



Leveraging Geo-Economic Proximity and Agricultural Commercialisation

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KEY MESSAGES

- Modernization and commercialisation of the agriculture sector requires significant public and private investment in terms of the transfer of scientific and technical knowledge to smallholder farmers related to diversification of farming patterns and cropping systems and management of land, family labor, and limited capital resources.
- Evidence recognizes contract farming as the principal mechanism for introducing modern technologies and linking agricultural production to markets, thereby commercialising smallholder farmers and raising income from on-farm activities linked to poverty reduction.
- The current policy and regulatory framework lacks incentives for adhering to the rule of law thus hindering the development of well-managed contract farming while facilitating negative impacts on land, labor, and the environment.
- Credit and finance to invest in technologies required for commercialisation are rigid, carry high interest rates, and are of short duration. Smallholder farmers are high risk borrowers.
- Geo-proximity to markets is a demand-pull driver of agricultural commercialisation, with the northern region having a comparative advantage for several agricultural commodities.
- The principal environmental risk to rural household income and remaining out of poverty is natural disaster.

Introduction

The purpose of this research brief is to synthesize the findings of ten policy research studies conducted by NAFRI's Policy Think Tank (PTT) research team between 2016 and 2020, and complementary research studies. The research was related to commercialisation of agricultural products in Lao PDR.

Background of the policy on commercialisation

On the theme of agricultural commercialisation, the Second Party Congress in 1972 recognized the need "...to reorganize small individual and less developed agricultural businesses into larger social enterprises through cooperatives with the voluntary participation of farmers." The Fourth Party Congress in 1986 introduced the New Economic Mechanism (NEM) to promote an open, market economy with Government supervision, including promoting foreign direct investment (FDI). In the late 1990s the policy emphasis was on "Household Economic Production" (HEP), promoting farm production through household enterprises linked to regional and international markets. In the early 2000s, the National Growth and Poverty Eradication Strategy (NGPES) focused agricultural policy on poverty eradication and developing trade and investment opportunities linked to cross-border markets through upgraded transport and communications infrastructure in the region.^{Ref.1} FDI from China, Thailand, and Viet Nam, Lao PDR's major trading partners, soon followed, comprising almost three-quarters of all approved FDI projects between 2006 to 2016.^{Ref.1} Investments were concentrated in hydropower, mining, agriculture, construction, and real estate. The Chinese lead in agricultural investments that are located mainly on land concessions in the north, and are linked to contract farming for commercial crops, including rubber, banana, sugar cane, tea, coffee, watermelon, and vegetables, among others.

The Eighth National Social and Economic Development Plan, 2016-2020 (8th Plan) has provided a policy environment that enabled investments by regional trading partners to achieve the 8th Plan's anticipated social and economic development outcomes. Food and nutrition security and agricultural commercialisation, including value-added processing of agricultural and forestry products, were important policy priorities. Significant investments in infrastructure to strengthen cross-border logistics have facilitated regional trade. Science and technology increasingly are applied to harmonize sanitary and phytosanitary (SPS) measures among principal trading partners in the Association of Southeast Asian Nations (ASEAN). At the same time, institutional (e.g., quality standards, certification procedures) and organizational innovations (e.g., farmer groups, internal



control systems, participatory guarantee systems) have been introduced to produce certified as clean agriculture products through Good Agricultural Practices (GAP) and organic agriculture. Agricultural exports including coffee, fruit, vegetables, non-timber forest products (NTFPs), livestock, and selected field crops have gained a larger share of regional markets. The management of agricultural land has been improved through an increase in secure titles granted to smallholder farmers^{Ref.2} resulting in an expansion of commercial crops. Increased investments in irrigated agriculture have stimulated private investment in commercialized agriculture.

