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The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of the Climate Investment Funds, its governing bodies, or the governments they represent.

# CONTENT

About this Brief		
Signals of Transformation		
The Starting Point		
The Challenge		
The Approach	3	
The Framework	4	
Signals Across Stages of Transformation	4	
Signals Across Dimensions	5	
Signals Across Sectors and Thematic Areas	5	
Ongoing Challenges and Insights		
Going Forward	8	
Annex 1: Indicative Signals by Sector/Theme		

### About this Brief

This brief stems from work undertaken by independent evaluators from Itad as part of the Independent Evaluation of Transformational Change in the Climate Investment Funds (CIF) and the broader CIF Transformational Change Learning Partnership (TCLP) (See sidebar).

The evaluation team assessed transformation across a diverse set of sectors, contexts, and projects that reflected a wide range of progress and different stages of implementation. To do this, the team developed a framework for transformational change 'signals'.

Others working on climate action expressed an interest in learning more about the evaluation team's work on signals of transformational change, as they too are striving to understand whether transformational change is occurring or is likely to occur in the future. This brief responds to the interest by providing a learning-oriented overview of the evaluation's signals framework.

This brief reflects work done by the independent evaluation team in 2018. It is not intended to serve as a guidance document or as a complete reference on signals of transformational change. Rather, it provides a set of illustrative signals and ideas on how signals could be developed further for other purposes.

While CIF already has a set of agreed-upon results frameworks and indicators for each program<sup>1</sup>, it will be considering how it can learn from the enclosed signals framework and discuss this with CIF stakeholders including recipient countries.

The CIF program-specific results frameworks and indicators, as well as the monitoring and reporting toolkits for each program, are available on the CIF <u>website</u> under "Our Work" then "Monitoring and Reporting Resources" for each program.

# THE CLIMATE INVESTMENT FUNDS (CIF) AND THE TRANSFORMATIONAL CHANGE LEARNING PARTNERSHIP (TCLP)

The Climate Investment Funds (CIF) were created in 2008 to scale up finance for climate action, filling urgent financing gaps and demonstrating the viability of emerging solutions. With more than U.S.\$8 billion contributed from 14 donor countries, CIF supports over 300 projects across 72 countries through four programs:

- The Clean Technology Fund (CTF), working on clean energy transition;
- The Scaling Renewable Energy Program (SREP), working on energy access;
- The Pilot Program for Climate Resilience (PPCR), working on climate resilience; and
- The Forest Investment Program (FIP), working on sustainable forests.

CIF's Evaluation and Learning Initiative established the Transformational Change Learning Partnership in 2017 to facilitate a collaborative, evidence-based learning process on transformational change and CIF's role in supporting transformational change since 2008.

The TCLP's work during this period involved an Independent Evaluation of transformational change, conducted by a team from Itad, and an Evidence Synthesis of transformational change conducted by the Overseas Development Institute, both published in early 2019.

### Signals of Transformation

#### THE STARTING POINT

CIF established the Transformational Change Learning Partnership (TCLP) to facilitate a collaborative, evidence-based learning process on transformational change. Through a participatory process in 2017, the TCLP developed the following working definition of transformation: "Strategic changes in targeted markets and other systems with large-scale, sustainable impacts that accelerate or shift the trajectory toward low-carbon and climateresilient development".

Underpinning this working definition were four dimensions of transformation: relevance, systemic change, scale, and sustainability. All four dimensions must be in place (to a greater or lesser extent) for transformational change to be considered both real and lasting.

#### THE CHALLENGE

Identifying transformational change in real, identifiable terms was a practical challenge. For instance, although CIF stakeholders recognized the importance of transformational change, and thought that 'they would know transformation when they saw it', they found it more difficult to articulate a definition or benchmarks against which transformation might be identified.

The TCLP's working definition and four dimensions of transformational change provided a starting point, but they lacked the granularity, forward-looking perspective, and dynamism necessary to recognize transformational change in different contexts, at different country/geographical levels, by sector/program, and at different timescales.

The challenge also included several other factors, including the different stages of implementation for many CIF projects and other issues listed in the sidebar.

