Lao PDR Market Assessment

Intervention Options

July 2013

Introduction

- This Market Assessment was conducted by the Lao Institute for Renewable Energies (LIRE), under the supervision of Nexus, Carbon for Development and Nexant, Inc.
- It is intended to provide an overall analysis of the Lao market and opportunities for improved cookstove (ICS) dissemination.
- Each Market Assessment has two parts:
  - Sector Mapping – an objective mapping of the sector
  - Interventions Options – suggestions for removing the many barriers that currently prevent the creation of a thriving market for clean cooking solutions.
- This report represents the Interventions Options for Lao PDR.
- This Market Assessment is based on the Market Assessment Toolkit provided by Global Alliance for Clean Cookstoves, which also provided valuable input during the design of the assessment.
- The intervention strategy presented in this report is mainly based on the strategy defined by GERES, which will be implemented from 2013 onwards.

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Summary

- In Lao PDR, capabilities for disseminating improved cookstoves are very limited. Considering the weakness of the existing value chain, two sets of interventions are necessary:
  - The overall framework must be reinforced, through actions targeting the upstream part of the value chain.
  - Production and distribution capacities also need significant enhancement for any program to be successful.
- Although solid fuel cookstoves are available in Lao PDR, none of them satisfy the requirements of a proper improved cookstove. Further R&D is required to come up with a stove design that satisfies both quality requirements and local ethnic habits.
- The implementation of a small scale pilot program is a necessary first step. It will allow local production capacities to be assessed, as well the user acceptance of new stoves.
- In the short and medium run, the following key actions are recommended:
  - ✓ Establish a national-level task force tasked to enhance cooperation and communication between the main actors in the sector.
  - ✓ Define national standards under the responsibility of the task force.
  - ✓ Create testing facilities at both a local- and national-level.
  - ✓ Create a strong monitoring system and a national labeling system.
  - ✓ Implement a pilot project and training program.

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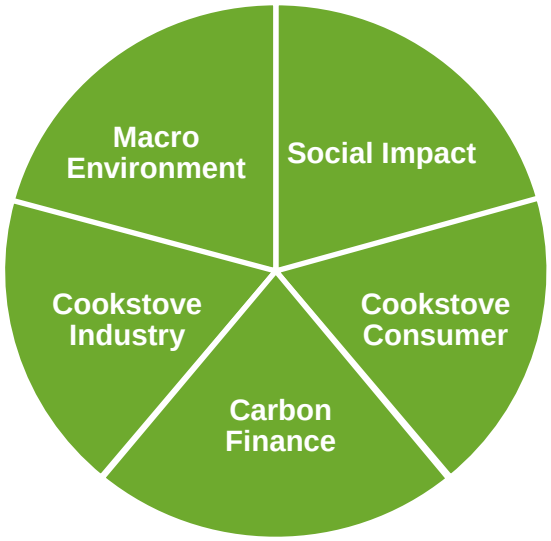
Project Approach

A structured approach first assessed the market for a cookstove industry and then used the sector mapping output to develop the intervention options and relative roadmap

Sector Mapping



Sector Mapping

Focus of this Report

Strategy Development

Identify Intervention Themes → **Develop Recommendations** → **Develop Relative Roadmap**