The policy emphasis of the Ministry of Agriculture and Forestry's (MAF) Agriculture Strategy to 2025 and Vision to 2030 (ADS) includes ensuring national food security through clean, safe, and sustainable agriculture, and strengthening capacity for commercialized agriculture that contributes to economic growth, industrialization, and modernization. The ADS's targets include: (i) increasing the quantity of commercial agricultural commodities through industrialization and modernization; (ii) boosting competitiveness in terms of quality; (iii) improving quality standards and compliance to regulations; and, (iv) ensuring food security and safety linked to improving

nutrition. Most recently (February 2020), the Lao People's Revolutionary Party's Politburo told leaders of central and provincial Party committees to improve policy implementation of providing credit for rural development and poverty reduction aimed at minimizing income inequality. Important measures include: promoting agricultural enterprises; protecting land use rights; providing extension services to encourage modern collective farming linked to markets; encouraging local and foreign private investment; appropriate arrangements for contract farming including the '2+3' and '1+4' models; operating agriculture and forestry demonstration centers to increase investments in and application of scientific research; and, improving market access roads linking production supply chains to local and regional markets. In this context, the 9th Plan is expected to emphasize the geo-economic proximity of Lao PDR, to maximize locational advantages within ASEAN. Soft connectivity – more intensive economic interactions through preferential trade and investment agreements – and hard connectivity – in the form of upgraded roads, railways, ports, and airlinks to enable information and communications technology (ICT) – are prospective priorities.

Research approach

Based on a review of 10 policy research reports prepared by the PTT research team between 2016 and 2020, and selected complementary reports (listed under references below), several factors were identified as critical for facilitating commercialised agricultural development, namely:

- **Contribution to social development**, specifically to alleviating poverty;
- **Environmental benefits**, including contributing to resilience to climate change;
- **Application of science and technology**, blending science-based technologies and indigenous techniques;
- **Enabling policy, institutional, and legal framework**, emphasizing simplifying administrative procedures;
- **Geographic circumstances**, specifically agro-ecological conditions, and proximity to markets;
- **Contract farming** arrangements;
- **Land administration**, including secure land tenure for smallholder farmers and arrangements for commercial land concessions;
- **Benefits** in terms of financial viability of investments (profitability) by key stakeholders;
- **Markets**, specifically the availability of and access to markets;
- **Labor** requirements and availability; and,
- **Credit/financing** arrangements.

A factor comparison table was prepared to organize the key findings of the research studies related to each factor. Common themes were identified among the findings and are synthesized in this Research Brief. Specific policy measures are proposed for overcoming constraints and impediments to agricultural commercialization. Policy measures include recommendations for improving institutional mechanisms and creating an enabling environment for agricultural commercialization, along with identifying who is responsible for each proposed measure.

Key findings and results

Synthesis of findings and results

Evidence indicates that commercialized agricultural development had generally positive implications for **social development, income generation, and poverty reduction** among rural households. Although research on banana production indicated disturbing negative impacts on the health of laborers in banana plantations, white charcoal and banana production, as well as ecotourism and contract farming, generate additional local employment opportunities and income for poor and marginalized residents. The long-term (7-15 years) harvesting of benzoin gum for sale also generates a higher return than upland rice and maize under shifting cultivation. Cattle rearing is an important store of family wealth and source of income. PTT research indicates that a one percent increase in cattle commercialization leads to an increase of 0.1 percent of farmers' income from sales.^{Ref.7} Important macro-level policies required to promote commercialised agricultural development were related to facilitating export-oriented trade and upgrading communications and transportation infrastructure. Linked to ensuring the sustainable alleviation of poverty, meso-level drivers of commercialization were deemed more important, including: enabling access to natural resources (i.e., land), extension services, and credit; accompanied by measured regulation from government. Minimizing dangers from natural hazards also is important since smallholder farmers have insufficient savings or social or market-based insurance schemes to cope with crises.

Environmental factors (including health and ecosystems) were important for the maintenance of natural resources required for cattle rearing, ecotourism, and sustainable harvesting of NTFPs linked to commercialised agriculture. The research studies provided evidence that commercial banana production had negative impacts on the environment; and, complementary studies verified detrimental impacts of large-scale monoculture (maize, cassava, rubber, etc.) on forests and biodiversity.^{Ref.3} Climate change was found to be a critical environmental factor constraining expansion of smallholder commercial cattle production. Earning income (i) from ecotourism using biodiversity in national protected areas (NPAs); (ii) from commercial production of white charcoal using *mai tieu*

(*Cratonxylum sp.* or Yellow Cow Wood); and, (iii) from harvesting benzoin gum (resin) from styra trees (*Styra tonkinensis*); enhances smallholder awareness about conservation, the positive effects of ecosystem services, and the need for sustainable management of biodiversity. The studies provided evidence that the principal environmental risks to rural household income was natural disaster (e.g., drought, flood, frost). Natural disaster also is a key factor related to: remaining out of poverty; accessing credit; and, successful contract farming. Natural disaster also influenced whether smallholder farmers used agricultural practices that are not resilient to climate change which resulted in crop and livestock losses.

