS providing the basis for micro-zoning in the field and as a result are taking action to begin working on the forest zoning.

		concession contracts would be a matter of analysis of layers, and the observation of the actual use would be more practical; it's missing information and we have to build it, it is limiting" (NGO1) "*third is the micro-zoning which we have taken up as a pilot in two San Martín districts; the validation of how we can allocate the concession contracts and how we can monitor them. So we're in Alonso Alvarado for the case of coffee, in Pachiza for the case of cacao, and there we have coincided with field work that ICRAF did. Plus, in this short report, we have also coincided and shared common meetings, because we work with regions, for example, with in-house. That is, we are the support aspect, we do not do the project outside of the regional government, but from the inside*" (NGO4)	NGOs have also taken a keen interest in providing technical support for this initiative.
Regional governments use or adapt micro-zoning approach to identify eligible AFCs	Informants described the utility of the micro-zoning methodology for its multi-functionality to identify eligible areas, produce maps, provide detailed information at the farm-level, and support regional ordinance and management (Gov7, NGO4). There are conflicting responses of micro-zoning uptake, however, which may be the result of different familiarity with regional government activities amongst informants, and at times it is difficult to discern which form of zoning is discussed as different terminology is used (e.g., zoning, forestry zoning, agro-ecological zoning, special treatment zoning, etc.). Nonetheless, the SUCCESS Project is thought to have contributed to decision-making around the zoning process (Gov5). Regional governments have applied a form of zoning for the pilots, but it is unclear if this is the micro-zoning approach generated by SUCCESS (Gov1, Gov4, Gov5, Par4, NGO4). Two government actors conveyed that zoning had not yet been conducted (Gov2, Gov3). One NGO was under the impression that both the San Martín regional government and environmental regional authority have adopted and adapted micro-zoning (NGO1). Other actors like MDA have taken up the micro-zoning approach in their projects and pilots in San Martín, receiving direct support from ICRAF for these activities (NGO4). MDA has also integrated a small-scale mapping approach (related to micro-zoning) into their proposal to ARA for 14 additional pilots (NGO4). This is an indication that external uptake of micro-zoning approaches, by actors like MDA, have or will be used in collaborations with regional governments, so it can be concluded that regional governments have used micro-zoning to some extent.	"*The entry of the project was to develop maps of the estates at the small scale--the same as exists at a macro-level for the entire region--for every estate; to develop a technology to define what type of image to use, what type of information is going to be offered*" (NGO4) "*the micro-zoning component we have worked with the regional government directly, it has been able to establish itself as a priority in this pilot, which we call the Torrevento pilot for contracts of* […] *use, which we are furthermore probably going to complete in the month of August. This closes the allocation of some contracts in two zones to which I've referred, in Alonso Alvarado and Pachiza, which are the first at the national level*" (NGO4) "*we have been traveling to San Martín the last two or three weeks to present our small-scale map proposal. They have checked it and it looks good to them, and we're scheduling a meeting for a kind of handing over or training about the characteristics these maps should have, and how they can replicate them in other cases, and the next step. And this has pretty much been an agreement between both managers, the ARA and the economic development, for the preparation of the records for these pilot areas; there are about fourteen pilots*" (NGO4) "*so we started to work on that in parallel. I mean San Martín and Ucayali have been two regions where this was starting to be worked. Forestry zoning pilots. And you were also at a disadvantage in that the regional governments also changed authorities, and incoming governments changed all their public*	L Indirect project contribution. Zoning has been applied but commentary is unclear in specifying if this was micro-zoning; however, micro-zoning has been applied in San Martín pilots with the support of MDA (who adopted the approach and have promoted it in their own proposals with regional governments). The micro-zoning approach is not yet reflected in the guidelines.