Intervention Options And Relative Roadmap

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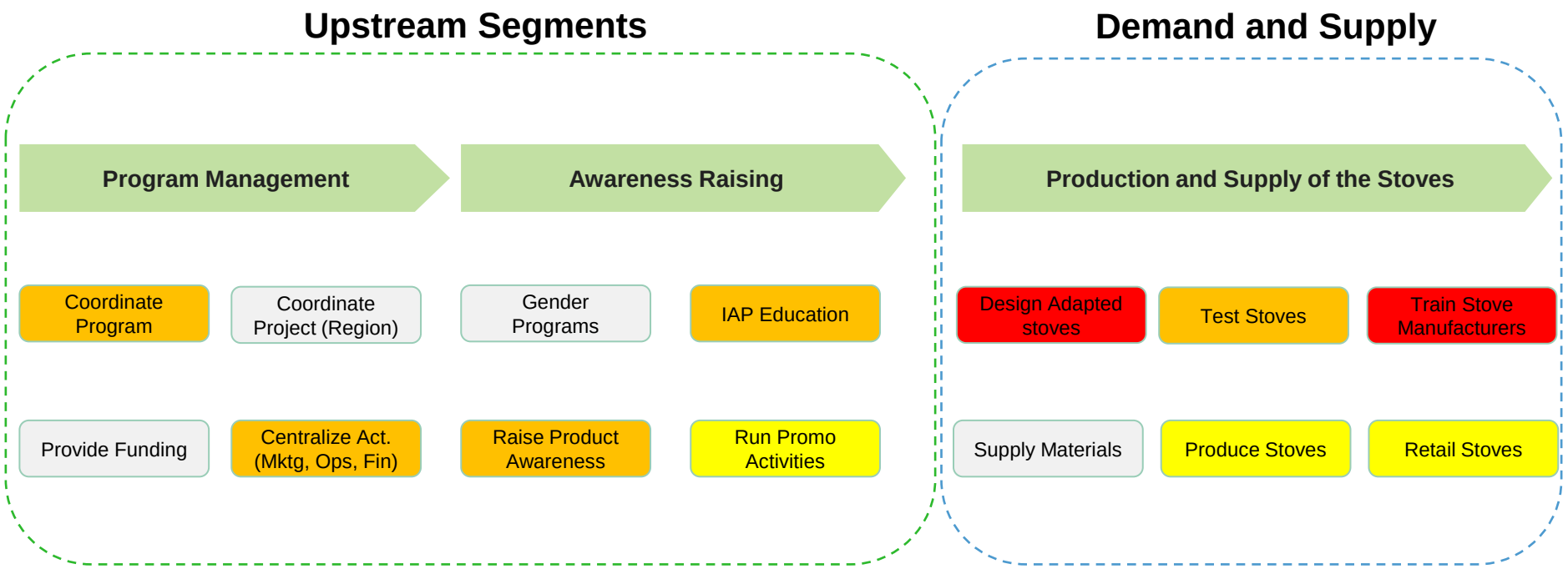
Value Chain Analysis

An analysis of the cookstove industry reveals that support is needed all along the value chain. However, some basic capacities exist, that simply need reinforcement.



Priority of support:

- High priority
- Medium priority
- Low priority

Interventions Option Segmentation

Based on this analysis, recommended Intervention Options must address the limitations of two segments. Strengthening demand and supply is strongly needed. The upstream segment must also be targeted, in order to foster an enabling environment, which is currently not favorable to ICS dissemination programs.

Upstream segments

- Regulation – Testing and Standards
- Awareness Raising
- Monitoring & Evaluation
- Fostering Cooperation

Demand and supply

- Design
- Materials and Fuels Selection
- Production & Training
- Sales & Distribution

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Regulation - Testing & Standards (1/2)

There are no established standards for stoves in Lao PDR, nor is there a testing center. Testing has occurred occasionally but might occur more frequently in a short term thanks to the launch of new projects.

No Standards Regarding Stove Production

The lack of a national agreement on standards has made it challenging for stove manufacturers, distributors, investors, and users to rate the quality and efficiency of cookstoves in different markets. Because improved stoves are not necessarily significantly cleaner, safer, or more efficient, having a set of standards in place that clearly define how technology impacts fuel use, emissions, durability and safety will allow consumers to make more informed choices, spur manufacturers to build higher quality stoves, and increase the level of overall investment in the sector.

The introduction of the Tao Prayat improved cookstove reflects the consequences of the lack of national standards. Indeed specific specifications have been implemented in collaboration with stoves producers in order to improve the regular bucket stoves. But when it appeared that profit margins were low, producers started to cut down the cost of production by reducing insulation, the thickness of grates and the number of grate holes. The absence of standards could not guarantee the quality of the stoves produced, and so user confidence in the stove decreased.

Creation of national standards will give stove makers affirmation of product quality, let users know they are making a worthwhile investment, and drive industry innovation.

No Continuous Testing of Biomass Stoves

There are very few testing facilities in Lao PDR, and no real coordination between them. Testing initiatives were mainly dedicated to water boiling tests and controlled cooking tests. The mains actors are LIRE, SNV and the Ministry of Science and Technology. New testing facilities are now under development under the supervision of SNV and LIRE-GERES. Both initiatives are coordinating their activities.