Application of **science and technology**: Access to and application, adoption, and adaptation of new technologies by farmers were critical to shifting from natural and subsistence farming, to commercial agriculture that can compete in regional and global markets. The foreign investors and traders that import science-based technology require reasonably good infrastructure, including electricity, market access, all-weather roads, and communications, that also contribute to reducing poverty and facilitating agricultural commercialisation. The technologies used in banana production and contract farming were imported by foreign investors. Alternatively, cattle rearing and white charcoal and benzoin gum production use indigenous knowledge and traditional techniques. Only two percent of cattle farmers^{Ref.7} use a science-based fattening system. Investors in commercial ecotourism blend modern management systems and local knowledge to operate biodiversity concessions. They also bring experience, knowledge of markets and consumer preferences, and the ability to build on indigenous knowledge to develop adventure, nature-based, and ecotourism products. The expansion of commercialised agriculture linked to modern technologies is constrained however by complex and inflexible financing of loans and credit for smallholder farmers to innovate and adopt modern technologies and mechanization. Traders who provide production inputs to smallholder farmers are a channel for introducing innovation and modernization (see credit and finance discussion below). PTT policy research studies also have found

that imported technology frequently is accompanied by the increased use and misuse of agricultural chemicals, particularly for banana production and contract farming, that have had negative health and environmental impacts.

Commercialisation of the agriculture sector requires an enabling **policy, institutional, and legal framework**. The policy research studies revealed that the regulatory framework is inadequate for commercial production of banana, cattle, and white charcoal. Farmers seeking to commercialise operations for those commodities reported that regulations are enforced in a discretionary manner, including production approval processes and the administration, monitoring, and evaluation of investments. Coordination among departments is not systematic, including among local authorities. Trade regulations and their enforcement are different in each province. Administrative fees are charged throughout the production value chain for cattle rearing, including fees for transporting livestock from one province to another. These administrative inefficiencies serve as a disincentive for farmers to invest in commercialisation and increase costs for both farmers and consumers. Commercialised benzoin gum production is constrained by weak enforcement of the Investment Promotion Law and Law on the Promotion of Small and Medium Sized Enterprises, No: 011/NA (dated 21 December 2011) at the local level; and, imposition of a profit tax and other fees on benzoin gum as an NTFP extracted from natural forests, when in fact it is obtained from plantations and agricultural land as permitted under the Land Law. Research findings show that contract farming is an important method of commercializing agriculture, reducing poverty, contributing to self-sufficiency, transferring knowledge and technology, and promoting production for export. However, no clear policy on contract farming has been adopted resulting in a lack of incentives for farmers and farmer groups to participate in contract farming programs. Without specific policy-based laws and implementing regulations or guidelines, the current legal and institutional framework is not effective in regulating contract farming arrangements. Legal contract enforcement is weak and mechanisms to address conflicts are ineffective. The lack of implementation within a common policy and regulatory framework and of ways for sharing of information, skills, and practical experience among stakeholders constrains expansion of contract farming. Combined with inadequate capacities among smallholder farmers, provincial and district officials, producers are often locked into unfair contracts.

Geo-economic proximity in terms of agricultural commercialisation is defined as the geographic location and ecological conditions for producing commercial crops in proximity to markets for those crops or their value-added by-products. Proximity to cross-border and East Asian regional markets is a key demand-pull factor influencing agricultural commercialisation. PTT policy research indicates that the northern region has a geo-economic comparative advantage for commercial agriculture products. The north (i) is a center for Chinese investments in commercial banana production for export to China; (ii) has some 15 to 26 percent of total national cattle rearing; (iii) contains an estimated area of 1.92 million ha of micro-climate suitable for styrax trees for commercial production of benzoin gum for export; (iv) produces nearly three thousand tons (2017) of white charcoal annually using *mai tieu* sourced from Bolikhamxay and Vientiane provinces; and, (v) provides national protected areas for commercial ecotourism development. Contract farming of pigs takes place in all provinces and is expanding, with a target of supplying 50 percent of domestic market demand.

