



PROMOTING SUSTAINABLE AGRICULTURE THROUGH GREEN EXTENSION IN LAO PEOPLE'S DEMOCRATIC REPUBLIC

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Green Extension is an umbrella term used to describe rural advisory services which support the scaling up of sustainable agriculture. This encompasses a range of methods to promote various types of content. What these approaches have in common is a process of socio-ecological learning, i.e., supporting farmers to analyse local problems and opportunities, and test alternative practices under local conditions. Building on three decades of experience in promoting organic agriculture, IPM, SRI and other forms of sustainable agriculture, the concept and practice of Green Extension has been developed and implemented in Lao PDR within the framework of the Lao Upland Rural Advisory Service (LURAS), since 2015.

In this Good Practice Note, Souvanthong Namvong and Andrew Bartlett, reflect on the evolution and progress of green extension and draw lessons from the challenges as well as opportunities at hand for influencing the enabling environment, forging partnerships and innovation in capacity development, and how they are strengthening the Agricultural Innovation System in Laos.

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CONTEXT

Located at the border between mainland South-East Asia and southern China, Laos is a mountainous country that is rich in natural resources, with a low population density but within reach of major international markets. The agriculture sector in Laos is undergoing a process of rapid commercialization which is pulled by the demands of industry and consumers in neighbouring countries and pushed by the Lao government's modernization efforts. While the adoption of new technology and access to new markets has increased cash incomes and reduced the incidence of poverty in rural areas, commercialisation has also been accompanied by negative impacts on the environment and human health, including misuse of pesticides, forest clearance and land degradation.

The Government of Laos has recently adopted a Green Growth Strategy as an integral part of its National Socio-Economic Development Plan. As part of this strategy, the Ministry of Agriculture and Forestry (MAF) is committed to developing clean, safe and sustainable agriculture. Various forms of sustainable agriculture have been promoted in Laos for 30 years, including organic farming, integrated pest management, the system of rice intensification and conservation agriculture. The concept and practice of Green Extension builds on this experience. Over the past five years, the Green Extension approach has been developed and implemented by the Department of Agricultural

Extension and Cooperatives (DAEC) in cooperation with Helvetas, a Swiss NGO, with the result that this approach has now been adopted by the Lao Government.

GREEN EXTENSION

'Green Extension' is an umbrella term used to describe rural advisory services which support the scaling up of sustainable agriculture. This encompasses a range of methods to promote various types of content. What these approaches have in common is a process of socio-ecological learning, namely, supporting farmers to analyse local problems and opportunities, and testing alternative practices under local conditions.

In 2018, 65 extension practitioners – representing farmer groups, local government, NGOs, researchers and development projects – came together in Xieng Khouang, Northern Laos, to share their experience with promoting sustainable agriculture. They identified the principles of Green Extension as follows:

- Active participation of smallholders in knowledge generation and dissemination, with affirmative action to involve women, youth and ethnic minorities;
- Attention given to both local agro-ecological and market conditions, including testing and adaptation of innovations to ensure technical feasibility, financial viability and environmental sustainability;
- Diversity of extension content and practices based on priorities

of the communities and organisations involved, rather than formulaic implementation.

While acknowledging the importance of operational diversity, the participants of the meeting in Xieng Khouang agreed that there were ideally five steps in a Green Extension process (Table 1).

TABLE 1 | Five steps in the Green Extension Process

Green Extension Process	What this involves
Participatory agro-ecosystem analysis	Rural families take stock of available resources; inventories and maps prepared
Community planning	Analysis of opportunities and constraints; agreement reached on priorities for innovation
Action research	Innovations are piloted; options are compared; communities collect data and analyze results
Farmer-to-farmer learning	Experience is shared among households and communities; knowledge and skills transferred
Organisational development	Informal networks and / or formal groups are created to sustain and scale up innovations

Source: Authors

In contrast to traditional top-down extension, where farmers are expected to adopt generic recommendations made by outside experts, Green Extension involves the horizontal sharing of knowledge that is specific to certain ecological conditions and markets.