Source : Interviews

Regulation - Testing & Standards (2/2)

A lack of regulation and standards have already lead to the failure of some ICS programs. Establishing a common framework and building capacities is a top priority for any clean cookstove initiative. Some facilities to do so exist but lack coordination. Further action is required to build up these existing capacities.

Intervention Options	Actions	Outcomes
1. Establish common generic and specific standards	• Define national generic standards • Define specific blueprint standards • Introduce cookstove labeling • Cooperate with MOST*, RENMI* and Department of Standards and Copyright • Cooperate with local NGOs already involved in testing processes (SNV)	✓ Common framework for ICS standards ✓ Government body in charge of standards identified and empowered
2. Implement and coordinate a network of testing centers	• Establish testing protocols • Establish a national framework for action • Train national and local testing teams • Capacity building	✓ Several centers operating under the same methodology ✓ Framework for cooperation
3. Develop a sustainable mechanism to enforce standards	• Identify a relevant organization able to manage standards enforcement in the long run • Build up capacity and train the organization	✓ Enforced standards ensuring quality and sustainability

Awareness Raising (1/2)

IAP awareness is almost non-existent among end-users. Furthermore, the awareness of the health issues related to cooking with biomass is low at a global-level and has prompted little government support.

Government and Ministries

Main Challenges

- No specific policies or strategies
- Lack of coordination between stakeholders
- Lack of specific regulations and laws
- Lack of public funding support Insufficient information on renewable energy potential for provincial level;

" Lao PDR does not yet have a comprehensive institutionally supported approach to the planning and implementing of energy programs in general, although many energy subsectors appear to have their policies/strategies for their own sector. "

From the Rural energy development and utilization, 2011

Consumers

Lack of Experience in Awareness Raising

So far, awareness raising on IAP has not been a key element of communication campaigns. For example, SNV's program (the most advanced ICS program in Lao PDR so far) did not feature health issues as part of its communication campaign. The main advantages that were advertised were durability and fuel efficiency, as means of saving money. SNV's target audience is charcoal users, who are more sensitive to fuel savings.

For that reason, a program targeting users of firewood (basically free) will need to raise awareness of the health issues related to cooking with traditional stoves to successfully drive ICS demand. In the absence of previous experiences, this may be a challenging endeavor.

Awareness Raising (2/2)

Engaging different government bodies and increasing collaboration among them is a priority. Raising customers awareness is also a priority.

Intervention Options	Actions	Outcomes
1. Mobilize government bodies	• Organize workshops with relevant government bodies • Promote existing actions • Involve Ministries in projects, with meetings on a regular basis	✓ Increased willingness to share resources for ICS projects ✓ Increased efficiency thanks to higher level of involvement
2. Identify the most efficient communication channels and mechanism	• Review existing communication strategies (case studies) and study lessons learned (e.g. SNV) • Define existing channels, and assess their accessibility and efficiency	✓ Channels for communication available and ready for large scale and local scale communication
3. Implement customer communication campaigns	• Mobilize large scale channels of communication (e.g. Ministries, radio) • Organize local scale actions of promotion	✓ Sustained demand for ICS

Monitoring and Evaluation

Data availability is very limited. Priority should be given to reinforcing the current local knowledge base for informed and coordinated action. Setting up a monitoring and evaluation system should be the next priority.

Intervention Options	Actions	Outcomes
1. Improve and share knowledge of the market baseline	• Investigate baseline in target areas concerning stove production and utilization • Test the performance of existing stoves (e.g. emissions, durability, etc).	✓ Comprehensive set of data is collected for an informed and coordinated intervention
2. Set up a monitoring system	• Set up a monitoring and verification system and process • Coordinate the activity with local agencies through a database • Identify and train local independent stakeholders in charge of monitoring	✓ A monitoring and evaluation system is designed in collaboration with stakeholders to assess and optimize the impacts

Fostering Cooperation

Although some actors are involved in ICS projects, coordination is still limited. Any large scale program should make a priority of linking with existing actions, to avoid overlap and to maximize efficiency.

