

# **Agriculture in Transition:**

*The impact of agricultural commercialization on livelihoods  
and food access in the Lao PDR*

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## **VAM Background Paper:**

### ***The impact of agricultural commercialization on food access and livelihoods in the Lao PDR***

#### **Executive Brief**

## **Overview, scope and methods**

- × The 2006 WFP *Comprehensive Food Security and Vulnerability Analysis* concluded that two thirds of rural households are at risk of becoming food insecure should a shock affect their livelihood. Since then, rural livelihoods have changed considerably—in large part due to expanding agricultural commercialization. In light of such changes, we must revisit our vulnerability analysis to incorporate the impacts of the commercial transition on food security in Laos.
- × Potentially over a million hectares have been planted with cash crops under different investment schemes. Major commodities such as rubber, sugar cane and maize, along with niche crops like cardamom, job's tear and sesame, are replacing rice production and natural forests. The result is that entire communities are changing their traditional livelihood strategies and becoming integrated into the growing market economy.
- × From January to July 2009, WFP conducted a secondary information review to assess how agricultural commercialization impacts food security in Laos. Its purpose was to provide WFP and its partners with information on: (1) How is food security affected by the transition to commercial agriculture? (2) Should WFP conduct a more in-depth study? (3) If so, what should the study focus on and what methodological recommendations can be made?

### **How was this background paper carried out?**

This paper is based on analysis of secondary information drawn from available reports and key informant interviews. It was theoretically grounded in WFP food security theory and the DFID Sustainable Livelihoods framework. The people interviewed represent NGOs, UN Agencies, government, and IGOs in the Lao PDR.

## **Recommendations**

### **Further research needed:**

- × Accurate and regularly updated maps of where commercial farming is happening.
- × Primary data collection of changing livelihoods and food security in the commercial transition.
- × A food and crop price monitoring
- × Conduct a comprehensive study. Focus on livelihoods and vulnerability analysis in case studies spanning agro-ecological zones and livelihood profiles as established in the CFSVA.

### **Possible implications for WFP in Laos:**

- × **Support improvements in human capital.** WFP should consider developing FFW and FFT operations that support human capital improvement through adequate technical training that is sensitive to the challenges of incorporating new systems into indigenous knowledge systems.
- × **Develop rural infrastructure.** WFP should continue developing rural infrastructure (particularly small-scale, community based rural infrastructure) to support better market access through FFW.
- × **Consider support for new food insecure households with FFR.** Relief programming may want to find households adversely affected by concession farming and provide support if possible. Certain contract farming may be attractive FFW schemes if they fulfill the right conditions.
- × **Advocate for better support of the rural poor in the commercial transition.** WFP should encourage the government to adjust its land-use policies in remote upland areas to allow for a smoother transition. Particularly important is good access to quality land and natural resources.

## How is food security affected in the commercial transition?

- × **Commercialization is changing what households do and how they access food.** Household livelihoods vary widely in their level of commercial ownership, crop cultivation, and production systems. The result is varied transitions from subsistence to market dependence and food purchasing.
- × **The asset rich tend to be the main direct participants in commercial schemes.** They tend to have the best land near roads with a supplementary subsistence production. As they increasingly integrate into the market, they rely more and more on cash to buy food. Their food security is thus increasingly dependent on their income security which is partially a function of market access.
- × **Limited land restricts direct commercial participation of the rural poor.** They thus tend to continue subsistence cultivation with wage labour to supplement food deficits. Food is largely self-produced or gathered, and purchased in the lean season. Households may introduce some commercial crops into their subsistence systems under policy inducement. Households that have lost their land altogether likely transition to wage labour entirely. Wage labourers depend on income to purchase food.
- × **The commercial transition is changing livelihood options for non-participating subsistence farmers.** Declining land availability changes what and how households produce food. Declining managed access to natural resources limits secondary livelihood options and thus increases household reliance on primary activities. Meanwhile, increases in wage labour increase the use of cash to buy food. Food access strategies vary in the commercial transition and depend largely on the specific changes occurring.
- × **A decline in managed access to forests is particularly problematic for the rural poor.** Beyond limiting secondary livelihoods, declining access reduces the availability of an important coping strategy and thus weakens how well households can cope with shocks.

## Who is most vulnerable in the commercial transition?

- × **The new landless are very vulnerable to food insecurity.** In concession schemes, some households have ceded their land entirely and made a complete transition to wage labour. They are vulnerable to food insecurity should something happen to their employment. Households without land and labour opportunities are likely already food insecure.
- × **Vulnerability is increasing for households dependent on managed access to natural resources.** Many households depend on natural resources as an important secondary livelihood and as a critical coping strategy. The decline in access thus decreases livelihood diversity and weakens household coping capacity. As the CFSVA identified, 25% of rural households are vulnerable to food insecurity should they lose access to natural resources.
- × **Vulnerability is increasing for households with declining diversity in their livelihood activities.** This is likely households with reduced access to natural resources, full transition to wage labour, and cultivation of a single crop. Risk is even greater for single crop ventures with longer cultivation periods. In these cases, shocks will have a more severe impact and increase the likelihood of food insecurity.
- × **The asset wealthy may reduce their vulnerability.** In the long-term, if their venture is profitable, they are likely to increase their net wealth, reinforce safety nets and reduce their vulnerability to food insecurity.

## There are significant outstanding gaps.

- × **Lack of primary data on how commercial transitions impact food security specifically.** This is particularly problematic given the range of impacts and the importance of livelihood contexts in determining vulnerability to food insecurity. Further research is needed that allows us to better understand the varied ways that food security is changing in the commercial transition.
- × **No sense of how many people are vulnerable and where they live.** Further research is needed on the geographical scope of the commercial transition and the variations between regions and livelihood groups.

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# Introduction

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The aim of this study is to identify what is known about agricultural commercialization in Laos. Using an adapted livelihoods framework, this study aims to make sense of the available information and contextualize it within the broader forces of change. The purpose is not to judge if commercialization is good or bad but rather to identify and understand the emerging vulnerabilities in the transition process.

Noting the large changes since 2006, this study should also be seen as an important supplement to the WFP *Comprehensive Food Security and Vulnerability Analysis*.<sup>1</sup> By exploring the impact of the commercial transition on food security, this study helps bring the CFSVA up to date.

The study is divided into 4 parts:

1. Context and methodology: Section I introduces the context of the study by identifying what is and is not known in the existing literature. Section II explains the study's methodology and introduces the analytical framework.
2. Livelihood analysis: Section III and IV identify changing assets and enabling systems that frame household livelihood choices. Section V explores changing livelihood strategies.
3. Vulnerability analysis: Section VI undertakes a vulnerability analysis to estimate emerging food insecurity and vulnerability in the commercial transition. The impact on risk exposure and coping strategies are highlighted.
4. Conclusion and recommendations: Section VII reviews the study's key findings and offers a suggested framework for future research.

## 1 Context

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Agriculture is the most important livelihood activity in Laos.<sup>2</sup> It provides employment for over 80% of the labour force and contributes to 45% of GDP.<sup>3</sup> Rice is the dominant crop though some households cultivate cash crops.<sup>4</sup>

While agriculture is the primary activity, rural households tend to be characterized by a diversity of livelihood activities. Secondary livelihoods include livestock rearing, fishing and hunting, and NTFP harvesting. There is also some involvement in unskilled non-agricultural labour.<sup>5</sup>

There are five agro-ecological zones related to agricultural potential and ecological similarity: Vientiane Plain, Central and Southern Highlands, Mekong Corridor, Northern

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<sup>1</sup> WFP, *Comprehensive Food Security and Vulnerability Analysis (CFSVA)*, (WFP: Vientiane, 2006).

<sup>2</sup> CFSVA p.28.

<sup>3</sup> World Bank, "Lao PDR: Policy, Market, and Agricultural Transition in the Northern Uplands", (World Bank: Vientiane, 2008) p. v.

<sup>4</sup> 71% of households reporting participation in glutinous rice production. 15% of households reported planting maize as a second crop. CFSVA p.73.

<sup>5</sup> For a description of the 15 different livelihood groups see CFSVA table 8. pg. 65.

Lowlands, and Northern Highlands. In the Lowlands, farmers tend to mainly cultivate paddy rice fields.<sup>6</sup> In the Uplands (Highlands), agricultural livelihoods are dominated by forest-based swidden cultivation that is primarily subsistence oriented.<sup>7</sup>

In the commercial transition, potentially over a million hectares are changing from subsistence to cash crops under different investment schemes.<sup>8</sup> Major commodities such as rubber, sugar cane and maize, along with niche crops like cardamom, job's tear and sesame, are replacing rice production and natural forests. The result is that entire communities are changing their livelihood strategies and becoming integrated into the growing market economy.

## 1.1 What we know

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### 1.1.1 Shift driven by policy and economic forces

Commercial farming has been supported as a policy since the 1980s. It was during this period that the government began promoting cash crop production as a way of addressing widespread poverty and developing the national economy. The 1986 'New Economic Mechanism' offered further support for this policy, urging farmers to transition from traditional forest-based swidden agriculture towards sedentary and intensive agricultural and commercialization.<sup>9</sup> Support has intensified in the 2000s.<sup>10</sup>

Economic forces both drive and take advantage of this political pressure to expand commercial farming. Increasing regional integration, driven by the economic growth of China, Vietnam and Thailand, is fuelling demand for raw materials such as rubber, sugar cane, and maize. The result is a surge of regional and domestic traders, foreign investors, agribusinesses, and small-scale entrepreneurs seeking to take advantage of this expanding

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<sup>6</sup> For expanded discussion of agro-ecological zones, see World Bank, "Lao PDR: Rural and Agriculture Sector Issues Paper," Rural Development and Natural Resources Sector Unit, East Asia and Pacific Region, (2006).

<sup>7</sup> Traditional swidden agriculture is usually integrated into a diverse land use system that includes permanent fields for certain crops in the fallow areas, home gardening, animal husbandry, and paddy rice cultivation in river valleys where land is available.

<sup>8</sup> Cor. H. Hanssen, "Lao Land Concessions, Development for the People?," in *International Conference on Poverty Reduction and Forests: Tenure, Market and Policy Reforms* (Bangkok: RECOFTC, 2007), p.17. According to the Vientiane Times, Laos has 165,000 hectares of agricultural land and the ministry plans to expand this to one million hectares by 2020. ("Authorities to Survey Land Use change, 16 Feb 2009)

<sup>9</sup> Thongmanivong Sithong and Vongvisouk Thouthone, "Impacts of Cash Crops on Rural Livelihoods: A Case Study from Muang Sing, Luang Namtha Province, Northern Lao PDR," in *Hanging in the Balance: Equity in Community-Based Natural Resource Management in Asia*, ed. Sango Mahanty, et al. (Bangkok: East-West Center, 2006), p. 107.

<sup>10</sup> The latest *National Economic-Social Development Plan (2006-2010)* reiterates this goal. The government, it states, supports the "continued shift in the structure of the agriculture and rural economy toward the promotion of commercial agriculture." "Private initiatives" by foreign investors and traders are encouraged.



market and the strategic position of Laos as a regional production base.<sup>11</sup>

### Box 1: Policies

#### • Key Goals

The 6<sup>th</sup> *National Socioeconomic Development Plan (2006-2010)* represents the government's national strategic priorities.

For the agricultural sector, the driving goal is to promote modernization and commercialization. The vision is "to transform agriculture into a thriving sector based on innovative technologies and practices in high value-added production and processing, catering to domestic and world markets. The rural economies will be diversified and farming methods and infrastructure upgraded."<sup>12</sup> This agricultural strategy is targeted primarily at the lowlands.<sup>13</sup>

For rural areas, the driving goal is to reduce poverty by creating employment, increasing incomes and restructuring rural economies toward intensified agriculture and commercialization. Targeting 47 "very poor" districts, the government's vision "is to reduce the disparities between rural and urban areas by enhancing transportation and communication networks and by improving the living conditions of the rural population in remote areas."<sup>14</sup>

#### • Key policies

These national goals are operationalized through institutions at various levels. The primary policies are in *The Elaborated Plan*,<sup>15</sup> the Ministry of Agriculture and Forestry's 4 goals and 13 measures, *the Northern Plan*, and provincial policy priorities. These central policies aim to: (1) promote increased trade, investment and technological innovation; (2) encourage commodity production; and (2) encourage stable land tenure patterns.

The key policies include the Land and Forest Allocation Program, the Stabilization of Shifting Cultivation, The Opium Eradication Program, and the Village Cluster Development Program.