	It is unlikely that the micro-zoning approach and methodology are reflected in the guidelines (Par4), but there is clear indication that micro-zoning has been applied in some of the AFC pilots currently underway in San Martín (Gov5, NGO4). The lack of a guide or manual is a noted reason why micro-zoning has not been adopted more widely (Par4). Testing of the micro-zoning approach in the current pilots may eventually support wider uptake and application of the method based off the experience of the pilots, and could possibly lead to reflection of micro-zoning in the guidelines.	*servants, so you had to start over. All those setbacks and complications*" (Par4) "*we decided to move forward with a technical group* [for the pilots] *and started working on the forest zoning*" (Gov4) "*Well, it's still in the development process, there was a pilot in Apurina, and a pilot in San Martín. Another pilot is about to start in Ucayali to finish the definitions; we need to decide how exactly we are going to define the agroforestry and silvo-pastoral categories* [for zoning]" (Gov5) "*And a third is the micro-zoning which we have taken up as a pilot in two San Martín districts; the validation of how we can allocate the concession contracts and how we can monitor them. So we're in Alonso Alvarado for the case of coffee, in Pachiza for the case of cacao*" (NGO4) "*No because like I have said, SERFOR and the regional governments started to prioritize, and we didn't advance until the zoning was done, advancing the zoning. We've seen that it's slow. Because there wasn't a manual either, no guide. And there wasn't any experience within the country*" (Par4)	
Regional governments develop AFC registration pilots & apply experiential learning	Several AFC pilots are currently underway. San Martín's regional government implemented ten pilots targeted for cacao and coffee producers (Gov1, Gov3, Gov4, Gov5, NGO1, NGO2, Par1, Res4), with additional pilots in preparation (Gov4, NGO4). Pilots in Ucayali are also in the preparatory phase (Gov5, Gov8, NGO1). Informants believed that the SUCCESS Project findings would be useful to support and inform pilots (Gov6, NGO3, Res4). Several informants shared evidence of ICRAF's and the project's contributions to the San Martín pilots, such as territorial planning, cartographic and geo-referencing information, micro-zoning approaches, technical advice, and community engagement approaches (Gov3, Gov4, Gov5, NGO2, NGO4). One government informant shared that ICRAF, SPDA, and SERFOR were in discussions of jointly running a pilot at one stage, but nothing manifested (Gov6).	"*from our side we are interested, at the pilot level, to be able to prove if the concession contracts are viable. How is it developing at this time, and for that purpose it is important to characterize the population that could have access to enabling titles*" (Gov6) "*And I do believe that it is really important to see how a pilot implementation works before we move into something more general. It is fine if within the pilot space you say that this is not a mechanism that will adjust to those people, or it is but it needs less of this or more of that. But the State is unable to do it, and then, what is best; maybe the best would be to exclude those hectares and to grant them a property title. It could be a radical idea, but we also have to see our limitations*" (Gov6) "*The objective of the pilots is to test, to create an experience of implementation or running the guidelines and see what happens, what's wrong*" (NGO4) "*with the regional government because our objective was to validate an instrument of public policy; I mean, like a pilot that can be used to identify the protocols that are going to be followed; therefore we were interested in doing it very clearly with the regional government which is the one that has the competencies to grant the enabling titles*" (NGO4)	H Clear project contribution. There is significant supporting evidence from a wide array of actors regarding the development of AFC pilots by the San Martín regional government with noted connections to the SUCCESS Project. There is some indication that there will be more pilots underway in San Martín and Ucayali.

"*that the pilots that we had have been applied by different entities, people. There are differences; it is different to talk about an area of jungle, and a mountain range; so we are trying to systematize all of this to be able to have the right methodology with the agroforestry map. To be able to apply it to the three areas, coast, jungle and mountain range*" (Gov5)

"*We started in 2016, it is almost in its final phase* […] *Special treatment zones and use concession pilots to develop the protocols and the procedures to extend through the region, and to do that we chose two chains: the cacao* […] *and the coffee value chain; coffee is in San Roque where the majority is in forest and conservation zones, and cacao in Mariscal Caceres and Guyabamba, which is also a forested zone*" (Gov4)

"*We, however, moved forward with concession contracts because there was already some preliminary input that they had helped us with, we did Roque with them, with the Mariscal Caceres technical experience that ICRAF had applied. To be able to organize the territory, we started with the communal neighborhood council's committees; all the territory planning started with ICRAF, they played a very important role in that process*" (Gov4)

"*we now have ten* [producers] *in Roque, and in Mariscal Caceres --by the way, with ICRAF* […] *I believe we have about thirteen that are ready to be handed their contracts*" (Gov4)

"*Well, it's still in the development process, there was a pilot in Apurina, and a pilot in San Martín. Another pilot is about to start in Ucayali to finish the definitions we need to decide how exactly we are going to define the agroforestry and silvo-pastoral categories. ICRAF has also participated in providing information from their own pilots*" (Gov5)

"*the micro-zoning which we have taken up as a pilot in two San Martín districts; the validation of how we can allocate the concession contracts and how we can monitor them. So we're in Alonso Alvarado for the case of coffee, in Pachiza for the case of cacao, and there we have coincided with field work that ICRAF did*" (NGO4)

"*After the presentation of results, I had a conversation with* [a SUCCESS researcher] *and with the SPDA; what I wanted was for SERFOR to know the results and use it as a starting point to look at the implementation of some kind of pilot*" (Gov6)

