

Resource and Case Studies Booklet



Supplement to *Toward a Holistic Approach to Sustainable Development: A Guide to Integrated Land-Use Initiatives*

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Abbreviations

AHADI	Agile and Harmonized Assistance for Devolved Institutions
BioCF	BioCarbon Fund
BMZ	<i>Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung</i> (Federal Ministry for Economic Cooperation and Development) (Germany)
BSM	Benefit Sharing Mechanism
CACILM	Central Asian Countries Initiative for Land Management
CAPRI	CGIAR Program on Collective Action and Property Rights
CIFOR	Center for International Forestry Research
EDF	Environmental Defense Fund
EXACT	Ex-Ante Carbon-balance Tool
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FFF	Forest Farm Facility
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIS	Geographic Information System
GIZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH</i> (German Corporation for International Cooperation) (Germany)
GLOBIO	Global Biodiversity Model for Policy Support
GLTN	Global Land Tool Network
ICARDA	International Center for Agricultural Research in the Dry Areas
ICMS	<i>Imposto sobre Circulação de Mercadorias e Serviços</i> (Brazil)
ICMS-E	<i>Imposto sobre Circulação de Mercadorias e Serviços Ecológico</i> (Brazil)
ICRAF	World Agroforestry Centre
IIED	International Institute for Environment and Development
IFPRI	International Food Policy Research Institute

ILC	International Land Coalition
IMAGE	Integrated Model to Assess the Global Environment
INSPIRE	Infrastructure for Spatial Information in the European Community
InVEST	Integrated Valuation of Ecosystem Services and Trade-offs
ISA Carbon	Environmental Service Incentives for Carbon (State of Acre, Brazil)
ISFL	Initiative for Sustainable Forest Landscapes
IUCN	International Union for Conservation of Nature
Kagera TAMP	Kagera Transboundary Agro-ecosystem Management Project
LADA	Land Degradation Assessment in Drylands
LAFF	Landscape Assessment of Financial Flows
LIFT	Landscape Investment and Finance Tool
LPS	Landscape Performance Scorecard
LUMENS	Land-Use Planning for Multiple Environmental Services
M&E	Monitoring and evaluation
MEL	Monitoring, evaluation, and learning
MESH	Mapping Ecosystem Services to Human Well-Being
MOSAICC	Modelling System for Agricultural Impacts of Climate Change
MRV	Monitoring, reporting, and verification
MSE	Multistakeholder engagement
MSP	Multistakeholder platform
NGO	Nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
OSILP	Orinoquía Sustainable Integrated Landscape Program
PES	Payment for Ecosystem Services
PSAH	Payment for Hydrological Environmental Services
REDD	Reducing emissions from deforestation and forest degradation
REDD+	Reducing emissions from deforestation and forest degradation in developing countries, and fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks

REM	REDD Early Movers
ROOT	Restoration Opportunities Optimization Tool
SDGs	Sustainable Development Goals
SHARED	Stakeholder Approach to Risk-Informed and Evidence-Based Decision making
SISA	State System of Incentives for Environmental Services (Brazil)
SKEP	Succulent Karoo Ecosystem Programme
SLM	Sustainable land management
TECA	Technologies and practices for small agricultural producers
TNC	The Nature Conservancy
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WOCAT	World Overview of Conservation Approaches and Technologies
WWF	World Wide Fund for Nature
ZIDRES	Zonas de Interés de Desarrollo Rural Económico y Social (Zones of Interest for Economic

All dollar amounts are U.S. dollars unless otherwise indicated.

How to Use This Booklet

This booklet is a companion to *Toward a Holistic Approach to Sustainable Development: A Guide to Integrated Land Use Initiatives*, produced by the BioCarbon Fund (BioCF) Initiative for Sustainable Forest Landscapes (ISFL). The full *Guide* takes stock of lessons learned, documents best practices from a range of integrated land use initiatives, facilitates knowledge sharing, and provides a handbook for practitioners who are looking to implement this approach. Analysis of these initiatives is offered through the lens of eight themes identified as being most significant to the success of these initiatives: multistakeholder engagement (MSE); environmental focus; economic focus; boundary setting; land tenure; financing strategies; monitoring, evaluation, and learning (MEL); and cross-sectoral coordination. *The Guide* can be accessed at <https://www.biocarbonfund-isfl.org/knowledge-center>.

This booklet provides a practitioner-focused toolkit, offering resources and tools related to each theme and presenting a compendium of case studies to illustrate best practices. This resource is meant to show how integrated land-use initiatives have worked in practice and provide practitioners with the tools necessary to adapt the lessons and approaches presented in the *Guide* to the specific needs of the people and landscapes with which they work.

Resources and tools by theme

General

Landscape Approach 101

This self-paced course was developed by the World Bank Group to give practitioners an overview of the Landscapes Approach.

Available at: <https://olc.worldbank.org/facilitated/link/00018381>

The Little Sustainable Landscapes Book

This guide to sustainable landscapes was produced in collaboration with the World Wide Fund for Nature (WWF), EcoAgriculture Partners, The Nature Conservancy (TNC), IDH The Sustainable Trade Initiative, and The Global Canopy Programme.

Authors: Louisa Denier, Sara Scherr, Seth Shames, Paul Chatterton, Lex Hovani, and Nienke Stam

Available at: <https://globalcanopy.org/insights/publication/the-little-sustainable-landscapes-book/>

Multistakeholder Engagement (MSE)

The Landscape Approach for Sustainability in African AgriBusiness Partnerships: Partnerships That Support Excellent Companies, Communities, and Ecosystems

This booklet, published by EcoAgriculture Partners, helps promote engagement between business and landscape leaders in Africa.

Authors: Lee Gross and Louis Wertz

Available at: <https://ecoagriculture.org/publication/landscape-approach-sustainability-african-agribusiness/>

The MSP Guide: How to Design and Facilitate Multi-Stakeholder Partnerships

This guidebook, developed by Wageningen University, draws on theoretical foundations and practical knowledge to guide practitioners through fostering multistakeholder partnerships.

Authors: Herman Brouwer, Jim Woodhill, Minu Hemmati, Karèn Verhoosel, and Simone van Vugt

Available at: <http://www.mspguide.org/msp-guide>

Public-Private Dialogue (PPD) Stakeholder Mapping Toolkit: A Practical Guide for Stakeholder Analysis in PPD Using the Net-Map Method

This guidebook was developed by the World Bank Group to guide practitioners through the process of stakeholder analysis using the Net-MAP method to: design dialogue platforms and identify stakeholders; create a dialogue element for an existing project; ensure the right participants are involved; facilitate dialogue to better understand obstacles to reform related to political economy; bridge divides between partners; create strategic reform communications plans; build stakeholder knowledge and capacity to catalyze reform.

Available at: <http://documents1.worldbank.org/curated/en/842721467995900796/pdf/106395-WP-PUBLIC-PPD-Stakeholder-Mapping-Toolkit-2016.pdf>

SocNetV: Social Network Analysis and Visualization Software

This open-source tool helps practitioners undertake social network analysis. The tool allows practitioners to draw social networks, load field data, and analyze network properties.

Available at: <https://socnetv.org/>

Stakeholder Approach to Risk-Informed and Evidence-Based Decision Making (SHARED)

The SHARED methodology was developed by the World Agroforestry Centre (ICRAF) to help policymakers build robust multistakeholder partnerships. SHARED has been designed to produce tailored, cross-sectoral, multistakeholder engagement structures for resolving power asymmetries, building trust, and fostering collaboration. Some of its key services include developing and implementing stakeholder and sectoral engagement processes, undertaking thematic research synthesis, and building capacity for data assimilation and interpretation to enable decision making.

More information available at: <https://www.worldagroforestry.org/shared>

Who Counts Most? Assessing Human Well-Being in Sustainable Forest Management

The Center for International Forestry Research's (CIFOR) stakeholder evaluation tool is based on seven factors: proximity to forests, pre-existing rights, dependency, Indigenous knowledge, poverty, power deficit, and forest/culture integration.

Authors: Carol J. Pierce Colfer, Ravi Prabhu, Mario Günter, Cynthia McDougall, Noemi Miyasaka Porro, and Roberto Porro

Available at: https://www.cifor.org/publications/pdf_files/Books/toolbox8.pdf

Environmental Focus

Infrastructure for Spatial Information in the European Community (INSPIRE)

Developed by the European Union, INSPIRE provides integrated, transboundary data for environmental policy purposes. The program is operated by EU member states and shares geospatial data with various public sector organizations across Europe.

Available at: <https://inspire.ec.europa.eu/>

The Land Degradation Assessment in Drylands (LADA) - World Overview of Conservation Approaches and Technologies (WOCAT)

LADA-WOCAT is a set of tools and approaches that help practitioners assess landscapes and the possible impacts of interventions. LADA was initially created for the assessment of land degradation, and has been developed to be widely applied to other ecosystems. This approach enables multisectoral and multistakeholder teams to identify and prioritize interventions needed on the ground, and to promote sustainable land management (SLM).

For more information, see Biancalani et al, 2013 at <http://www.fao.org/3/i3241e/i3241e.pdf>

LADA-WOCAT QM

LADA-WOCAT QM allows practitioners to link conservation and land degradation activities at a provincial/regional level with a country-level spatial database. The tool allows stakeholders and practitioners to get a clearer picture of land degradation at the level of a district or even a whole country. The methodology is promoted by WOCAT, and has been tested in Global Environment Facility (GEF)-funded and Food and Agriculture Organization of the United Nations (FAO)-implemented projects in more than 20 countries.

Available at: www.fao.org/land-water/land/land-governance/land-resources-planning-toolbox/category/details/en/c/1197596/

Modelling System for Agricultural Impacts of Climate Change (MOSAICC)

FAO, in partnership with European research institutes, developed this tool to carry out climate change impact assessment studies at the national level. The models in MOSAICC are organized into five components: climate, crops, hydrology, forests, and economy.

More information available at: <http://www.fao.org/in-action/mosaicc/en/>

Restoration Opportunities Optimization Tool (ROOT)

This tool was launched by International Union for Conservation of Nature (IUCN) in partnership with The Natural Capital Project to explain ecosystem services to decision makers, using ecosystem services analysis data. The tool is designed to appeal to a wide variety of stakeholders, especially the private sector.

For more information, see Beatty et al, 2018, available at: <https://portals.iucn.org/library/node/47805>

Sustainable Forest Management Toolbox

A collection of tools, case studies, and resources on sustainable forest management for forest owners, managers, and other stakeholders, developed by FAO. Materials are organized in modules.

Available at: <http://www.fao.org/forestry/sfm/85086/en/>

Technologies and Practices for Small Agricultural Producers (TECA)

This online platform for successful agricultural technologies and practices is managed by FAO's Research and Extension Unit.

Available at: <http://www.fao.org/teca/en/>

Tools for Landscape-Level Assessment and Planning: A Guide for the North Pacific Landscape Conservation Cooperative

This resource provides a matrix of 100 tools available for landscape-level assessment and planning. It is published by NatureServe, and developed with support of the U.S. Fish and Wildlife Service.

Authors: Patrick Crist, Kat Maybury, Sarah Carr, and Jon Hak

Available at: www.natureserve.org/sites/default/files/report_final_tools_for_landscape-level_assessment_and_planning_2.pdf

Tools for Measuring, Modeling, and Valuing Ecosystem Services

This IUCN publication guides practitioners on tools that help measure, model, and put a value on ecosystem services.

Authors: Rachel A. Neugarten, Penny F. Langhammer, Elena Osipova, Kenneth J. Bagstad, Nirmal Bhagabati, Stuart H. M. Butchart, Nigel Dudley, et al.

Available at: <https://portals.iucn.org/library/node/47778>

World Overview of Conservation Approaches and Technologies (WOCAT)

WOCAT is one of the first global networks to document knowledge on sustainable land management and share it. The United Nations' Convention to Combat Desertification (UNCCD) recommends WOCAT as a primary source for the Global Database for best SLM practices.

More information available at: <https://www.wocat.net/en/>

Economic Focus

Designing Benefit Sharing Arrangements: A Resource for Countries

This platform, developed by the Forest Carbon Partnership Facility (FCPF) and BioCF ISFL, helps countries design and implement benefit-sharing arrangements for results-based land use initiatives. The platform breaks the process down into steps and provides a comprehensive set of tools, resources, and case studies.

Available at: <https://www.forestcarbonpartnership.org/bio-carbon/en/index.html>

Designing Incentive Agreements for Conservation: An Innovative Approach

This conceptual approach to developing effective and equitable community agreements can be used for defining and organizing the information necessary for creating incentive agreements. It guides practitioners in: 1) defining, together with households, "baseline scenarios" regarding individual households' past, present, and future natural resource use and farming activities; 2) developing a shared vision for "acceptable changes" from these baseline scenarios; and 3) uncovering and agreeing on the "support and incentives" needed to put these changes into effect.

Authors: Renaud Lapeyre, Herlina Hartanto, and Romain Pirard

Available at: https://www.cifor.org/publications/pdf_files/Books/BPirard1501.pdf

Land Tenure

Exploring Property Rights and Tenure in Integrated Landscape Management: A Scoping Study from the Landscapes for People, Food and Nature Initiative

This study explores the work of 12 organizations in land governance and property rights innovations. These organizations include CIFOR, the International Food Policy Research Institute (IFPRI), the CGIAR Program on Collective Action and Property Rights (CAPRI), the Global Land Alliance, the International Land Coalition (ILC), Landesa, the Land Portal/Foundation, Oxfam International, Rights & Resources Institute, and the United Nations (UN) Habitat's Global Land Tool Network (GLTN). Most of these organizations are actively engaged with local communities to explore context-specific solutions related to land tenure. They are carrying out research and testing new approaches to improve land governance and gender equality, and to promote collective action.