## THE CHALLENGE OF IDENTIFYING TRANSFORMATIONAL CHANGE IN PRACTICAL TERMS

Identifying transformational change is a practical challenge for many reasons, including:

- Transformation can refer to changes at different scales, from the individual to the global;
- Transformation can appear in many different forms depending on the sector and context;
- Data on transformational change are generally lacking. For instance, transformation is relative to a starting point or baseline, and often these baselines are unclear, especially in hindsight;
- Transformation involves addressing multiple barriers or constraints;
- Transformation usually occurs beyond program/project boundaries where results chains are less clear;
- The timescales of transformation are typically longer than those of supporting investments;
- Transformation is often dynamic and non-linear and requires sequential, multi-stage, or parallel interventions; and
- Transformation, as a complex system change, cannot ultimately be controlled, even if it can be influenced.

#### THE APPROACH

Recognizing the need for an innovative approach, the evaluation team considered the work of other institutions grappling with similar challenges, including the World Bank's review of transformational engagements<sup>2</sup>, the experience of the UK International Climate Fund in developing its Key Performance Indicator on Transformational Change<sup>3</sup>, and the Initiative for Climate Action Transparency's draft guidance on transformational change evaluation<sup>4</sup>. A review of these efforts coupled with the TCLP's work to date provided thematic insights including the following:

- Transformation often emerges with a sequential pattern;
- Signals of transformation can be found in both outcomes and processes that support outcomes;
- Signals of transformation can be categorized using the four dimensions: relevance, systems, scale, and sustainability; and
- The long-term nature of transformational change and the lack of available data on long-term outcomes suggest a need for proxies to capture likely future changes – often years after projects end.

<sup>2</sup> The World Bank Independent Evaluation Group (2016), <u>Supporting Transformational Change for Poverty Reduction and Shared Prosperity</u>, <u>Lessons from World Bank Group Experience</u>.

<sup>3</sup> See UK International Climate Fund KPI 15 (transformational impact) <u>methodology guidance.</u>

<sup>4</sup> United Nations Environment Program, DTU Partnership and World Resources Institute (2018). <u>Guidance for assessing the</u> <u>transformational impacts of policies and actions</u>. Initiative for Climate Action.

### The Framework

Based on the above insights, the team created a framework which was centred around the concept of indicative signals. Signals are system characteristics that demonstrate progress toward transformation, whether at early, interim, or more advanced stages. The team consciously developed the framework to be indicative, rather than prescriptive, with signals based on qualitative and descriptive information in addition to quantitative data. The signals also included proxies for future change that might not be quantifiable during or immediately after project/program implementation. The resulting signals framework considered three simultaneous aspects of transformational change: stages, dimensions, and sector/theme.

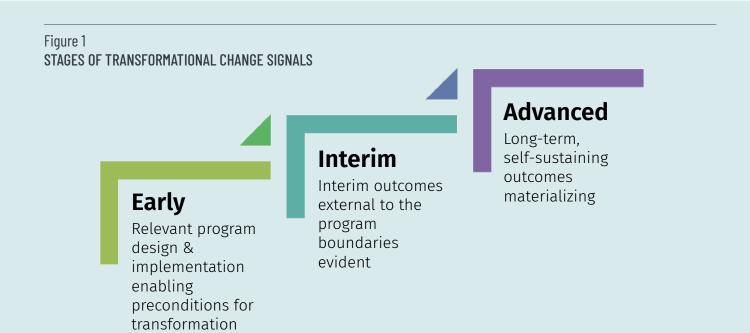
#### SIGNALS ACROSS STAGES OF TRANSFORMATION

After researching 15 case studies, the evaluation team started to recognize a sequential pattern: Signals of transformation typically emerge and strengthen over time, often over the course

of years, starting with early signals based on program design and extending to long-term outcomes after program completion. Although progress is not always linear, stages generally followed a pattern (see also Figure 1):

- Early signals: Relevant program design and implementation are enabling preconditions for transformation.
- Interim signals: Interim outcomes external
  to the program boundaries are evident. This
  includes process advancements such as
  policy development and budget allocation
  that support and advance progress toward
  transformational outcomes over time.
- Advanced signals: Long-term, self-sustaining outcomes are materializing.

The context in which change is occurring and the ambition of the transformational change are worth noting in relation to stage of advancement. What might be regarded as modest capacity advancements in a developed



market or governance context might be more fundamentally transformational in a lessdeveloped country context; therefore, framing around advancements should be considered in context.