"*There was already participation from public functionaries and the regional government technical people in these pilots; they*

		gathered some information, registered people, provided some training about the process, and my understanding is that they wanted to consolidate concession contracts centered in two of the regions' main productive activities: cacao and coffee" (Par1)	
Regional governments & SERFOR recognize need to build smallholders' capacity to comply	As a core contribution of the SUCCESS findings, government actors learned that the requirements are not attractive and smallholders have varying capacities to comply, but this was perceived to be less understood at the national level (NGO4, Res2, Res5). This realization lead to discussions regarding smallholders' inability to comply with the requirements, which were recognized as a significant barrier to their registration (Gov2, Gov3, Gov6, NGO4). While the requirements are in place to protect and conserve degraded forested areas, an informant noted that they must be attractive and feasible for smallholders to maintain in order for the mechanism to achieve its objectives (Gov3). Addressing smallholders' capacity to comply was noted to be important because of the implications of raised costs to governments if eligible beneficiaries are dispersed across the region (Gov2). The interviews demonstrated that government actors have reflected on components of the requirements that obstruct smallholders' compliance, such as the payment for the right to benefit, lack of regulatory and technical knowledge, and restrictions placed on production or deforestation, to name a few (Gov2, Gov6, NGO4). One informant confirmed that SERFOR recognizes the need to understand smallholder realities and capacities, and infers that SERFOR's policy directorate is taking some form of action, but did not clarify what or how (Gov1). Another government informant reflected that training would need to be given to smallholders to build their capacities to sustain their compliance with the contact requirements, noting it as the logical next step for regional governments to pursue (Gov2). Two informants noted that governments should develop incentives for smallholders to register, recommending financial or technical incentives that would support smallholders' capacities to comply (Gov5, NGO4).	"*The law establishes that if you are determined as* oficio*, you not only have to determine the area, you have to develop a process of capability building for that area, and in that process the farmer will decide if they want or don't want a concession contract;* […] *they are not necessarily all under the obligation to accept a concession contract because an area has been determined*" (Gov2) "*in general, ICRAF says that use concessions aren't attractive. The issue is to identify the specific points that need unscrambling, to make it attractive while still being a tool able to control the agricultural practices and reduce deforestation*" (Gov3) "*it is important to look at the mechanism more closely, to see about the implementation. It is a little bit complicated because the regulations have certain technical requirements that I am not that sure the people receiving the enabling titles have the capacity to fulfill. I am also not that sure that they have the finances to do it. Because the issue is that they don't have the technical advice, they don't have many elements that could allow them to access the rights. To go from a position of no payment to one of payment. Those are key elements*" (Gov6) "*the coffee grower doesn't cut trees because he is mad at them, it's because of his economic situation; so if that doesn't change the situation remains critical and that understanding isn't there at the national level*" (NGO4) "*part of the policy directorate is to clarify this* [social realities of smallholders and capacities] *because we can't be empowering people in something and down the road they say no, 'the cooperation has helped me with this, and the State also told me, and now it says I have no right.' So caution must be taken*" (Gov1) "*the concession contracts imply that people will have to produce more in the same area and not continue with business as usual, that is to say, keep deforesting to increase production. It implies that other instruments are needed, incentives so that people can meet their goals effectively*" (NGO4)	M Clear project contribution. Partial achievement as comments indicate that regional governments and SERFOR are aware that smallholders face different capacities to comply with AFC requirements, but there is little evidence to suggest they recognize their role in building smallholders' capacity in this regard.