APPROACH

In Laos, leadership in the development and implementation of Green Extension has been provided by DAEC with the support of the Lao Upland Rural

Advisory Service (LURAS). LURAS is a program of the Swiss Agency for Development and Cooperation (SDC) and the Government of Laos, implemented by Helvetas in partnership with DAEC.

Forging partnerships

Since 2014, LURAS and DAEC have joined hands with a number of national and international organisations to promote Green Extension, including the Lao Farmer Network (LFN), NGOs, international research organisations and UN agencies (Table 2).

Table 2| Partners and their roles

Partners	Roles
LURAS (Helvetas and DAEC)	<ul style="list-style-type: none"> ○ Providing conceptual and operational support for Green Extension, including establishing community learning centres, capacity building for local agriculture offices, and production of extension materials. ○ Serving as the Secretariat of National Working Group on Farmers and Agribusiness which convenes regular policy dialogue, manages online discussion groups and maintains a digital library on agriculture development in Laos (LaoFAB).
Farmer Groups (incl. Lao Farmer Network)	<ul style="list-style-type: none"> ○ The Lao Farmer Network (LFN) strengthens the bargaining power of member organisations, facilitates contracts with buyers and provides a channel for technical and financial support from development projects; ○ Groups producing and selling organic vegetables and coffee have been a major success, and share experience through farmer-to-farmer learning.
Local authorities (PAFO & DAFO)	<ul style="list-style-type: none"> ○ Green Extension is changing the role of Provincial and District Agriculture and Forestry Offices (PAFOs and DAFOs), where staff are becoming process helpers and resource linkers, not just solution givers. LURAS has supported training on the 'New Extensionist' as part of capacity building for these offices.
Private companies (e.g., Comma Coffee, Phousan tea)	<ul style="list-style-type: none"> ○ Companies are processing and marketing eco-friendly products such as tea and coffee grown in natural forests. Partnerships between companies and farmer groups is an essential part of the knowledge generation process due to the specialised technology and practices needed to meet quality standards that give producers a premium price.
Mass Organisations: e.g., Lao Youth Union	<ul style="list-style-type: none"> ○ In cooperation with LURAS, the Lao Youth Union is managing a scheme for rural youth called AGREE (Agripreneurs for a Green Rural Economy and Employment) that provides training and start-up grants for young people, to establish innovative micro-enterprises in farming and food systems that generates income from healthy products and services.
International organisations (e.g., FAO & CIMMYT)	<ul style="list-style-type: none"> ○ Collaboration with FAO has helped to integrate the principles of Responsible Agricultural Investment (RAI) into the practice of Green Extension, for example by emphasising the importance of Free, Prior and Informed Consent (FPIC) as part of contract farming; ○ Research institutions, such as CIMMYT, have provided technical back-stopping for participatory action research, such as farmer experiments to control Fall Armyworm in maize.

Source: Authors

Strengthening functional capacities for experimentation, learning and monitoring

Setting up Community Learning Centres:

Learning Centres involve a systematic approach to tackling complex issues under local conditions by means of a socio-ecological learning process. In practical terms, this usually involves action research carried out by groups of farmers, supported by the provision of technical training and community managed facilities. At each location 20-200 farmers were involved in an activity. With support of LURAS, more than 1,600 farming households have been directly involved in action research as part of Green Extension over the past four years. The topics for this action research included:

- alternative methods for maize storage;
- bio-control methods for Fall Armyworm;
- improved pasture management;
- new processing techniques for coffee; and
- feasibility of using solar-powered irrigation pumps.