#### • Implementation problems

The impact of commercialization on livelihoods is not fully taken into account in the policies. As the World Bank notes, central-level control in policy implementation is weak. Implementation is often compromised at provincial level because of logistical and budgetary reasons. There is widespread technical misunderstanding and issues selecting adequate means for achieving set objectives.<sup>16</sup> As Zola notes, the administrative haste accompanying the accelerated processing of these investments has generated several governance and land management issues. These issues are linked to the transparency of land allocation, long-term environmental sustainability and the distribution of benefits.<sup>17</sup>

Provincial autonomy enables provinces and districts to put forward their own interventions based on local perceived needs. In practice, provinces often adopt an opportunistic approach to agricultural development that seeks to take advantage primarily of private sector investments into the Northern Uplands; priorities are often adjusted according to investor choices.<sup>18</sup>

<sup>11</sup> Sithong Thongmanivong and Yayoi Fujita, "Recent Land Use and Livelihood Transitions in Northern Laos," *Mountain Research and Development* 26, no. 3 (2006). p. 247.

<sup>12</sup> Government of Laos "National Socioeconomic Development Plan (2006-2010)," ed. Ministry of Planning and Investment (2006). p.7

<sup>13</sup> World Bank, "Lao PDR: Policy, Market, and Agriculture Transition in the Northern Uplands," p.15.

<sup>14</sup> NSDEP 7.

<sup>15</sup> The Elaborated Plan consists of 11 national programs and 111 focus projects, detailing some of the NSDEP policy directions that line agencies are obligated to implement.

<sup>16</sup> World Bank, "Lao PDR: Policy, Market, and Agricultural Transition in the Northern Uplands," p.21.

<sup>17</sup> Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR," p.1.

<sup>18</sup> Ibid. p.21.

### 1.1.2 Different modalities for the expansion of commercial farming

There are different modalities under which commercial farming is taking place in Laos: concessions, commercial farming, and small-investor farming.

#### Box 2: Commercialization of Agriculture in Laos: definitions

**Concession farming** is a type of investment scheme whereby land is transferred to companies who are responsible for all its investment and cultivation.<sup>19</sup> Large concessions are usually the preferred form of investment by investors since it maximizes company control over the land.<sup>20</sup>

**Contract farming** is an investment scheme that provides farmers with critical investments in exchange for a guaranteed share of the profits or harvest. Ideally, it should produce a reliable market for the farmer and a stable secure supply for the trader or processor. Unlike concession farming, farmers retain rights to their land.

**Small-investor farming** is an informal type of investment scheme where smaller investors establish contracts with villagers through informal, oral agreements. Such investments are normally channeled through personal connections and rely on a casual flow of funds and technical knowledge, often across borders.

#### **Concession Farming in Lao PDR**

Concession farming began to boom in the 2000s when large international companies began buying up existing concessions for paper production. Before long, they began to gather new concessions, accumulating larger and larger tracts of land. Large concessions have since been distributed for rubber, maize, jatropha, sugarcane, cassava, agarwood and other cash crops. Biofuel plantations are currently under development with a potentially large impact on concession area and higher overall food prices.<sup>21</sup> If all plans and proposals in the *Vientiane Times* are realized, there should be well over 1 million hectares of concession land in the Lao PDR.<sup>22</sup>

The introduction of concession farming fits into three key policy goals. First, it is said to make underutilized land more productive. Second, it reinforces the government's goal of eliminating shifting cultivation. Finally, concessions provide valuable foreign direct investment (FDI). This can help develop not only concession land (by providing infrastructure, jobs and stimulating the local economy) but also provides government revenue that can help develop other regions. Despite this potential increase, government revenue remains limited due to the low tax rate of concession land. At present, official income is about \$6/ha/year compared to \$20/ha/year in Vietnam and as much a

<sup>19</sup> See Mike Dwyer, "Turning Land into Capital," ed. CIDS-Laos (Vientiane: Land Issues Working Group (LIWG), 2007). See p. 2-3 for a more precise definition.

<sup>20</sup> Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective."31.

<sup>21</sup> In 2007, the estimated area under cultivation for biofuel is about 50,000 ha. There are plans to increase this to 2 million ha of "idle" by 2020 according to the National Council of Sciences of Lao PDR. See Hanssen, "Lao Land Concessions, Development for the People?" 3. Also Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective."30.

<sup>22</sup> Hanssen, "Lao Land Concessions, Development for the People?" p. 8.

\$50/ha/year in China.<sup>23</sup> This disparity may be due to a Lao equity stake<sup>24</sup> in the concessions or in some cases unofficial payouts that contribute to corruption.

The Prime Minister issued a memorandum in May 2007 announcing the indefinite suspension of large concessions of more than 100 hectares for industrial tree planting, perennial plants and mining. Despite this memorandum, concession distribution dipped only mildly following the announcement. There is speculation that “rampant concessions continue.”<sup>25</sup> Some governors have reportedly even dismissed the memorandum altogether, continuing to distribute concessions freely. In 2009, the issue was revisited and after a short re-opening of concession distribution, the suspension was re-continued.<sup>26</sup>

### ***Contract Farming in the Lao PDR***

#### **Box 4: Investment schemes in contract farming**

Contract farming can be distinguished by the distribution of 5 inputs: land, labour, capital, technology, and marketing.

**The “2+3” model:** In this model, land and labour are provided by the farmer, and capital, technology, and marketing are provided by the investor. The capital (seedlings, fertilizer, equipment) is provided as a loan while future harvest is divided in a respective 70/30% split (farmer/investor).<sup>27</sup> The aim is to provide villagers with secure access to their land and a stronger sense of ownership in the plantations. Contracts are usually signed for 30 to 35 years for crops ranging from maize and rubber to chilies and pulpwood.

**The “1+4” model:** In this model, there is ambiguity in what the “1” represents. In some cases, it refers to land and in others labour. Profits and risk are concentrated with the investor.<sup>28</sup> Unlike concession farming, villagers still retain rights to their land and often a minority portion of the harvest in addition to wages.

Given the ambiguity in contracting, understanding each contract requires an examination of the broader context in which these schemes occur.<sup>29</sup>

Contract farming is fast proliferating in Laos.<sup>30</sup> It is heavily promoted in Northern Laos<sup>31</sup> where reportedly over 10,000 ha have been planted under contract schemes. Luang

<sup>23</sup> Ibid. p. 3-4. There is some discussion of developing a tiered land classification system where land is priced proportional to its quality.

<sup>24</sup> Rather than playing landlord, government sometimes wants to be partner in investment. They thus share equity stake in the company in a joint-venture. An example is OJI eucalyptus concessions.

<sup>25</sup> Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective." p.32

<sup>26</sup> Vientiane Times, “Government again suspends land concessions,” 2 July 2009.

<sup>27</sup> The actual division often varies between contracts.

<sup>28</sup> Usually investor retains the 70% share. This is the usual percentage. However, percentage may vary depending on the contract

<sup>29</sup> For description of the problems of static classifications, see Thongmanivong Sithong et al., "Concession or Cooperation? Impacts of Recent Rubber Investment on Land Tenure and Livelihoods: A Study from Ouxomxai Province, Lao PDR " (Vientiane: National University of Laos, 2009).

<sup>30</sup> Contract farming began to take off in the 2000s.

<sup>31</sup> Villagers reports district priorities to increase cash crop production (WFP).

Namtha envisions at least 20,000 ha more.<sup>32</sup> It is not widespread in the Southern Lowlands.<sup>33</sup>

Since contract farmers continue to plant on their own land, it has the potential to improve the land rights of smallholders and local communities while also potentially improving land productivity, boosting the local economy, and generating state revenues. On the other hand, unfair contracts have the potential to result in risks to farmers and debt if the crops fail, if quality standards are not achieved or if contracts are not honored. The lack of legal knowledge, process and the disproportionate power of the companies compared to the farmers are other factors due consideration.

In the Prime Minister's 2007 memorandum, "2+3" contract farming was emphasized as a better approach to FDI in the agricultural sector that would ensure local level benefits. Although the "2+3" model has a promising premise, its implementation has left much to be desired. For a variety of reasons, many large investment contract schemes in rubber dissolve into a "1+4" arrangement in practice.

### ***Small-investor farming in Lao PDR***

In some districts, the majority of contract farming appears to be small investor farming schemes. In Luang Namtha, for example, small investor farming (including villager's own investment) account for 80% of the total rubber establishment.<sup>34</sup> This type of investment tends to be more dominant in affluent areas and along borders. In the South, there are increasing numbers of asset rich smallholders seeking to convert their land into plantations.

Investments are usually through informal networks. As one NGO worker described, there is an increasing feeling of insecure land tenure among smallholders increasing the impetus to become involved in the commercial transition to solidify land entitlement.

The execution of this informal investment scheme tends to be free of disputes. Contracting parties usually have a better mutual understanding of the contract terms and share a higher level of mutual trust. The decentralized, voluntary process helps better match villagers' expectations with investor's offers, be it capital, technique, labour or marketing. Since the government is rarely involved, there is often little or no coercion. Transnational connections serve to help villagers start-up and gain access to market information, informal credit, and technical support.<sup>35</sup>

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<sup>32</sup> Hanssen, "Lao Land Concessions, Development for the People?" 19.

<sup>33</sup> Anthony Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR," (Vientiane: Asian Development Bank, 2009), p. 35.

<sup>34</sup> Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective." p.44.

<sup>35</sup> Shi, p. 44.

## 1.2 What we don't know

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### 1.2.1 Scale and geographical extent largely unknown

There is little understanding of the extent to which concessions have been issued and contracts signed other than that the scope is large and the impacts and changes are significant.

There is ambiguity in data over identifying whether figures represent *existing* or *expected* commercial production areas. In practice, land allocated for commercial use may not have yet been converted into plantations. The difficulties of quantifying exact land area are compounded by the speed by which changes occur in the rural agricultural landscape.<sup>36</sup>

GTZ is currently undertaking a country-wide mapping project of concession farms in the Lao PDR. This should help fill some of the spatial gaps; however it does not include any contract farms.

The table below gives a preliminary, incomplete and probably underestimated picture of the extent of the schemes in different provinces of Laos. These figures should be interpreted with care as they may under-represent the actual situation.

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<sup>36</sup> This lack of understanding is due to the decentralized and unregulated process of concession distribution. Different government agencies and levels of government have each handed out concessions with little to no coordination sometimes resulting in overlapping concessions. This has provided some companies with incentive to quickly plant crops in order to ensure land access. (Hanssen, "Lao Land Concessions, Development for the People? ", p. 8.). Moreover, the poor quality of mapping data available for designating concessions also has resulted in the conversion of good quality forest into concession with the timber illegally extracted by the company.

Province	Concession	Lease	Contract-farming	Projects with information about area
Phongsaly	100.00		16,636.60	22
Oudomxai	10.66	20,136.18	8,053.20	24
Luangnamtha	1,009.97	12,017.60	31,101.50	21
Borkeo	23.00	12,653.29	3.00	12
Sayabouri	30,184.96	71.36		26
Houaphan	1.00	2.00		13
Luangphrabang	27,034.15	32.58		23
Xiengkhouang				6
Vientiane Prov.	14,628.90			65
Vientiane Cap.	100.00			6
Borikhamxai	48,916.99			89
Khammouane	5,623.13			14
Savannakhet	40,967.67	249,351.20	10,000.00	70
Champasak	98,089.00	245.50		27
Saravan	7,692.75			14
Sekong	46,570.00			18
Attapeu	1,522.90			13
<b>Total</b>	<b>322,475.07</b>	<b>294,509.71</b>	<b>65,794.30</b>	<b>463</b>

**Table 1: GTZ Phase 1 preliminary inventory of land lease/concession area (2007)<sup>37</sup> in hectares**

### 1.2.2 Nature of the impacts poorly understood

We do not know how many people are affected by the transition toward greater commercial farming. There is also little sense of the nature of the changes and their diverse impact on households.

The most comprehensive studies include the 2008 World Bank report, GTZ studies on rubber in Luang Namtha, the LEAP contract farming study (2007), a INGO network desk review, and several academic articles. For the most part, however, these studies are geographically limited and usually focus on a small sample of cases. Many provinces affected by the commercial transition are not covered by any studies.<sup>38</sup> The lack of available data is likely to blame for insufficient analysis of the situation.

The result of this limited information is that there is little sense of what is happening, why it is happening, and how changes are affecting people across the country.