		"*the main purpose at the end of the project was to understand what does it mean to implement this mechanism, like, who can access to the mechanism? I mean, in terms of the technical requirements which are part of this mechanism, to really see* […] *if I laid all of the different variables that are required compared to the reality of the farmers that are part of the study case, and* […] *from all these requirements already set in the legislation actually, this, this, and this are already working, so farmers already are fulfilling these requirements, but some of them are, or a big number are not fulfilling this, this, and this. So this actually* […] *could help the authority to make a proper decision or to develop proper strategies for when they will implement this*" (Res5)	
Regional governments & SERFOR develop better AFC policy	Several informants recognize the need to modify and improve the current set of guidelines, proposing that more studies and pilots can identify issues and inform revisions before the mechanism is implemented at a large scale (Gov3, NGO3, NGO4, Par2). ICRAF provided direct feedback on the draft guidelines, but no changes were reflected once the guidelines were published (Res1). The SUCCESS findings were thought to be a useful study to inform revisions (Gov1, Gov3, NGO3, NGO4, Par4, Res3), because of the applicability of the findings in addition to ICRAF's active involvement in the topic and as a producer of scientific evidence (Gov2, Gov3, Gov7, NGO1, NGO2, NGO3, NGO4, Par4). SUCCESS findings were shared with SERFOR with the intent to better inform the guidelines. As a result, informants indicated that SERFOR now understands the need for more data in order to better apply and regulate the AFC mechanism; while SUCCESS has influenced SERFOR specialists' understandings regarding revisions, this has not occurred at the director level (Gov1, Gov7, Par4). To date, the guidelines have not been revised (Gov3, Gov7, NGO2, NGO3, NGO4, Par3, Par4, Res1), but modifications have been proposed (Gov3, NGO3). SERFOR has made a request to SPDA to prepare recommendations for revisions using SUCCESS findings, which indicates that SERFOR plans to improve the guidelines from their current form (NGO3).	"Interviewer: *The possibility of making modifications…* Interviewee: *It's necessary* […] *So in the reading of the norms, one sees that, no, it is still illegal. Later on we can see about the guidelines; but first, changes must be made to the regulations*" (Gov3) "*we need a little more evidence. Maybe to be clearer about the changes that need to be made, to bring the regional governments, who are the ones that need to apply, implement, to say what the difficulties that they have are, and for the regional governments talk about it in a broader space*" (Gov7) "*But I think that clearly the guidelines need to be reformed, improved but based on the evidence, not on opinions of experts, but on evidence*" (NGO4) "*The use concessions were done thinking about coffee growers; this is Peru. The mistake we made at the time was to articulate the issue only thinking about one sector but the issue is broader; what happens with lower elevation jungle where similar processes are happening but with much more adverse conditions for the environment, or with people who are being backed up by unknown capital*" (Gov3) "*So what is going to happen with these studies--and it is important that they do them and the pilots--are what will provide feedback and corrections*" (NGO4) "*we met with ICRAF for the presentation of their preliminary results. They also told us they were meeting with SERFOR about the guidelines. That's why I told you that their work was more about the guidelines than at a regional level*" (Gov2)	L Preliminary results indicate potential for achievement with clear project contributions Most commentary discusses this potential, but there is no evidence to support that better or improved guidelines have been developed as no revisions have been made.

		"*it* [SUCCESS findings] *has allowed us to define some things that we have in the norms*" (Gov1) "*Well, I think that results on the issue of guidelines, it is unclear what has been the substance based on evidence*" (NGO4) "*At the SERFOR level, however, things would be the same as now because nothing has happened, it's all the same. But I think that it will change when we need to debate over the need to modify the guidelines, because the guidelines have not been discussed. It's necessary but we haven't gotten there yet*" (Gov3)	
MINAM presents AFCs as mechanism to achieve national climate change commitments	Informants note that there is an existing high degree of commitment to and prioritization of climate change by MINAM and MINAGRI (Gov3, Gov4, NGO3, Res1, Res2). There is a reference to agroforestry systems in Peru's national commitments to reduce the effects of greenhouse gas emissions (Doc10). NDCs put forward by MINAM (Gov3, NGO3). By providing a quantification of potential greenhouse gas reductions, the project supported arguments that AFCs are an effective mechanism for achieving climate change commitments.	"*So, at least we know--from what occurs to me--at least we know we can quantify the potential reduction in emissions, or adequately implement these forestry concessions. At least now I can say there are priority implementation zones, so I can actually say two things. We can prioritize; we can quantify the amount of beneficiaries*" (Par2) "*Well, we are interested in agroforestry as a way to mitigate and adapt to climate change. And concession contracts in agroforestry systems are a tool that allow this adaptation and mitigating measure. If they are not current, although they are technically appropriate, we would be working with people in illegal possession of land, and the State can't work against the State*" (Gov3) "*Because the MINAM formula, from the time I was hired I was here every day. And that worked to empower the theme within the area, the same as how SERFOR does it, or did. Because as a director I am also interested in having more people helping me, and it also works to make connections with the Agrarian directorate, the Livestock directorate, with the agrarian statistics, with SERFOR, with everyone. So I took the climate change mitigation message to the everyday sector activities. So right now the livestock director general looks for my director general to see what can be done and my director general pulls his ear and tells him you have to go to the meetings about how to reduce emissions, about* friaje [frosts]*, about the alpacas, and who knows what else. Because the message is getting there, and that is our day to day, and it is perfect. The livestock functionary will leave, my director will go, the Minister will leave, and I will leave as well; we are all going to leave, but the specialists remain, and when you have one or two--which is not a lot--in several directorates, they push forward and the projects begin to show up*" (Gov3)	M Clear project contribution. Other actors provide indication of outcome achievement; however no interviews were conducted with MINAM, which would have supplemented key information pertaining to the project's contribution to this outcome achievement.