Contract farming is a key supply-push factor influencing agricultural commercialisation. The research on contract farming revealed that investors are able to accelerate adoption of new technologies by smallholder farmers. Foreign agribusiness tends to dominate contract farming because domestic agribusiness enterprises are few, small, and weak. This situation leads to markets being dominated by large domestic and foreign enterprises. Agribusiness that operates through contract farming also has links with markets, providing opportunities for smallholder farmers. Research evidence confirms that commercial banana production in northern provinces was initiated by Chinese investors who established contract farming originally using the 1+4 model, with farmers providing land, but capital investments controlled by investors. In terms of risk management, research on the commercial production of pigs and

green beans through contract farming indicated that the 2+3 model dominates, with companies controlling through vertical integration, but also bearing a higher level of risk. In contract production of rice, the 3+2 model is used, wherein farmers bear most of the risks. Cattle farmers with contracts had difficulty meeting standards and contractual requirements stipulated by contractors. Although the GOL has no comprehensive policies or incentives for contract farming, it does encourage enterprises to collaborate with villagers to promote (i) white charcoal production by providing financial support to register individual smallholder forest areas for *mai tieu* or by negotiating contract farming arrangements; and, (ii) commercial production of benzoin gum, wherein GOL staff collaborates with a foreign investor to promote planting and management of styrax trees on fallow agriculture land. Importantly, trust and a close relationship between companies and farmers are critical to contract enforcement.



Effective **land administration**, including facilitating secure land tenure for smallholder farmers and managing commercial land concessions, is another key factor influencing agricultural commercialisation. PTT policy research shows that land use changes were accelerated by the granting of land concessions to domestic and foreign investors at reduced land lease fees. While Chinese investors in commercial banana plantations benefitted, land owners were returned land that had been degraded and polluted with agricultural chemicals, and that required rehabilitation at significant cost. The granting of land concessions affected farmers rearing cattle and producers of white charcoal who reported a decrease in land availability for cattle grazing and a supply of raw material (natural *mai tieu*) for making white charcoal, respectively. Commercial harvesting of benzoin gum was less affected because the Land Law allows use of agriculture land for growing industrial trees and perennial plants (styrax trees), thus limiting impacts from land concessions. Access to credit and finance needed by smallholder farmers for investments in commercial crops also is constrained by the inability of farmers to use agriculture land as collateral since many lack secure title. In addition, the research revealed that poverty can be reduced by providing access to land to poor, smallholder farmers who use agriculture land for family food and nutrition security, livelihood, and income.

The research confirmed that smallholder farmer income can **benefit** (profit) significantly from commercialised agriculture. The financial viability (profitability) of smallholder investments increased for each commodity

studied and for contract farming. Banana farmers benefitted from land lease agreements with Chinese investors (1+4 contract farming) and, if investing themselves, when they had access to markets and a guaranteed price. However, benefits were decreased when the cost of land recovery is taken into consideration. Research results indicate that a one percent increase in commercial cattle rearing leads to a 0.1 percent increase in income from cattle sales.^{Ref.7} Thus, expanding cattle herds is important to raising smallholder income and sustainably reducing poverty. However, cattle farmers are slow to adopt commercial techniques (fattening) even though traditional grazing makes livestock vulnerable to disease infections. Commercial producers of white charcoal increased household income from 17 to 19 percent annually.^{Ref.13} In addition, farmers can earn more than LAK80,000 per day^{Ref.4} (above the daily rate of LAK60,000 in July 2020) from commercial production of benzoin gum. Ecotourism contributes 36 percent to household income annually^{Ref.9} using the Community-Based Ecotourism Practice (CBEP) and 96 percent^{Ref.9} using the Entrepreneur-Based Ecotourism Practice (EBEP). Contract farming also raises farmers' income. The income of contract farming rice producers is higher than that of non-contract farming farmers; and, the income of contract farmers cultivating green beans nearly doubles. The income of contract pig growers drops much less than non-contract growers when market fluctuations have negative impacts on farmers' income.