Intervention Options	Actions	Outcomes
1. Identify and map the local framework of actors; assign responsibilities and share tasks	• Map the different actors • Assess the capacities and resources of the different actors • Assign optimal responsibilities and tasks according to each actor's resources and skills	✓ Optimized allocation and mobilization of resources
2. Create a local framework for coordinated actions (e.g.Task force)	• Regroup the different actors under a common association or working group • Organize regular events to promote coordination and knowledge sharing • Identify an organization to lead the project	✓ Dynamic exchanges regarding best practices and progress ✓ Well coordinated actions
3. Create a regional platform of knowledge sharing	• Identify relevant actors and advertise the need to share best practices • Create a mechanism for information exchange (e.g. website, network, database) • Define the operating principle of the platform, and nominate a responsible administrator	✓ Follow-up and implementation of best practices from the field

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Design (1/2)

There is a wide range of biomass cookstoves available in Lao PDR, however none of them satisfy the requirements of an Improved Stove. The use of modern cooking equipment (e.g. LPG and electricity) is very limited.

Most Commonly Used Cookstoves

Modern Cooking Equipment Used in Lao PDR

Design (2/2)

There is a limited supply of quality improved cookstoves in Lao PDR despite the obvious need for them. Conducting field research and designing a locally adapted new type of improved cookstove should be a priority.

Intervention Options	Actions	Outcomes
1. Focus on improved cookstoves (cleaner stoves) in the short run	• A gradual approach should be taken which focuses on cleaner stoves (Tier-1 or 2) rather than on clean stoves (Tier-4)	✓ Pragmatic approach with quick results, paving the way for further actions
2. Improve cookstove design and market knowledge	• Conduct comprehensive field research on cooking habits and practices • Test the performance of existing cookstoves	✓ Gathering knowledge will allow successful R&D and the design of new stove(s)
3. Carry out R&D: Design and test an improved bucket-shaped biomass stove	• Design one or several new stoves that are compatible with people's habits, and comply with the specific requirements of each ethnic group • Assess users' acceptance of the new stove(s)	✓ Filling the gap in the offer with a quality product satisfying consumers expectations should boost demand

Materials and Fuel Selection (1/2)

There is a clear trade-off between the size of the market and the accessibility of this market. Wood users are numerous, but more difficult to reach. Stove production material can be found locally, but investments might be necessary.

Market Segmentation and Sizing by Main Type of Fuel

(Number of Households)

Type of Area	Charcoal	Firewood
Urban	169,000	175,000
Rural, road connection	52,000	430,000
Rural, no road connection	21,000	173,000
National	**242,000**	**778,000**

Type of fuel selected in previous programs

SNV	**Charcoal**	**20.000 stoves**
HELVETAS	**Firewood**	**50 stoves**

Available Materials/Fuel

The abundance of firewood that can be freely collected, combined with the high cost of modern energy, suggests that the switch to modern forms of cooking energy may not be easily achieved.

Firewood Shelter

Firewood pile near a stove

Materials required for the production of cookstoves can be found locally. Nevertheless, additional effort and investments in processing clay are essential (e.g. use of efficient clay mixer and kiln).

Materials and Fuel Selection (2/2)

Given that production materials are easily accessible, the proposed interventions are to support producers in acquiring the right equipment to collect, process, and distribute raw materials, such as clay.

Intervention Options	Actions	Outcomes
1. Conduct baseline study to identify users' fuel preferences	• Conduct households surveys and group discussions • Gather data from main actors and previous programs	✓ Better understanding of user preferences for adapted interventions
2. Enhance quality of materials used for the production of cookstoves while ensuring the sustainability and quality of supply	• Provide training to producers on material preparation • Subsidize the access to modern equipment • Research the optimal use and preparation of raw materials	✓ Improvement of stove quality due to the use of improved materials

Production and Training

Most people cook with solid fuels in bucket stoves, for which there is a large existing network of stove producers. These producers should be the target of a training program on improved cookstove production.

Intervention Options	Actions	Outcomes
1. Assess production capacities and make contact with stove producers	• Assess existing production infrastructure • Map stove producers and assess willingness to participate in a training program • Make contact with stove producers and initiate recruitment for a pilot program	✓ Assessment of the feasibility of a large scale training program ✓ Identification of high potential future stove producers
2. Set up a pilot program; assess quality and consider up-scaling	• Create a training task force • Train stove producers in manufacturing improved cookstoves • Train producers on basic business and planning skills, in order to limit the drop-out rate due to management mistakes • Set-up a follow-up for the trainees	✓ Increased production capacities

Sales and Distribution

Future projects should build off of existing distribution networks, by strengthening them and building up their capacity, rather then designing new systems.