		"*It* [AFCs] *is also on the agenda of some management tools; if you look at the national forestry and the climate change strategies, you will feel it. You will feel that there is a tool, there is not only talk of indigenous concession contracts, but rather you can feel that they are also thinking about these other tools, even in NDC's plan* [*contribuciones nacionales determinadas*, national climate target commitments to reduce greenhouse gas emissions] *that we reviewed not too long ago, there is also a reference*" (NGO3)	
Regional governments recognize AFC mechanism could support DCI Joint Declaration	Informants from the regional government did not share information pertaining to this outcome; however, other informants did. In sharing details of DCI's objectives to "*create enabling conditions* [and] *attack the indirect causes of deforestation*" (Gov7), one informant indicated how DCI is aligned with the AFC objectives to reduce deforestation without reauthorizing forests as agricultural zones (Gov7). Others noted agroforestry and SUCCESS Project alignment to support DCI activities, particularly for deforestation (NGO1, NGO2, NGO3, Par2). One NGO informant specified that AFCs are a powerful mechanism to "*break the inertia*" (NGO3) around deforestation and support carbon emissions reduction targets. SUCCESS findings were shared with DCI, and one informant noted the utility of the Project's 400 thousand hectare estimation for agroforestry system potential (Gov7), which could achieve half of DCI's goal to limit the amount of unregistered forests (NGO2). SUCCESS findings also supported DCI's framing in their strategy plan for sustainable coffee and cacao productivity and linkages for small producers to enter formal commodity chains (Gov7, Par2).	"[DCI's] *goals are related to strategies to reduce the illegal authorization of change in use. It has to do with fine tuning the studies of the drivers of deforestation, what causes deforestation and the degradation of the Peruvian Amazon. It has to do with reducing the area of non-categorized Amazonia. I mean, what isn't* [categorized], *isn't an ANP* [protected national area]*, isn't an indigenous reserve, does not have a property title or an enabling title*" (Gov7) "*So, the scientific evidence we found is that a lot of agroforestry systems--and a lot of the evidence has to do with what ICRAF has been generating as scientific evidence--that a sustainable practices to improve productivity are not necessarily related--well, there are a variety of techniques, one sustainable with coffee and cacao, the best one had to be agroforestry systems. So, that was like the main strategy that we have placed in the plan to work with the small producers. Mainly to access technical assistance about agroforestry systems for coffee and cacao, and silvo-pasture systems for cattle raising*" (Gov7) "*during the SUCCESS program--in the framework of the joint deforestation declaration--ICRAF is involved in the design of the frame for coffee and cacao*" (Par2)	L Preliminary results indicate some project contributions. There is no evidence given by regional governments, but other actors in the system recognize AFC alignment with the DCI joint declaration. There is clear evidence that DCI's framing has been influenced by the SUCCESS Project.
National Plan allocates resources for land titling	There is no evidence to suggest this outcome was achieved. Titling is recognized as an important part of AFC discussions (Gov7, Par4). Land titling and issues of illegality act as incentives for regional governments to support AFCs as zone allocation determines the type of title that can be given (Gov7). DCI has allocated funding for land titling to regional governments (Gov7), but there is no evidence indicating funding or other resources have been allocated through the National Plan to date. One partner shared that GGGI contributed forest economic analyses to the framework for the national forestry plan, but it is unclear if this analysis was related to land titling (Par2).	"*one issue has to do with the titling processes because to title you still have to first classify the land use, so this leads you to interact more with the directorate of environmental or agrarian affairs who see to the classification of land*" (Par4) "*Now, for example,* [SERFOR has] *been approved for a budget increase to be executed in three months, but we'll only get* [the funds] *six months after* [approval]. *So this is critical for us, we can't fulfill our practice*" (Gov1) "*And obviously the rigor of the research--but of course, I think that since it is difficult for ICRAF to see how it proposes and grounds its results* [in] *something that works for the government in its application of these public policies--it's the*	L No evidence of achievement.