PTT's policy research revealed that demand-pull from export **markets** is a major driver of agricultural commercialisation, although domestic markets remain relevant for some commodities. Commercial banana production originated in response to demand from Chinese consumers for clean agricultural products (GAP). Expanded commercialisation of cattle rearing reflects growing demand from domestic consumers for increased food security and from export markets mainly in China and Viet Nam for dietary diversity. The increase in commercial production of white charcoal is in response to consumer demand in five countries, namely Japan, Korea, China, Thailand, and Viet Nam. Between 2005 and 2015 some 90 percent of commercially produced benzoin gum was exported to the European Union and 10 percent to the United States and India.^{Ref.4} Contract farming operated by experienced agribusiness with close links to markets provide new opportunities for smallholder farmers and encourage them to pursue market share. The contract farming of rice, pigs, and green beans targets both domestic and neighbor-country markets, although export markets for these products are limited to cross-border trade. Similar to cattle rearing, most farmers interested in contract farming lack sufficient market information for decision making due to weak mechanisms linking farmers to markets. Ecotourism targets both domestic and foreign tourist markets. The research revealed that facilitating access to markets through improved transport and communications infrastructure also contributes to poverty reduction.

Conclusions and Recommendations

Conclusions

Evidence from the research and complementary studies indicates that generally agricultural commercialisation has positive implications for social development, income generation, and poverty reduction among rural households. Negative impacts from commercial agriculture occurred to the environment (ecosystem) and labor (health) as a result of weak regulation of land concessions for banana production; and, for contract farming linked to land concessions that compete for fallow land used for grazing cattle and harvesting NTFPs. In addition, extensive monoculture reduces biodiversity and causes farmers to be more vulnerable by being dependent on a single crop. Integrated cropping is a viable option to combine with monoculture.

The financial viability of smallholder investments in commercial agriculture increased for each commodity studied and for contract farming. Key supply-push factors influencing agricultural commercialisation include contract farming that is accompanied by introduction and adoption of new technologies and facilitating smallholder farmer access to markets. The application of modern (science-based) farm technologies is important to shifting from natural and subsistence farming to modern commercialised agriculture that can supply a surplus of products for food and nutrition security and commodities that meet competitive standards for target markets. Investments that introduce science-based technologies require

The research provided evidence that the availability of family **labor** is an indispensable factor for agricultural commercialisation of all commodities studied. At commercial banana plantations in the north smallholder farmers work as laborers for Chinese companies that lease their land. At banana plantations in central and southern regions, family members are the principal source of labor. Family labor also is critical for cattle rearing (with equal participation by women and men) and for harvesting of *mai tiaw* for commercial production of white charcoal, as well as for collecting and drying benzoin gum. Ecotourism provides employment opportunities for local people in various permanent positions. The CBEP approach to ecotourism generates income as a secondary occupation for about 10 percent of households, wherein the principal source of income is from on-farm activities and NTFPs. The research shows that contract farming creates employment choices for farmers. Household incomes can be raised, and poverty reduced when accompanied by improved education and skills for heads of households and increasing large and small livestock numbers.

Research results confirmed that farmers require access to **credit and finance** to invest in technologies that support agricultural commercialisation. Most farmers do not borrow for fear of becoming indebted and because their financial literacy is inadequate. A complementary study^{Ref.3} found that in the case of maize, the only access to credit for farmers is through traders who provide inputs (e.g., seeds, pesticides, herbicides) early in the season. Farmers pay for inputs when crops are sold. This approach has two implications: i) a negative implication is that farmers are in debt to traders as non-institutional sources of credit and assume the risk of crop failure (i.e., due to natural disaster or climate change); and, (ii) a positive implication is that innovation and modernization can be channeled through traders. In addition, the Enhancing Milled Rice Production in Lao PDR (EMRIP) Project is cited as a good example of providing financing to intermediary stakeholders who in turn support farmers thus contributing to a win-win solution. Few financial institutions provide credit to smallholder farmers who have a relatively high level of risk. When available, credit is limited, interest rates are high, and repayment periods are short. Banks hesitate because farmers have demonstrated poor financial discipline, do not pay back loans, and cannot plan and manage business and finances. Sources of loans by cattle farmers include the Agricultural Promotion Bank (35 percent); and, village development funds (30 percent).^{Ref.7} Commercial white charcoal production is of interest to domestic and foreign investors due to high demand in international markets. Investors in ecotourism (EBEP) and contract farming have sufficient funds to develop and manage their projects. The CBEP ecotourism approach, however, requires support from government and international organizations due to a lack of local funds and of knowledge to develop and manage ecotourism areas. The principal constraints to accessing credit include insufficient experience in the commercial products being produced; a low-level of education, land size, and security of tenure; and, the availability of family labor.