<sup>37</sup> GTZ, "Progress Report on Phase I of the Land Lease and Concession Inventory Project in Lao PDR," (Vientiane: GTZ/NLMA, 2007), p. 4.

<sup>38</sup> Very few studies on Attapeau, Sekong, Khammuane, Borikhamxay, Xaysomboun, Boeko and Huaphanh.

### ***Lack of focus on food security specifically***

Most studies do not address food security. Those that do, usually address food security indirectly through discussions about livelihoods and poverty. Alternatively, studies that do identify impacts on food security tend to highlight isolated effects without situating them within the broader forces of change. There is thus no sense of the way commercial transitions impact households, and the resulting sources of vulnerability.

There is a need for more comprehensive research. Such research needs to investigate *how* the commercial transition impacts household food security in Laos specifically. Research should span a range of regions, crops, investment types, ethnic groups and levels of asset wealth, highlighting the diverse ways that this commercial transition impacts rural livelihoods.

## **2 Objectives, Methodology and study limitations**

### **2.1 A supplement to the CFSVA**

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WFP decided to undertake this study as an important supplement to the CFSVA. The CFSVA is the first country-wide food security survey undertaken in rural Lao PDR. It provides WFP and its partners with a good understanding of the nature and extent of rural food insecurity and suggests sustainable interventions that could address these issues. The CFSVA's primary data collection lasted 6 weeks from early October to Mid-November 2006. Approximately 400 village heads and 3,925 households were interviewed.<sup>39</sup>

Noting the large changes since 2006, this study helps bring the CFSVA up to date by incorporating commercial changes into the analysis. Agricultural commercialization is treated as a livelihood shock with the findings of the CFSVA used as a baseline. The findings of this study should thus be read in conjunction with the CFSVA to provide a fuller picture of food security in the Lao PDR.

### **2.2 Objectives and key questions**

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There is an outstanding gap in our understanding of the nature of the commercial transition and its impact on food security. This study attempts to reach the following main objectives and answer the following main questions.

#### **2.2.1 Primary objective**

The primary objective of this study is to understand what is already known about the impact of commercial farming on food security in order to determine if field research is needed.

1. How is food security affected by the transitions to commercial agriculture?

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<sup>39</sup> CFSVA p. 9.

2. Should WFP conduct a more in depth study?
3. If so, what should the study focus on and what methodological recommendations can be made?

Anticipating the difficulties of understanding and describing *how* agricultural commercialization impacts food security, the study aims to

- Develop a framework for understanding *how* the commercial transition impacts food security in the Lao PDR.
- Using the framework, identify changes in food security. Particular attention will be paid to identifying what factors have changed and how they relate to one another. Noting the immense diversity between cases, this section highlights a spectrum of impacts.
- Synthesize the different factors into an overall vulnerability analysis. Some preliminary risk assessments estimate the emerging vulnerabilities to food insecurity in the commercial transition.

## 2.2.2 Secondary objective

Based on the acquired information and analysis, the secondary objective is to formulate preliminary programming recommendations for WFP.

1. Should WFP consider including recent transitions to commercial farming as a shock to households?
2. If so, under what conditions?

## 2.3 Methodology

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From February to June 2009, the World Food Program's Vulnerability Analysis and Mapping Unit conducted a preliminary fact-finding study to determine what is known about the impact of agricultural commercialization on food security in the Lao PDR. This was conducted in three parts.

### 2.3.1 Desk review

The first phase of the study was a desk review examining a wide range of secondary sources. Information was drawn from NGO reports, IGO reports, academic literature, government documents and seminar papers. Together, they constitute the most accessible information on agricultural commercialization in the Lao PDR.<sup>40</sup>

### 2.3.2 Interview of key informants

To supplement the desk review, the second phase consisted of a series of interviews with WFP partners and key development actors. Particular attention was paid to cross-

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<sup>40</sup> List of reviewed documents in Annex D.



referencing trends identified in the desk review with field observation. Over the course of one month, interviews were held with WFP partners, NGOs, academic researchers, and consultants.<sup>41</sup>

### 2.3.3 Defining the approach

With the information gathered from the desk review and key informants, the final phase was to synthesize the key findings into an analytically coherent framework. Drawing from theory from WFP on food security and DFID on sustainable livelihoods,<sup>42</sup> a framework of analysis was developed to make sense of the information available. This allows for better understanding of the impacts premised on a comprehensive picture of food security. The 2006 CFSVA is used as a baseline.

#### ***What is Food security?***

*“Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”*

The food security status of any household or individual is typically determined by the interaction of a broad range of agro-environmental, socio-economic and biological factors. While there is no single, direct measure of food security, the complexity of the food security problem can be simplified by focusing on three distinct but interrelated dimensions: aggregate food availability, household food access, and individual food utilization.

**Availability of food:** refers to the amount of food physically present in a country or area through all forms of domestic production, commercial imports and food aid. Food availability is an important component of food security, providing the macro-level picture of the amount of food that there is to be consumed.

**Access to food:** the ability of households to regularly acquire adequate amounts of food through a combination of their own stock, home production and collection, purchases, barter, gifts, borrowing or food aid.

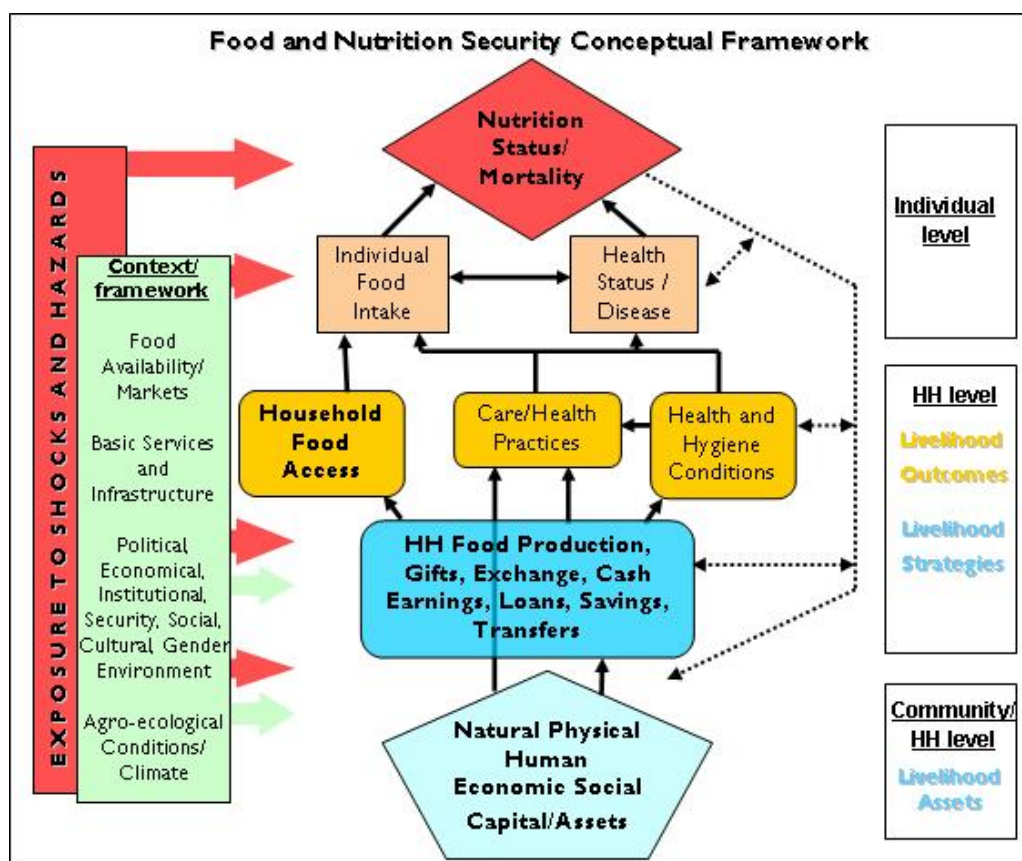
**Utilization of food:** the biological conversion of food by the human body – the factors affecting to related to the ability of individuals and households to absorb nutrients and meet their specific dietary and health needs

These three categories represent three different levels of analysis moving respectively from the regional/national level to the household and individual. To achieve food security thus requires sufficiency in all these areas.

A range of factors shape these three dimensions. The complexities of the linkages are illustrated by the *WFP Food Security and Nutrition Conceptual Framework*.

<sup>41</sup> List of interviewed people in Annex D.

<sup>42</sup> See *WFP Emergency Food Security Assessment Handbook (2<sup>nd</sup> ed.)* (January 2009) and DFID Sustainable Livelihoods guidance sheets (October 2001).



Source: WFP EFSA 2009, p. 19.

This broad framework highlights the varied factors shaping food security; however, the relative significance of each element of the framework depends on the nature of the shock being examined. In our study, the framework must thus be adapted to the specific context of agricultural commercialization in Laos.<sup>43</sup>

### ***A focus on access and livelihoods***

This study approaches its examination of agricultural commercialization and its impact on food security through the lens of changing livelihoods. This approach is pursued for two reasons.

First, a focus on livelihoods and food access allows us to best understand the primary channels of effect. In the context of agricultural commercialization, the anticipated primary impact is on livelihoods and how households access food. Changes to household livelihood activities and the context of their livelihood choices have an immediate and significant impact on the way households get food and the resilience of their food security. Though food access is but one component of overall food security, in the

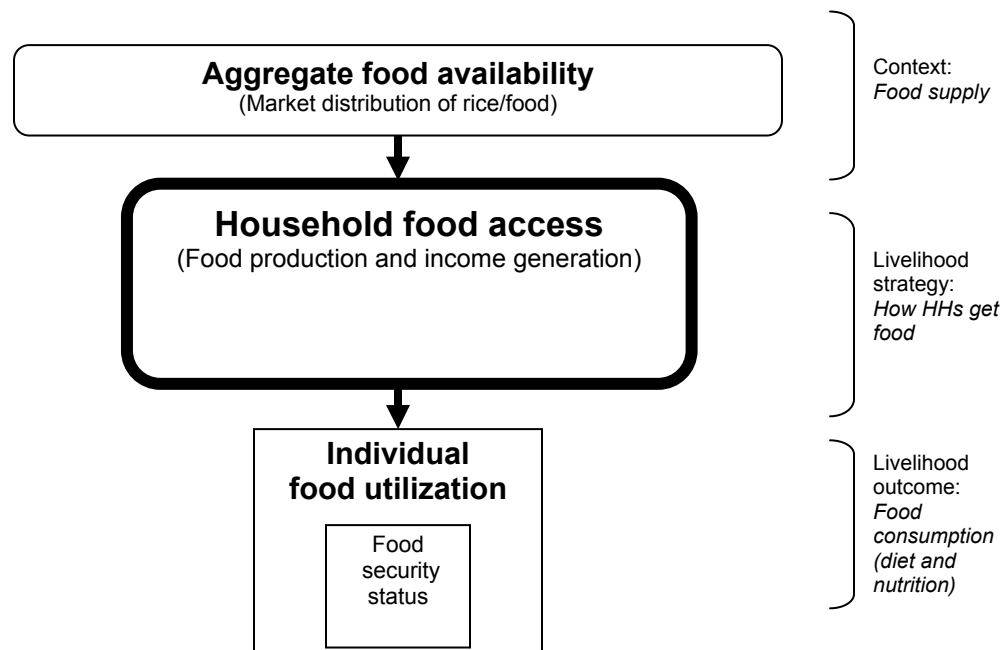
<sup>43</sup> WFP EFSA 2009, p. 21.

context of the commercialization transition, it appears to be the most straightforward way to capture the primary channels of effect.

Second, a focus on livelihoods and food access serves to put people at the heart of the analysis while also incorporating the wide range of factors shaping household choices. Looking at the household level, this approach incorporates aggregate food availability as a contextual factor and individual food utilization as an outcome.<sup>44</sup>

How transitions might more comprehensively affect these components of food security is beyond the scope of this study. The analysis does not focus directly on aggregate food availability in part because impacts from agricultural commercialization are unlikely to be immediately substantial, and in part because it would require information that is currently not available. This does not mean the issues are secondary. How they are affected by the transitions needs to be carefully assessed. Preliminary notes on both Food Availability and Utilization are explored in Annex A.

**Diagram: The key components of food security**



### 2.3.4 Determining impacts and identifying vulnerabilities

In building a framework to assess the impacts of commercial farming on food access and livelihoods, we must have both a static picture of what has changed and a dynamic picture of how these changes are likely to impact household welfare. We must thus look at these two things:

<sup>44</sup> Because changing food availability is a constraining factor both shaped and shaping livelihoods and new livelihood strategies often include new consumption patterns with an impact on household diet and individual nutrition.