Authors: Louise E. Buck, Sara J. Scherr, Barbara Chami, Melissa Goldman, Ted Lawrence, Jefferson Mecham, Ellen Nevers, and Ryan Thomas

Available at: <https://ecoagriculture.org/wp-content/uploads/2019/06/Exploring-Property-Rights-and-Tenure-in-ILM-June-2019-webfinal.pdf>

Understanding, Preventing and Solving Land Conflicts: A Practical Guide and Toolbox

This guide provides tools to analyze, address, and prevent land conflicts.

Author: Babette Wehrman

Available at: <https://landportal.org/library/resources/understanding-preventing-and-solving-land-conflicts-practical-guide-and-toolbox>

Financing Strategies

Landscape Assessment of Financial Flows (LAFF) Methodology

Developed by Tropenbos International and EcoAgriculture Partners, the LAFF methodology is an extension of the Landscape Investment and Finance Toolkit (LIFT). LAFF aims to help stakeholders identify sources of financing for new investment ideas, and to understand if the financial system in a landscape is adequately supporting the integrated land use initiative. The objective of LAFF is to facilitate the identification and characterization of the most significant flows of finance that support landscape initiatives. The other guiding principles of LAFF's methodology include building stakeholder capacity to understand: 1) financial flows related to their landscape; 2) the primary sources and recipients of investment; 3) the use and purpose of investment; and 4) the impact of investments. The methodology includes engaging stakeholders who provide financing. It also provides information on elements of financial governance.

Authors: Seth Shames, Bastiaan Louman, and Sarah Scherr

LAFF is available at: <https://ecoagriculture.org/publication/the-landscape-assessment-of-financial-flows/>

Landscape Investment and Finance Tool (LIFT)

Developed by EcoAgriculture Partners, together with IUCN's National Committee of the Netherlands, LIFT is a three-stage process to help program managers find the right investors and create pitch material to approach them.

Authors: Seth Shames, Sara Scherr, Jan Willem den Besten

Available at: <https://ecoagriculture.org/publication/the-landscape-investment-and-finance-toolkit/>

Monitoring, Evaluation, and Learning (MEL)

CLUMondo Land Systems Simulation Model

CLUMondo, developed by the Environmental Geography Group at VU University Amsterdam, is free software that can be used to model land system change.

Available at: <https://www.environmentalgeography.nl/site/data-models/models/clumondo-model/>

Global Biodiversity Model for Policy Support (GLOBIO)

Developed by PBL Netherlands Environmental Assessment Agency, the GLOBIO model helps practitioners and policymakers quantify the human impact on ecosystems and biodiversity. GLOBIO is connected to the IMAGE model (see IMAGE, below). The IMAGE-GLOBIO framework has been used for many environmental assessments, including for the Convention on Biological Diversity.

Available at: <https://www.globio.info/>

Integrated Model to Assess the Global Environment (IMAGE)

Developed by PBL Netherlands Environmental Assessment Agency, the IMAGE model framework simulates interactions between human society, the climate, and the biosphere. The framework can help users explore the long-term impacts of changes resulting from environmental and social factors, including climate change, biodiversity, and human well-being.

Available at: https://models.pbl.nl/image/index.php/Welcome_to_IMAGE_3.0_Documentation

The Integrated Valuation of Ecosystem Services and Trade-Offs (InVEST)

InVEST, developed by the Natural Capital Project at Stanford University, is a suite of open-source software that helps practitioners map and value ecosystem services.

Available at: <https://naturalcapitalproject.stanford.edu/software/invest>

The Landscape Performance Scorecard (LPS)

Stakeholders score and qualitatively assess their landscape based on 20 outcome-oriented criteria and linked indicators related to conservation, production, livelihood, and institutional goals. The data are displayed in an Excel spreadsheet and a spider diagram to aid multisector discussion on the needs of the landscape; determine interventions; and track changes in the landscape over time.

Tool submitted by Louise Buck for the Landscapes for People, Food, and Nature Initiative.

Available at: <https://peoplefoodandnature.org/tool/landscape-performance-scorecard-lps/>

A Landscape Perspective on Monitoring and Evaluation for Sustainable Management: Trainer's Manual

Developed by EcoAgriculture Partners, Cornell University, the Environmental Resources Management Center for Sustainable Development, and TerrAfrica, this manual helps SLM professionals train others in effective integrated landscape management monitoring and evaluation (M&E).

Authors: Louise Buck, Raffaella Kozar, John Recha, Ayal Desalegn, Chris Planicka, and Abigail Hart

Available at: <https://ecoagriculture.org/publication/a-landscape-perspective-on-monitoring-evaluation-for-sustainable-land-management/>

Mapping Ecosystem Services to Human Well-being (MESH)

MESH, developed by the Natural Capital Project at Stanford University, allows users to calculate and map ecosystem services under various possible land use management interventions.

Available at: <https://naturalcapitalproject.stanford.edu/software/mesh>

Open FORIS software

Developed by FAO, this software facilitates data collection, analysis, and reporting. Open FORIS can be used for: forest inventories; climate change reporting; socioeconomic surveys; biodiversity assessments; land use, land use change, and forestry measurement; deforestation monitoring with remote sensing; and detecting desertification.

Available at: <http://www.openforis.org/>

Operational Guidelines for the Design, Implementation, and Harmonization of Monitoring and Evaluation Systems for Climate-Smart Agriculture

Developed by FAO, these guidelines help practitioners find common indicators from the Sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction, and the Paris Agreement that can help harmonize M&E systems for climate-smart agriculture.

Available at: <http://www.fao.org/3/ca6077en/CA6077EN.pdf>

Resilience Diagnostic and Decision Support Tool

Developed by the Turkana County government in Kenya in partnership with ICRAF, the UN Children's Fund (UNICEF), and the United States Agency for International Development (USAID) Agile and Harmonized Assistance for Devolved Institutions (AHADI), this tool helps practitioners with decision making and resilience planning through data visualization. The tool divides data into thematic modules, including livestock, nutrition, land health, and energy.

Available on the ICRAF Geoscience Lab Landscape Portal at: <http://landscapeportal.org/sharedApp/>

Spatial Agent

This app, developed by the World Bank, provides users with interactive maps and charts to visualize spatial and temporal data from national, regional, and global datasets.

Available at: <https://olc.worldbank.org/about-olc/spatial-agent-world-data-your-fingertips>

Strengthening the Social Impacts of Sustainable Landscapes Programs: A Practitioner's Guidebook to Strengthen and Monitor Human Well-Being Outcomes

Developed by TNC, this guide helps practitioners strengthen the social outcomes of land use programs through their design, implementation, and monitoring.

Authors: Supin Wongbusarakum, Erin Myers Madeira, and Herlina Hartanto

Available at: www.conservationgateway.org/ConservationPractices/PeopleConservation/SocialScience/Documents/TNC%20Guidebook%20draft%20070814%20-%20for%20office%20print.pdf

Success from the Ground Up: Participatory Monitoring and Forest Restoration

Developed by CIFOR, this report offers a review of lessons learned from participatory monitoring.

Authors: Kristen Evans and Manuel R. Guariguata

Available at: <https://www.cifor.org/knowledge/publication/6284/>

Understanding Ecoagriculture: A Framework for Measuring Landscape Performance

Buck et al's framework for assessing landscape performance captures measurements related to process, intervention, and threat reduction. It is useful in landscape programs, where direct measurements are often impossible. This approach was designed to complement existing, project-based monitoring and evaluation.

Authors: Louise E. Buck, Jeffrey C. Milder, Thomas A. Gavin, and Ishani Mukherjee

Available at: <https://ecoagriculture.org/wp-content/uploads/2006/12/Discussion-Paper-Understanding-Ecoagriculture-A-Framework-for-Measuring-Landscape-Performance.pdf>

VegetationMap4Africa

Developed by scientists at ICRAF and the University of Copenhagen, the VegetationMap4Africa project provides a set of tools to provide a baseline for landscape assessment; to predict distribution of and variation in plant species; as an extension tool for farmers adopting sustainable practices; to provide a baseline for forecasts of land use change; as a management tool for ecosystems; and as a tool for the protection and restoration of ecosystems.

Available at: <https://vegetationmap4africa.org/About.html>

Cross-Sectoral Coordination

An Analytical Framework for Understanding the Political Economy of Sectors and Policy Arenas

Published by the Overseas Development Institute, this analytical framework is designed to help practitioners design and conduct analyses of the political economy of sectors, facilitating their understanding of entry points, and helping them to develop appropriate incentives.

Authors: Joy Moncrieffe and Cecilia Luttrell

Available at: <https://cdn.odi.org/media/documents/3898.pdf>

Cross-Sectoral Toolkit for the Conservation and Sustainable Management of Forest Biodiversity

Published by the Secretariat of the Convention on Biological Diversity, this toolkit provides a summary of policy approaches that minimize pressure on forest biodiversity.

Edited by I. Thompson and T. Christophersen

Available at: <https://www.cbd.int/doc/publications/cbd-ts-39-en.pdf>

Implementing the 2030 Agenda for Food and Agriculture: Accelerating Impact through Cross-Sectoral Coordination at the Country Level

Published by ICRAF and FAO, this paper provides national and international actors with approaches for working across sectors to achieve the SDGs. The paper emphasizes and explores multistakeholder collaboration in achieving subsectoral coordination.

Authors: C. Neely, M. Bourne, S. Chesterman, I. Kouplevatskaya-Buttoud, D. Bojic, and D. Vallée

Available at: <http://www.fao.org/3/i7749e/i7749e.pdf>

Land Use Planning for Multiple Environmental Services (LUMENS)

LUMENS is a planning tool developed by ICRAF to help stakeholders in Papua and South Sumatra with zoning; to quantify environmental services; analyze tradeoffs; and simulate land use trade scenarios.

More information available at: <http://www.worldagroforestry.org/output/lumens>

Policy Coherence of Sustainable Development Toolkit

Developed by the Organisation for Economic Co-operation and Development (OECD), this online toolkit provides practitioners with practice guidance, checklists, and good practice examples and tools to help track progress on policy coherence in implementing the SDGs. The guide helps practitioners analyze interactions among SDGs and targets, strengthen institutional mechanisms, and monitor, assess, and report progress on policy coherence.

Available at: <https://www.oecd.org/gov/pcsd/>

The Political Economy of Policy Reform: Issues and Implications for Policy Dialogue and Development Operations

This World Bank report explores political economy issues in sector reform through analysis of case studies of World Bank engagement in agricultural liberalization and public-private partnerships in sanitation and water supply. The study presents a framework for analyzing the political economy of policy reform.

Available at: <https://openknowledge.worldbank.org/handle/10986/7782>

Problem-Driven Political Economy Analysis: The World Bank's Experience

This report takes stock of the World Bank's experiences with political economy analysis and sector reform. It offers policy recommendations, providing donors with examples of how they can adapt to political economy conditions, or help expand reform efforts. The report concludes that focusing on the intersection of politics and economics can change how donors design and implement programs.

Authors: Verena Fritz, Brian Levy, and Rachel Ort

Available at: <https://openknowledge.worldbank.org/handle/10986/16389>

Strengthening Sector Policies for Better Food Security and Nutrition Results: Political Economy Analysis

This policy guidance note, developed by FAO and the Directorate for International Cooperation and Development of the European Commission, introduces practitioners to political economy analysis and discusses how this analysis can help support policy efforts to improve food security and nutrition.

Authors: Dubravka Bogic and Klaus Urban

Available at: <http://www.fao.org/3/i7212en/i7212EN.pdf>

Case Studies

This appendix consists of 13 case studies illustrating how integrated land use initiatives work in practice. These case studies are abbreviated and simplified to concisely draw out best practices: for more detailed information, please consult the sources listed. The case studies are presented alphabetically by region, then by country.