good transport and communications infrastructure that also support poverty reduction. Proximity to cross-border and East Asian regional markets is a key demand-pull factor for agricultural commercialisation. The policy research indicates that the proximity of the northern region to China and Viet Nam provides Lao PDR with a geo-economic comparative advantage.

Commercialisation of the agriculture sector requires an enabling policy, institutional, and legal framework. Farmers pursuing commercialised operations require equitable enforcement of regulations, systematic coordination among government departments, and uniformity of trade rules for each province. More effective land administration is needed to accelerate granting secure land tenure to commodity producers in rural areas and to monitor the use of land concessions. Land use changes have accelerated significantly by granting land concessions to domestic and foreign investors at low land lease fees, often with negative impacts on land customarily accessed by farmers.

Sufficient family labor is an indispensable factor for agricultural commercialisation of all commodities studied. Farm families also require access to credit to invest in technologies and processing facilities needed for agricultural commercialisation. However, few financial institutions provide credit adapted to smallholder farmers who have a relatively high

level of risk. Farmers who collaborate with traders may be able to negotiate easier credit terms and gain access to innovative and modern agriculture technologies at the same time.

Policy Recommendations

Related to investments by domestic and foreign agribusiness enterprises: The Ministry of Agriculture and Forestry (MAF) should take the lead to create a national level steering committee that would include senior officials from concerned ministries to screen and endorse commercial investments before a business license is authorized. The steering committee or other appropriate mechanism should be led by MAF and consist of representatives from the Ministry of Planning and Investment (MPI), Ministry of Industry and Commerce (MOIC), and Ministry of Environment and Natural Resources (MONRE). Potential social, environmental, trade, and technical implications and impacts would be screened for each investment. Evidence of consultations with village and district authorities should be required to ensure informed consent is obtained prior to beginning a project on land or using resources within villages' territory. The agribusiness steering committee could make recommendations on investment proposals for consideration by the National and Provincial Investment Promotion Committees. A monitoring system should be established, and a responsible agency designated for ensuring that both investors and producers comply with business agreements and environmentally and socially responsible investment practices.

Related to building the capacity of local officials responsible for authorizing and managing investments: MAF should designate provincial agriculture and forestry offices (PAFO) to take responsibility for leading the monitoring and evaluation of agribusiness investments in each province. Key elements that should be monitored include the use of agricultural chemicals, social and environmental impacts of investments, including contract farming arrangements, and other issues raised by villagers, district and village authorities, and investors. Evaluation should be based on compliance with the regulatory framework. This recommendation requires that (i) funds are available to support inspection and enforcement; (ii) technical staff have adequate training on the use of agricultural chemicals; and, (iii) provincial authorities have the authority to halt activities when negative impacts on environment and society are exposed.

Related to cattle rearing: MOIC should work with MAF and the Ministry of Finance (MOF) to harmonize trade regulations to promote cattle exports; set standard taxes and fees on cattle movements across provinces; and, organize the payment of fees and taxes through a single window (one-stop service) to reduce transaction costs. To promote commercial cattle rearing (fattening), MAF should provide training to interested farmers on nutritional techniques using existing domestic crops, aiming to improve overall meat quality for sale in high-value regional markets. Promoting cattle rearing to chronically poor households contributes to food and nutrition security and

improves livelihoods. MOF should work with commercial banks, traders, and investors, to formulate policy lending mechanisms that would improve access to credit for farmers who have a high potential for commercialised cattle rearing.

Related to production inputs, MAF should focus on assisting smallholder farmers to access improved seeds and breeds (e.g., fingerlings in aquaculture, piglets from sources other than foreign companies); and, should implement controls on the use of inferior quality seed, and to avoid the spread of disease (e.g., Panama disease in banana, anthracnose fungal disease in cassava).

