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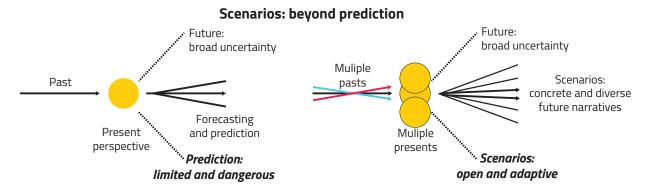
What is foresight?

Foresight is the ability to predict or the action of predicting what will happen or be needed in the future. Foresight uses a range of methodologies, such as scanning the horizon for emerging changes, analyzing megatrends and developing multiple scenarios, to reveal and discuss useful ideas about the future. It is an approach that aims at making sense of the future, understanding drivers of change that are outside of one's control, and preparing for what may lead to success or failure.

Story map development using contextual foresight scenarios

Climate change is projected to impact human and natural systems, with differential consequences across regions, economic sectors and time. The magnitude and extent of future impacts depends not only on the dynamics of the earth system but on socio-economic developments too and current resilience of systems. Exploratory scenarios gave an understanding of how systems interact and what changes might occur in years, decades to come. Anticipatory scenarios or decision support scenarios, develop path to predetermined futures that vary according to desirability. Scenarios offer a way to address uncertain-ty about the future by creating "coherent, internally consistent storylines that explore plausible future states of the world or alternate states of a system" (adapted from Intergovernmental Panel on Climate Change 2013).

The agro-ecological zoning (AEZ) suitability and yield maps form excellent scientifically approved support for robust and future resilient policy formation for adaptation planning and complement the use of foresight and scenarios. To make use of this information in the best possible way, it is essential to find a way to convey the results and key messages to decision-makers and other stakeholders in a professional, convincing, and understandable manner. This is where effective science communication becomes important. To convey the results of the AEZ maps as well as key actions and policy recommendations, foresight analysis tools and the concept of "story maps" are used. For four national priority crops, story maps have been produced including in-depth analysis of production systems and adequate suggested actions based on contextual scenarios.



Predicting one future (left) versus anticipating multiple futures (right). Source: Adapted from Noortmann, M., Koning, J., Vervoort, J., & Hoofd, I. (2019). Imaginative scenario planning for security and law enforcement organisations. A Report on practicing with uncertain security futures.

How policy narratives and storylines be of use?

The preparation of policy narrative was designed specifically for officials of the Department of Agricultural Land Management (DALAM) and of the National Agricultural and Forestry Research Institute (NAFRI) to present first key concepts and methods around science communication to then produce strategic story maps, from spatial analysis to future resilient policy recommendations. The narratives are detailed in-depth analysis of the current state of maize, cassava, coffee and banana production, as well as projections of future developments of the agricultural system. The policy recommendations and advised actions in the document can help policy makers to establish a resilient future-proof production system.

Process for developing policy narratives

- Training on foresight analysis with development of contextual scenarios and selection of the priority crops;
- Story map preparation with multi-sector participatory iterative design of maps, graphs and plans;
- Field missions to test the robustness of the recommendations and the future pathways in the crop production areas;
- National workshop for approval and awareness raising.





How storylines are generated

1. Input

Defining theme and boundaries and stakeholders mapping.

2. Analysis

Trend analysis and horizon scanning to analyze the outputs of the AEZ future crop suitability maps, the adaptive capacity maps and the contextual scenarios developed in the foresight analysis course. Hotspot maps are being developed to indicate the highest priority locations for increasing adaptive capacity, based on future crop suitability and livelihood maps.

3. Interpretation

Multi-stakeholder system mapping maps all institutions, the private sector and other important shareholders in the production system.

4. Plan

Links between barriers and causes of issues are identified using a causal analysis.

5. Prospection

The contextual scenarios analysis forms a means to examine possible other future states of the production system and helps determine opportunities and possible issues that arise from these scenarios.

6. Reflective strategy

The results of all analyses are used to formulate new transformative actions and policy recommendations that complement agricultural policies, therefore steering the agricultural system towards a more robust an future-resilient system.



The generation process

SAMIS Contextual Scenariors

1. Input

What is the scope of the work?

2. Analysis

What is happening?