		same for the State. The investigations seem super interesting, but what can I do? Perhaps the closest thing was what we tried to do with GGGI. That GGGI asked--okay, take their research, but ground it in a national plan, like they incorporated it into a national plan" (Res2)	
Local & regional NGOs support AFCs	This outcome was achieved with a clear contribution of the project. The project engaged and depended on NGOs to build rapport with communities in San Martín, but these engagements had wider benefits beyond easing implementation of the project (Res1, Res3). The attitude shift among local and regional NGOs toward interest and support for AFCs was observed, and also illustrated by new action on the subject from NGOs like SPDA. The latter draws a direct connection with the project, as one informant notes that in the absence of ICRAF, SPDA would not work on the topic (Gov1, NGO3). That being said, the research demonstrated a clear connection between the opportunity to develop the mechanism and objectives that NGOs were already supporting in their work, such as reforestation, climate change, and livelihood improvements. Conservation NGOs in San Martín already had an interest in agroforestry systems, reforestation, tenure rights for legal product commercialization, and contextually appropriate regulatory reform, all of which can be supported by the effective implementation of AFCs (NGO1, NGO2, NGO4). As AFCs were presented as a mechanism to address the related issues that these organizations already valued and were working on likely made it easier to garner support. Conservation NGOs with municipal government and producer association contacts were therefore key allies in the research process to secure long-term implementation of the mechanism (Res1, Res5).	"*It's complicated because the guidelines were developed and nothing more was done. My perception is that it was left there waiting for someone interested in it to arrive, and maybe for lack of information about the procedure, the truth is that there was not much of an answer. The NGOs showed more interest. Let me tell you, not as a director, but I am one of the creators of that device while in another NGO. In fact, and just by chance this is one of the documents that supported the norms*" (Gov3) "*So the important issue there is the presence of institutions like ICRAF that allow the State to pay attention to a tool with an important potential, and at the same time to move the wheels despite the interest of the State. So when you ask me what would have happened without ICRAF, well, probably I wouldn't even be involved in the subject*" (NGO3) "*I believe that there are a lot of people who are interested* […] *NGOs show interest depending on what you are managing at the time* […] *when you show management and a product it aligns to, I think it will proceed*" (Gov8) "*If someone want to go back to the concession contracts they will not be starting from zero, there is a lot of information and a lot of people interested in concession contracts. Specifically, I can tell you that if ICRAF hadn't work in concession contracts we would not have made any progress*" (Gov8) "*It is not so much PUR Projet, it is mostly the organizations that coordinate and collaborate with PUR Projet; we are talking about FUNDAVI, Oro Verde from Acopagro that have gotten involved in the subject and have been invited. And as part of the technical team they have been financed by PUR Projet for the subject of reforestation, participating as well. They are the ones that said, 'we can legalize, we can work on the producer's formalization'. With these activities, what was done was to promote the pilots; people said, 'Let's do the pilots that have been working in San Martín here.' We are talking about Lugo and Pachiza from the Alto Guayabamba; Tina Papu, Mariscal Casas these zones are pilots for the first implementation of concession contracts*" (NGO1)	M Clear project contribution. There is limited evidence of this for Ucayali, however, there is strong evidence from San Martín that suggests this outcome was achieved.

Producer associations maintain territories of AFC smallholders against encroachment of other groups who use poor/worse practices	It is too early to determine whether producer associations will take on this role; this would likely only occur once the AFC contracts are allocated and smallholders establish their activities. The only commentary made regarding producer associations identified them as a relevant actor group for the supporting role they play for smallholders (NGO3). It should be noted that producer associations were not interviewed for the evaluation.	"*farmers and the farmer's organizations are also important. I mean, people in the field*" (NGO3)	L There is no evidence to suggest the outcome was achieved.
New relationship & mutual interest recognized between ICRAF, GGGI, & SPDA	This outcome was achieved with a clear contribution of the project. Increased support for AFCs by NGOs, in particular by SPDA, was driven by the alignment of interests in reducing deforestation (NGO3). ICRAF's working relationship with GGGI through the initial consultancy about drivers of deforestation played a key role in building working relationships and recognition (Par2). SPDA and GGGI noted that their engagement in work on the topic was a direct result of the SUCCESS Project (NGO3, Par2). ICRAF, GGGI, and SPDA recently entered a partnership around AFC promotion (Doc2). Convening diverse actors and opening space for communication were recognized as good strategies to facilitate the recognition of mutual interests, strengthen working relationships, and align objectives (NGO3). This is illustrative of a new commitment and working arrangement that came out of interactions among these actors within the frame of the SUCCESS Project to continue work on AFC implementation.	"*We never thought we were going to be having these kinds of meetings* […] *or that we're going to have these very close, highly strategic relationships with SPDA, for instance*" (Res7) "In Peru, GGGI collaborates with ICRAF and SPDA and supports the Government of Peru in strengthening policies to improve livelihoods of vulnerable, small-scale farmers living at the Amazon frontier. GGGI and partners are currently finalizing a proposal to Norway's International Climate and Forest Initiative (NICFI) which focus on implementing the Agroforestry Concession scheme (AfC), which would provide a contract for 40 years to thousands of untitled farmers currently encroaching the Peruvian Amazon. Detailed legal procedures and guidelines established in 2017 will be piloted in 3 regions and if successful, incentives will result in 125,000 smallholder families transitioning from agricultural practices that drive deforestation to agroforestry systems and zero deforestation practices" (Doc2)	H Clear project contribution. Interviews were conducted with representatives from each organization and proposal documentation all corroborated the achievement of the outcome.
GGGI utilize ICRAF study results in their engagements with MEF around AF & the Peruvian Green Growth Strategy	Only two informants provided information related to this outcome (Par2, Res2). There is some indication that the SUCCESS Project findings have been shared with MEF (or attempted to be), but the sharing actor is unclear. As green growth is a priority for Peru, several actors – including GGGI – work to support government ministries like MEF to develop and implement relevant policy (Par2). One of MEF's strategies for green growth is through formalization. One of the researchers, who joined MEF following the project, fed input regarding AFCs as a potential formalization strategy for green growth that was being developed (Res2). There is some possibility that the SUCCESS findings were used as the researcher worked directly with AFC impact on climate change data, but this was not confirmed by the interviews. However, it is unclear as to whether MEF views AFCs as a potential mechanism to provide formalization in support of green growth. The SUCCESS Project attempted to work with MEF,	"*the issue of green growth, green growth is everything, and it's one of those things that would be a priority*" (Res2) "*everything I was mentioning but now we're* [GGGI] mostly [working] *with MEF*" (Par2) "*when I started,* [a MEF colleague] *was developing a formalization strategy for the Peruvian economy, and I included the issue, we were able to get the issue included not as a use concession, but as a concession you can talk to SERFOR, you can talk to Agriculture, but at MEF you can't speak about use concessions. They're about formalization, every aspect of formalization, but only if they manage to understand*" (Res2) "*But it* [might have] *reverberated there* [Green Growth] *obviously, economic growth versus environmental issues, so it ended up getting diluted*" (Res2)	L Preliminary results indicate indirect project contribution. There is some indication that SUCCESS findings have been shared with MEF, but it is unclear through whom.