1. **The changes to livelihoods and food access.** In other words, how the commercial transition changes the constraints shaping livelihood choices and the way households access their food.
2. **Emerging vulnerability to food insecurity.** We must identify the emerging risks that result from new livelihoods and food access strategies, and the changing capacity of households to cope to these risks.

### ***How to conceptualize impacts on livelihoods and food access***

The first part of the framework is focused on examining changes to livelihoods and food access. This provides a sense of the changing combination of incentives and constraints shaping household choices.

Food access refers to a household's ability to get food. More specifically, it refers to a household's ability to regularly acquire adequate amounts of food through a combination of their own stock and home production, purchases, barter, gifts, borrowing, or food aid.<sup>45</sup>

The *ability* to get food depends on *household livelihoods*—the activities that people use to secure their basic needs. These activities are shaped by people's strengths and the broader institutional context in which they live. In order to build a comprehensive understanding of how people access food, we will thus break our analysis into three parts:

1. **Asset Wealth:**<sup>46</sup> Livelihood strategies derive their resilience and strength from different household assets. Those with more assets tend to have a greater range of options and the ability to switch between multiple strategies to secure their livelihoods. Conversely, a lack of assets limits the range of livelihood strategies possible. It is perhaps easiest to think of these assets as livelihood building blocks serving to empower particular livelihood strategies.
2. **Enabling Systems:**<sup>47</sup> If assets are conceptualized as livelihood building blocks, enabling systems are the structures and processes shaping these building blocks into livelihood strategies. "Enabling systems include institutions, organizations, policies and legislation. They operate at all levels, from the household to the international arena, and in all spheres, from the most private to the most public." Enabling systems provide incentives that stimulate particular choices; they grant and deny access to particular assets; and enable the transformation and interaction of assets themselves. In so doing, enabling systems play a critical role in household food security by influencing the underlying determinants that shape how people access food.

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<sup>45</sup> World Food Programme *Emergency Food Security Assessment Handbook*, 1 ed. (Rome: WFP, 2005).

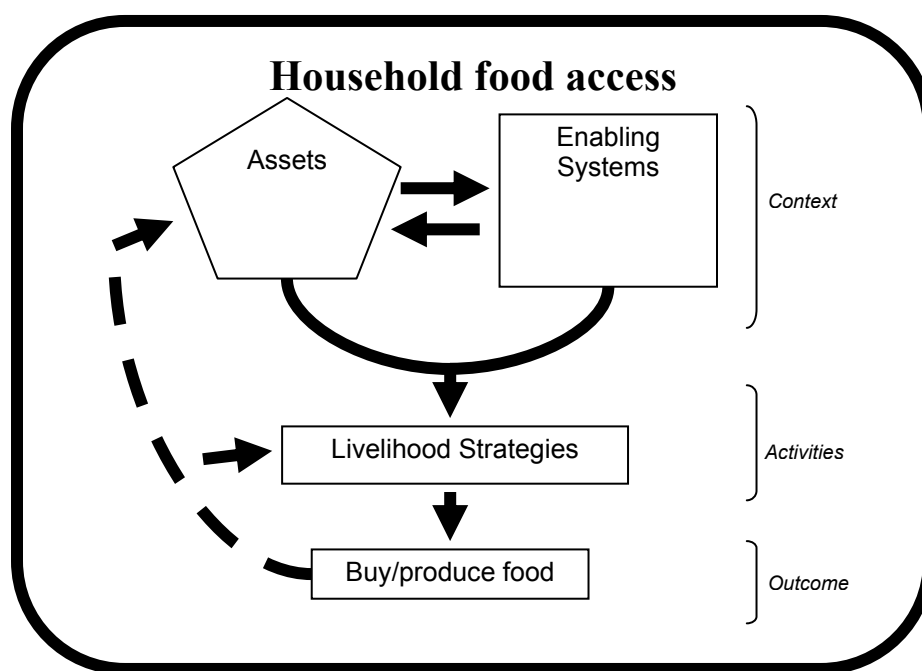
<sup>46</sup> There are five categories of assets: Human Capital, Natural Capital, Physical Capital, Social Capital, and Financial Capital. "No single category of assets on its own is sufficient to yield all the many and varied livelihood options that people seek....As a result, [people] have to seek ways of nurturing and combining what assets they do have in innovative ways to ensure survival". (DFID Sustainable Livelihoods Framework)

<sup>47</sup> See DFID Sustainable livelihoods framework on institutions and structures; WFP EFSA Handbook.

3. **Livelihood Strategies:**<sup>48</sup> A livelihood strategy refers to the combination of activities that people undertake to generate sufficient food or income. It is important to emphasize that livelihood strategies are, in fact, combinations of activities that usually vary across regions, sectors, and within households overtime. “This is not a question of people moving from one form of employment to another. Rather, it is a dynamic process in which they combine activities to meet their various needs at various times.”

The choice of livelihood strategy is made within the context of a household’s asset wealth and the broader enabling systems. These factors combine to encourage particular choices and constrain others. Within this context, households determine how they can best combine activities to achieve food security and other livelihood goals.

These factors – asset wealth, enabling systems and livelihood strategies – interact. Assets are improved through livelihood choices, and particular livelihood choices are made more attractive by certain asset endowments. Enabling systems sit at the nexus between livelihoods and assets, serving to transform assets and stimulate particular livelihood strategies. Together, these factors represent the context in which households make choices about their livelihoods. They thus help explain not only the livelihood strategies themselves, but also why they are pursued.



<sup>48</sup> See DFID Sustainable Livelihoods Framework.

### ***How to conceptualize emerging vulnerabilities to food insecurity***

The second part of this framework is focused on viewing household food access from a more dynamic, forward-looking perspective. Such a dynamic lens is important because while there may currently be no evident problems, high household vulnerability indicates future problems are possible and likely.

Vulnerability is defined as the probability of an acute decline in food access or consumption levels below minimum survival needs. It is a result of exposure to both risk factors - such as drought, conflict or extreme price fluctuations - and also of underlying socio-economic processes which reduce the capacity of people's ability to cope. Thus, vulnerability can be viewed as follows:

$HH \text{ vulnerability} = \text{exposure to risk} + \text{inability to cope}$
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In order to build a comprehensive understanding of the severity and source of emerging vulnerabilities, we will break our analysis into three parts:

1. **Shocks and risk:**<sup>49</sup> An identification of household *exposure* to future shocks is necessary to understand how changes result in potential future problems. This requires estimating of the *likely frequency* and *severity* of these shocks. High exposure to risk indicates the necessity to adjust livelihoods to adapt to shock. Low exposure, by contrast, means that households are unlikely to experience major shocks to their normal lives.
2. **Coping strategies:**<sup>50</sup> An analysis of available coping strategies determines household *sensitivity* to future shocks. Coping strategies refer to the ways in which households manage risk, determined by a household's asset base and livelihood strategies. When shocks push households beyond the difficulties faced in normal times, households employ coping strategies.
3. **Vulnerability analysis:**<sup>51</sup> Household vulnerability is determined by examining household *exposure and sensitivity* to risk that may negatively impact their livelihoods. In general, the more assets a household has and the more varied the livelihood strategies available to it, the more resilient that household will be to food insecurity. In order to conduct a vulnerability analysis effectively, we must disaggregate analysis of potential impact by the relevant groups.

It must be noted that vulnerability analysis is an estimation of risk in an ongoing transition. This analysis aims not to provide exact probabilities of vulnerability but rather identify areas of concern and the ways that changes may potentially result in future food insecurity if poorly managed.

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<sup>49</sup> See WFP EFSA 2009 Handbook p.143-147.

<sup>50</sup> See WFP CFSVA p. 113.

<sup>51</sup> See WFP Thematic Guidelines: Integrating "Livelihoods" into Food Security and Vulnerability Analysis (January 2005)

## 2.4 Study limitations

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A supplement to the CFSVA (2006). Other shocks discussed in the CFSVA that impact food security may not be addressed in this study.

Focused exclusively on impacts to food security from agricultural commercialization. This study does not discuss other impacts from agricultural commercialization such as environmental, social and spiritual outcomes. Moreover, it does not discuss the factors affecting food security that have not changed in the commercial transition.

Limited primary data. Without fieldwork or more comprehensive secondary data, we cannot determine the scope, scale, and frequency of the identified effects, nor can we determine which factors have the greatest relative impact on food security. As a result, key findings remain hypotheses that need to be tested by fieldwork.

Unrepresentative sample with negative bias. The case studies evaluated do not accurately represent the range of impacts. Opportunities emerging from the commercial transition and general benefits are not well addressed in the literature and thus cannot be highlighted in this study. The cases drawn from the literature are also geographically limited. This study may thus neglect to highlight other impacts of equal importance not addressed.

Lacks focus on aggregate food availability, individual nutrition and food utilization. There is no information on aggregate or even local food availability. Furthermore, without information on changing consumption patterns, this study is unable to incorporate findings on nutritional developments. Intra-household food security is also not being addressed, partly because at this stage no information is available on that issue.

Short term focus: We are looking at how the transition is currently affecting food security and livelihoods and not taking into account the lifecycle and intergenerational issues.

## 3 The central role of land and market access

Household assets are livelihood building blocks that provide different livelihood options in pursuit of household food security. Agricultural commercialization impacts household asset in two main ways:

1. First, and most notably, it alters the availability of natural capital. Given the importance of land and natural forests to rural livelihoods, changes to natural capital endowment affect the primary way that households produce food and income. It thus provides a good indicator of how the structure of food security is changing. Natural capital is shaped by human capital since the sustainability of cultivation patterns depends on adequate technical knowledge and skills.
2. Second, increased agricultural commercialization necessitates better market access. Market access is largely a function of physical infrastructure. As households are increasingly involved in commercial farming schemes, physical infrastructure is essential to facilitate the connection of goods to market. Market access is also facilitated by social and financial capital. Established social networks, within

communities and between them, facilitate stronger market positioning and increased access to loans. Commercialization without sufficient infrastructure or market power limits the benefits of commercialization to smallholders.

## 3.1 Changing Land Access

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Economic development in Laos is premised on converting the country's vast natural resources into capital.<sup>52</sup> Agricultural commercialization, in stride, is thus premised on using Laos' fertile land to produce commodities for market.

For people in rural areas, natural capital<sup>53</sup> is particularly important because almost everyone derives all or part of their livelihood from resource-based activities. The availability and quality of land is thus a key determinant of household food security. Access to natural forests is also important, providing a critical secondary food and income source.<sup>54</sup> This is particularly true for the poorest and most food insecure villages.<sup>55</sup>

### 3.1.1 Declining land availability

In the commercialization of agriculture, land availability for smallholders is declining. In the lowlands, the expansion of concessions<sup>56</sup> has led to dramatic shifts in land use patterns. In extreme cases, farmers cede their land entirely. Compensation is usually poor.<sup>57</sup> Often, farmers retain access to their paddy land but lose access to shared forests. With an increasing feeling of insecure land tenure, some farmers are beginning to invest their own resources into plantation development.<sup>58</sup> In some instances, entire (mostly ethnic group) communities are resettled to make land concessions available to investors.<sup>59</sup> Resettled villagers are often allocated less fertile land located further from the road.

In the upland areas, smallholder land tenure is also changing dramatically.<sup>60</sup> Aiming to eliminate shifting cultivation and encourage commercial agriculture production,

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<sup>52</sup> Keith Barney, "Power, Progress and Impoverishment: Plantations, Hydropower, Ecological Change and Community Transformation in Hinboun District, Lao PDR," in *Political Ecology series - (Re)making Governance series* (Toronto: YCAR Papers, 2007), p.7.

<sup>53</sup> Natural Capital refers to the natural resource stocks ranging from intangible public goods (e.g. atmosphere, biodiversity) to assets used directly for production (trees, land, etc.).

<sup>54</sup> See Joost Foppes, "Fish, Frogs and Forest Vegetables: Role of Wild Products in Human Nutrition and Food Security in Lao PDR," (2008).

<sup>55</sup> GTZ (2007) and Lang & Shoemaker (2006) in Dwyer 6.

<sup>56</sup> Usually along the main roads (No. 3, 13, 15, 16, etc.).