3. Interpretation

What is happening?

4. Plan

What do we want to explore in the future?
What are the key barriers?
What could be done to overcome the challenges and embrace development opportunities?

5. Prospection

What might happen that we didin't plan for?

6. Reflective Strategies

What we like to do differently in out pathways?

Process for developing policy narratives

At national level, the story maps can form as a means of communication for technical spatial teams to formulate priority areas for investments in an understandable manner. Experts from Ministry of Agriculture and Forestry (MAF) can use the results of the

analyses to base policy-related decisions on agriculture land planning. The story maps can also be used to communicate results in between departments and teams of the Ministry of Agriculture and Forestry.



Use case: the cassava story map

SCOPE DOCUMENT

Cassava is a relatively climate-resilient crop, but the production shows a large range of issues. Using SAMIS AEZ future crop suitability maps and multiple foresight anlysis tools, the risks and opportunities for cassava production are analyzed.

Policy recommendations containing proposed actions and strategies are imposed in the form of a pathway action plan, to ensure an effective implementation of the Agriculture Development Strategy (ADS) 2025 and the vision to the year 2030.

· Pinpoint suitable areas for future cassava

· Preserve environment and forest area;

inside forests and paddy rice areas:

• Future suitable production areas are not

• Establish a consultative committee to 1)

use of chemical fertilizers; 2) develop

standards and policies to facilitate all

monitor and control production process and

CURRET & FUTURE TRENDS

- · Changing suitable areas for future cassava production.; The root causes of the trends: Lack of knowledge of soil nutrient management and
- insufficient availability of innovative;
- · Unsuitable varieties for some regions;
- · High occurrence of pathogens and pests;
- · Lack of wall-balanced policies, laws, decrees and regulations for support of farmers sectors;
- · Deforestation and forest degradation due to slash and burn practices:
- · And gender inequality in production and child labour.

ROOT CAUSES

- Research and use of scientific knowledge is not optimized
- Higher demand of cassava products
- High global GHG emissions Low adaptation

- Poverty under farmer's households
- Loss of ecosystem services
- Land degradation
- Risks for income of tourism sector

· Reduce poverty of farmers;

· Main recommendations;

aspects of value chain.

production;

General recommendation: Application of crop rotation and land management in cassava production system

For scenario AGRICULTURE IN NEED OF A RESCUE:

- · Development of side activities as opportunities to increase household income;
- · Credit provision should be constantly monitored to avoid misuse:

For scenario HAPPY FARMERS:

- · Motivation of farmers to come together in
- And more distribution of relevant information to farmers particularly in remote areas.

- NAFRI (provides the high yield variety);
- DOA and DTEAP (modern technology production and processing);
- · DALAM (allocates suitable areas and land management);
- DOPLA and DOPF (regulations).

Ministry of Industry and Commerce:

- MPI (plan and contracts);
- MONRE (DMH) (climate data) Private Sectors:
- · Domestic investors:
- · International investors: China, Vietnam and Thailand:
- · and farmers as implementors.

PRIORITIES FOR DEVELOPING ACTIONS

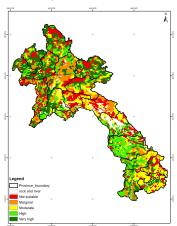
KEY IMPACTS

Deforestation imbalance of gender roles, low yield and income for farmer, degradation of natural resources and conflicting and lacking policies.

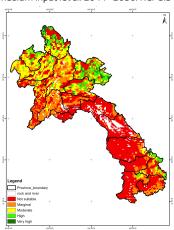
KEY ACTIONS

Active distribution of policy content, training for farmers on disease prevention, new technologies and soil management, actions against slash & burn practices and enabling of access to funds.

Suitability cassava short cycle variety medium input level/2010-2019



Suitability cassava short cycle variety medium input level/2041-2050/RCP8.5

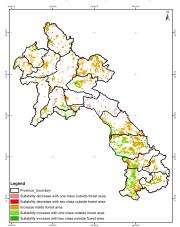


Cassava suitability and hotspot map by Department of Agriculture Land Management, Ministry of Agriculture and Forestry, 2022.