Table 1: Case Studies by Region

Case Study	Country	Scale	Relevant Themes	Page
Africa				
Multisectoral Sustainable Forest Management	Liberia	National	MSE, Environmental Focus, Economic Focus, Land Tenure, Financing Strategies, Cross-Sectoral Engagement	11
Succulent Karoo Ecosystem Programme (SKEP) in Namaqualand	South Africa	Regional	MSE, Environmental Focus, Economic Focus, Financing Strategies, MEL, Cross-Sectoral Coordination	12
Community-Based Monitoring of Forests and Woodlands	Tanzania	Subnational	MSE, Environmental Focus, Economic Focus, MEL	13
Kagera Transboundary Agro-ecosystem Management Project (Kagera TAMP), Kyazi Microcatchment, Missenyi District	Tanzania	Subnational	MSE, Environmental Focus, Cross-Sectoral Coordination	14
East Asia and the Pacific				
Integrated Watershed Management in Reggung Watershed, Central Lombok, West Nusa Tenggara	Indonesia	Subnational	MSE, Environmental Focus, Economic Focus, Cross-Sectoral Coordination	16
The Forest-River-Village-Sea Ecoagriculture Initiative	Taiwan	Subnational	MSE, Environmental Focus, Economic Focus	17
Europe and Central Asia				
Integrated Natural Resource Management in Drought-Prone and Salt-Affected Agricultural Production Landscapes in Central Asia and Turkey (CACILM-1 and 2)	Central Asia and Turkey	Regional/Multinational	MSE, Environmental Focus, Economic Focus, Boundary Setting, Financing Strategies, MEL, Cross-Sectoral Coordination	18
Global				
WWF Global Monitoring and Evaluation Strategy	Global	National/Global	MSE, Environmental Focus, Financing Strategies, MEL	19
Latin America				
Incentivizing Conservation through an Ecological Tax in Brazil (ICMS Ecológico)	Brazil	Sub-national (multiple states)	MSE, Environmental Focus, Economic Focus, Financing Strategies, MEL, Cross-Sectoral Coordination	20
State System of Incentives for Environmental Services (SISA) and REDD Early Movers (REM) Program, State of Acre	Brazil	Subnational	MSE, Environmental Focus, Economic Focus, Boundary Setting, Financing Strategies, MEL, Cross-Sectoral Coordination	21
The Nature Conservancy's Program in the Municipality of São Félix do Xingu	Brazil	Subnational	MSE, Environmental Focus, Economic Focus, Boundary Setting, Land Tenure, Financing Strategies, Cross-Sectoral Coordination	23
Orinoquía Sustainable Integrated Landscape Program (OSILP)	Colombia	Subnational	MSE, Environmental Focus, Economic Focus, Land Tenure, Financing Strategies, MEL, Cross-Sectoral Coordination	25
The Payment for Hydrological Environmental Services (PSAH) Program	Mexico	Subnational	MSE, Environmental Focus, Economic Focus, Financing Strategies, MEL, Cross-Sectoral Coordination	26

Africa

Multisectoral Sustainable Forest Management, Liberia

PROGRAM FOCUS

To build a multisectoral policy platform to promote intersectoral dialogue for integrated forest and landscape management.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Land Tenure, Financing Strategies, Cross-Sectoral Engagement

PROGRAM DETAILS

The Forest Farm Facility (FFF) seeks to strengthen multisectoral platforms that bring together ministerial and departmental actors to discuss policy issues that need to be addressed to empower forest and farm producer groups. FFF operates in six partner countries: The Gambia, Guatemala, Liberia, Myanmar, Nepal, and Nicaragua.

FFF engages with a broad range of producer groups. The program focuses on improving sustainability in the production of agricultural and forest products. It aims to strengthen the business of these producer organizations directly by creating an enabling environment through policy and cross-sectoral coordination. FFF selected Liberia as a partner country in 2013 because of the country's strong stated commitment to conserving forests based on community forest management. Liberia recognized the need for a robust, sustainable forest management policy to effectively combat forest degradation and achieve its climate goals.

This process included creating policy initiatives such as strengthening community participation, promoting sustainable forest management governance frameworks, mobilizing financial resources, and enhancing coordination and cooperation on forest-related issues (UN 2018). The intervention focused on developing a multistakeholder, multisectoral coordination mechanism. The program officially began in 2014. Early on the program engaged with a local farmers' union known as the Farmers Union Network.

FFF financially supported a platform called the National Forests and Landscape Forum, created to involve stakeholders in sustainable forest management policy formulation, planning, and implementation. The platform facilitated multisectoral policy dialogue to discuss natural resource management-related issues at the national, local, and county levels (UN 2019). The main objectives of this platform were to improve coordination among forests and landscape management sectors, and to resolve issues related to land use planning and land tenure rights. The platform engaged stakeholders from different government ministries, representatives from county forest forums, donors, and members of the private sector. The National Coordinator from the Forestry Development Authority acted as the convener of these multisectoral dialogues.

Periodic discussion was hosted by several different ministries to encourage maximum participation, and decisions were reached by broad consensus. In addition to promoting coordination, the platform also steered capacity building efforts for sustainable forest management for local communities, and invited local communities to participate.

According to a study of the program, current outcomes include improved coordination related to forest management between sectors, and improved awareness of the need for an integrated decision-making process. In the long term, however, more effort is required to move beyond FFF's donor-funded platform and engage with other international and national agencies for financial support (FAO 2018b).

BEST PRACTICES

Identify relevant sectors, analyze trade-offs and synergies

- Designed comprehensive, multisectoral policy interventions
- Aligned initiative with national goals

Use a multistakeholder platform (MSP) to facilitate cross-sectoral coordination

- Developed a multistakeholder, multisectoral coordination mechanism
- Agenda driven by the national government
- Appointed a convenor who is committed to coordinating dialogue
- Focused on involving a broad range of stakeholders, including local stakeholders and various ministries
- Ensured inclusive, consensus-based decision making

Build stakeholder capacity

- Provided training for local farmers

Sources: International Institute for Environment and Development (IIED), n.d.-a.; FAO 2018b; Macqueen et al., 2014; UN 2018, 2019

Succulent Karoo Ecosystem Programme (SKEP), Namaqualand, South Africa

PROGRAM FOCUS

To promote biodiversity conservation and sustainable land use in the Succulent Karoo Hotspot.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Financing Strategies, MEL, Cross-Sectoral Coordination

PROGRAM DETAILS

The ecoregion of the Succulent Karoo stretches from the west coast of South Africa to southwestern Namibia. Its arid and semiarid climates form a biodiversity hotspot that supports a rich diversity of succulent plants and animals. It has two regions: Namaqualand, which extends north from the west coast of South Africa into Southern Namibia; and the Southern Karoo, which lies inland in southwestern South Africa. The biodiversity of the region is threatened by the expansion of communal lands, overgrazing, new mining ventures, and the illegal harvesting of succulents (WWF n.d.-b).

The Succulent Karoo Ecosystem Programme (SKEP) was launched to conserve this area. The program is led by Conservation South Africa, with the SKEP coordinating unit housed within the parastatal South African National Biodiversity Institute (Shames, Hill Clarvis, and Kissinger 2014). SKEP is a long-term, multistakeholder bioregional conservation and development program. The program has adopted an integrated landscape approach and aims to contribute to multiple thematic areas, including livelihoods, conservation, mining, climate change, and renewable energy. It has four focal areas: increasing local and international awareness of the unique biodiversity of the Succulent Karoo; expanding protected areas and improving conservation management; supporting a matrix of harmonious land uses; and improving institutional coordination.

SKEP draws on a blend of financing from a mix of private foundations and international donors (Shames, Hill Clarvis, and Kissinger 2014). It set out in 2001 as a 20-year program; the first five years were considered a catalytic phase and were funded by the Critical Ecosystem Partnership Fund, which is a joint initiative of *l'Agence Française de Développement*, Conservation International, the GEF, the government of Japan, the John D. and Catherine T. MacArthur Foundation, and the World Bank. The focus of the Critical Ecosystem Partnership Fund was to catalyze biodiversity conservation related to critical activities in underfunded geographic priority areas using innovative mechanisms involving specific land users, such as the agricultural sector, mining companies, and communal authorities.

A local fund named “SKEPPIES” was established. It acted as a small grants fund jointly funded by the Development Bank of Southern Africa and Conservation International, to support community conservation and development. The Development Bank of Southern Africa actively cofunded the project and also supported SKEPPIES with its wealth of experience in local economic development, project management, and the management of grant-funding mechanisms. Development Bank of Southern Africa systems and processes were used to manage SKEPPIES funds, which helped to establish the fund at the community level. The primary focus was conservation in Succulent Karoo, along with the promotion of the economic development of poor communities living in the region.

The program monitors the performance of its grantees in achieving a core set of targets through its review of programmatic and financial progress reports, and site visits to each project. It also emphasizes verifying conservation outcomes in order to encourage greater transparency for investors.

The program has focused on exploring and creating multiple financing sources and developing strategies to strengthen partnerships, as well as on identifying resources to match. A long-term commitment by the Critical Ecosystem Partnership Fund to invest in convening and catalyzing key activities has played a pivotal role in attracting finances from other sources. The program has focused on creating an enabling environment, with funding strategically directed toward achieving related targets. The catalytic phase in building an institutional framework for the long-term conservation of the region has made good progress: SKEP has been formally institutionalized as a bioregional program within the South African National Biodiversity Institute, increasing its potential to achieve systemic change in the long term. Funds have also contributed to undertaking extensive stakeholder engagement, conducting interactions with government, and promoting awareness campaigns and environmental education.

BEST PRACTICES

Mobilize and plan resources

- Access to a pool of funding enabled implementation of multiyear projects
- Blended financing, with activities funded by government, international donor agencies, and philanthropic funds

Align initiative with national priorities

- Collaborated with relevant government agencies and programs to achieve common goals, and seek alignment of policies and programs in support of vision and strategy
- Small amounts of donor funding were used to develop government departments' capacities
- Integration and alignment with government-led programs helped secure long-term program sustainability

Mitigate risk

- Focus on improving verification of conservation outcomes sought to attract sustained capital flows

Sources: SANBI 2008; Shames, Hill Clarvis, and Kissinger 2014; WWF n.d.-b.

Community-Based Monitoring of Forests and Woodlands, Tanzania

PROGRAM FOCUS

To align monitoring systems with the needs and capacities of local communities that are responsible for managing and maintaining forests.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, MEL

PROGRAM DETAILS

The year 2002 saw a participatory monitoring system implemented in 23 villages in the Montane evergreen forest and Miombo woodland areas in Tanzania. The 1990s witnessed degradation in these forests, leading the Tanzanian government to devolve ownership and management responsibility to local communities. In 1998, the government revised the National Forest Policy: this revised policy recognizes the need for partnerships with stakeholders, and acknowledges rural communities as a critical part of forest management. As a result of this, and of the Forest Act (2002), which allowed the devolution of rights, local communities can now comanage the forests along with the government (Akida and Bloomley 2006). In practice, this means that village communities manage the forests, with advisory services provided by the district forest office.

The new regime aimed to develop a sustainable monitoring system adapted to local needs. It was reported that districts and villages initially intended to comanage the forests; however, owing to the unattractive incentive for district-level intervention, villages actually received full autonomy of forest management. Emphasis was given to

developing a simple, cost-effective, and transparent monitoring system, with villagers selecting the indicators. The monitoring system focused on four objectives: 1) to align with local interests and priorities; 2) to ensure incentives for managers; 3) to maintain transparency in local decision-making processes; and 4) to provide ward, divisional, and district-level information related to forest management in order to be able to attract institutional support from the government and other agencies (Topp-Jørgensen et al 2005). Quantitative data suggests that decision making based on local monitoring prevailed, because the data gathered through this process was highly relevant to the people, and accurate.

The monitoring scheme was built on an existing local institutional set-up, and developed with villagers to promote transparency. Village Natural Resource Committees of 7 to 11 members were appointed and made answerable to the village government. Permission was usually required from the Village Natural Resource Committees for the extraction of natural resources. These committees became the critical bodies actively engaged in monitoring activities. At the ward level, Forest Coordination Committees worked in line with decisions taken by the Village Natural Resource Committees, and produced monthly monitoring reports. These were submitted to District Forest Office coordinators, which conducted annual monitoring and evaluation meetings at the village level. Data collection was carried out primarily through surveys, patrols, and perception interviews, and then verified and analyzed. The program reported a high level of commitment from villagers and was, overall, a democratic process.

Village-level managers displayed high levels of commitment toward monitoring. Preliminary feedback indicated that the monitoring scheme was providing the information needed to trigger the right interventions. The initiative focused on aligning its monitoring systems with the needs and capacities of the members of the locally elected natural resource committees that were responsible for managing and monitoring the natural forests. Indicators such as resource extraction and disturbance were identified as being suited to assessing the performance of an intervention.

BEST PRACTICES

Develop measurable, simple, cost-effective indicators

- Developed simple indicators aligned with local needs and capacities

Engage stakeholders

- Communities engaged in identifying indicators and designing the monitoring process
- High level of commitment from village communities
- Used existing institutional set-up for participatory monitoring system
- Local and district-level governments offered support in conflict resolution, and in addressing other management issues

Practice effective knowledge management

- Monitored regularly produced reports

Sources: Akida and Blomley 2006; Funder et al 2013; Topp-Jørgensen et al 2005

Kagera Transboundary Agro-ecosystem Management Project (TAMP), Kyazi Microcatchment, Missenyi District

PROGRAM FOCUS

To identify the most suitable SLM practices, based on a thorough ecological assessment, and to develop an SLM plan in collaboration with local communities.

RELEVANT THEMES

MSE, Environmental Focus, Cross-Sectoral Coordination

PROGRAM DETAILS

The Kagera Transboundary Agro-ecosystem Management Project (TAMP), a program funded by GEF, used

cross-sectoral coordination to address both agro-ecosystem degradation and the economic vulnerability of those dependent on the land for their livelihoods. The program focused on restoring degraded land, climate change mitigation, agrobiodiversity conservation, water conservation, and agricultural production. The socioeconomic benefits of the program included improvements in rural livelihoods and food security across areas of Burundi, Rwanda, Tanzania, and Uganda. One part of the program focused on the Kyazi microcatchment zone of the Missenyi District in Tanzania. The Kyazi microcatchment is a part of a larger catchment area which forms the Kagera River drainage basin. The river basin has experienced severe physical, biological, and chemical degradation.