	but encountered barriers (Res2). Overall, there was a perception that "*diluted*" (Res2) SUCCESS findings may be included in the Green Growth Strategy, inferring that findings were shared in this forum to some degree, but it is unclear if findings were shared by ICRAF, GGGI, or other actors.		
New research questions emerge	Informants described new areas of possible research inquiry by highlighting areas where information is lacking. In particular, the need for longitudinal data (Gov1), point-by-point analyses of the guidelines to determine solutions (Gov3, Par2), the effects of agricultural intervention on forest land and growth dynamics of agroforestry systems (Gov4), econometric studies about production chains (Par1), and cost-benefit analyses of formalization from the perspective of smallholders (NGO1) were highlighted. One NGO suggested replicating the SUCCESS study in different areas, calling for a more participatory case study research approach that would collaborate with SERFOR and NGOs to thoroughly study the actors in agroforestry systems to learn about what is and is not working (NGO3). One partner suggested the need to develop research mechanisms that support AFC implementation that can generate indicators and monitoring mechanisms, and identify which incentives to grant under which conditions (Par1). These research lacunae may be the result of a lack of research on the topic or a lack of effective sharing of information, but nonetheless provide an opportunity for ICRAF to generate relevant knowledge on the topic in the future. Moreover, it is indicative that ICRAF succeeded in raising awareness and attention to an issue that was relatively poor in data and information.	"*I think it is necessary to have a point by point analysis of the guidelines to modify what needs to be modified--I don't know if ICRAF's study recommendations are that specific. But if ICRAF is not specific enough, we need to do that work with SERFOR's people*" (Gov3) "*We would like a basic research about agricultural intervention in forest land, what is the growth dynamics. For example, some are already purmas* [*purmas* are the equivalent to secondary forests] *how much has the forest ecosystem been affected --wood and species. We need this information to be able to generate sustainability. Do we have a forest with an economic potential in environmental service or does it have an economic potential in timber or medicinal. It would be nice if ICRAF could put together a study of the economic value of those processes; that would be excellent because we would have more tools to design the interventions--in the social sector a health post, a road--with those conditions we would know the entire forest space value exactly, right?*" (Gov4) The peer-reviewed article (Robiglio & Reyes, 2016) has three citations: Sears et al. (2018); Santos et al. (2019); and van Noordwijk (2019).	M Unclear project contribution. Many informants commented on new research questions needing attention, but did not make explicit connections to the findings and what questions are raised as a result. Academics are also citing the peer-reviewed article.
New research develops indicators to determine smallholders' compliance with AFC requirements	To date, no new research has produced indicators to determine smallholders' compliance with the concession requirements. However, a partner identified that understanding of AFC indicators are a present gap that would otherwise move the mechanism forward (Par1), conveying that research on indicators could better identify potential beneficiaries, inform more responsive implementation of the contracts, or improve monitoring of the concessions over time. Identification of this knowledge gap gives validity to the relevance of this outcome. It may be too early to observe evidence of this outcome, as research pathways typically experience time lags.	"*The conditions are set; the guidelines give us the percentage of forest and the percentage for agricultural area for the agroforestry systems, but what is lacking is the development a research mechanism to implement the concession contracts that could generate indicators or monitoring mechanisms for each particular concession*" (Par1)	L There is no evidence to suggest that new research has been initiated to develop indicators of smallholder AFC compliance.