Intervention Options	Actions	Outcomes
1. Explore and test retailing options	• Conduct research on current distribution and retailing system for cookstove • Gather best practices from previous programs • Estimate costs and capacities	✓ Comprehensive framework of the available distribution options in Lao PDR, including main potential barriers and limitations
2. Map distribution network	• Create a training task force • Train stove producers in manufacturing improved cookstoves • Train producers on basic business and planning skills, in order to limit the drop-out rate due to management mistakes • Set-up a follow-up for the trainees	✓ Increased production capacities

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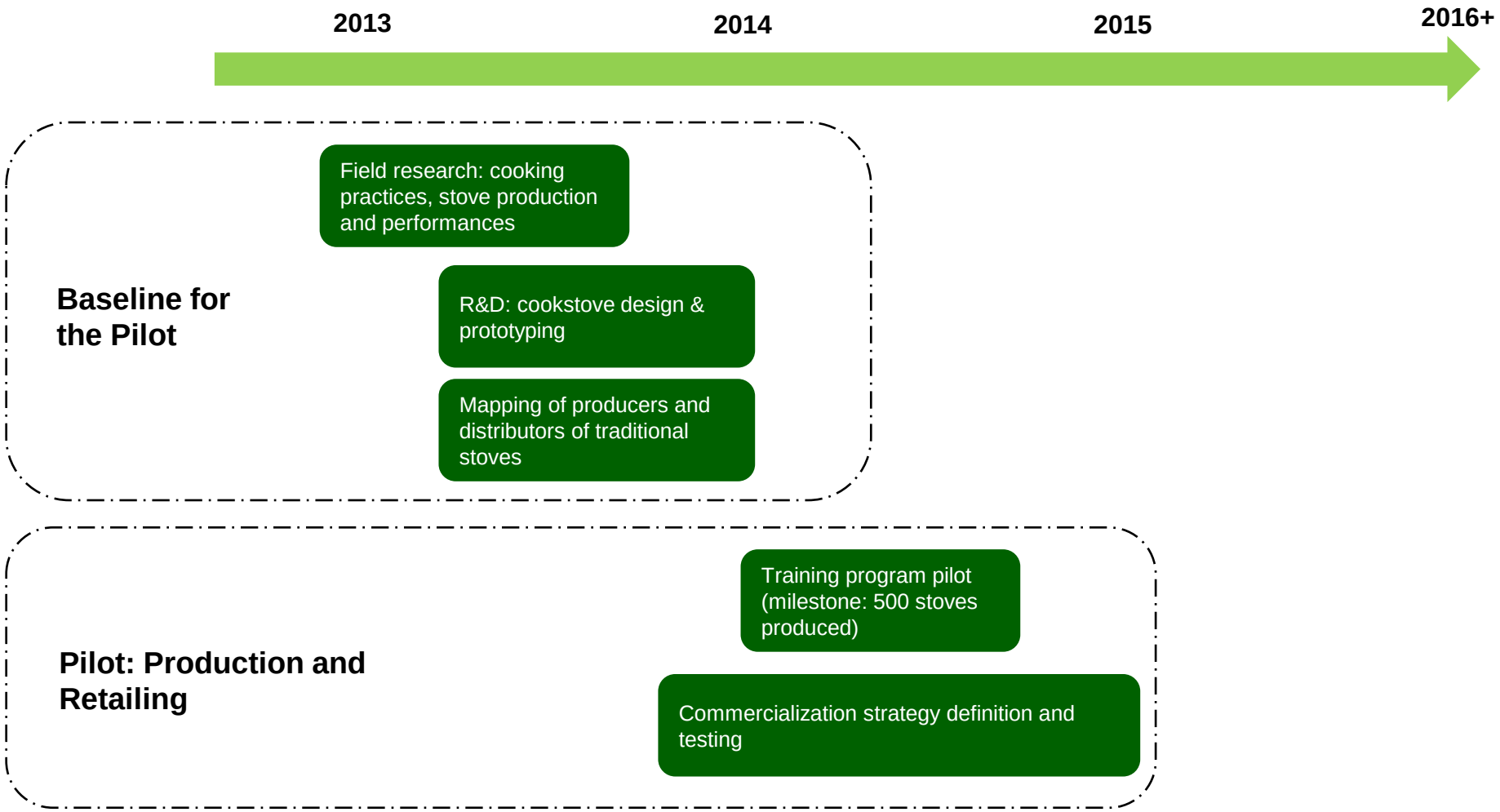
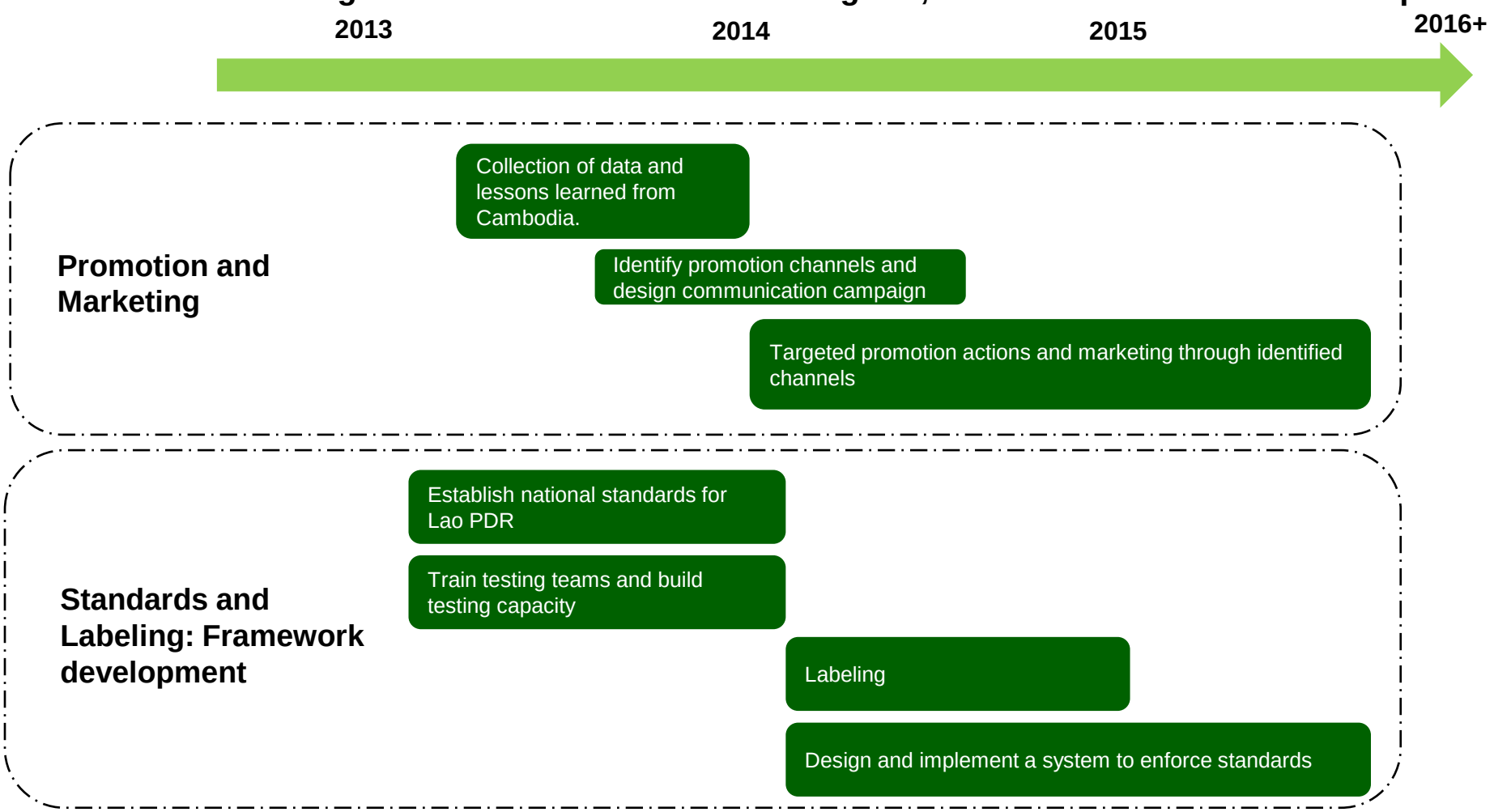
Intervention Relative Roadmap

In the first phase, Intervention Options should focus on the development and implementation of a pilot project. This will allow the scalability of cookstove dissemination to be assessed.