Progress is also not always assured or linear. Setbacks can occur, and context, such as local resource availability, can also change, making earlier progress less relevant. For example, cost reductions associated with one type of renewable energy source (e.g., photovoltaic solar power) may outpace cost reductions associated with another renewable energy source (e.g., geothermal power). In this case, advancement could slow or even come to a halt in less cost-competitive technology markets and pick up speed in the more cost-competitive markets. Similarly, extreme weather events, political upheaval, global economic downturns, or other events can slow or reverse progress in uncontrollable ways. For these reasons, advancement in a linear and predictable fashion is not assumed, and the ability to be nimble and adapt design, strategy, and implementation are paramount to ultimate success.

#### SIGNALS ACROSS DIMENSIONS

Signals can be mapped broadly against the four dimensions (relevance, systemic change, scaling, sustainability). Relevance is an early signal as set out above – namely that programs had been designed for transformational success; however, relevance should not be taken for granted and often program design over time needs to be revisited in order to remain relevant. Other signals often support one or more of the other dimensions. Scaling and sustainability are likely to emerge longer term. Figure 2 shows this framework across stages and dimensions.

#### SIGNALS ACROSS SECTORS AND THEMATIC AREAS

While some signals are universal to all types of development programming (e.g., around capacity development), many signals differ substantially by sector or thematic area. For example, progress toward climate-resilient agriculture differs from progress toward utilityscale grid decarbonization. Based on the evaluation case studies, the evaluation team compiled illustrative signals by sector/theme in addition to stage and dimension (see Annex 1). These sector/theme-based signals focus on interim and advanced stages, given that the early stage signals are more generic. Similarly, relevance is not included as this dimension was considered most relevant to the early stage of progress.

Figure 2
FRAMEWORK FOR SIGNALS OF TRANSFORMATIONAL CHANGE

Note: Relevance is captured in early signals, particularly program design

TYPE OF SIGNAL	SYSTEMIC CHANGE	SCALE	SUSTAINABILITY
Early Signals Relevant program design & implementation enabling preconditions for transformation	Targeted programming for systemic change:  Systems approaches  Barrier identification  Combinations of programming areas	Targeted programming for scaling, e.g.:  Plans for scaling up/out,  Demonstration/replication  Financing approaches  Market development	Targeted programming for sustainability, e.g.:  Monitoring systems  Ownership transfer  Capacity development  Sustainable financing  Adaptive planning
Interim Signals Interim outcomes external to the program boundaries evident	Meaningful progress on activities to overcome barriers across relevant arenas, e.g.:  New institutions/capacity  Enhanced governance structures  New policies/regulations  New planning processes  New financing structures built  New infrastructure underway	Increased activity that might facilitate scaling, e.g.:  New finance programmes  Investor conferences  Evidence of pipeline development  Supply chain expansion  New distribution networks  Delivery platforms established	Progress on changes to ensure long term sustainability, e.g.:  Ongoing financial support  Processes for long-term financing  Monitoring processes established  Follow-on projects in design  Long term target planning
Advanced signals Long-term, self-sustaining outcomes materializing	Evidence for system change outcomes that influence decisions or behaviours, e.g. changes in:  Planning decisions and outcomes  Uptake of incentives  Changes in budgetary allocations  Increased awareness levels  Changes in consumption patterns  Improved affordability  Increased technology availability	Evidence for scaling outcomes, e.g. changes in volumes/scope of:  Changes in # of market participants  Increasing financing flows  GHG reductions  # of consumers/service users  Changes in technology sales  Increased geographic coverage  National-subnational linkages  Community participation	Evidence for sustainability outcomes, e.g. changes in:  Reduced fossil fuel subsidy regimes  Lower concessionality  Greater enforcement  Increased monitoring  Use of adaptive programming  Mainstreaming and integration  Copycat initiatives

### Ongoing Challenges and Insights

Despite the utility of the framework developed for the evaluation's purposes, there are still several challenges associated with identifying and capturing signals of transformation. These include:

- Data availability: Some signals are easier to identify and measure (e.g., technology sales or market penetration); whereas others are more complex and/or are difficult to access data on (e.g., private sector supply chains). Clear baseline data are also often lacking;
- Challenges in classification of signal:
   The classification of signals in terms of dimension or stage is not always straight forward, and some signals relate to multiple places in the framework, indicating that further work might be required for nuanced delineation;
- The use of indicative signals: Given that transformation is context specific, it is neither possible (nor desirable) to create exhaustive lists of signals as might be done for uniform, context-blind, measurable indicators. Identifying useful signals requires a level of interpretation relevant to the context;
- Sustainability and dynamic change:
   Sustainability is a longer-term, post-project, dynamic process. As a general rule, signals on sustainability are not collected or reported due to the post-intervention timing as well as difficulty of researching the signals at broader scales beyond intervention boundaries. They are challenging to capture in a static and measurable way.