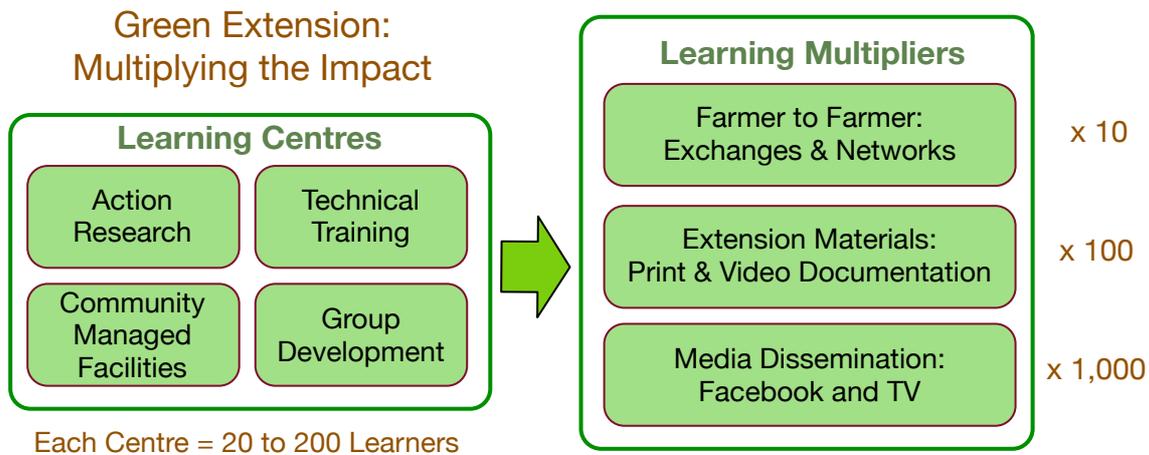
Learning Multipliers: Multiplier activities take the lessons learned by farmers at the Learning Centres to a much wider audience. The means for doing this include farmer-to-farmer (F2F) exchanges, production and dissemination of extension materials, and the use of social media. (See the diagram below.) As a result of



Rural youth prepare business plans. ©LURAS

multipliers, the project is able to reach tens of thousands of farmers, field staff and decision-makers in the agriculture sector. Importantly, extension materials are prepared in collaboration with the farmers who have tested and applied the new techniques; both print materials and video have been used to share what they have learned and the practices they have adopted.

FIGURE 1 | Green Extension: Multiplying the Impact



Source: Authors

An additional 15,000 families have been reached through farmer-to-farmer (F2F) activities, including visits to community learning centres and F2F training. More than 800 extension workers have received training in the Green Extension concepts and methods, including their role as ‘New Extensionists’ using GFRAS training materials translated into the Lao language.