The program used the LADA Local tool to carry out local assessments and analyze the severity of land degradation. Built by FAO, LADA Local assesses the degree of land degradation and helps in mapping and identifying the practices that might help redress it. After identifying ecological issues and trends in the changes in land use, the government of Tanzania worked closely with FAO. Their joint analysis, conducted at both the country and local level, informed the choice of interventions in 21 districts in the basin. Based on this thorough ecological assessment, the program developed an initiative to manage the microcatchment area sustainably, using land management practices. At the local level, the program involved local stakeholders and Indigenous communities in assessing the ecological degradation, as well as its causes and impacts.

The initiative discovered that the absence of sustainable agro-ecosystem practices was mainly due to a lack of participatory appraisal. This lack of active community participation had led to a bias toward communities adopting conventional methods of land management. In Tanzania, workshops for training rural development advisors were held to help improve the social acceptability of sustainable farming systems. Training advisors in the application of LADA methodology was a critical component of these workshops, as well as training them in other tools for participatory land assessment and SLM planning.

LADA Local also helped advisors collect Indigenous knowledge in natural resource management and conservation, and created opportunities for communities to improve on these practices. The program used locally sensitive questionnaires to invite community participation, as well as ground mapping and transect walks. It also gave due consideration to Indigenous technical knowledge, using it alongside scientific knowledge.

The results of these efforts informed the Kyazi community's plan for sustainable land use. Equipped with strong, clear plans, communities were able to identify the extra resources they needed to meet their economic and environmental goals. The practices they chose included crop and livestock integration and conservation, especially near the river. The many benefits of this program included improvements in soil health and organic matter, water harvesting, improved agricultural productivity, diversified crop output, and the reduced incidence of uncontrolled fires. These practices have added to the resilience of the agro-ecosystem and improved people's livelihoods.

BEST PRACTICES

Conduct thorough ecological assessment and carefully consider environmental objectives and interventions

- Used multiple tools and techniques to assess conditions and environmental outcomes of the proposed interventions
- Decided to focus on adaptation and mitigation based on local needs
- Identified best practices based on the land degradation assessment
- Scaled up the program by mainstreaming SLM practices into national development planning

Engage stakeholders

- Included local stakeholders in ecological assessment and program implementation
- International agencies provided technical assistance
- Established MSP to engage public and private sectors in improving value chains for small-scale farmers
- Employed gender-sensitive practices

Sources: FAO 2017a and 2017b

East Asia and the Pacific

Integrated watershed management, Renggung watershed, Lombok, Indonesia

PROGRAM FOCUS

To promote and support cross-sectoral engagement to address complex conservation issues around private sector operations in tobacco growing and mixed agricultural landscapes.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Cross-Sectoral Engagement

PROGRAM DETAILS

Lombok island in Indonesia hosts farming communities that rely on growing a number of crops, including rice, coffee, cocoa, and coconuts; and agroforestry is practiced in lowland areas. Deforestation and forest degradation in the island's mountain is threatening both biodiversity and water resources (Suroso et al 2009). Intensive food crop production and other forms of human and climate-induced changes in the ecosystem are having a negative impact on the livelihoods of local communities.

An assessment of risks and opportunities was launched to conserve biodiversity using a tool developed by the British American Tobacco Biodiversity Partnership (BATBP). This tool, the BATBP Assessment, helps to identify the impacts and dependencies of private sector operations on biodiversity (BATBP 2011). This tool was used as part of a larger initiative to address complex conservation issues around private sector operations in tobacco growing, and mixed agricultural landscapes (BATBP 2012).

The partnership-supported Integrated Watershed Management project in the Renggung Watershed of Lombok works directly with local communities and other organizations, such as Fauna & Flora International, and the government-led Watershed Management Agency. The program adopted an ecosystem-based approach to watershed management by focusing on implementing a multistakeholder, multisectoral program.

Under this initiative, the Watershed Management Agency acted as a convener in the development of the watershed. Its stakeholder analysis helped to identify the key sectors to be involved in the program: the tobacco sector, agriculture, watershed management, and forestry. Stakeholder mapping was undertaken to better understand the roles of local communities, the tobacco sector, government, nongovernmental organizations (NGOs), and research and education institutions.

The process included formulating an integrated watershed management model that could leverage existing formal coordination mechanisms. The project made efforts to mainstream the integrated watershed management plan into local and sectoral policies through, for example, incorporating biodiversity and ecosystem service considerations into provincial-level government policy and other sectors, including forestry and trade. It also helped form a local forest management unit that is formally recognized by the national government, furthering efforts to foster cross-sectoral coordination (Lyons 2014).

Flora & Fauna International led the development of a multistakeholder institution, the Central Lombok District Watershed Forum, to build the capacity of local institutions. Communities were trained in agroforestry principles and practices. Efforts were made to mainstream the integrated watershed management plan into local and sectoral policies, with biodiversity and ecosystem service considerations incorporated into the provincial-level government policy and other sectors, such as forestry and trade.

The program has identified challenges which, if addressed, could significantly improve its outcomes. A more robust coordination mechanism that enables regular communication and cooperation between stakeholders is needed, especially at the government level. While Flora & Fauna International is acting as a convener under the current donor-funded plan, establishing a financially sustainable means of supporting a local and government-supported body would help support the program in the long term.

BEST PRACTICES

Identify relevant sectors, analyze trade-offs and synergies

- Four sectors were identified based on stakeholder mapping: tobacco, agriculture, watershed management, forestry
- Conducted a thorough stakeholder analysis/stakeholder mapping

Use an MSP to facilitate cross-sectoral coordination

- Developed a dialogue platform and included local forest community groups
- Strong commitment from convening body

Build stakeholder capacity

- Worked to build capacity of local institutions
- Trained local communities on SLM practices

Sources: BATBP 2011, 2012; Lyons 2014; Suroso et al 2009

The Forest-River-Village-Sea Ecoagriculture Initiative

PROGRAM FOCUS

To identify and engage different stakeholder groups to resolve land use conflict by developing an inclusive MSP.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus

PROGRAM DETAILS

Xinshe Village is located in Hualien County on the east coast of Taiwan. There are two Indigenous settlements in the area. These belong to the Dipit tribe, in the middle reaches of the watershed, and the Xinshe tribe, on farmland in the lower reaches of the valley. One watershed connects these two communities along an axis that runs from forest to river to village to sea.

The inhabitants of the two settlements rely on gathering edible forest plants, farming terraced paddy rice, and fishing in the ocean. But despite their dependency on common resources, no dialogue on managing them had ever taken place. On the contrary, sporadic conflict broke out over water usage, hunting, and fishing rights. Various government agencies had worked separately with them on individual community goals.

An integrated landscape program was developed to manage this region. In 2016, a multistakeholder platform, called the Forest-River-Village-Sea Ecoagriculture Initiative, was launched. The platform was used to promote cross-border and cross-sectoral cooperation between the Xinshe and Dipit tribes, and to draft an action plan. It involved six stakeholder groups, including the National Dong Hwa University.

The platform was open to all interested actors—members of local community organizations, central and local government institutions, local schools, academic institutions, NGOs, and green enterprises. Meetings were held rotationally on Xinshe and Dipit territories and supported by government and research institutions. Action plans were discussed together. Stakeholders regularly discussed progress, challenges, outcomes—and the strategies needed to overcome challenges.

When the stakeholder matrix created at the start was analyzed, it reflected a need to expand its membership to include the Eastern Region Branch Agriculture and Food Agency, the Council of Agriculture, and the Xinshe elementary school. The Eastern Region Branch Agriculture and Food Agency joined to assist in marketing agricultural products for the two communities, while the school helped transfer Indigenous culture and knowledge. The county government was kept in the loop.

National Dong Hwa University emerged as a backbone organization, and the primary facilitator of cross-sectoral engagement. Although the program is comparatively new and concrete outcomes have yet to emerge, certain outcomes are clear: there is now more trust between the two communities, and the interaction between government agencies and the communities has improved. Additionally, a study by a conservation NGO in Xinshe Village showed the diversity and abundance of species of shrimp in the village stream to be extremely high. These results have motivated the communities and the authorities to discuss the protection and restoration of the area.

BEST PRACTICES

Conduct stakeholder analysis

- Identified key stakeholders, their interests, and determined their levels of influence
- Thorough stakeholder analysis enabled assessment of the cooperation or risk potential of certain stakeholders and determination of appropriate ways to engage these stakeholders

Engage stakeholders

- Meaningfully involved government institutions and local communities
- Local communities actively contributed to the establishment of MSP
- Frequent consultations held with local communities
- Collectively developed goals and responsibilities
- Empowered local community to drive MSP and convene meetings

Source: Satoyama Initiative 2019

Europe and Central Asia

Integrated Natural Resource Management in Drought-Prone and Salt-Affected Agricultural Production Landscapes in Central Asia and Turkey (CACILM-1 and 2)

PROGRAM FOCUS

To manage natural resources in a sustainable and integrated manner, and scale these practices up to the landscape level.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Boundary Setting, Financing Strategies, MEL, Cross-Sectoral Coordination

PROGRAM DETAILS

The Central Asian Countries Initiative for Land Management (CACILM) program in drought-prone and salt-affected agricultural landscapes in Central Asia and Turkey focuses on adaptation. CACILM is a multicountry collaboration identifying synergies and interventions to combat ecological degradation. Its objective is to manage natural resources in a sustainable, integrated manner, and to scale these practices up. The primary means of achieving this are through practices that: 1) improve ecosystem health; 2) minimize negative pressure on natural resources; and 3) build resilience to phenomena such as drought and salinity (FAO 2018a).

CACILM started by identifying context-specific sustainable land management practices, and barriers to their adoption. It crafted an approach to mainstream SLM in national development and budgetary planning, and included stakeholder participation in program design and implementation.

Fundamentals of the program include: incorporating sustainability in sectors related to natural resource management and production systems; engaging both the public and private sectors in improving value chains to support smallholder farmers who are adopting climate-smart techniques; and the adaptation and scaling up of technologies to combat the impacts of climate change, such as greater salinity and more drought (FAO 2018a). The program has used a variety of analytical tools to carry out climate change impact assessments and determine the possible impact of agriculture and forestry development projects, including Ex-Ante Carbon-Balance Tool (EXACT), the Modelling System for Agricultural Impacts of Climate Change (MOSAICC),¹ Aquacrop, and Farmer Field Schools (FAO 2018a). Land degradation assessments led to the identification of context-specific, landscape-level interventions, and relevant investment programs. Context-specific sustainable practices included growing cereals with minimum tillage and creating perennial grass seed areas and plantations of salinity-tolerant (mostly nitrogen-fixing) species of trees. They also include many other traditional farming practices, including pasture rotation, the improvement of livestock grazing practices, and protecting forest

¹ FAO, in partnership with European research institutes, developed MOSAICC, which is a tool to carry out climate change impact assessment studies at the national level (FAO n.d.-c).

plantations on mountain slopes (International Center for Agricultural Research in the Dry Areas, n.d.). Some multisectoral (agriculture and forestry) and gender-sensitive practices for building climate resilience were adopted. Active stakeholder involvement was encouraged in M&E, and efforts are being made to invite further involvement at the design and implementation stages.

BEST PRACTICES

Conduct thorough ecological assessment and carefully consider environmental objectives and interventions

- Multiple tools and techniques were used to assess current conditions and environmental outcomes of the interventions (EXACT, MOSAICC, Farmer Field Schools)
- Focus on adaptation and mitigation
- Identified best practices based on ecological assessment
- Scaled up the program by mainstreaming SLM practices into national development planning

Engage stakeholders

- Local stakeholders included in program implementation
- International agencies provided technical assistance
- Used MSP to engage public and private sectors and improve value chain for small-scale farmers
- Used gender-sensitive practices

Sources: FAO 2018a; International Center for Agricultural Research in the Dry Areas (ICARDA) n.d.

Global

WWF Global Monitoring and Evaluation Strategy

PROGRAM FOCUS

To develop a monitoring system that caters to project, program, and global-level organization performance assessments.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, MEL

PROGRAM DETAILS

WWF has made significant advancements in evidence-based conservation since 2006. In 2013, it went one step further and started an improved monitoring and reporting system to track the performance, outcomes, and impact of more than 60 global priority conservation programs. It also tracked the delivery of its global goals. Its new and improved system entails establishing measurable goals and objectives; measuring outcome and impact indicators; and tracking results annually. It identified a set of more than 20 indicators for other global goals as well (for example, on biodiversity and ecological footprints). The indicators were common among programs that were applying similar conservation strategies to enable the aggregation and analysis of outcomes and impacts at the portfolio level.

Several of the WWF common program indicators are the same, or similar to those being used by the Convention on Biological Diversity to track delivery of 7 of the 20 Aichi Targets. There are 11 indicators common to both systems for measures of habitat cover and loss, environmental flows, river fragmentation, state of the oceans, protected areas coverage, protected areas management effectiveness, species populations, ecological footprint, and certified fisheries and forests.

An important aspect of this approach was to define measurable goals and outcomes using WWF program standards. These standards seek to impart consistency in monitoring. WWF focuses on developing indicators to assess both short and long-term goals, where tracking short-term goals happens annually (interim objectives) and is achieved through key performance indicators. Global-level indicators were devised, along with program-level indicators. These global indicators keep the agency informed on whether its meta goals are being met (for example, on global-level habitat loss, species populations, and so on). Analyses and results are shared with a

broader set of audiences and stakeholders, helping with adjustments to all future programs.