Training should be provided to smallholder farmers and PAFO and district agriculture and forestry office (DAFO) technicians related to markets (research on commodity prices and demand, marketing techniques, market development), product certification, trade documentation, and financial literacy, among other aspects of commercialised agricultural development. PAFO and DAFO staff also should be better trained to prepare contracts and to monitor and enforce contract farming arrangements.

Related to the commercial use of natural resources, specifically in terms of ecotourism and by producers of white charcoal and benzoin gum: PAFO in each province should take the lead to prepare five-year sustainable land and forest management plans for each company investing in ecotourism, white charcoal, and benzoin gum or for each producer group, to ensure sustainable management of ecosystems and raw material supplies; including creating special use zones on suitable land with the registration of stakeholders. MAF and PAFO should take the lead to train DAFO technicians to monitor and evaluate implementation of these plans to ensure professional forest and land use management. MAF should work with ecotourism companies and civil society groups to strengthen the capacity of local people to manage ecotourism programs, focusing on youth groups. MAF should standardize forest and NTFP management regulations in each province to improve protection of resources and prohibit forest lands from being used to cultivate cash crops. Provincial industry and commerce offices (PICOs) should play a role in evaluating the efficiency of value chains and identifying means to increase value-added through local semi-processing of NTFPs. At the national level, MAF and MONRE should collaborate to certify benzoin gum to be an NTFP. MOIC and MPI should provide training to concerned provincial and district officials to effectively enforce the Investment Promotion Law and Law on the Promotion of Small and Medium Sized Enterprises, No: 011/NA (21 December 2011) at the local level. MOF should undertake a review of profit and export taxes for NTFPs and ecotourism to consider the source of each NTFP and the local benefits from ecotourism and adjust taxes accordingly.

Related to contract farming: MAF should take the lead in creating a national-level or cross-sector working group on contract farming consisting of



representatives from the Ministry of Justice, MOF, MOIC, and, Ministry of Information, Culture and Tourism (MOICT), to review the Contract and Tort Law No. 01/NA, dated 8 December 2008, and to prepare a code of conduct committing contract farming parties to ethical production, business, and trading practices. Following clarification of MAF policies related to contract farming, MAF should take the lead to improve institutional arrangements for monitoring and evaluating contract farming programs. MAF should formulate a set of guidelines that: (i) clarify institutional arrangements for contract farming; (ii) monitor agribusiness operations; (iii) provide incentives to encourage efficient operations and minimize rent seeking behavior; (iv) assess stakeholders' needs related to market information, market access (including feeder roads), and legal support; (v) promote farmer organizations and cooperatives; (vi) support agribusiness incubation and engagement in contract farming; and, (vii) build capacity for domestic agribusiness to work with farmers through contract farming. PAFO and DAFO should take the lead and collaborate with civil society groups to promote ethics, social values, and village-based mechanisms for effective contract enforcement. The objective is to provide guidance related to supporting and improving the policy and legal framework for investment and future implementation of the ADS, the policies of the Department of Rural Development and Cooperatives, and the National Nutrition Strategy 2025 and Plan of Action (2016-2020).

For chronically poor and transitory households: The principal environmental risk to rural household income and remaining out of poverty is natural disaster. MAF should take the lead to train PAFO and DAFO technicians to promote climate resilient agricultural production practices that minimize crop and livestock losses. Working with provincial and district Disaster Management Offices and Committees, PAFO and DAFO should contribute to formulating local early warning systems to prevent sudden floods and to manage droughts, in an effort to reduce crop damage and loss of agricultural products and livestock. MAF should collaborate with the National Disaster Management Office to establish disaster protection funds and operate crop and livestock insurance programs through local branches of government banks. DAFO should play a role in information distribution related to basic procedures to request disaster relief assistance and to access post-disaster recovery funds.

Related to access to credit: PAFO and DAFO should work with government banks to facilitate access to flexible credit mechanisms for smallholder farmers and especially poor households to ensure funds are available to invest in technology and innovation. Additional training in financial literacy and the innovative transfer of knowledge and technology should be provided to ensure the effectiveness of institutional support and to avoid the burden of debt. For chronic and transitory escape groups, PAFO and DAFO should improve access to irrigation to support farm production over the long-term.

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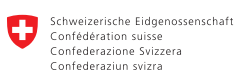
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