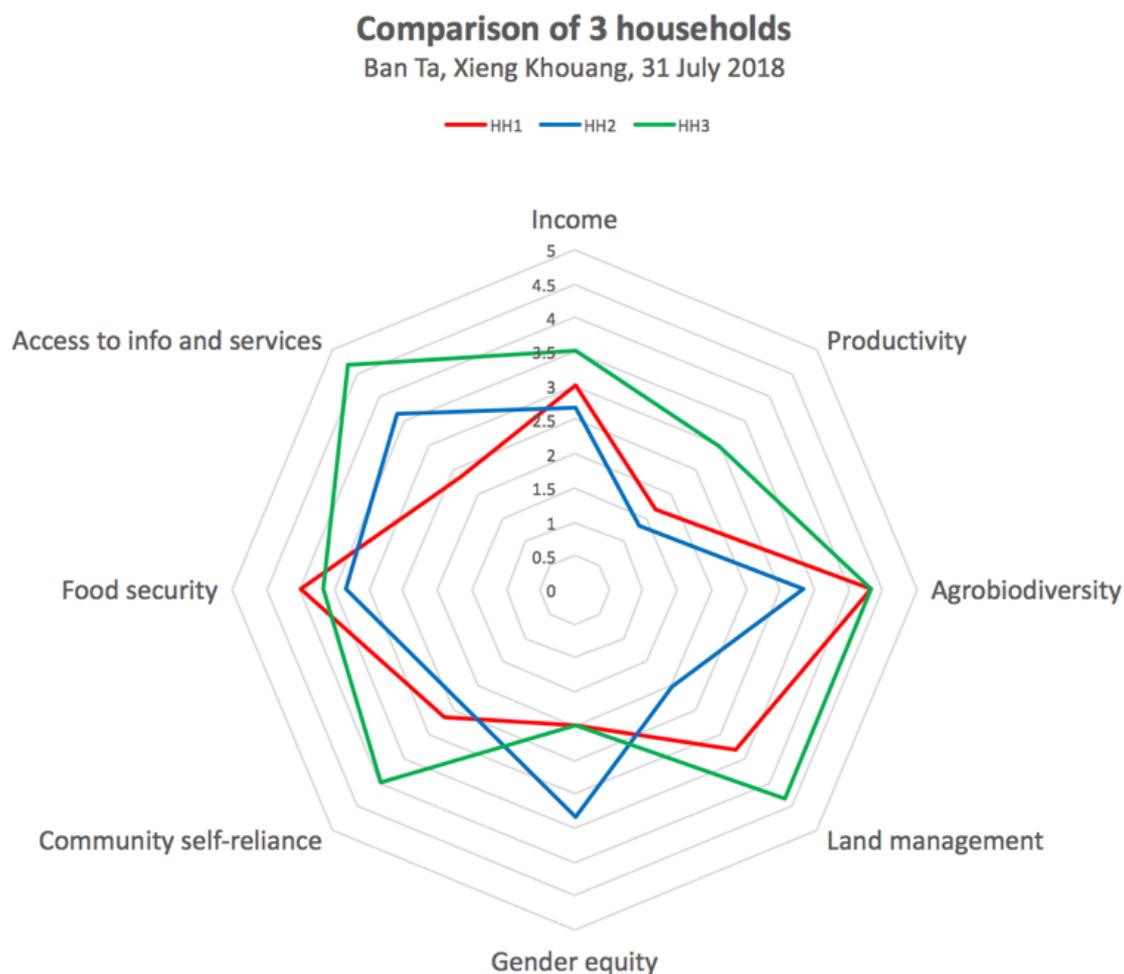
Participatory Monitoring: In the framework of LURAS, DAEC and Helvetas have developed and applied an M&E system called ‘Spider-GEM’. The acronym ‘GEM’ stands for ‘Green Extension Monitoring’ while Spider-GEM is a participatory method that involves the use of spider charts to assess the condition of the food systems in which innovation takes place.

Spider charts enable project partners, including community groups, to analyse and visualize multiple dimensions of their food system. The indicators that

are used as part of the Spider GEM include economic, social and ecological variables. The Spider-GEM methodology has been applied by both project staff and government partners. It captures a holistic picture of food systems, produces results that are easily understood, but can also quantify differences between locations and changes over time.

Each of the eight primary indicators is quantified using a set of questions that are asked in household interviews. Depending on the circumstances, the results can be immediately displayed on a wall-chart during the course of the interview, or collected for later analysis using a tablet and Kobo software. The diagram below illustrates the difference between a sample of three households.

FIGURE 2 | Comparison of three households using “SPIDER-GEM”



Source: Authors

Influencing the Enabling Environment

In 2019, Green Extension was the subject of the first Briefing Note produced by the newly established Department for Policy and Legal Affairs in the Lao Ministry of Agriculture and Forestry. Two years later, Green Extension became an integral part of the Government’s ‘Green and Sustainable Agriculture Framework for Lao PDR to 2030’ as approved by the Prime Minister.

DAEC and LURAS have also collaborated with FAO to document and share the Lao experience in implementing Green

Extension, which takes into account the lessons learned from two decades of Farmer Field Schools in Laos. FAO supported a national capitalization process and invited a representative of DAEC (and one of the authors of this note) to speak at the launch of the Decade of Family Farming in Rome.