### Going Forward

Interest in better understanding transformational change has proliferated over the past few years. As of late 2019, more climate finance institutions and development partners have begun to explore this concept, including how to design interventions to most effectively advance transformational change, and how to better understand whether this is occurring. The signals framework developed for the Evaluation of Transformational Change in the CIF can contribute to the field's broader advancements.

While the work for CIF on signals of transformation has been focused primarily on climate-relevant areas and co-benefits, the overarching signals framework may be useful for identifying transformation in other sectors and development contexts, particularly those where there is a level of complexity around both the content and the contexts, and where change

processes are expected to emerge over the longer term.

CIF is also launching a next phase of the Transformational Change Learning Partnership, which will consider the issues thought to be most critical for joint learning and advancement of long-term climate outcomes. It is possible that advancing the work on signals will be one of the priority TCLP work areas in the future, or simply that this work will continue to evolve on its own accord as many people around the world work to both prevent and prepare for climate change.

# Annex 1: Indicative Signals by Sector/Theme

This annex provides indicative signals relevant to CIF thematic program areas based on the <u>Evaluation of Transformational Change in the CIF</u>. While there might be some overlap in signals between sectors and themes (e.g. around capacity building and policy mainstreaming), each type of program/sector also has unique signals and pathways towards transformation. The tables below provide indicative rather than comprehensive lists of signals against which progress might be identified. Early signals and relevance are not included here as these relate primarily to elements of program design that lay the foundation for other aspects of transformation to occur.

#### CLEAN TECHNOLOGY FUND (CTF) - CLEAN ENERGY TRANSITION

TYPE OF SIGNAL	SYSTEMIC CHANGE	SCALE	SUSTAINABILITY
Interim Signals  Transformation processes & related interim outcomes	Signals of progress on activities to overcome barriers across relevant arenas, e.g.,  • Enhanced public sector capacity to integrate low carbon technologies  • Emerging policies/processes to support private finance (e.g. permits, contracts)  • Processes for enabling infrastructure (e.g. transmission, Info systems)  • Improved quality and availability of information (e.g. resource mapping)	Signals of increased activity that facilitates scaling of low-carbon technologies, e.g.,  Increased availability of lower cost finance for low-carbon developers  Pipeline development activity (new investors and/or projects being planned)  Investments in supply chain activity (distribution, maintenance, employment)	Progress on changes to ensure long-term sustainability, e.g.,  Support for long term operation and maintenance regimes for RE systems  Processes to raise long-term finance for future low carbon development/scale up  Planning for long term low carbon decarbonisation pathways (e.g. 2050)  Integration of long term RE targets into wider economic development strategy  Adoption of smart grid approaches allowing future scale up and expansion of RE
Advanced Signals Outcomes materializing	Evidence for system change outcomes that influence decisions/behaviours, e.g.,  New incentives and regulations to support RE investment in operation  Changes in budgetary allocations to low carbon energy and other systems  Increases in awareness of and public support for renewable energy supply  Falling capital costs for renewable energy and other LC technologies  Lower financing costs (risk premiums) for RE technology investment  Increased availability of renewable energy technologies (e.g., solar PV)  Changes in regional energy markets and power trading  Changes in grid quality and efficiency	<ul> <li>Evidence for scaling outcomes, e.g.,</li> <li>Increase in supply of low carbon technology (units, capacity)</li> <li>Scaling of financial flows to support low carbon technology (public and private)</li> <li>Increased numbers of providers (technology, finance, service) in market</li> <li>Emergence of primary and secondary markets for LCCR financing instruments</li> <li>Changes in purchase/use of low carbon options (e.g. transport)</li> <li>Trends in energy-related GHG emissions and intensity (sector, per capita, GDP)</li> <li>Replication of successful pilot initiatives at a national or international level</li> </ul>	Evidence for sustainability outcomes, e.g.,  Reduction/elimination of concessionality necessary to incentivise LC development  Elimination of subsidy regimes supporting carbon-intensive energy alternatives  Evidence of mainstream integration (e.g., baseload power, electrified transport)  Adherence to long-term RE and low carbon targets set out in development plans  Fully commercial private sector supply chains and local manufacturing capacity