<sup>57</sup> For an example of lost land without compensation see: Glenn Hunt, "Large Scale Plantations in Pakkading District: Report from a Visit to Pakkading Integrated Rural Development Project," (2006). Compensation is a very contentious issue. Most reports note that farmers are compensated for their land, but usually not for the value of the crops on the land.

<sup>58</sup> Interview with NGO worker.

<sup>59</sup> Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR."27.

<sup>60</sup> Largely through the *Land and Forest Allocation Program* and *Stabilization of Shifting Cultivation Policy*. See Section 4 for more details.



government policy has zoned village land and allocated households a fixed plot not to exceed 3 hectares.<sup>61</sup> These policies effectively limit the area of land under cultivation, encourage commodity production, and restrict access to shared land. In so doing, it changes the land available for subsistence food production. Given the significant effect of such changes on rural livelihoods, such zoning is often disregarded by villagers.<sup>62</sup>

Further contributing to land pressure is the *Village Cluster Development Program*. To improve access to essential services, the scheme brings scattered villagers together along roads and close to other key infrastructure. Land availability, however, is often a resulting problem for relocated households. Since most of the available of fertile arable land is already occupied, new settlers tend to have worse land located further from the road with lower soil quality.<sup>63</sup> As a result, they are limited in both their production capacity and ability to participate in commercial farming schemes.

### **3.1.2 Loss of managed access to common land**

There is a worrying decline in managed access to common lands and forests that play a critical role in household food security. This decline in access is primarily the result of two factors. First, natural forests are disappearing as industrial plantations, agricultural cash crops, pastures and logging accelerate.<sup>64</sup> Second, the *Land and Forest Allocation Program* is restricting farmers' managed access to forest areas by zoning the village land into agricultural and forest land categories.

The loss of common land and forests eliminates an important alternative income and food source. Many households depend on NTFPs as a supplement to their primary production and as a coping mechanism during shocks. For these households, lost access to common land substantially increases vulnerability to food insecurity. Should these households produce insufficient yields in a given year, this critical coping mechanism will be unavailable. The exact scale of this process is not well documented and further research is needed.

### **3.1.3 Increased need to manage land quality**

As farmers move toward new production systems, they require new technical knowledge to sustainably and effectively cultivate their land. In many cases, the commercialization

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<sup>61</sup> World Bank, "Lao People's Democratic Republic: Policy, Market, and Agriculture Transition in the Northern Uplands," p.44. To date, there has been no M&E of the LFAP process and no systematic assessment of its outcomes and impacts.

<sup>62</sup> World Bank, p. 22.

<sup>63</sup> Thongmanivong Sithong and Vongvisouk Thouththone, "Impacts of Cash Crops on Rural Livelihoods: A Case Study from Muang Sing, Luang Namtha Province, Northern Lao PDR," in *Hanging in the Balance: Equity in Community-Based Natural Resource Management in Asia*, ed. Sango Mahanty, et al. (Bangkok: East-West Center, 2006), p.120.

<sup>64</sup> World Bank, "Lao People's Democratic Republic: Policy, Market, and Agriculture Transition in the Northern Uplands," p.58. According to Steven Schipani, "Ecotourism as Alternative to Upland Rubber," *Juth Pakai*, (2007): In Luang Namtha, "by 2005, over 4580 ha of degraded forest and swidden fallow fields had been cleared and replaced with small to intermediate rubber plantations". Monocrop rubber meets none of the government's objectives for protected area management in Laos.

transition results in a gap of necessary technical skill. The size of this gap in skill varies across sectors and regions in Laos.

The rapid onset of the commercial transitions, complicated by difficulties incorporating the new systems into indigenous knowledge systems, is leading to unsustainable cultivation practices. Farming methods are usually rooted in long standing community traditions. The new methods necessitated by new land tenure systems are often unfamiliar to farmers. Without the necessary regeneration periods and fertilizers, areas now under permanent cultivation show signs of soil degradation and declining yields. This is particularly pronounced in areas of maize-growing and the fixed rotational cropping of upland rice.<sup>65</sup> Without adequate technical skill development, this could lead to declining productivity and possible food insecurity over the long-term.

There is also a gap of technical knowledge accompanying the intensification of large livestock. The grazing of larger numbers of livestock inhibits the further succession toward natural forest plant communities and encourages open landscape with sparse trees or grass and scrublands. This is occurring in large parts of Xieng Khounang, Luang Prabang, and HouaPhan.<sup>66</sup>

In some cases, farmers have learned the necessary new technical skills and are thus able to effectively and sustainably cultivate their land. There appear to be two primary channels where transfers occur:

*Social networks.* Technical development is occurring through informal social networks as farmers learn skills through observation and osmosis. A new rubber farmer, for example, may travel to see how relatives in China harvest rubber. In so doing, he learns the necessary technical skill which he can then pass on to others in his community.<sup>67</sup>

*Contract farming arrangements.* In Vientiane, Champasack and Savannakhet, there are reports of significant skill development under pilot projects in contract farming schemes. In these projects, companies “rent” the land from the farmers who then work for wages as full employees. The farmer is then given very specific instructions on how to farm the particular crop. Over a few years, the farmer skills are upgraded producing substantially higher yields. With these new skills, the farmers then realize the opportunities of greater ownership and move into a new investment scheme (2+3). This type of skill development is promising though in its infancy.<sup>68</sup>

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<sup>65</sup> World Bank, "Lao People's Democratic Republic: Policy, Market, and Agriculture Transition in the Northern Uplands," p.42.

<sup>66</sup> Ibid., p.56.

<sup>67</sup> Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective."

<sup>68</sup> Anthony Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR," (Vientiane: Asian Development Bank, 2009)

## 3.2 Connecting smallholders to market

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The transition toward agricultural commercialization increases the importance of effective market dynamics in two ways.

First, for households directly involved in the commercial transition, physical capital<sup>69</sup> is important to improve their productive capacity and to link them to economic opportunities. For households with direct ownership in production, benefits from the commercial transition are partially a function of access to market infrastructure. Since infrastructure is poor and market centers are not well integrated into rural areas,<sup>70</sup> commercialization tends to either concentrate around existing roads or lead to new road development.

Second, though households may have more cash from their new production, what is critical to ensuring food security is that this cash can actually be used to purchase rice. It is theoretically conceivable that while farmers/farming associations sell their cardamom to Chinese traders, this is not accompanied by a corresponding increase in regional rice stock. Though it appears that most farmers continue to produce subsistence rice while increasing their involvement in commercial farming, as farmers transition toward greater commercial engagement, it is important that this corresponds with market development.

### 3.2.1 Roads

Most communities mention poor road conditions as the main reason for lack of physical access to markets. Some villages' limited market access is compensated by periodic visits on the part of traders. According to the CFSVA, more than two thirds of the surveyed village heads indicate that traders and agents come to their villages at least twice a month. Unfortunately, the subsequent trade is predominantly one-way with villagers having limited bargaining power.<sup>71</sup>

The expanding commercialization of agriculture is both shaped by and shaping the physical infrastructure available. The correlation of commercial agricultural production and road infrastructure is remarkable. Commercial plantations are evident along Lao's main roads (No. 3, 13, 15, 16, etc...) that are well connected to market centers. This has in some cases resulted in farmers who previously worked along the roads being pushed

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<sup>69</sup> "Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods." Infrastructure is critical to provide access to markets. Ownership of productive assets enhances agriculture production. Insufficient producer goods constrain people's productive capacity and therefore the human capital at their disposal. (DFID Sustainable Livelihoods Framework)

<sup>70</sup> CFSVA p. 11. For the 398 surveyed villages in the CFSVA sample, travel distances to district centres are significantly higher than 10km with the exceptions of the Phongsaly and Khammuane provinces (refer to table on the following page). However the roads in these two provinces tend to be of a low standard. Most rural villages have low or moderate access to motor roads. Villagers travel to district centres primarily by foot, indicating travel times that are comparable to an entire working day (8 hours two-way) to reach the closest market.

<sup>71</sup> CFSVA, p. 43.

back toward the uplands.<sup>72</sup> In other cases, households along roads have been courted into contract arrangements.

Commercialization can also result in new road development. Given the desire to farm contiguous blocks to achieve better economies of scale, some investors are opting to cultivate commercial crops in remote locations. Remote cultivation necessitates the development of road infrastructure to facilitate market access. This road development, while providing a connection to markets, is sometimes exclusively controlled by the investor limiting market access by the local communities.<sup>73</sup>

In some of the worse situations, commercialization is occurring in areas with poor road infrastructure and no road development. This is usually policy induced. The World Bank argues that it is in these instances where the most negative livelihood impacts are seen. As households transition to commercial production under policy inducements in a context without sufficient market access, households are unable to find sufficient alternative income-generating opportunities.<sup>74</sup>

### **3.2.2 Social networks and access to credit<sup>75</sup>**

Social networks are often important components of successful commercial transitions. In rubber cultivation in Luang Namtha, for example, villagers with stronger cross-border connections started earlier, planted more, and benefited from a casual flow of credit, technology, and market information from their Chinese peers.<sup>76</sup> In contract farming schemes, the relationship between investors and farmers is an important determinant of commercial success in contract farming schemes. Informal schemes premised on close social ties (familiar or otherwise) are usually more successful than investments premised on contractual precision.<sup>77</sup>

Where communities are strong or groups well established, farmers are better positioned to borrow small amounts against income from the crops being grown under contract.<sup>78</sup> Farmers' groups are increasing in number across Laos. These groups are important social capital for smallholder farmers involved in the commercial transition, helping relatively powerless individuals come together to exert a higher level of market power. After being certified by district officials, such farmers groups are eligible to borrow money from the Agricultural Promotion Bank.<sup>79</sup>

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<sup>72</sup> The result is rising resource pressure in common lands and forests.

<sup>73</sup> Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective."

<sup>74</sup> World Bank viii: "Those households that experience restrictions in land access, reduced quality of land, and increasing insecurity of tenure combined with poor access to infrastructure and likely to lose in the transition simply bc they are lacking market opportunities to cope with restrictions by the policies."

<sup>75</sup> Social capital refers to the networks in place to support livelihood pursuits. Financial capital refers to the financial resources people use to achieve their livelihood objectives.

<sup>76</sup> The rubber phenomenon in Luang Namtha is supported by long-standing social, ethnic, and economic ties to China. See Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective." p.4.

<sup>77</sup> See Diana (2006) in Dwyer 16. Also See Fullbrook.

<sup>78</sup> Rates can be interest free, but in some cases "rates can be usurious, especially when traders are lending." Fullbrook, "Contract Farming in Lao PDR: Cases and Questions." 51.

<sup>79</sup> Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR."

In general, availability of cheap credit is patchy. The banking system is not set up to engage with small farmers. Interest rates from banks are usually high, around 15 to 20 percent a year. As David Fullbrook notes, “the shortage of cheap, abundant credit leaves farmers at risk” to “debt traps or bondage, and reduces long-term prospects for raising incomes through investment in land, irrigation, seeds, and equipment.”<sup>80</sup>

## 4 Impacts of Policy and Market Dynamics

Enabling systems are partly responsible for why assets are changing and why households tend to make particular choices. Examining the key enabling systems thus provides insight into understanding the source of the observed changes.

Government policy and market dynamics are the most influential enabling systems respectively representing the push and pull forces driving the commercial transition. Policy is having the most pronounced effect on land use patterns. Meanwhile, market dynamics provide incentives to commercialize. However, outstanding market barriers such as poor infrastructure and weak regulations effectively limit the reach of market opportunities, thus decreasing the potential benefit distribution. Policy inducements without corresponding market access can result in particularly adverse consequences for rural communities. To date, policy has not been adequately reactive to respond to the emerging social needs for asset protection and technical support.

### 4.1 Policy Induced Changes

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#### 4.1.1 Shifts from subsistence based livelihoods to commercially oriented activities

Government policy is encouraging increased commercialization by promoting expanding investment in Laos. Efforts at central and provincial levels to increase commodity production often take the form of production targets. For example, *the Forest Strategy (2020)* has set targets of 500,000 hectares for tree plantations for which only a few species will be used.<sup>81</sup> The government is also increasing support for investment schemes in commercial farming. This is often undertaken by private firms usually through contract farming arrangements. Despite the Prime Minister’s 2007 memorandum, there are reports of provincial support for concession schemes to boost commercialization.

The result of these policies is an expanding physical change in the agricultural landscape of rural Laos concentrated heavily in the lowlands but expanding increasingly into the uplands.<sup>82</sup> Under these policy inducements, households face added pressure to transition toward a commercially oriented livelihood strategy.