Intervention Relative Roadmap

In parallel with the pilot, actions to strengthen the upstream segment should be taken. These actions must be designed to be sustainable in the long run, and should continue after the pilot.



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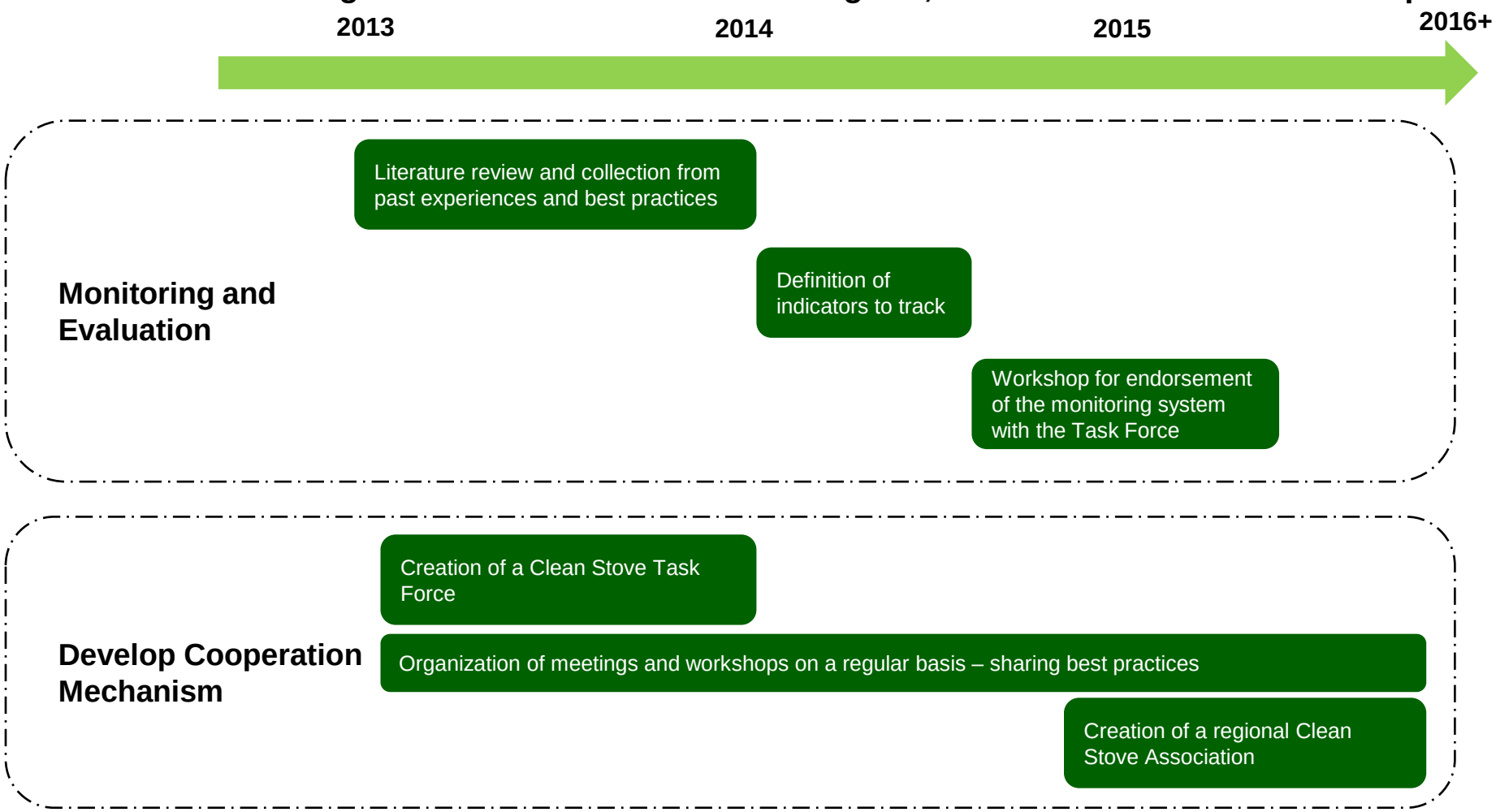