#### SCALING UP RENEWABLE ENERGY IN LOW-INCOME COUNTRIES PROGRAM (SREP) - ENERGY ACCESS

TYPE OF SIGNAL	SYSTEMIC CHANGE	SCALE	SUSTAINABILITY
Interim Signals  Transformation processes & related interim outcomes	Signals of progress on activities to overcome barriers across relevant arenas, e.g.,  Processes to enhance public sector institutional or technical RE capacity  Development of regulations and incentives for private investment  Planning activity for new infrastructure (transmission, connection)	Signals of increased activity that is likely to facilitate scaling of low-carbon energy, e.g.,  Programmes to increase availability or affordability of finance for RE investment  Pipeline development (new investors and/or projects being planned)  Evidence of growing private sector interest (developer, investor conferences)  Emerging private investment in markets and supply chains (installation, O&M)	Progress on changes to ensure long-term sustainability, e.g.,  • Support for long term operations and maintenance regimes for RE systems  • Processes to raise long-term finance for future RE development and scale up  • Planning for long term low carbon energy decarbonisation pathways (e.g. 2050)  • Integration of long term RE targets into wider economic development strategy  • Adoption of smart grid approaches allowing future scale up and expansion of RE
Advanced Signals Outcomes materializing	Evidence for system change outcomes that influence decisions/behaviours, e.g.,  New incentives and regulations to support RE investment in operation  Changes in budgetary allocations to low carbon energy and other systems  Increases in awareness of and public support for renewable energy supply  Changes in affordability and of renewable energy supply for end users  Falling capital costs for renewable energy and other LC technologies  Lower financing costs (risk premiums) for RE technology investment  Increased availability of renewable energy technologies (e.g., solar PV)	Evidence for scaling outcomes, e.g.,  Increase in supply of renewable energy (projects, units, connections, capacity)  Changes in geographical coverage of renewable energy supply/distribution  Change in access to clean, reliable energy (business, community, household)  Increased range of access opportunities to energy (Grid, mini-grids, off grid)  Changes in energy-related GHG emissions and decarbonisation trends  Evidence of cobenefits form low carbon transformation (employment/ health)	<ul> <li>Evidence for sustainability outcomes, e.g.,</li> <li>Reduction/elimination of concessionality necessary to incentivise RE development</li> <li>Elimination of subsidy regimes supporting carbon-intensive energy alternatives</li> <li>Evidence of mainstream integration (e.g., baseload power from low-carbon sources)</li> <li>Adherence to long-term RE targets set out in national development plans</li> <li>Development of private sector supply chains and local manufacturing capacity</li> </ul>

#### PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR) – RESILIENCE

TYPE OF SIGNAL	SYSTEMIC CHANGE	SCALE	SUSTAINABILITY
Interim Signals  Transformation processes & related interim outcomes	Progress in overcoming barriers to climate resilience practices, e.g.,  New decision-making or advisory bodies for resilience put in place  Integration of resilience considerations into (cross)-sector planning processes  Enhanced institutional/ community capacity for adaptation and resilience  Adoption of technical standards/ guidelines for resilient infrastructure  Stakeholder and community-led adaptation processes, plans underway  Enhanced climate and hazard warning information systems under design  Changes in curricula and other awareness/enabling activities	Emerging processes that facilitate scaling of climate resilient practices, e.g.,  New financing programmes to expand scope or coverage of activities  Processes (workshops or training) underway to replicate pilot models  Investment pipeline development processes to finance resilience  Roll out of resilience guidelines or standards to infrastructure developers  Activities to replicate and scale underway at or between national/subnational/local level	Progress on changes to ensure long-term sustainability, e.g.,  Political commitment and funding support for on-going resilience operations  Processes to raise long-term finance for resilience to ensure predictable funding  Establishment of risk monitoring and change processes for emerging threats  Design of follow-on resilience projects to further develop initial concepts  Incorporation of resilience in long term national targets/development plans  Capacity development underway to understand & interpret climate data
Advanced Signals Outcomes materializing	Evidence for system change outcomes that influence decisions/behaviours, e.g.,  Increased budget allocations directed towards climate resilient initiatives  Sector projects routinely screen & incorporate climate resilient approach  Climate information routinely applied in strategic long-term planning  Enhanced understanding drives new stakeholder behaviours/ decisions  Increased access to and availability of resilience finance via intermediaries  Resilience plans and processes are implemented and effective	Evidence for scaling outcomes, e.g.,  Successful replication/ scaling of pilots (e.g. livelihood/community, governance)  Widespread incorporation of resilience in infrastructure design (e.g. roads, bridges)  Large-scale Investments in resilience-infrastructure (e.g., protective infrastructure)  Large scale adoption of climate resilient practices (e.g., new varieties, irrigation)  Beneficiaries/systems demonstrate improved resilience to shocks/ stresses	<ul> <li>Evidence for sustainability outcomes, e.g.,</li> <li>Long term financing approaches in place to meet additional costs of adaptation</li> <li>Monitoring systems capture emerging climate threats and thresholds</li> <li>Adaptive programming underway using iterative programming approaches</li> <li>Mainstreaming guidelines fully integrated into programming and appraisal processes</li> <li>Emerging of unsupported resilience planning and implementation initiatives</li> <li>New networks of key stakeholders support change (e.g. legislators)</li> </ul>