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<sup>80</sup> Fullbrook, "Contract Farming in Lao PDR: Cases and Questions." 51.

<sup>81</sup> World Bank, "Lao People's Democratic Republic: Policy, Market, and Agriculture Transition in the Northern Uplands." p.58. Species are likely rubber, teak, aquilaria, eucalyptus, and probably Pinus.

<sup>82</sup> Zola p.26.

### 4.1.2 New smallholder land tenure patterns

Policy induces new smallholder land tenure patterns. More specifically, policy has largely decreased land access and promoted new unfamiliar production systems on fixed land plots. This is, in many cases, reducing the long-term quality of land (soil fertility). Together these practices leave “farmers scrambling for scarce arable land and threaten an already tenuous food security situation.”<sup>83</sup> This heightens household vulnerability to food insecurity.

The *Land and Forest Allocation Policy* (LFAP) zones village land for different agricultural use and allocates particular plots with temporary land use rights to individuals, villages, and commercial organizations. In the Lowlands, households tend to be restricted to only their paddy land. In the Uplands, the *LFAP* reinforces the *Stabilization of Shifting Cultivation policy* by assigning households to a fixed plot of land for permanent cultivation. In both, there tends to be a dramatic reduction in managed access to natural forests and traditional shared land. Managed forest access is also influenced by Forest Management and timber industry development policies.

In several provinces, the land allocation process is well underway; however, given the negative impacts on livelihoods, it is not uncommon for these new zoning restrictions to be disregarded.

The *Village Cluster Development Program* also impacts land allocation. Moving remote upland communities closer to roads and essential services, *the Village Cluster Development Program* creates tension over land allocation since resettled households often the worst land since the more fertile (suitable for paddy) is usually already occupied.

### 4.1.3 Insufficient support for the rural poor

Existing land use policy has had a particularly adverse effect on remote upland communities. These households face more restrictions with regard to their livelihood opportunities and transition options because of decreased land tenure, decreased managed access to natural wild resources, and limited market access through which to seek alternative work. As a result of being target-driven, policy implementation has led to complications for villagers in the form of inexperience with new production systems and insufficient consideration of soil and land capability.<sup>84</sup>

It also increases social tensions between Upland communities relocated into Lowland areas. Since they have less resilient livelihoods and weakened coping mechanisms, they are likely to have difficulty accessing adequate food should they face one or more shocks. Remote upland communities are thus likely to be more vulnerable to food insecurity.

Unfortunately, policy *has not* responded with the necessary intervention to address these emerging problems. This is because there is not enough sensitivity in government policy to the relationship between commercialization and sustainable livelihoods. Policies lack adequate attention to individual production systems, market access conditions, and the

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<sup>83</sup> Zola, p.27.

<sup>84</sup> Zola, p.26.

particular circumstances of remote upland communities. The administrative haste accompanying the accelerated processing of these investments has generated several governance and land management issue. These issues are linked to the transparency of land allocation, long-term environmental sustainability and the distribution of benefits.<sup>85</sup>

## **4.2 Engaging in Market Dynamics**

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### **4.2.1 Rising demand for commodities**

There is a dramatic rise in demand for a range of agricultural products driven by the expanding markets of China, Vietnam and Thailand. A series of Free Trade Agreements<sup>86</sup> and improvements in physical infrastructure facilitate increased trade and investment corresponding to this rising regional demand. The result is that traders and agribusinesses are better placed to take advantage of Laos' unique agro-ecological conditions and strategic position as a production base for food crops, agricultural raw materials, raw materials, and other niche products.

### **4.2.2 Market integration problems**

There is a close correlation between commercial investments and infrastructure development. Simply, investors tend to go where there are roads. It is thus no surprise that Lowland areas are the principal target of investment, though expansion into Upland areas is increasing.<sup>87</sup>

In general, roads are still far too undeveloped. This contributes to higher costs and reduces crop competitiveness. According to NAFES 2006, transport costs are twice more expensive in Laos than in Thailand.<sup>88</sup> Middlemen in some provinces can add further costs and constrict access to buyers and higher prices. Some farmers have formed groups after registering with local authorities, enabling them to bypass the middlemen/traders and sell directly to the market at market prices.<sup>89</sup>

Though the investment environment has improved, it is still poorly regulated. As David Fullbrook stresses, "regulations are vague and opaque, and establishing a business is time-consuming and expensive". Regulations in practice appear to vary between provinces and "some officials seem uncertain regarding what regulations are in force, what they mean and how to apply them. Problems related to land ownership and titling

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<sup>85</sup> Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR," p.1.

<sup>86</sup> This includes: Free trade agreements among ASEAN member countries; broad-based bilateral and multilateral trade and investment initiatives launched by China, Thailand, and Vietnam; ACMECS (Ayerwaddi-Chao-Phryaya Mekong Economic Cooperation Strategy) Plan of Action; China-ASEAN Trade in Goods Agreement.

<sup>87</sup> Zola, "A Preliminary Assessment of Contract Farming Arrangements and Plantations in the Agriculture and Natural Resources Sector of Southern Lao PDR."1.

<sup>88</sup> 7.5 versus 3.2 baht per ton/km as cited by Fullbrook, "Contract Farming in Lao PDR: Cases and Questions." 51.

<sup>89</sup> Fullbrook p.51.

crop up often.”<sup>90</sup> Since smallholders are usually in a weaker bargaining position than investors, they are more likely to be at the losing end of negotiations.

Further problems include poor understanding and enforcement of contracts. Investors sometimes complain that farmers breach the contract by selling their crop to passing traders. Farmers sometimes complain that they are not being compensated for their labour (reflecting a misunderstanding of the nature of the “2+3” investment).<sup>91</sup> Poor government regulation exacerbates this problem, as there is no enforcement mechanism to fairly mediate disputes. This environment adds uncertainty risk to commercial production.

## 5 Agricultural Commercialization and Emerging Livelihoods

As household assets change in the context of different policies and market pressure, households have transitioned toward greater agricultural commercialization. Households are consequently undergoing dramatic shifts in their livelihoods with significant impacts on how they access food.

There is much variance between households in the transition process. The specifics of each case are important to note since they indicate resulting vulnerability to food insecurity. The variance among different household livelihoods can be captured by examining:

1. The level of their ownership and participation: In order words, *the way* in which households (chose to) participate. Different investment schemes are premised on different levels of smallholder ownership that lead to different resulting livelihood strategies.
2. The content of production: This consists of the type of production system and the specific crops being cultivated.
3. The scale of this transition: Some households participate on a small scale with a continued focus on subsistence, while some have undergone a complete livelihood transformation participating exclusively in commercial farming.

These three categories illuminate the content of new livelihoods and the sources and magnitude of emerging risks. Having looked earlier at *why* households make particular livelihood shifts, this section explores the *content* of new livelihoods and the resulting risks that have emerged.

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<sup>90</sup> Fullbrook, “Contract Farming in Lao PDR: Cases and Questions,” p.52.

<sup>91</sup> See Fullbrook, “Contract Farming in Lao PDR: Cases and Questions.”



## 5.1 Varying levels of commercial ownership

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### 5.1.1 Concession Farming

#### ***No ownership but wage labour opportunities***

In concessions schemes, land is wholly transferred to the company who is then responsible for all its investment and cultivation.<sup>92</sup> Farmers thus have no ownership in the commercial production and work on concessions as wage labourers. This type of investment is most prevalent in the South.

Expanding concessions tend to increase wage labour opportunities. The degree of the transition to wage labour varies. In some cases, households cede their land entirely for compensation and trade their livelihoods to become wage labourers. In other cases, farmers continue to cultivate their existing land and use wage labour to supplement shortfall in food or income. There are reports where households are pushed into upland cultivation as plantations take up their roadside land.<sup>93</sup> The scale of wage labour participation is not well documented.

#### ***Labour restrictions limit participation***

The worst off in the transition are households who have ceded land without adequate alternatives. Sometimes, concessionaires put a minimum and maximum age. Older household heads<sup>94</sup> and female headed households may not then have the opportunity to use wage labour to supplement lost land. As a result, without subsistence land, it is dramatically more difficult to find adequate sources of food.

### 5.1.2 Contract Farming

#### ***Contracting tends to be limited to the asset rich. Poor households participate as wage labourers.***

Better off villagers with good land and subsistence crop tend to more frequently engage in contract farming. Poorer households, by contrast, are often unable to participate in contract farming because of the quality, size and location of their land. Companies looking to maximize profits find business with small farmers too costly given lower profits relative to the cost of getting to more remote locations. Cooperatives may be helpful in this regard. Landless people do not have assets that would allow them to participate. Most poor households therefore participate in contract farming as wage labourers in order to supplement their insufficient subsistence food supply.

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<sup>92</sup> See Mike Dwyer, "Turning Land into Capital, Part 1," (Vientiane: LIWG: Land Issues Working Group, 2007).p. 2-3 for a more precise definition.

<sup>93</sup> Interview with NGO worker.

<sup>94</sup> Restrictions may be for labourers over the age of 35, 40, or 45.

### ***Level of ownership varies by contract type***

Unlike concession farming, farmers plant on their own land. In contract farming, farmers are provided critical investments in exchange for a guaranteed share of the profits or harvest.

The degree of smallholder ownership in contract farming schemes varies.<sup>95</sup> The “2+3” model is the most common form of contract farming in the Lao PDR. Farmers have the greatest share of ownership. Land and labour is provided by the farmer, and capital, technology, and marketing provided by the investor. The capital (seedlings, fertilizer, equipment) is provided as a loan while future commodities are divided in a respective 70/30% split (farmer/investor).<sup>96</sup>

In the “1+4” model, farmers give only land while the investor is responsible for the planting and maintenance with hired labour. Correspondingly, the product divisions is reversed with the investor retaining the 70% share.<sup>97</sup> Unlike concession farming, contract farming amounts to the villager “renting” land to the investor for a portion of the harvest in addition to wages.

In order to understand the specifics of each contract require an examination of the broader context in which these contract schemes occur.<sup>98</sup> For example, in the “1+4” model, there is ambiguity in what the “1” represents. In Luang Namtha, “1+4” means something very different than in Oudomxay.

#### **Box 3: The importance of context for agency: preference for 4+1 schemes in Luang Namtha**

In the case of rubber in Luang Namtha, smallholders tend to chose for lower levels of ownership in a “1+4” model.

Two main contextual factors shape this preference. First, companies pushed for a “1+4” system because, like concessions, it gave them greater control over the plantation and a better share of the profits. This reflects the importance of determining the relative strength of the investor.

Second, villagers desired to be paid wages for their labour. The immediate assets available to households influenced whether they are able to transition to livelihood with a greater ownership stake that require a long-term investment.

<sup>95</sup> Most contracts take form of the “2+3” model. The 2+3/1+4 typology is most meaningfully applied to rubber.

<sup>96</sup> The actual division often varies between contracts. Problems with this model can be rooted in a poor understanding and enforcement of the contracts. Investors sometimes complain that farmers breach the contract by selling their crop to passing traders. Farmers sometimes complain that they are not being compensated for their labour (reflecting a misunderstanding of the nature of the “2+3” investment).<sup>96</sup> Poor government regulation exacerbates this problem, as there is no enforcement mechanism to fairly mediate disputes.

<sup>97</sup> This is the usual percentage. However, percentage may vary depending on the contract

<sup>98</sup> For description of the problems of static classifications, see Thongmanivong Sithong et al., “Concession or Cooperation? Impacts of Recent Rubber Investment on Land Tenure and Livelihoods: A Study from Ouxomxai Province, Lao PDR ” (Vientiane: National University of Laos, 2009.).

In the Luang Namtha example, with few sources of alternative income during the 7 to 8 year waiting period before some crops generated income, wages provide greater household food security.<sup>99</sup> Reinforcing this was that villagers had limited trust in the investors and little sense of ownership or partnership in the contract. It was thus difficult for villagers to work without pay for an uncertain return.

### **5.1.3 Small-investor and independent commercial farming**

#### ***High level of smallholder ownership***

This is an informal type of investment scheme where smaller investors establish contracts with villagers through informal, oral agreements. Such investments are normally channeled through personal connections and rely on a casual flow of funds and technical knowledge, often across borders. Farmer ownership is thus high in these schemes, resembling the “2+3” model. Farmers are thus guaranteed a high stake in the profits, but are also highly dependent on market access and vulnerable to market risks.