Source: https://lrims-dalam.net/?thematic=sar

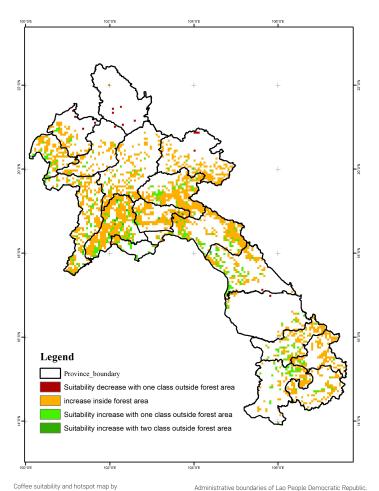
DIFFERENCE PRESENT AND FUTURE SUITABILITY

Difference between present and future (2041-2050/RCP8.5) cassava suitability, short cycle variety, at medium input level



Administrative boundaries of Lao People Democratic Republic. National Geographic Department, 2013.

Current & future suitability Arabica coffee



Key trends

- Changing suitability for coffee production due to climate change;
- A lack of labor during harvest season;
- Technologies, machinery and equipment for post-harvesting processes are insufficient;
- Lao coffee is not well accepted by the global market yet;
- Coffee varieties are not climate-resilient;
- Lack of monitoring system from national level to farmers and lack of coordination within the value chain from farm to processing to market.

Key impacts

- Changing future yields and production volumes;
- Land use conflicts such as hydropower projects on coffee land:
- Labor cost is high due to a lack of labor supply;
- In cold season, coffee trees tend to die during cold chills;
- Low to zero productivity;
- Some farmers do not know that there is a policy to promote organic coffee and special coffee;
- And impacts on not being accepted by the global market = not being able to achieve full export potentials and thus affecting the socio-economic growth potential of the country.

Source: https://rims-dalam.net/?thematic=sar

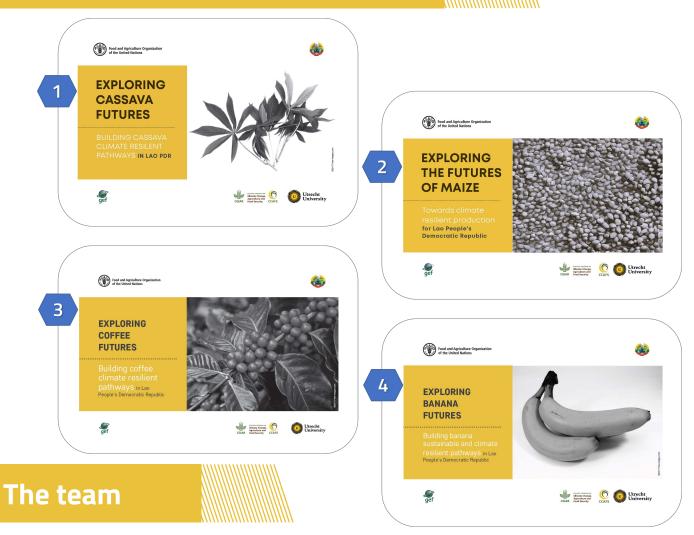
Department of Agriculture Land Management

Ministry of Agriculture and Forestry, 2022.

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National Geographic Department, 2013

Story maps for four priority crops



- Overall implementation: Department of Agricultural Land Management (DALAM), National Agricultural and Forestry Research Institute (NAFRI);
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 Sustainable Productivity in agriculture (in the context of CSA and Agro-ecology) (FMM sub-programme 5.1), FAO Lao PDR;
- Official consultation and approvals: Policy Team of the Department of Planning and Cooperation, Ministry of Agriculture and Forestry;
- Technical expertise and finalization support: Dr Rathana Peou Norbert Munns, FAO & University of Utrecht;
- And regional coordination: FAO Regional Office for Asia and the Pacific.



Further information

Further information on LaCSA and the overall SAMIS project can be found on the respective FAO page http://www.fao.org/in-action/samis/en/. Individual story maps for cassava, coffee, maize and ba-nana are published in the project web page. All data is available in the Land Resources Information Management System.

Funding proposals and concrete inquiries can be directed at the Department of Agricultural Land Managemen (DALaM, www.dalam.org.la) under the Ministry of Agriculture and Forestry (MAF), which can be reached by telephone under +865 21 770201.