TYPE OF SIGNAL	SYSTEMIC CHANGE	SCALE	SUSTAINABILITY
Interim Signals  Transformation processes & related interim outcomes	Progress in advancing REDD+ (like) readiness reforms and identified strategy building efforts, e.g.,  New/enhanced REDD+ strategies/policies under development  New decision-making or advisory bodies being established, better coordination  Enhanced institutional capacity in place (governance, land management))  Stakeholder processes under design (consultation, awareness, grievance)  Processes to support enhanced forest rights and tree/land tenure systems  Establishment of forest and land monitoring systems  Community-scale pilot projects (e.g., alt. livelihoods, business models)	Increased activity that facilitates scaling of sustainable forest management practices, e.g.,  Expansion in the coverage of forest and land monitoring programs  Workshops or training to introduce programs or pilot to other communities  New financing programmes to expand scope, coverage of sustainable forestry;  Processes to develop and encourage sustainable forest supply chains  Investment pipeline development (e.g. concessions, plantations, processing)  Market creation processes for sustainable and agro- forestry activities	Progress on changes to ensure long-term sustainability, e.g.,  Evidence of changes in political or public support for sustainable forestry  Positive changes in systems boundaries (e.g. social, agriculture, market systems)  Processes to raise long-term funds to support forest sector development  Establishment of monitoring/response processes to address emerging threats  Evidence of design processes for follow-on projects underway  Integration of sustainable forestry into long term development targets/plans  Efforts to improve enforcement capacity to prevent non-sustainable forest exploitation
Advanced Signals Outcomes materializing	Evidence for system change outcomes that influence decisions/behaviours, e.g.,  New planning approaches to forestry and boundary systems underway  Uptake of agreed incentive structures by market participants  Changes in budgetary allocations to support forestry objectives  Changes in community approach/ownership of stewardship  Changes in mindset and understanding of forestry stewardship among decision makers	<ul> <li>Evidence for scaling outcomes, e.g.,</li> <li>Replication of pilot projects (business models, livelihoods, benefit sharing etc.)</li> <li>Changes in scale of protected or sustainably managed forests</li> <li>Positive trends in reforestation or enhanced forest carbon stocks</li> <li>Increase in communities participating in sustainable forestry or agroforestry efforts</li> <li>Reduction in poverty levels among indigenous/forest-dependent communities</li> <li>Reduced GHG emissions from deforestation and degradation</li> <li>Changes in volumes of finance (private sector, environmental service payments)</li> </ul>	<ul> <li>Evidence for sustainability outcomes, e.g.,</li> <li>Reduction in external financial/institutional support needed for sustainable forestry</li> <li>Subsidy reform to drivers of non-sustainable consumption, forest exploitation</li> <li>Evidence for improvements in enforcement and governance over time</li> <li>Evidence of monitoring and successful adaptive response to emerging threats</li> <li>Full adoption of forestry into mainstream rural development and livelihoods strategy</li> <li>Sustainable improvements in boundary systems (e.g., ag, rural development)</li> <li>New initiatives emerge independently without donor or IFI support</li> </ul>