Appendix 10. References

Belcher, B., & Palenberg, M. (2018). Outcomes and impacts of development interventions: Toward conceptual clarity. *American Journal of Evaluation, 39*(4): 478-495.

Belcher, B. (2017, January 12-13). *Evaluation with and evaluation of ToC: Lessons from FTA*. Invited presentation to CGIAR Independent Evaluation Arrangement Symposium on Use and Evaluation of Theories of Change, Rome.

Belcher, B. M., Rasmussen, K. E., Kemshaw, M. R., & Zornes, D. A. (2016). Defining and assessing research quality in a transdisciplinary context. *Research Evaluation, 25*(1): 1-17.

Cairney, P. (2015). Paul A. Sabatier, "An Advocacy Coalition Framework of Policy Change and the Role of Policy-oriented Learning Therein". In M. Lodge, E. C. Page, & S. J. Balla (Eds.), *The Oxford Handbook of Classics in Public Policy and Administration* [Online]. https://doi.org/10.1093/oxfordhb/9780199646135.013.24

Cairney, P., & Jones, M. D. (2016). Kingdon's Multiple Streams Approach: What is the empirical impact of this universal theory?. *Policy Studies Journal, 44*: 37-58.

Coe, R., Sinclair, F., & Barrios, E. (2014). Scaling up agroforestry requires research 'in' rather than research 'for' development. *Current Opinion in Environmental Sustainability, 6*: 73-77.

Earl, S., Carden, F., & Smutylo, T. (2001). *Outcome mapping: Building learning and reflection into development programs*. Ottawa, Canada: International Development Research Centre.

Forss, K., Marra, M., & Schwartz, R. (Eds.). (2011). *Evaluating the Complex: Attribution, Contribution, and Beyond* (Vol.1). New Jersey: Transaction Publishers.

Halimanjaya, A., Belcher, B., Suryadarma, D. (2018). Getting forest science to policy discourse: a theory-based outcome assessment of a global research programme. *International Forestry Review, 20*(4): 469-487.

ISPC. (2017). Quality of Research for Development in the CGIAR Context, Brief N.62. Rome: Independent Science and Partnership Council.

Mayne, J. (2001). Addressing attribution through contribution analysis: Using performance measures sensibly. *Canadian Journal of Program Evaluation, 16*(1): 1-24.

Mayne, J. (2012). Contribution analysis: Coming of age?. *Evaluation, 18*(3): 270-280.

Mitchell, C., Cordell, D., & Fam, D. (2015). Beginning at the end: The outcome spaces framework to guide purposive transdisciplinary research. *Futures, 65*: 86-96.

Nelson, R., Coe, R., and Haussmann, B. I. G. (2019). Farmer research networks as a strategy for matching diverse options and contexts in smallholder agriculture. *Experimental Agriculture, 55*(S1): 125-144.

Scholz, R. W. (2000). Mutual learning as a basic principle of transdisciplinarity. In J. Thompson Klein, W. Grossenbacher-Mansuy, R. Häberli, A. Bill, R. W. Scholz, & M. Welti (Eds.), *Transdisciplinarity: Joint Problem-Solving among Science, Technology and Society* (pp.13-17). Basel, Switzerland: Birkhaüser Basel.

Sinclair, F. & Coe, R. (2019). The options by context approach: A paradigm shift in agronomy. *Experimental Agriculture, 55*(S1): 1-13.

Vogel, C., Moser, S. C., Kasperson, R. E., & Dalbelko, G. D. (2007). Linking vulnerability, adaptation, and resilience science to practice: Pathways players, and partnerships. *Global Environmental Change, 17*: 349-364.

Wooden staircase in the Maya Biosphere Reserve (MBR) in Petén, Guatemala. Photo by FTA/PIM.

The CGIAR Research Program on Forests, Trees and Agroforestry (FTA) is the world's largest research for development program to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. CIFOR leads FTA in partnership with ICRAF, the Alliance of Bioversity International and CIAT, CATIE, CIRAD, INBAR and TBI.

FTA thanks all the donors who supported this research through their contribution to the CGIAR Trust Fund: cgiar.org/funders/

CIFOR · World Agroforestry · Alliance Bioversity International CIAT · CATIE Solutions for environment and development Soluciones para el ambiente y desarrollo · cirad La recherche agronomique pour le développement · INBAR International Bamboo and Rattan Organisation · Tropenbos International

CGIAR RESEARCH PROGRAM ON Forests, Trees and Agroforestry

foreststreesagroforestry.org
cgiarforestsandtrees@cgiar.org
@FTA_CGIAR
foreststreesagroforestry