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Intervention Methodology – GERES Pilot Project

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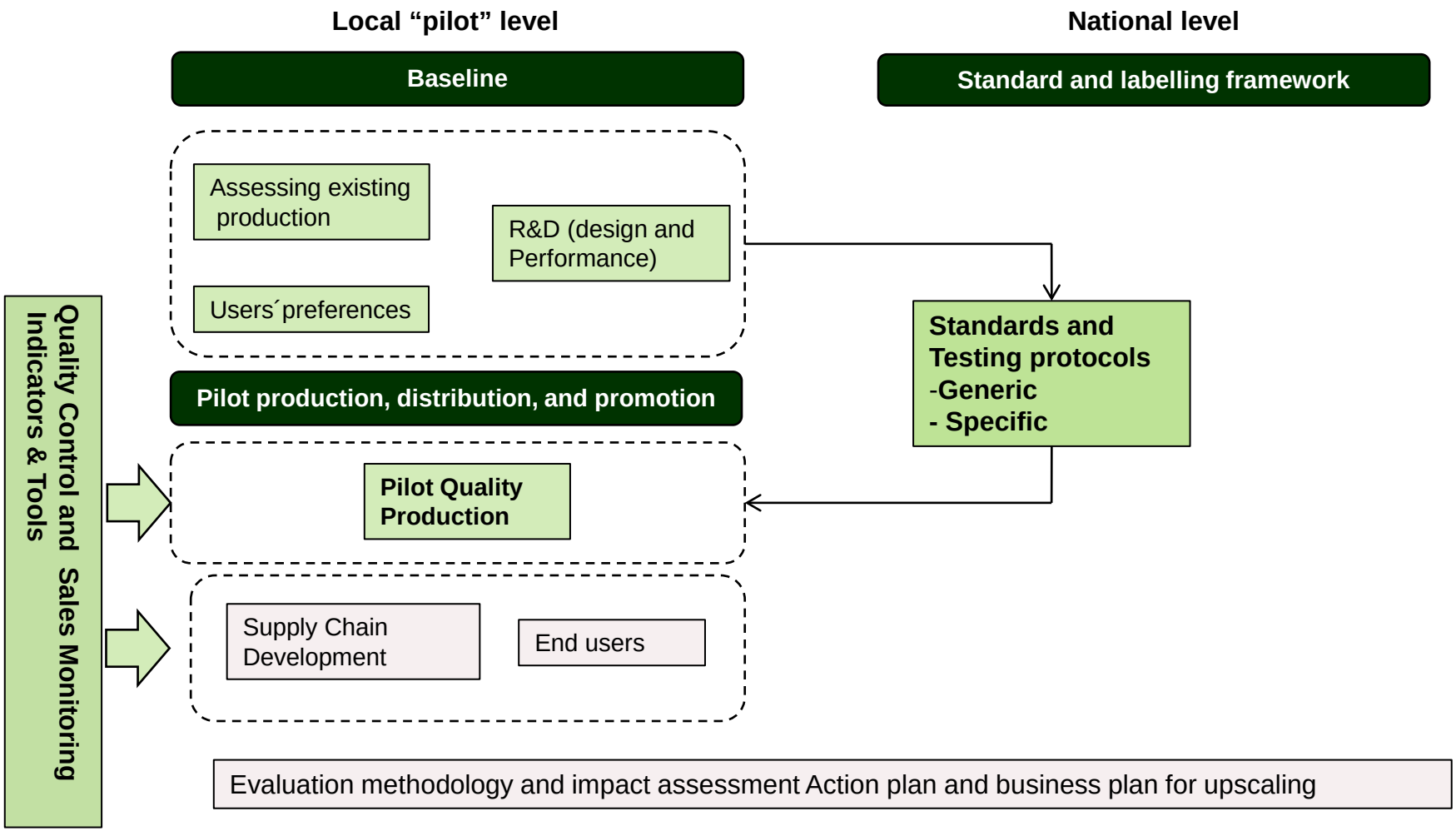
The pilot project to be implemented by GERES from 2013 onwards will follow this overall structure :



Acknowledgements

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