Streamlining the monitoring mechanism also serves as adaptive management. WWF International established a Conservation Strategy & Performance Unit in 2007, and has since focused on improving standards and existing results-based mechanisms. Its internal knowledge management system, Insight, maintains databases for the entire WWF network.

WWF's community governance assessment tool helps selected program participants evaluate the extent to which management practices are complying with the four criteria of good governance (transparency, participation, accountability, and predictability). The tool was used in the Hariyo Ban program in Nepal. Sixteen governance indicators guide this program, with participants rating them as very good, good, moderate, and poor (WWF-Nepal 2013). WWF's adaptive style of management has allowed it to continually improve its M&E practices, with efforts being made to further harmonize indicators.

Making these improvements to its M&E system took significant resources and the right environment. WWF believes in having high-level management support; well-established standards for planning, monitoring, and reporting; dedicated capacity in critical programs; and a dedicated central team working to set standards, and to collate and analyze data.

BEST PRACTICES

Develop measurable project and program-level indicators

- Program standards developed to maintain consistency in the monitoring process
- WWF program standards used to establish measurable goals and objectives
- Identified and tracked short-term, long-term, and meta goals
- Created a set of more than 20 indicators common to programs applying similar conservation strategies, providing meaningful aggregation and analysis of outcomes and impacts at the portfolio level

Engage stakeholders

- Adaptive management based on robust knowledge management of past experiences and learning
- Partnered with local organizations to build capacity, and enable a community monitoring process
- Used a participatory governance assessment tool to make an assessment of governance in community groups

Practice effective knowledge management

- Data is reported across programs globally
- Regularly provided training to all staff

Sources: WWF-Nepal 2013; Stephenson & O'Connor 2014

Latin America

Incentivizing Conservation through an Ecological Tax in Brazil (ICMS Ecológico)

PROGRAM FOCUS

To reward local governments for conservation activities through public sector finance.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Financing Strategies, MEL, Cross-Sectoral Coordination

PROGRAM DETAILS

The ICMS (*Imposto sobre Circulação de Mercadorias e Serviços*) in Brazil is a tax on goods and services, much like a value-added tax. It takes environmental indicators into account when it shares ICMS revenue with local governments (Cassola 2010; Ring 2008). ICMS Ecológico was set up to compensate local municipalities for the cost of land use restrictions and opportunity costs after protected areas were established. Although ICMS

Ecológico was originally introduced to compensate for these land use restrictions, it quickly became used as a tool to incentivize the creation of new protected areas (May et al 2012). States using ICMS Ecológico allocate a portion of tax revenue to municipalities for their conservation efforts. Transfers amount to 25 percent of the municipalities' share of ICMS tax revenue, and are disbursed to municipalities on a weekly basis based on an ecological index formulated by ICMS-implementing states. Once a municipality decides to enroll in the program, it must legally register a protected area (Grieg-Gran 2000). The financial benefits accrue to municipalities, not to individual landowners.

The program is credited with improving the relationship between local communities and municipalities, and presenting an opportunity to generate revenue. Municipalities have full discretion over how ICMS Ecológico funds are spent, and many have devoted these resources to environmental activities and infrastructure development projects. All of the revenue generated is disclosed to the public by individual municipalities in order to secure the support of local communities (May et al 2012). Studies indicate that the size of protected areas has increased in many states. Some municipalities have also expressed interest in giving private landowners incentives for conserving privately-owned protected areas (Bernardes 1999; Ring 2008).

BEST PRACTICES

Use performance-based, inclusive incentives

- Funds generated through levying value-added tax
- Incentivized municipalities to establish and steward protected areas
- Municipalities ensured the freedom to decide how to spend the allocated funds

Develop a strong benefit-sharing mechanism

- Developed robust methodology (development of ecological indices) to allocate funds based on areas conserved
- Benefits shared with municipalities are disclosed to the public, to achieve transparency
- Institutional mechanisms established prior to tax implementation

Sources: Bernardes 1999; Cassola 2010; Myers Madeira et al 2013; May et al 2012; Grieg-Gran 2000; Ring 2008

State System of Incentives for Environmental Services (SISA) and REDD Early Movers (REM) Program, State of Acre, Brazil

PROGRAM FOCUS

To reduce greenhouse gas (GHG) emissions from deforestation and degradation, following the State Plan for Control and Prevention of Deforestation; to provide performance-based payments for Acre's reduced emissions from deforestation; and to invest these funds in forest and climate protections and other benefits for Acre.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Boundary Setting, Financing Strategies, MEL, Cross-Sectoral Coordination

PROGRAM DETAILS

The Brazilian state of Acre in the Amazon has experienced a decade of strong economic growth and has successfully developed a forest-based economy. Acre is known for showing a high degree of commitment to and leadership in forest protection. This state, which once had a gross domestic product (GDP) per capita of less than 60 percent of the Brazilian average (World Bank 2013), has now achieved GDP growth well above the national average while combating deforestation (Environmental Defense Fund (EDF) 2010). Acre's state government has formulated a comprehensive policy mix that is focused on protecting forests while simultaneously strengthening sustainable economic development.

The state is most widely known for implementing the State System of Incentives for Environmental Services (SISA), the world's first jurisdictional REDD+² program, created through a state law passed in October 2010.

² REDD+: Reducing emissions from deforestation and forest degradation in developing countries, and fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks.

In 2006, Acre had approved an Economic and Ecological Zoning plan, which was later incorporated into broader forest legislation that provided for the mapping of land use, and defining land use priorities through a participatory process (REDD-Monitor 2015; EDF 2010). In 2010, it set up SISA (REDD-Monitor 2015).

Land-use zoning remains an innovative and successful strategy employed by SISA. The Economic and Ecological Zoning plan has carried out robust land-use system mapping, which has helped it define its priorities. The process involved grassroots participation and developed into a state law that established economic activities in the deforested area and identified practices for sustainable forest management (EDF 2010).

Besides Acre's impressive performance designing comprehensive cross-sectoral policies, the program has had a robust stakeholder consultation process. Although initially it was planned that the program would be implemented in seven or eight priority areas in the high deforestation risk zone identified by Economic and Ecological Zoning, that idea was abandoned after the program consulted a broader spectrum of stakeholders (REDD-Monitor 2015). The implementing agency decided to hold even more extensive stakeholder consultations, resulting in a strong consensus that the initiative should be implemented at the state level, transforming it into a jurisdictional reducing emissions from deforestation and forest degradation (REDD) program (Alencar et al 2012). The stakeholder consultations included interviews and discussions carried out over a period of nearly two years (Climate Focus 2013). The consultations engaged civil society groups and individuals along with international and national experts from government, environmental NGOs, intergovernmental and other international institutions, and Acre's own citizens (EDF 2010). The initiative's implementation at the state level enhanced its relevance to poverty issues, and enabled efficient alignment with state-level policies.

SISA includes a REDD+ program in Acre that is officially known as the Environmental Service Incentives for Carbon (ISA Carbon). Multiple agencies funded the initial activities of the SISA and ISA-Carbon Program, including Acre's state government, the German Corporation for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, GIZ), WWF, and IUCN. The second phase, which involved the final design and implementation of the SISA and ISA Carbon Program, was funded by the Amazon Fund. Another international source came in the form of a partnership between WWF and the UK's entertainment and communications company, Sky, which provided the Acre government with funding over a period of three years starting in 2009, with the company matching donations by Sky's consumers.

In December 2012, recognizing Acre's environmental leadership and achievements in reduced deforestation, the German government decided to support Acre's state government in further strengthening forest and climate protection in alignment with Brazilian national policies. As a critical component of this partnership, the two governments decided to coordinate a results-based REDD+ system, in which the German government would provide funding for emission reductions achieved as a result of reduced deforestation in the State of Acre. The program was implemented through REDD+'s Early Movers Program (REM), and launched in 2012 at the Rio+20 Conference. REM is an innovative initiative of German Official Development Assistance that rewards pioneers of forest protection and climate change mitigation by providing results-based payments for verified emission reductions from deforestation. Funds from REM are being used to consolidate and expand Acre's forest and climate protection policies, and to enhance SISA by providing additional incentives for local actors to further reduce deforestation.

The institutional structure for this program helps coordinate the various moving parts, monitor performance, and secure financing. The central entity, the SISA-REM executive committee, is pivotal in linking up all of the institutions³ involved in program implementation. It gives the State Forest Fund direction in signing cooperation agreements with implementing agencies (including government bodies, NGOs, and smallholder organizations), and transfers funds. Another entity, called the State Commission for Validation and Monitoring, is a participatory governance body with SISA. It has the authority to approve investments and funds, and to monitor the overall performance of the SISA implementation. This provides the additional advantage of checking the efficiency and effectiveness of the financial mechanism.

The state has recognized that its current funding sources are limited, and that it needs to strengthen its institutional mechanisms and work to ensure stakeholder participation in the long term. The program is exploring carbon financing (both regulated and voluntary) outside of the UN Framework Convention on Climate Change (UNFCCC) scope. It includes the California state government's new cap-and-trade program, which offers potential opportunities for trading carbon credits originating from various countries. A Memorandum of Understanding between the states of California in the U.S., Chiapas, Mexico, and Acre in Brazil was signed in

³ For a more thorough treatment of the institutional structure supporting SISA-REM, see Alencar et al 2012, Federal Ministry for Economic Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, BMZ) 2017, Duchelle et al 2015, and EDF 2010.

November 2010, defining the legal and technical basis for a program to be launched by the three states (Alencar et al 2012). In addition to its active participation in dialogue with California, the Acre state government is also exploring opportunities within a possible Brazilian carbon market involving other states, especially São Paulo and Rio de Janeiro.

Acre is known as a pioneer in performance-based schemes that reward good land stewardship and sustainable agriculture. Its program has demonstrated a high level of political will and wise stakeholder consultation-driven development of integrated sectoral policies supporting forest conservation that have attracted a significant amount of attention and, eventually, public and private sector finance also. REM has provided an added advantage by offering performance-based payments. Even though a long-term, sustainable source of funding is yet to be established, the state is proactively exploring various options, especially in the carbon market, to secure such financing.

BEST PRACTICES

Select boundaries that facilitate governance

- Jurisdictional REDD+ program was implemented primarily through the state's existing policies and programs to reduce deforestation
- Extensive consultations held with stakeholders to set initiative boundaries and aid implementation

Engage stakeholders

- A wide variety of local stakeholders involved in planning and implementation

Mobilize and plan resources

- Targeted investments focused on incentivizing local actors
- Alignment with national government where finances are mobilized through national institutions
- Funds distributed through benefit-sharing mechanisms (BSMs)

Align initiative with national and international environmental and development agendas

- Performance-based finance consistent with UNFCCC, aiming to contribute to climate change mitigation and forest protection
- Alignment with REDD+ Social and Environmental Standards

Monitor financial flows

- Robust monitoring of financial flows conducted through participatory governance body

Sources: Alencar et al 2012; BMZ 2017; Climate Focus 2013; Duchelle et al 2014; EDF 2010; REDD-Monitor 2015; World Bank 2013; WWF 2013

The Nature Conservancy's program in the municipality of São Félix do Xingu

PROGRAM FOCUS

To bring multiple conservation strategies together, into a single landscape to demonstrate how to balance improved environmental governance with economic alternatives that do not contribute to deforestation.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Boundary Setting, Land Tenure, Financing Strategies, Cross-Sectoral Coordination

PROGRAM DETAILS

Supported by TNC, the São Félix do Xingu program in Brazil focused on striking a balance between combating deforestation and supporting sustainable economic development. It adopted an integrated approach in order to draw together a variety of separate conservation strategies under an umbrella program. Using jurisdictions to define the territories in which it would operate, it started by forging a collaborative structure at the municipal level. This structure included creating stakeholder pacts, expanding the capacities of existing institutions, and

developing new institutions to mobilize resources. The overall initiative was rooted in a decision by Brazil to curb rising deforestation. The government had created a list of the municipalities responsible for more than half of the country's total deforestation. These municipalities faced a ban on issuing new licenses to open up pasture, an embargo on the sale of goods produced on illegally deforested areas, and a reduction in access to credit.

The municipality of São Félix do Xingu in the State of Pará was at the top of the list. As part of the process it needed to go through in order to be removed from the list, the municipality had to design interventions to achieve zero illegal deforestation. The municipality thus developed a strategy: landowners wanting a clean bill of health on the Rural Environmental Registry needed to commit themselves to the Municipal Pact. This pact demanded that they consider the interests of others and work together toward common goals.

Forging the pact enabled program managers to secure commitments from key stakeholders. The local government had to fulfill its own obligations by granting licenses, providing technical assistance, facilitating the land tenure clarification process, increasing access to incentives (credit), and providing infrastructure for the land use actors involved. It was committed to making sure that rural producers (farmers) were complying with environmental regulations and adopting sustainable models of production (Gebara 2014).

The pact was discussed with as many as 10 communities before being finalized. Each community elected two representatives (a smallholder and a large landowner) to represent them. Through the consultation process, implementing agencies were able to identify key barriers and concerns, and prove the pact's legitimacy. This pact was eventually signed by 52 organizations representing the government, local stakeholders, and NGOs; it detailed the commitments from government, rural producers, banks, members of the private sector, and the NGOs.