#### ***A way increasing income and securing land entitlement***

In some provinces, the majority of contract farming appears to be small investor farming schemes. In Luang Namtha, for example, small investor farming (including villager’s own investment) account for 80% of the total rubber establishment.<sup>100</sup> In the South, there are apparently increasing numbers of asset rich smallholders seeking to convert their land into plantations.

Investments are usually through informal networks. As one NGO worker described, there is an increasing feeling of insecure land tenure among smallholders increasing the impetus to become involved in the commercial transition to solidify land entitlement.

#### ***Free of disputes***

The execution of this informal investment scheme tends to be free of disputes. Contracting parties usually have a better mutual understanding of the contract terms and share a higher level of mutual trust. The decentralized, voluntary process helps better match villagers’ expectations with investor’s offers, be it capital, technique, labour or marketing. Transnational connections serve to help villagers start-up and gain access to market information, informal credit, and technical support.<sup>101</sup>

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<sup>99</sup> Even though what they lose in future shares will likely significantly exceed their gain in current wages, villages find it difficult to think and calculate financially over such a long time period.” (Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective."37)

<sup>100</sup> Shi, p. 44.

<sup>101</sup> Shi, p. 44.

## 5.2 The content of production

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### 5.2.1 New Production Systems

The World Bank<sup>102</sup> identifies five emerging agricultural production systems:

1. Fixed rotational cropping
2. Modernized rice-based farming
3. Annual cash cropping in large-scale monocultures
4. Industrial plantations of tree crops
5. Intensified production of livestock

In the southern lowlands, it appears that most commercialization is under industrial plantations and large-scale monocultures. Large plantations of rubber, eucalyptus and other tree crops are rapidly expanding.

In the Northern Uplands, fixed rotation cropping is emerging as the dominant non-traditional agricultural production system. It is found on large areas on lower and middle slopes and is characterized by subsistence production with numerous cash crops increasingly introduced on a small scale. Mono-cropping is also fast emerging in the North. Over the last decade, the area under maize production nearly tripled to more than 66,000 ha (in 2005).<sup>103</sup> Maize is being primarily explored to Thailand, China, and Vietnam but also sold locally to domestic livestock feed mills. Large-scale tree plantations are widely visible too, appearing to produce mainly rubber in Luang Namtha and Oudomxay.

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<sup>102</sup> Alternative ways to classify agricultural systems may also be by culture; integral/non-integral; new or partial systems; duration of cultivation period; sedentary vs. migratory cultivation patterns; impacts on vegetation; geographical characteristics.

<sup>103</sup> Provincial data by the World Bank shows that this expansion has further accelerated and some provinces have seen a doubling in maize production area since 2005, with Xayabury, Oudomxay, and Bokeo having seen the most dramatic increases in production area.

**Table 1: Northern Upland regional agricultural system trends**

<b>Region</b>		<b>Characteristics</b>
<b>Western</b>	<ul style="list-style-type: none"> <li>• Bokeo</li> <li>• Luang Namtha</li> <li>• Oudomxay,</li> <li>• Southernmost Phongsaly</li> <li>• Northernmost Xayabury</li> </ul>	<ul style="list-style-type: none"> <li>• Favourable conditions for teak and rubber.</li> <li>• Stabilized fixed rotational cropping of upland rice, cash crops, and industrial tree plantations.</li> <li>• Stabilization of swidden agriculture advance and no longer a policy priority for PAFO and DAFO.</li> <li>• Diverse agro-forestry systems practiced at small-scale in ODX and PSY where marketing options good</li> <li>• Higher forest cover retained during transition due to fertile basin areas.</li> </ul>
<b>Northern</b>	<ul style="list-style-type: none"> <li>• Phongsaly</li> </ul>	<ul style="list-style-type: none"> <li>• Virtual absence of lowland areas for rice paddies. Unfavourable conditions for rubber and teak (except in Buon Tai and Buon Neua).</li> <li>• Characterized by poor infrastructure with limited market access.</li> <li>• Swidden agriculture and opium cultivation are focus of government policy implementation efforts.</li> <li>• Only 50% of province's villages gone through LFAP.</li> <li>• Dominant agricultural production systems are traditional swidden agriculture and, more recently, stabilized fixed rotational cropping in areas of LFAP implementation.</li> </ul>
<b>Eastern</b>	<ul style="list-style-type: none"> <li>• Luang Prabang, except small parts along Mekong and lower Namou rivers</li> <li>• Xieng Khouang</li> <li>• Houa Phan</li> </ul>	<ul style="list-style-type: none"> <li>• Rubber and teak plantations are absent.</li> <li>• Maize and monocultures dominate in Meung Kham district and areas near Vietnamese border.</li> <li>• Landscape dramatically transformed by fire, which is used to promote growth of forage in previously forested areas.</li> <li>• As coping strategy to land use restrictions, livestock production is new element in its intensified form. Overgrazing has led to the near complete removal of natural shrub and forest vegetation.</li> <li>• Stabilization of shifting cultivation is still perceived as an issue and focus of policy implementation.</li> </ul>
<b>Central</b>	<ul style="list-style-type: none"> <li>• Mekong and lower Namou corridor in Luang Prabang</li> <li>• Northern part of Vientiane (Vang Vieng and Kasi)</li> </ul>	<ul style="list-style-type: none"> <li>• Located along main rivers in tourist centers where off-farm income important.</li> <li>• Teak plantations are common.</li> </ul>

*Summary of World Bank (2008) findings, p. 11-14*

Table 1. Typology of Traditional and Emerging Agriculture Production Systems

Characteristics				Location
<b>Group I. Swidden agriculture</b>				
Mostly in young/medium age secondary forests with medium to long fallow periods. Mainly upland rice but with many other crops (tubers, beans, fruits) as diverse land use system. NTFPs important in times of rice shortage. No pesticide / herbicide use. Final vegetation cover usually natural forest vegetation, which quickly regenerates during fallow periods in absence of large livestock numbers. Long fallows ensure maintenance of soil fertility; stable yields. Fallow improvements not common.				In remote locations, away from main roads and rivers
<i>Initial vegetation cover</i>	<i>Resource user</i>	<i>Final vegetation</i>	<i>Fallow length</i>	
<i>Young secondary forest common</i>	<i>Indigenous communities</i>	<i>Natural forest</i>	<i>5-8 years (medium)</i>	
<i>Mature secondary forest less common</i>	<i>Indigenous communities</i>	<i>Natural forest</i>	<i>&gt; 8 years (medium to long)</i>	
<i>Mature secondary forest rare</i>	<i>Indigenous users</i>	<i>Agro-forest</i>	<i>None</i>	
<b>Group II. Paddy-rice cultivation</b>				
Rain-fed wet season rice; and gravity-based irrigation during the dry seasons; traditional rice varieties, minimal use of chemical fertilizer and pesticides; low levels of mechanization.				Small areas in Houa Phan
<b>Group III. Fixed Rotational Cropping</b>				
Stabilized form of swidden agriculture; 3-4 plot system; often only on lower /middle slopes. Upland rice but with cash crops on small scale. Nearly complete elimination of fallow periods; declining yields, beginning market opportunities; negative impacts on soil fertility and soil erosion; increasing weeding requirements requiring the use of pesticides for weeding.				Throughout Northern Uplands along roads and rivers
<b>Group IV. Modernized rice-based farming</b>				
Evolving from traditional systems (Group II); mechanized plowing, high yield varieties, mineral fertilizer, pesticides, supplemental irrigation; dry-season rice replaced by cash crops.				Vientiane
<b>Group V. Annual cash crops in monocultures</b>				
Large-scale monocultures replacing upland rice; beginning encroachment into young regenerating/natural forest; primarily maize, Job's tears, sugarcane; to a lesser extent rice bean, black cowpea, peanuts, sesame, cassava; use of hybrid varieties for maize, fertilizer and pesticides, burning of residues for land preparation, cultivation on steep slopes, sometimes with tractors; often inappropriate application of new technologies; soil degradation and nutrient loss, decreasing yields; possible improvement through direct seeding, mulch-based conservation and intercropping but currently on very small pilot scale.				<i>Maize</i> : Meung Kham, Beng, Meung Houn, Nalae, Southern Xayabury, <i>Job's tears</i> : Luang Prabang <i>Sugarcane</i> : Phong Saly
<b>Group VI. Annual/ per-ennial cash crops in agro- forestry systems</b>				
Mix of cash crops on small plot arrangements with distinct tree component; practiced as alternative to upland rice but based on familiar elements of swidden system (small-scale, intercropping, and NTFP collection); high sustainability and low economic risks; more complex cultivation and harvesting practices; farmers require significant support financially and technically.				Around Oudomxay provincial capital; Southern Phong Saly
<b>Group VII. Industrial plantations of perennial crops</b>				
Small to large plantations of rubber, teak, eaglewood, tea and <i>Eucalyptus</i> , often in concession arrangements; rubber plantations replace existing natural forest, encroachment into forest areas; limited intercropping initially possible; uncertain how farmers bridge period before rubber tapping begins..				Vientiane, Luang Prabang, Bokeo, Southern Xayabury, Oudomxay
<b>Group VIII. Intensified production of large livestock</b>				
Production of cattle and goats (new elements in the Northern Uplands) and buffalo with mainly traditional practices: free forest grazing, foraging with limited supervision, deliberate use of fire in forest areas to induce growth of fresh grasses, and poor pasture/fodder management.				Xieng Khouang, Luang Prabang, Houa Phan Provinces

World Bank table p. 12

## 5.2.2 Crops under production

There is a range of commodities under production in new commercial schemes. This includes major commodities such as rubber, sugar cane and maize, along with niche crops like cardamom, job's tear and sesame, are replacing rice production.<sup>104</sup> The table below offers a preliminary overview of crops by provinces based on the information from GTZ.

**GTZ: Activities within the agricultural sector (2007)**

Province	Total Projects in Agriculture	Don't know	Rubber	Tea/Coffee	Eucalyptus	Tree plantation	Teak	Agar wood	Crop & Animal Raising	Cassava	Sugarcane	Corn	Palm Oil and other Biodiesel	Fruits and Vegetables	Others
Phongsaly	15	1	10	2											2
Udomxay	10		4	1	2										3
Luangnamtha	21	11	6			1			2					1	1
Bokeo	6		2												4
Xaiyabouri	9	9													
Huaphane	18	18													
Luangphrabang	3	3													
Xiengkhuang	3	3													
Vientiane Prov.	58	58													
Vientiane Cap.	15		2				1		8				1	1	2
Bolikhamsay	38	2	17		2	6	1		3	5					2
Khammouan	20		5						13			1	1		
Savanaket	27	6	7		4	1			3	3	2				1
Champasak	74	12	39	3	1			3	2	1	1		4	5	3
Salavan	13		9							3			1		
Xekong	11		7			1							1		2
Attapeu	15	5					4		6						
<b>Total</b>	<b>356</b>	<b>128</b>	<b>108</b>	<b>6</b>	<b>9</b>	<b>9</b>	<b>5</b>	<b>5</b>	<b>37</b>	<b>12</b>	<b>8</b>	<b>1</b>	<b>8</b>	<b>7</b>	<b>20</b>

## 5.3 Scale of the livelihoods transitions

The participation level of smallholders in agriculture commercialization varies. Some households, while incorporating commercial crops into their livelihoods, may continue with significant subsistence production to meet given their food needs. Other households may exclusively participate in commercial farming schemes.

Commercialization is still in a transition period. The scale of transition is important to identify since it is a determinant of the resulting risks and vulnerability to food insecurity. Little information is available on the scale of the transition and requires further research.

<sup>104</sup> See Annex C for summary of trends in the Northern Uplands.

## 6 Emerging vulnerabilities

Agricultural commercialization is changing how households access food. As a result and depending on the context of these changes, households face emerging risks that could make them vulnerable to food insecurity. While households may not be presently food insecure, exposure to potential shocks could lead to food insecurity should one or more shocks occur.

The challenge of this section is to estimate who is likely to become food insecure in the commercial transition. A preliminary vulnerability analysis will thus be conducted in three parts. First, we will identify emerging shocks and risks. Second, we will identify available coping strategies in the transition process. Finally, we will synthesize findings and estimate emerging vulnerabilities. It is acknowledged that they may, in some cases, be decreasing. The 2006 CFSVA will be used as a baseline.

In the commercial transition, households are exposed to both existing and new shocks. The degree of exposure and the severity of impact to existing shocks may change. In addition, households are exposed to other types of shocks that are directly related to their new livelihood activities. In some cases, the resulting increased risk exposure and weakening coping capacity leaves household more vulnerable to food insecurity.