IMPACT

In the last four years, more than 16,000 farming households in Northern Laos

have benefitted, including those growing rice, maize, coffee, tea, and raising cattle. Economic benefits of Green Extension have been greatest among farmers who partnered with companies that help them move up the value chain. Coffee farmers who previously picked and sold cherries to local traders can now process and sell green beans for 10 times what they had previously received. Nearly 200 youth have started their own small business or been employed as community development workers. Some of the producer groups and cooperatives helped farmers increase the bargaining power of small farmers engaged in organic farming by marketing their produce through these groups.

CHALLENGES

Green Extension is both knowledge-intensive and location-specific which makes scaling up a major challenge. The success or failure of Green Extension ultimately depends on the enabling environment for sustainable agriculture. Knowledge and skills are not the only determinants of behaviour in the sector; farmers and agribusinesses also make decisions based on the likely financial returns. Thus, if sustainable agriculture is to be scaled up in Laos, it needs policies and practical measures that make green farming more profitable for a much larger number of small producers.

Green extension alone is not sufficient to promote sustainable agriculture. Formal research and development efforts are needed that help reduce the costs and increase the financial benefits of organic and clean farming practices, including measures related to value



Extension materials based on farmer experience
©YouTube/ Lao Fab Channel

chain governance, taxation, certification and pricing.

Though there has been some success in increasing the bargaining power of small farmers engaged in organic farming by establishing producer groups and cooperatives, these organisations are often constrained by weak management and poor access to finance. As an alternative, providing training and start-up grants to rural youth who want to manage their own micro-enterprises has proved to be a viable method for promoting green innovation. These small businesses could be the seeds of a more sustainable future for rural communities.

LESSONS

The principles and practice of Green Extension is proving to be an effective way for the Lao government and its development partners to support a more sustainable commercialisation of agriculture as part of a Green Growth



Partnering with private sector to move farmers up the value chain ©LURAS

strategy, thereby increasing rural environment that were associated with the first wave of cash crops in the country. By engaging farmers in testing and adapting innovations under local conditions, the partners involved in implementing Green Extension have proved that it is possible to enhance the knowledge and income of farmers who adopt more sustainable practices through a combination of farmer-to-farmer learning, networking, use of print, television and social media. Green

Extension is not a blueprint with a precise schedule of activities or a mandatory set of tools. Instead, it is a set of principles and a general process that can be adapted to different circumstances and priorities.

Though Green Extension aligns with the National Government's commitment to developing clean, safe and sustainable agriculture, its widespread adoption needs a more enabling environment

that provides financial incentives for farmers and other value chain actors to adopt more sustainable practices, and an effective regulatory environment. For instance, on the one hand, farmers need to receive premium prices for healthy products, but on the other, the government needs to discourage and penalise producers and investors who create unfair competition with technology that is harmful to both people and the planet.

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Coffee farmers test new processing techniques at GE Learning Centre. ©LURAS

Good Practice Notes Series

The Asia-Pacific Islands and Rural Advisory Services Network (APIRAS), the Asia-Pacific Association of Agricultural Research Institutions (APAARI), in close collaboration with the Research and Extension Unit of the Food and Agriculture Organization (FAO) of the United Nations are committed to strengthen agriculture innovation systems in Asia-Pacific for transforming agri-food systems.

In 2020, APIRAS and APAARI carried out a Joint Rapid Appraisal (JRA) to scope the innovation environment to identify and document initiatives aimed at strengthening Agricultural Innovation Systems (AIS), in a context of the TAP-AIS project.

The JRA study revealed three main barriers that constrain development of an effective AIS in the Asia-Pacific. These include: a) lack of sufficient partnerships among actors in the AIS, b) inadequate investments and lack of policies that could steer the research and extension agencies to engage with other AIS actors, and c) lack of sufficient capacity development initiatives aimed at enhancing functional capacities of AIS actors. Publication of this series of Good Practice Notes is an attempt by APIRAS and APAARI to document cases that have tried to address development of an effective AIS through addressing the above constraints.

The TAP-AIS project

This publication was developed in the context of the TAP-AIS project (2019-2024), funded by the European Union and implemented by the Food and Agriculture Organization of the United Nations.

For more information see:

www.fao.org/in-action/tap-ais

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