It was amended in 2012 to gain the support of Indigenous communities in São Félix do Xingu and other organizations, such as the National Protected Areas Commission, and the federal Indigenous Affairs agency. The São Félix do Xingu municipality officially still leads the program and ensures that sector-specific strategies are cohesive. TNC acted as a backbone organization, coordinating with the municipality to ensure that interventions were complementary and nonconflicting.

Careful analysis identified the drivers of deforestation and relevant stakeholders and sectors. The exercise helped to formulate sector/actor-specific strategies (for cocoa and cattle) and multifunctional landscape approaches (for Indigenous territories and smallholder agriculture). This analysis led to one of the highlights of this program: strategies tailored to the needs of the various stakeholders, which helped to motivate all stakeholders to achieve their individual land use objectives. There were specific strategies for: 1) sustainable models of cocoa agroforestry systems for smallholder farmers; 2) sustainable cattle intensification for medium and large landholders; 3) Indigenous territorial management; and 4) support for the management of protected public areas.

The program was designed to make concrete benefits manifest early on, to avoid the loss of stakeholder interest. Registering with the Rural Environmental Registry⁴ meant that stakeholders received immediate benefits, such as access to credit from a TNC-created small grants fund, and technical assistance for carrying out best practices. Performance-based benefits were offered based on stakeholders' efforts to reduce emissions. Both of these performance-based and upfront benefits were part of the pilot program.

The program provided leadership for both sector-focused and cross-sectoral solutions. It made progress in developing capacity, and building economically viable models. Better coordination between specific interventions, and the adoption of a shared vision and shared goals by municipal and national governments were key to its success.

The program has won the trust and support of local stakeholders, changing how they thought about and practiced land use (Schmink *et al* 2017). TNC has channeled more investment into actor-specific strategies, including multifunctional approaches (working with Indigenous territories) and sectoral plans (cocoa and cattle). The cocoa and cattle strategies are expanding into neighboring municipalities that have similar land and actor dynamics.

⁴ Rural Environmental Registry: TNC and Cargill developed a system of satellite monitoring and land registration of farmers' properties to identify farmers who were not deforesting. This tool became the Rural Environmental Registry (*Cadastro Ambiental Rural*). It has served to ensure compliance with the revised forest code wherein registration of private properties was used as an enforcement measure to ensure the legality of land use (Varns *et al* 2018).

Overcoming dependence on TNC as a convening body has been identified as one area needing improvement. Other areas for growth include developing a local organization to act as a convening body; identifying sources of funding to sustain the program in the long term; and greater engagement with members of the Indigenous community. Land tenure, which is dependent on political will, remains a serious challenge.

In spite of these challenges, the Municipal Pact has set an important precedent, showing that stakeholders need to work together to solve deforestation, and has laid the groundwork for a broader program with more substantial investments. To date, 86.4 percent of private properties in São Félix do Xingu are recorded in the Rural Environmental Registry. By 2013, 95 percent of beef-supplying properties were enrolled in it.

BEST PRACTICES

Actively foster community participation

- Deforestation strategies encompassed the social and economic well-being of the São Félix do Xingu community
- Community representation was ensured in program design and implementation

Take a cross-sectoral approach

- Conducted a thorough analysis of key drivers of deforestation, identifying 23 priority opportunities, including those with the largest land use impacts (cattle, agriculture, and forestry)
- Collectively identified issues in environmental governance and funding strategies
- TNC supported identification and development of specialized strategies for specific stakeholders

Develop stakeholder capacity

- Helped municipal government with environmental monitoring, enforcement, and licensing

Enable collaborative management

- The Municipal Pact formed the basis for collaboration.

Ensure accountability

- Incentives were created for stakeholders, emphasizing early materialization of benefits to ensure sustained participation and interest

Sources: Gebara 2014; Schmink *et al* 2017; Varns *et al* 2018

Orinoquía Sustainable Integrated Landscape (OSILP) Program, Colombia

PROGRAM FOCUS

To improve enabling conditions for sustainable, low-carbon landscape planning and management in project targeted areas.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Land Tenure, Financing Strategies, MEL, Cross-Sectoral Coordination

PROGRAM DETAILS

The Orinoquía region in Colombia covers 28 million hectares. It is believed that 35 percent of the region's species are endemic to Colombia, and that close to 75 threatened species in Colombia live in this area. However, the Orinoquía region has the second highest deforestation rate in the country. The government of Colombia recognizes that this region can offer the country major opportunities, both at the economic and social level; but it wants to make sure that the development path that will be taken for this "new region" will also respond to environmental sustainability.

Colombia was selected as one of the five countries selected for consideration under the ISFL initiative. The World Bank is channeling resources from various sources and various instruments. The overall operation is supported

and financed by the World Bank through the BioCF ISFL initiative, to support the preparation and implementation of the Orinoquía Sustainable Integrated Landscape Program (OSILP) with a combination of technical assistance and performance-based payments. In addition to the ISFL program, a \$5.9 million GEF-funded operation, implemented through the World Bank, complements the low-carbon development objective of the ISFL initiative, with selected biodiversity conservation interventions.

The OSILP aims to improve enabling conditions for sustainable and low-carbon landscape planning and management in targeted areas of the Orinoquía region. To achieve its objective, the program was designed around four main components. Through Component 1 (Integrated Land-Use Planning and Improved Governance for Deforestation Control), support is provided to the government of Colombia to strengthen its territorial planning agenda. This agenda includes support for mainstreaming environmental considerations into land-use planning and management and land tenure processes via consultancy services, technical assistance, and training activities.

The integrated nature of land planning processes promoted by the project is reflected in the coordination of component activities among the National Planning Department of Colombia, the Ministry of Environment and Sustainable Development, and the Ministry of Agriculture and Rural Development.

Key activities to improve the mainstreaming of environmental consideration in land planning instruments and land regularization processes under Component 1 include: (1) strengthening local and regional planning documents with low carbon and climate-resilient criteria; (2) designing a regional spatial data infrastructure to ensure that environmental and agricultural data is interoperable and available for cadaster and land tenure purposes; (3) development of the cadaster for the municipality of Arauquita (funds available through the UK cooperation will complement this work by supporting the development of seven additional municipal cadasters in the project areas); (4) support for the operationalization of the Zones of Interest for Economic and Social Development in Rural Areas (*Zonas de Interés de Desarrollo Rural Económico y Social, ZIDRES*) program through verification and legal assessment of land titles and the preparation of guidelines for mainstreaming environmental variables into future private sector investments; (5) developing a methodology to apply environmental attributes with economic value for land title, taxing, marketing purposes, Payment for Ecosystem Services (PES), etc.; (6) support to the national land agency to include environmental and gender criteria in Territorial Plans; and (7) validation of a methodology for integrated land use planning (landscape charts) in two municipalities, to be developed by the National Unit for Agriculture Planning, as a reference for future applications in other municipalities in the region and beyond.

Overall, ISFL's funded activities are expected to contribute to the establishment of a comprehensive land-use planning framework to support a resilient, low-carbon land use pattern in the region.

BEST PRACTICES

Identify ways to support ongoing tenure reform

- Built institutional capacity, and supported ongoing efforts of the government of Colombia for sustainable development in the region.
- Used technology to create a database bringing together robust, accurate information that accurately represents the territory.

Actively include all relevant stakeholders

- Emphasized gender equality, especially under the cadastre/land titling activities

Source: World Bank, 2017

The Payment for Hydrological Environmental Services (PSAH) Program

PROGRAM FOCUS

To incentivize forest owners to protect watersheds and recharge aquifers in areas where commercial forestry is not competitive.

RELEVANT THEMES

MSE, Environmental Focus, Economic Focus, Financing Strategies, MEL, Cross-Sectoral Coordination

PROGRAM DETAILS

The Payment for Hydrological Environmental Services (PSAH) program in Mexico was introduced to address deforestation and the overuse of water aquifers by paying participating forest landowners to protect watersheds and recharge aquifers in areas where commercial forestry is not competitive (Muñoz-Piña et al 2008). Under this scheme, fees for water use were invested back into conserving forest cover in priority areas for hydrological resources.

PSAH funds come from a designated share of the water use fees charged by municipalities. These funds were then channeled through the Mexican Forest Fund (*Fondo Forestal Mexicano*) instead of directly through the government. This ensured greater coordination and efficiency in mobilizing funds for PSAH. Direct cash payments were made to forest landowners each year based on compliance. Primary forest owners received 300 pesos per hectare per year (about \$27 in 2020), and cloud forest owners received 400 pesos per hectare per year (\$36) (IIED, n.d.-b).

The government has created clear guidelines for the allocation of PSAH funds, focused on establishing administrative mechanisms and policy tools for assessing compliance and ensuring that forest landowners are compensated for ecosystem services.

The program enjoys considerable political support. For example, the Mexican government has introduced a national law to protect and restore forests, conserve biodiversity, and protect the communities that depend on these forests. The law was introduced after public consultations with a diverse range of stakeholders, including legislators, the federal government, civil society organizations, Indigenous organizations, academics, forestry engineers, and others. The government integrated the law into the PSAH PES scheme (FAO 2013a).

Performance and compliance monitoring, and the use of technology for ecological assessment are key to the initiative's success. Monitoring under PSAH is conducted annually to create a baseline for agreements with landowners; establish the amount contracted; and monitor the performance prior to each annual payment, as established in the contract (FAO 2013a). Site visits and satellite imagery are used to verify that the forest cover is being protected. Where there is noncompliance, participants are removed from the program.

The program has led to reduced deforestation (Muñoz-Piña et al 2011; Alix-García, Shapiro, and Sims 2010); has effectively targeted areas of relevance; and has promoted ecosystem conservation. The program has also benefited from acceptance at the grassroots level, enabled by a sustainable funding mechanism, a clear incentive scheme, and careful consideration of Indigenous communities and women's participation.

BEST PRACTICES

Use performance-based, inclusive incentives

- Direct cash payments for conserving/maintaining forest cover and hydrological sources
- Channeled funds for PSAH through a national forest fund, which had sustainable, blended financing from various sources, including contributions from water users, a budget approved annually by the legislature, state and municipal governments, and private actors

Develop a strong performance monitoring mechanism

- Used a variety of methods, including Geographic Information System (GIS), satellite imagery, and survey methods to create a strong mechanism for monitoring compliance
- Aligned with national laws (General Law for Sustainable Forest Development); amendments to law based on broad stakeholder consultation

Actively include all relevant stakeholders

- Inclusion of women and Indigenous communities

Sources: Alix-García, Shapiro, and Sims 2010; FAO 2013a; IIED, n.d.-b; Muñoz-Piña et al 2008; Muñoz-Piña et al 2011

Bibliography

- Akida, Amina and Rosina Blomley. 2006. "Trends in Forest Ownership, Forest Resources Tenure and Institutional Arrangement: Are They Contributing to Better Forest Management and Poverty Reduction? Case Study from the United Republic of Tanzania." Dar es Salaam: FAO. <http://www.fao.org/forestry/12511-0a38b2dd54443592fd647a92d27de18fc.pdf>
- Alencar, Ane, Daniel Nepstad, Elsa Mendoga, Britaldo Soares-Filho, Paulo Moutinho, Marcelo C.C. Stabile, David McGrath, Simone Mazer, Cassio Pereira, Andrea Azevedo, Claudia Stickler, Sonaira Souza, Isabel Castro, Osvaldo Stella. 2012. "Acre State's Progress Towards Jurisdictional REDD: Research, Analysis, and Recommendations for the State Carbon Incentive Program (ISA-Carbono)." Brasília: Amazon Environmental Research Institute. <https://earthinnovation.org/wp-content/uploads/2012/07/Acres-Progress-Towards-Jurisdictional-REDD-1.pdf>
- Alix-García, Jennifer M., Elizabeth N. Shapiro, and Katharine R.E. Sims. 2010. "Impact of Payments for Ecosystem Services on Deforestation in Mexico: Preliminary Lessons for REDD." Tenure Brief. No. 11. Madison: Land Tenure Center, University of Wisconsin. <https://minds.wisconsin.edu/handle/1793/46748>
- Beatty, Craig, Leander Raes, Adrian L. Vogl, Peter L. Hawthorne, Miguel Moraes, Javier L. Saborio, and Kelly Meza Prado. 2018. *Landscapes, At Your Service: Applications of the Restoration Opportunities Optimization Tool (ROOT)*. Gland, Switzerland: IUCN. <https://portals.iucn.org/library/node/47805>
- Bernardes, Aline T. 1999. "Some Mechanisms for Biodiversity Protection in Brazil, with Emphasis on their Application in the State of Minas Gerais." Paper prepared for the Brazil Global Overlay Project, Development Research Group. Washington, DC: World Bank.
- Biancalani, Riccardo, Freddy Nachtergaele, Monica Petri, and Sally Bunning. 2013. *Land Degradation Assessment in Drylands: Methodology and Results*. Rome: FAO. <http://www.fao.org/3/a-i3241e.pdf>
- British American Tobacco Biodiversity Partnership (BATBP). 2011. "British American Tobacco Biodiversity Partnership-Progress Report." (Accessed September 29, 2020) [http://www.batbiodiversity.org/groupms/sites/BAT_8A7ED8.nsf/vwPagesWebLive/1F54CC450E52EF88C12577BD003F2BF7/\\$FILE/BAT_Biodiversity_Report.pdf?openelement](http://www.batbiodiversity.org/groupms/sites/BAT_8A7ED8.nsf/vwPagesWebLive/1F54CC450E52EF88C12577BD003F2BF7/$FILE/BAT_Biodiversity_Report.pdf?openelement)
- _____. 2012. *Biodiversity Risk & Opportunity Assessment Handbook*. London: BATBP (Accessed September 29, 2020) [https://www.bat.com/group/sites/uk__9d9kcy.nsf/vwPagesWebLive/DO9DEM2S/\\$FILE/medMDAXGG9Y.pdf?openelement](https://www.bat.com/group/sites/uk__9d9kcy.nsf/vwPagesWebLive/DO9DEM2S/$FILE/medMDAXGG9Y.pdf?openelement)
- Brouwer, Herman, Jim Woodhill, Minu Hemmati, Karèn Verhoosel, and Simone van Vugt. 2015. *The MSP Guide: How to Design and Facilitate Multi-Stakeholder Partnerships*. Wageningen: Wageningen University and Research, WCDI, and Rugby, UK: Practical Action Publishing.
- Buck, Louise E., Jeffrey C. Milder, Thomas A. Gavin, and Ishani Mukherjee. 2006. "Understanding Ecoagriculture: A Framework for Measuring Landscape Performance." Ecoagriculture Discussion Paper Number 2. Washington, DC: EcoAgriculture Partners. <https://ecoagriculture.org/wp-content/uploads/2006/12/Discussion-Paper-Understanding-Ecoagriculture-A-Framework-for-Measuring-Landscape-Performance.pdf>
- Buck, Louise, Raffaella Kozar, John Recha, Ayal Desalegn, Chris Planicka, and Abigail Hart. 2014. *A Landscape Perspective on Monitoring & Evaluation for Sustainable Land Management: Trainers' Manual*. Washington, DC: EcoAgriculture Partners. <https://ecoagriculture.org/publication/a-landscape-perspective-on-monitoring-evaluation-for-sustainable-land-management/>
- Buck, Louise E., Sara J. Scherr, Barbara Chami, Melissa Goldman, Ted Lawrence, Jefferson Mechem, Ellen Nevers, and Ryan Thomas. 2019. *Exploring Property Rights and Tenure in Integrated Landscape Management: A Scoping Study from the Landscapes for People, Food and Nature Initiative*. Washington, DC: EcoAgriculture Partners (on behalf of the Landscapes for People, Food and Nature Initiative).

Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ). 2017. "REDD+ in the State of Acre, Brazil: Rewarding a Pioneer in Forest Protection and Sustainable Livelihood Development." Frankfurt: KfW Development Bank; Bonn: BMZ. <https://www.kfw-entwicklungsbank.de/PDF/Entwicklungsfinanzierung/Themen-NEU/REDD-Early-Movers-Acre-Fact-Sheet.pdf>

Cassola, Rodrigo S. 2010. "TEEBcase: Fiscal Transfers Between State and Municipal Governments Provide Incentives for Ecosystem Services Provision: The ICMS-E in Brazil." (Mainly based on Ring (2008). Geneva: The Economics of Ecosystems & Biodiversity. <http://www.teebweb.org/wp-content/uploads/2013/01/Financing-conservation-through-ecological-fiscal-transfers-in-Brazil.pdf>

Climate Focus. 2013. "Acre, Brazil: Subnational Leader In REDD+." Amsterdam: Climate Focus. https://www.climatefocus.com/sites/default/files/acre_brazil.pdf

Colfer, Carol J. Pierce, Ravi Prabhu, Mario Günter, Cynthia McDougall, Noemi Miyasaka Porro, and Roberto Porro. 1999. *Who Counts Most? Assessing Human Well-Being in Sustainable Forest Management*. The Criteria & Indicators Toolbox Series, 8. Jakarta, Indonesia: CIFOR. doi:10.17528/cifor/000768

Crist, Patrick, Kat Maybury, Sarah Carr, and Jon Hak. 2014. *Tools for Landscape-Level Assessment and Planning: A Guide for the North Pacific Landscape Conservation Cooperative*. Arlington, VA: NatureServe. https://www.natureserve.org/sites/default/files/report_final_tools_for_landscape-level_assessment_and_planning_2.pdf

Denier, Louisa, Sara Scherr, Seth Shames, Paul Chatterton, Lex Hovani, and Nienke Stam. 2015. *The Little Sustainable Landscapes Book*. Oxford: Global Canopy Foundation. <https://ecoagriculture.org/publication/the-little-sustainable-landscapes-book/>

Duchelle, Amy E., Maron Greenleaf, Denyse Mello, Maria Fernanda Gebara, and Tadeu Melo. 2014. "Acre's State System of Incentives for Environmental Services (SISA), Brazil." In *REDD+ on the Ground: A Case Book of Subnational Initiatives Across the Globe* edited by Erin O. Sills, Stibniati S. Atmadja, Claudio de Sassi, Amy E. Duchelle, Demetrius L. Kweka, Ida Aju Pradnja Resosudarmo, and William D. Sunderlin. Bogor, Indonesia: CIFOR.

Environmental Defense Fund (EDF). 2010. "The Acre State System of Incentives for Environmental Services (SISA)." Summary, December 2010. New York: EDF. https://www.edf.org/sites/default/files/11492_Acre_SISA_fact_sheet.pdf

European Commission. n.d. *INSPIRE Knowledge: Infrastructure for Spatial Information in Europe*. European Environment Agency. European Commission. (Accessed May 13, 2021) <https://inspire.ec.europa.eu/inspire-implementing-rules/51763>

Evans, Kristen, and Manuel R. Guariguata. 2016. *Success from the Ground Up: Participatory Monitoring and Forest Restoration*. Occasional Paper 159. Bogor, Indonesia: CIFOR. https://www.cifor.org/publications/pdf_files/OccPapers/OP-159.pdf

Food and Agriculture Organization of the United Nations (FAO). n.d.-a. "Global Perspectives Studies: Methodologies." <http://www.fao.org/global-perspectives-studies/methodologies/en/>

_____. n.d.-b. "LADA-WOCAT QM." Land & Water, Land Resources Planning Toolkit. Rome: FAO. <http://www.fao.org/land-water/land/land-governance/land-resources-planning-toolbox/category/details/en/c/1197596/>

_____. n.d.-c. "Modelling System for Agricultural Impacts of Climate Change (MOSAICC)." Rome: FAO (Accessed May 13, 2021), <http://www.fao.org/in-action/mosaicc/en/>

_____. n.d.-d. "SFM Toolbox." *Natural Forest Management*. Rome: FAO. (Accessed May 13, 2021), <http://www.fao.org/forestry/sfm/85086/en/>

_____. n.d.-e. "TECA: Technologies and Practices for Small Agricultural Producers." Rome: FAO. (Accessed May 13, 2021), <http://www.fao.org/teca/en/>

_____. 2017a. "African Practitioners Show How Sustainable Land Management Creates Healthy Land, Water and Lives." *Land & Water*. Rome: FAO (Accessed May 17, 2021) <http://www.fao.org/land-water/news-archive/news-detail/en/c/901173/>

____ 2017b. "Sustainable Land Management (SLM) in Practice in the Kagera Basin: Lessons Learned for Scaling Up at Landscape Level: Results of the Kagera Transboundary Agro-Ecosystem Management Project. (Kagera TAMP). Rome: FAO. <http://www.fao.org/3/i6085e/i6085e.pdf>

____ 2018a. "FAO/GEF Regional Project CACILM-2: 'Integrated Natural Resources Management in Drought-Prone and Salt-Affected Agricultural Production Systems in Central Asia and Turkey.'" Webinar: Ecosystem-Based Adaptation in Dryland Ecosystems. August 9, 2018 by Makhmud Shaumarov and Sara MarjaniZadeh. Rome: FAO. <http://www.fao.org/3/CA1423EN/ca1423en.pdf>.

____ 2018b. "Forest and Farm Facility Summary Report (2012-2017): Putting Producers First Works: Impacts and Lessons Learned from Enabling Governments and Strengthening Forest and Farm Producer Organizations." Rome: FAO. <http://www.fao.org/documents/card/en/c/I9155EN>

____ 2019. "Operational Guidelines for the Design, Implementation and Harmonization of Monitoring and Evaluation Systems for Climate-Smart Agriculture." Rome: FAO. Available at: <http://www.fao.org/3/ca6077en/CA6077EN.pdf>

FAO and the European Union. 2017. "Strengthening Sector Policies for Better Food Security and Nutrition Results: Political Economy Analysis" by Dubravka Bogic and Klaus Urban. Policy Guidance Note 8. Rome: FAO; Brussels: EU. <http://www.fao.org/3/i7212en/I7212EN.pdf>

Forest Carbon Partnership Facility (FCPF) and BioCarbon Fund (BioCF) Initiative for Sustainable Forest Landscapes. 2020 *Designing Benefit Sharing Arrangements: A Resource for Countries*. Washington, DC: World Bank. (Accessed May 13, 2021) <https://www.forestcarbonpartnership.org/bio-carbon/en/index.html>

Fritz, Verena, Brian Levy, and Rachel Ort. 2014. *Problem-Driven Political Economy Analysis: The World Bank's Experience*. Directions in Development-Public Sector Governance. Washington, DC: World Bank. Available at: <https://openknowledge.worldbank.org/handle/10986/16389>

Funder, Mikkel, Finn Danielsen, Yonika Ngaga, Martin R. Nielsen, and Michael K. Poulsen. 2013. "Reshaping Conservation: The Social Dynamics of Participatory Monitoring in Tanzania's Community-Managed Forests." *Conservation and Society* 11 (3): 218-232. doi:10.4103/0972-4923.121011.

Gebara, Maria Fernanda. 2014. "Sustainable Landscapes Pilot Program in São Félix Do Xingu, Brazil" In *REDD+ On the Ground: A Case Book of Subnational Initiatives Across the Globe* edited by Erin O. Sills, Stibniati S. Atmadja, Claudio de Sassi, Amy E. Duchelle, Demetrius L. Kweka, Ida Aju Resosudarmo, and William D. Sunderlin. Bogor, Indonesia: CIFOR. <https://www2.cifor.org/redd-case-book/case-reports/brazil/sustainable-landscapes-pilot-program-sao-felix-xingu-brazil/>

GLOBIO. n.d. "Global Biodiversity Model for Policy Support: Modelling Interactions Between Humans and Nature." The Hague: PBL Netherlands Environmental Assessment Agency (Accessed May 16, 2021) <https://www.globio.info/>

Grieg-Gran, Maryanne. 2000. "Fiscal Incentives for Biodiversity Conservation: The ICMS Ecológico in Brazil." International Institute for Environment and Development, Environmental Economics Programme, Discussion Paper 00-01. 10.2139/ssrn.279173.

Gross, Lee and Louis Wertg. 2015. *The Landscape Approach for Sustainability in African Agribusiness: Partnerships That Support Excellent Companies, Communities, and Ecosystems*. Washington, DC: EcoAgriculture Partners. <https://ecoagriculture.org/publication/landscape-approach-sustainability-african-agribusiness/>

International Center for Agricultural Research in the Dry Areas (ICARDA). n.d. *Technologies and Approaches on Sustainable Land Management in Central Asia*. Beirut: ICARDA. <https://www.wocat.net/library/media/97/>

International Institute for Environment and Development (IIED). n.d.-a. "Forest and Farm Facility Phase I." *Forests, Locally-Controlled Forestry* (Accessed September 29, 2020) <https://www.iied.org/forest-farm-facility-phase-i>

____ n.d.-b. "Case Studies: Mexico-National PSAH Programme." *Payments for Watershed Markets – Information from Schemes in Developing Countries* London: IIED (Accessed September 27, 2020) https://watershedmarkets.org/casestudies/Mexico_National_PSAH_eng.html

IVM Institute for Environmental Studies. n.d. "CLUMondo Model" *Environmental Geography*. Amsterdam: VU University Amsterdam. (Accessed May 16, 2021) <https://www.environmentalgeography.nl/site/data-models/models/clumondo-model/>

Landscapes for People, Food and Nature. n.d. "Landscape Performance Scorecard (LPS)." Tool submitted by Louise Buck. Washington, DC: EcoAgriculture Partners. (Accessed May 14, 2021) <https://peoplefoodandnature.org/tool/landscape-performance-scorecard-lps/>

Lapeyre, Renaud, Herlina Hartanto, and Romain Pirard. 2015. *Designing Incentive Agreements for Conservation: An Innovative Approach*. Jakarta, Indonesia: The Nature Conservancy. http://www.cifor.org/publications/pdf_files/Books/BPirard1501.pdf

Lyons, Anna. 2014. *Building a Collaborative Vision for Landscape Action: Lombok Project Experience – A Case Study of Integrated Watershed Management in Renggung Watershed, Central Lombok, West Nusa Tenggara Province, Indonesia* by Flora & Fauna International. Washington, DC: EcoAgriculture Partners. https://peoplefoodandnature.org/wp-content/uploads/2014/11/FFI_Lombok_LPFNCASEStudy_November12_2014.pdf

Macqueen, Duncan, Jhony Zapata, Jeffrey Y. Campbell, Sony Baral, Kanimang Camara, Leonardo Chavez, Sophie Grouwels, Fred Kafeero, Edward Kamara, Ewald Rametsteiner, and Ogden Rodas. 2014. *Multi-Sectoral Platforms for Planning and Implementation: How They Might Better Serve Forest and Farm Producers*. Forest and Farm Facility Working Paper 2. Rome: FAO. <https://pubs.iied.org/sites/default/files/pdfs/migrate/G03880.pdf>

May, Peter H., Maria Fernanda Gebara, Bruna Rañção Conti, Guilherme Rodrigues Lima. 2012. "The 'Ecological' Value Added Tax (ICMS-Ecológico) in Brazil and Its Effectiveness in State Biodiversity Conservation: A Comparative Analysis." Paper presented at 12th Biennial Conference of the International Society for Ecological Economics ISEE 2012: Ecological Economics and Rio +20, Rio de Janeiro, June 16-19, 2012. Panel Session: "The role of Economic Instruments in the Conservation Policy Mix."

Moncrieffe, Joy and Cecilia Luttrell. 2005. *An Analytical Framework for Understanding the Political Economy of Sectors and Policy Arenas*. London: Overseas Development Institute. <https://cdn.odi.org/media/documents/3898.pdf>

Muñoz-Piña, Carlos, Alejandro Guevara, Juan Manuel Torres, and Josephina Braña. 2008. "Paying for the Hydrological Services of Mexico's Forests: Analysis, Negotiations and Results." *Ecological Economics*. 65 (4): 725-36. 10.1016/j.ecolecon.2007.07.031.

Muñoz-Piña, Carlos, Marisol Rivera, Alfredo Cisneros, and Helena García. 2011. "Retos de la Focalización del Programa de Pago por los Servicios Ambientales en México." *Revista Española de Estudios Agrosociales y Pesqueros* 228 (1): 87-112.

Myers Madeira, Erin, Lisa Kelley, Jill Blockhus, David Ganç, Rane Cortez, and Greg Fishbein. 2013. *Sharing the Benefits of REDD+: Lessons from the Field*. Arlington, VA: The Nature Conservancy. https://www.conservationgateway.org/Documents/tnc_benefit%20sharing_web.pdf

Natural Capital Project. n.d.-a. "InVEST." *Natural Capital Project*. Stanford: Stanford University (Accessed May 16, 2021) <https://naturalcapitalproject.stanford.edu/software/invest>

____ n.d.-b. "MESH." *Natural Capital Project*. Stanford: Stanford University (Accessed May 16, 2021) <https://naturalcapitalproject.stanford.edu/software/mesh>

Neely, C., M. Bourne, S. Chesterman, I. Kouplevatskaya-Buttoud, D. Bojic, and D. Vallée. 2017. *Implementing the 2030 Agenda for Food and Agriculture: Accelerating Impact through Cross-Sectoral Coordination at the Country Level*. Rome: ICRAF and FAO. <http://www.fao.org/3/i7749e/i7749e.pdf>

Neugarten, Rachel A., Penny F. Langhammer, Elena Osipova, Kenneth J. Bagstad, Nirmal Bhagabati, Stuart H. M. Butchart, Nigel Dudley, et al. 2018. *Tools for Measuring, Modelling, and Valuing Ecosystem Services*. Gland, Switzerland: IUCN. <https://portals.iucn.org/library/node/47778>

- Open Foris. n.d. "Home: openforis." (Accessed May 14, 2021) <http://www.openforis.org/>
- Organisation for Economic Co-operation and Development (OECD). n.d. "Policy Coherence for Sustainable Development Toolkit" (Accessed May 14, 2021) <https://www.oecd.org/governance/pcsd/toolkit/#d.en.377019>
- PBL Netherlands Environmental Assessment Agency. 2020. *IMAGE Integrated Model to Assess the Global Environment*. The Hague: PBL Netherlands Environmental Assessment Agency (Accessed May 16, 2021) https://models.pbl.nl/image/index.php/Welcome_to_IMAGE_3.0_Documentation
- REDD-Monitor. 2015. "Acre, Brazil: A Story of Deforestation, Reduced Deforestation, and Now REDD." (Accessed May 17, 2021) <https://redd-monitor.org/2015/07/21/acre-brazil-a-story-of-deforestation-reduced-deforestation-and-now-redd/>
- Ring, Irene. 2008. "Integrating Local Ecological Services into Intergovernmental Fiscal Transfers: The Case of the Ecological ICMS in Brazil." *Land Use Policy* 25 (4): 485-497.
- Satoyama Initiative. 2019. "Towards an Integrated Multi-Stakeholder Landscape Approach to Reconciling Values and Enhancing Synergies: A Case Study in Taiwan." Tokyo: Satoyama Initiative (Accessed May 17, 2021) https://satoyama-initiative.org/case_studies/towards-an-integrated-multi-stakeholder-landscape-approach-to-reconciling-values-and-enhancing-synergies-a-case-study-in-taiwan/
- Schmink, Marianne, Jeffrey Hoelle, Carlos Valério A. Gomes, and Gregory M. Thaler. 2017. "From Contested to 'Green' Frontiers in the Amazon? A Long-Term Analysis of São Félix do Xingu, Brazil." *The Journal of Peasant Studies* 46 (2): 377-399. doi:10.1080/03066150.2017.1381841.
- Shames, Seth, Margot Hill Clarvis, and Gabrielle Kissinger. 2014. *Financing Strategies for Integrated Landscape Investment: Synthesis Report*. Washington, DC: EcoAgriculture Partners: https://ecoagriculture.org/wp-content/uploads/2014/09/FinancingStrategiesforIntegratedLandscapeInvestment_Shames_etal_2014.pdf
- Shames, Seth, Sara Scherr, Jan Willem den Besten. 2017. *The Landscape Investment and Finance Tool (LIFT)*. Trial Version 1.0 (in development). Washington, DC: EcoAgriculture Partners. <https://ecoagriculture.org/publication/the-landscape-investment-and-finance-toolkit/>
- Shames, Seth, Bastiaan Louman, and Sarah Scherr. 2019. *The Landscape Assessment of Financial Flows: A Methodology*. Wageningen: Tropenbos International and Eco Agriculture Partners. <https://ecoagriculture.org/publication/the-landscape-assessment-of-financial-flows/>
- SocNetV. n.d. "Social Network Visualizer - SocNetV: Social Network Analysis and Visualization Software" by Dimitris Kalamaras (Accessed May 18, 2021) <https://socnetv.org/>
- South African National Biodiversity Institute (SANBI). 2008. *Succulent Karoo Ecosystem Programme: Phase 2 2009 - 2014 'Consolidation and Securing Programme Sustainability'* by Amanda Younge Hayes and Wendy Crane. A Strategic Plan of Action for South Africa, August 2008. <https://www.sanbi.org/wp-content/uploads/2018/03/skep-strategic-plan-2009-2014.pdf>
- Stephenson, P.J. and Sheila O'Connor. 2014. *A Case Study of Conservation Monitoring Related to Aichi Targets: Experiences and Lessons from WWF*. Gland, Switzerland: WWF International.
- Suroso, Djoko, Ti Wahyu Hadi, Ibnu Sofian, Hamzah Latief, Oman Abdurahman, Hendra Julianto and Budhi Setiawan. 2009. "Vulnerability of Small Islands to Climate Change in Indonesia: A Case Study of Lombok Island, Province of Nusa Tenggara Barat." Presented at the International Conference on Climate Change Impacts on Water Resources and Coastal Management in Developing Countries, Manado, Indonesia, May, 2009.
- Thompson, I., and T. Christophersen eds. 2008. *Cross-Sectoral Toolkit for the Conservation and Sustainable Management of Forest Biodiversity*. Convention on Biological Diversity Technical Series No. 39. Montreal: Secretariat of the Convention on Biological Diversity. <https://www.cbd.int/doc/publications/cbd-ts-39-en.pdf>
- Topp-Jørgensen, Elmer, Michael K. Poulsen, Jens Friis Lund, and John F. Massao. 2005. "Community-Based Monitoring of Natural Resource Use and Forest Quality in Montane Forests and Miombo Woodlands of Tanzania." *Biodiversity and Conservation* 14: 2653-77.
- United Nations (UN). 2018. "Initial Voluntary National Contributions to Achieving One or More of the Global Forest Goals and Targets Set Out in the UNSPF" by Edward Sheikh A. Kamara (Accessed September 29, 2021) https://www.un.org/esa/forests/wp-content/uploads/2018/03/VNC_Liberia_March2018.pdf
- _____. 2019. "Format for Reporting on Progress Towards the Implementation of the United Nations Strategic Plan for Forests 2017–2030: The United Nations Forest Instrument and Voluntary National Contributions." (Accessed May 17, 2021) <https://www.un.org/esa/forests/wp-content/uploads/2019/12/Liberia.pdf>
- Varns, Theodore, Rane Cortez, Lex Hovani, and Paul Kingsbury. 2018. *São Félix do Xingu, Brazil: A Jurisdictional Approach to Conserving the Amazon*. Arlington, VA: The Nature Conservancy. https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_JurisdictionalApproaches_CaseStudies_Brazil.pdf
- Vegetationmap4africa. n.d. "The Vegetationmap4africaproject." Vegetationmap4africa (Accessed May 14, 2021) <https://vegetationmap4africa.org/About.html>
- Wehrmman, Babette. 2017. *Understanding, Preventing and Solving Land Conflicts: A Practical Guide and Toolbox*. Bonn and Eschborn: GIZ. <https://landportal.org/library/resources/understanding-preventing-and-solving-land-conflicts-practical-guide-and-toolbox>
- Wongbusarakum, Supin, Erin Myers Madeira, Herlina Hartanto. 2014. *Strengthening the Social Impacts of Sustainable Landscapes Programs: A Practitioner's Guidebook to Strengthen and Monitor Human Well-Being Outcomes*. Arlington, VA: The Nature Conservancy. <https://www.conservationgateway.org/ConservationPractices/PeopleConservation/SocialScience/Pages/strengthening-social-impacts.aspx>
- World Agroforestry Center (ICRAF). n.d.-a "Resilience Diagnostic and Decision Support Tool." ICRAF Geoscience Lab Landscape Portal (Accessed May 14, 2021) <http://landscapeportal.org/sharedApp/>
- _____. n.d.-b "SHARED" (Accessed September 29, 2020) Available at: <http://www.worldagroforestry.org/shared>
- _____. 2015. "LUMENS." *Tools* (Accessed May 14, 2021) <https://www.worldagroforestry.org/output/lumens>
- World Bank. n.d. "Spatial Agent: A World of Data at Your Fingertips." *Open Learning Campus*. Washington, DC: World Bank (Accessed May 16, 2021). <https://olc.worldbank.org/about-olc/spatial-agent-world-data-your-fingertips>
- _____. 2008. *The Political Economy of Policy Reform: Issues and Implications for Policy Dialogue and Development Operations*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/7782>
- _____. 2013. "WB/Brazil: 700,000 to Benefit from Enhanced Public Services in the State of Acre." Press release, December 5, 2013. Washington, DC: World Bank (Accessed May 17, 2021) <https://www.worldbank.org/en/news/press-release/2013/12/05/wb-brazil-700-000-to-benefit-from-enhanced-public-services-in-the-state-of-acre>
- _____. 2016a. *Landscape Approach 101 [eCourse]*. *Open Learning Campus*. Washington, DC: World Bank. <https://olc.worldbank.org/facilitated/link/00018381>
- _____. 2016b. *Public-Private Dialogue (PPD) Stakeholder Mapping Toolkit: A Practical Guide for Stakeholder Analysis in PPD Using the Net-Map Method*. Washington, DC: World Bank. <http://documents1.worldbank.org/curated/en/842721467995900796/pdf/106395-WP-PUBLIC-PPD-Stakeholder-Mapping-Toolkit-2016.pdf>
- _____. 2017. "Sustainable Low-Carbon Development in Orinoquia Region Project (P160680)." Washington, DC: World Bank (Accessed May 17, 2021) <https://projects.worldbank.org/en/projects-operations/project-detail/P160680>
- World Overview of Conservation Approaches and Technologies (WOCAT). n.d. "About." <https://www.wocat.net/en/about>
- World Wide Fund for Nature (WWF). n.d.-a. "Payments for Ecosystem Services." WWF. https://wwf.panda.org/knowledge_hub/where_we_work/black_sea_basin/danube_carpathian/our_solutions/green_economy/pes/
- _____. n.d.-b. "Southern Africa: Southern Namibia into South Africa" by Shirley Cowling. *Terrestrial Ecoregions, Deserts and Xeric Shrublands*. Washington, DC: WWF (Accessed September 26, 2020) <https://www.worldwildlife.org/ecoregions/at1322>

_____. 2013. *Environmental Service Incentives System in the State of Acre, Brazil: Lessons for Policies, Programmes and Strategies for Jurisdiction-Wide REDD+* by Anthony Anderson, Carlos Rittl, Luis Meneses-Filho, Brent Millikan, Emily Brickell, and Sarah Hutchison. Surrey: WWF-UK. http://awsassets.panda.org/downloads/acre_brazil_sisa_report___english_10_13.pdf

WWF-Nepal. 2013. *Hariyo Ban Program Internal Governance Tool 3: Participatory Governance Assessment (PGA)*. Kathmandu: WWF-Nepal (Accessed 25 September 2020) https://d2ouvy59p0dg6k.cloudfront.net/downloads/toolkit_3_participatory_governance_assessmentss.pdf