### Key concepts in vulnerability analysis

**Shocks** are natural or human-induced events with a negative impact on nutrition and food security. They may vary in their severity, timing, and geographical scope and may occur suddenly or gradually.<sup>105</sup>

When shocks push households beyond the difficulties faced in normal times, households employ **coping strategies**. Such coping strategies are determined by a household's asset base and livelihood strategy. Changes to both these factors in the commercial transition impact the availability and composition of a household's capacity to cope with shocks.

The combination of risk exposure and coping capacity gives an estimation of the likelihood that particular groups will become food insecure. In other words, it estimates their **vulnerability**. Households who are able to minimize the loss of welfare from shocks through livelihood and risk management strategies are *less vulnerable* than those who cannot cope with or mitigate the effect of these risks.

## 6.1 Shocks and emerging risks

### 6.1.1 Key shocks according to the CFSVA

#### *Risk of natural disasters*

In any given year, farmers face the threat of severe crop losses resulting from mid-season dry spells and late season floods just before harvest.<sup>106</sup> The most exposed regions to

<sup>105</sup> WFP EFSA (2009), p. 144.



drought are located in Khammuane, Savannakhet, Saravane, Champasack, Xayabury, and Vientiane province.<sup>107</sup> Floods usually happen from August to September in Central and Southern parts of the country.<sup>108</sup> Crop pests may also limit farming yields.

As households engage in greater commodity production, they are still exposed to natural disasters. The severity of impact, however, may change depending on the crops under cultivation. Perennial tree crops, for example, may prove more resilient to flooding while maize is very sensitive to droughts. Losses are also more severe for crops with a longer cultivation period. For households with perennial crops that take many years to cultivate, crop loss can mean a severe loss of investment and significant shock to livelihoods.

### ***Risk of declining managed access to forests***

The high dependency of many rural households on natural resources make declining managed access to forests a significant potential shock. Declining managed forest access reduces household access to wild vegetables, fruit, fish, OAA, and wild meat. Some households also lose cash income from selling forest products.

According to the CFSVA, 24% of rural households have diets sufficiently dependent on natural resources such that a loss of access would likely lead to food insecurity. Farmers, farmer/gatherers and unskilled labourers are most vulnerable. As much as one third of rural villagers' income stems from the sale of NTFPs.<sup>109</sup>

In the commercial transition, there appears to be declining managed access to forests. The severity of the impact depends on how well households can compensate for the lost resources in their new livelihood strategies. When commercial farming takes over forest land, it is likely that households will have less access to natural resources. However, for some, cash from new commercial cultivation allows households to purchase the lost resources.

### ***Risk of food price increases***

For households that purchase all or part of their food, rising food prices are a significant shock to their food security.

Rice prices increase the greatest during the lean season when stocks are depleted and households rely on the market to meet their rice deficit needs. This is typically in August and September in rice deficit areas such as Luang Prabang, Huaphan and to some extent Xiengkhuang. Areas with bad market access during lean season are particularly prone because trade flows do not adequately fill the gaps between supply and demand.

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<sup>106</sup> Flooding is the main natural disaster in Laos in terms of frequency and consequence. Large floods cause housing damage, loss of equipment, and other asset damage that can impact on a household's well-being. Rice losses and paddy field damage is common. The worst impact is usually the loss of livestock given its importance as a key household asset and safety net. Household vulnerability is determined by asset wealth after flooding resides.

<sup>107</sup> Farmers with non-irrigated land and farm labour are most exposed to this shock since they depend on rain-fed agriculture.

<sup>108</sup> CFSVA p.119-20.

<sup>109</sup> Ministry of Agricultural and Forestry (2006) in CFSVA p. 64.

In the last few years there have been unusually large price increases due to other factors.<sup>110</sup> In 2006, rice prices rose by over 60% with increases as high as 100% in some regional markets. Last year there were also notable price increases. Unfortunately, in Laos only rice prices have been analyzed. Not much is known about other food prices.

As households integrate more into the market in the commercial transition, households face increasing exposure to rising food prices. The degree of market dependence determines the severity of potential impacts.

### **6.1.2 Emerging shocks in the commercial transition**

#### ***Risk of cash crop market volatility***

As households begin to produce more commodities for market, they become exposed to market volatility that may reduce income. Price and demand volatility varies by crop. Such volatility shocks can be seasonal, recurrent, or one-off. Recently, prices of rubber have declined significantly impacting household incomes.<sup>111</sup>

Significant decreases in price or demand of commercial commodities decrease the income received from commercial farming. In some instances, when regional supply is too large and/or demand too small, farmers may not be even able to sell their entire harvest. With reduced income levels, households may have difficulties purchasing sufficient amounts of food. In instances where households borrowed money to plant commercial crops, falling prices and income may lead to indebtedness.<sup>112</sup>

Exposure to changing prices is greater the more households orient production to commercial crops. More diversified crop portfolios spread out risk. The severity of potential impact is proportional to the concentration of production in that particular crop, the invested cultivation time, and the degree of the price decline.

#### ***Risk of fluctuating labour demand***

There is an increasing dependence on wage labour as a primary and secondary livelihood in concession schemes. A decline in labour demand is thus a significant shock for households increasingly reliant on this income source.

Annually, labour demands are prone to fluctuate according to seasonal needs. In some cases, there are reports suggesting an influx of foreign workers that decrease labour opportunities for local farmers. This can result in more permanent declining labour demand.

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<sup>110</sup> Rice prices in September 2008 rose by 21% over the last year. See WFP, “Food Market Study and Preliminary Household Level Survey on the Impact of Higher Food Prices on Household Food Security,” (November 2008).

<sup>111</sup> See: Bangkok Post, “Pressure still on Rubber prices,” 31 December 2008. Vientiane Times, “Chinese investors bounce away from rubber,” 8 January 2009.

<sup>112</sup> As reported in WFP Laos rodent EFSA 2009.

The severity of this shock depends on the degree to which households depend on wage labour in their livelihood strategies. Households that depend on wage labour as a primary livelihood are most exposed. They tend to be the landless.

### ***Risk of rising prices and declining purchasing power for the poor***

In the medium-term, purchasing power may decline for non-participating households in commercializing contexts. As commercialization increases, farms require more inputs and supplementary food. This increases demand in a community with limited supply leading to higher prices. While higher prices mean more money for retailers, for those not engaged as either contract farmers or retailers, prices rise as incomes remain static. The result is reduced purchasing power and increased difficulty securing adequate food supplies.<sup>113</sup>

**Table: Risks and anticipated differential vulnerability depending on type of commercial farming**

<b>Main Shocks</b>	<b>Concession farmers (wage labourers)</b>	<b>Contract and Small-holder farming (2+3) (high ownership)</b>	<b>Contract farming 1+4 (minimal ownership)</b>	<b>Subsistence farmers (non-participant)</b>
<b>Natural disasters</b>	Loss of labour for landless agricultural labourers. Result is loss of income.	Loss of income from lost crop. The severity of damage varies depending on the crops under cultivation.	Loss of labour and potentially loss of rent which is paid as proportion of harvest.	Major shock to farming that likely leads to lost production and rice deficits.
<b>Rising food prices</b>	Highly exposed to rising food prices because they depend mostly on income generation and purchasing their food.	Though households usually continue to plant subsistence crop, they are more exposed to potential rising food prices.	Though households usually continue to plant subsistence crop, households are more exposed to potential rising food prices.	Vulnerable to rising food prices in times of production deficits requiring food purchase. Most pronounced in rice deficit provinces with poor market access.
<b>Declining access to natural resources</b>	Loss of important supplementary food and income source. Vulnerability depends on market access of other foods.	Loss of important supplementary food and income source. Vulnerability depends on market access of other foods.	Loss of important supplementary food and income source. Vulnerability depends on market access of other foods.	Loss of important supplementary food and income source. Vulnerability depends on market access of other foods.
<b>Market volatility</b>	<b>N/A</b>	Highest market risk because of high ownership in production. Confounding market risk is a poor regulatory environment.	Limited market risk because small ownership in production.	<b>N/A</b>
<b>Fluctuating labour demand</b>	This is the primary risk. It results in a loss of primary income.	<b>N/A</b>	<b>N/A</b>	May matter in availability of labour as coping strategy
<b>Reduced purchasing power</b>	Likely to find themselves with reduced PP and at the lower end of social hierarchies.	Likely to benefit from commercialization, positioned at upper end of social hierarchies.	May benefit from commercialization, depending on the success of their venture and their level of ownership.	Likely to find themselves with reduced PP and at the lower end of social hierarchies.

<sup>113</sup> Phil Simmons, "Overview of Smallholder Contract Farming in Developing Countries," in *ESA Working Paper* (2003).

## 6.2 Coping strategies

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### 6.2.1 Common coping strategies

Regardless of the shock, the most common coping strategies employed are:<sup>114</sup>

- Reduction or change of food consumption
- Borrowing or help from relatives
- Consumption of wild food
- Use of credit to buy food

Households often use a combination of strategies depending on their livelihood orientation and asset wealth. Unskilled labourers usually work for food and migrate; agro-pastoralists sell livestock and petty traders use savings. All groups rely to some extent on gathering wild foods.<sup>115</sup>

Asset wealth also shapes the coping strategy used. Asset poor households tend to employ simultaneous strategies—such reducing food consumption and gathering wild foods. Wealthier households, by contrast, can more easily deal with shocks by selling assets, using their savings, or tapping into remittances from migrated relatives.<sup>116</sup>

### 6.2.2 Impact of agricultural commercialization on coping strategies

#### *Declining managed access to forest resources*

In the commercial transition, there is a worrying decline in managed access to forests. As the CFSVA identified, most rural households rely to some extent on gathering wild foods as a coping strategy. Declining managed access to forest is thus likely to leave some households with a weaker capacity to cope with shocks. This is particularly true for farmers/gatherers.

The importance of this impact cannot be over-emphasized. While households may find greater short-term material gains, the declining managed access to forests could spell disaster for household in times of shock. The asset poor are the worst affected. Depending greatly on natural resources to deal with shocks, the loss of managed forest access leaves many of the asset poor with few alternatives to compensate for losses. Declining food consumption is the most likely substitute. Households may also travel further away to gather wild foods or may migrate altogether.

#### *Increasing wage labour opportunities*

Agricultural commercialization relies in many cases on seasonal labour. The increased labour opportunities provide a new coping strategy for households facing a shock—though its availability is hard to predict in advance. For example, during the 2009 rat

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<sup>114</sup> CFSVA p. 115.

<sup>115</sup> Ibid.

<sup>116</sup> According to the CFSVA, asset wealth can be used as a proxy for coping capacity.

infestation, households who had access to labour through rubber plantations were better off than those households who did not.

This coping strategy is mainly utilized by households who do not already depend on wage labour as a primary livelihood. Since concessions may replace cleared forests, arising labour opportunities can serve as an alternative coping strategy that provide much needed income in times of shock. This is particularly true for households who continue to plant on their own land.<sup>117</sup>

### ***Potential to increase household asset wealth***

Successful commercial production can facilitate an improvement in household asset wealth. The rising income levels that arise from profitable operations allow households to buy physical assets (like cows/buffalos), improve housing infrastructure, and accumulate savings. This improvement is significant since most households in Laos traditionally spend a great deal of their resources on food with little left to build up their asset base.<sup>118</sup> In theory, the resulting increase in asset wealth builds a household's safety net whereby they can more easily deal with shocks by selling assets or using savings.

The availability of coping strategy depends on the profitability of smallholder commercialization and the way households decide to use their earnings. Changes to asset wealth have not been well documented.

## **6.3 Emerging vulnerabilities**

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### **6.3.1 Picture of vulnerability in 2006**

When the CFSVA was conducted in 2006, 84,000 people in Laos were food insecure.<sup>119</sup> The food insecure tended to be asset poor, poorly educated, illiterate and from non-Lao-Tai ethnic groups.<sup>120</sup> They tended to be either unskilled labourers<sup>121</sup> or farmers<sup>122</sup> who seldom hunt or fish.<sup>123</sup> Many of the food insecure are in the uplands who own less than 1

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<sup>117</sup> For households with no land, however, wage labour is not a coping strategy but a primary livelihood.

<sup>118</sup> Households with poor food consumption (who tend to be asset poor) traditionally spend the greater proportion of their resources on food (75%). The result is very little left for other expenditure needs. CFSVA p.71.

<sup>119</sup> As measured by a poor to borderline food consumption score.

<sup>120</sup> Only 7% of Lao-Tai are food insecure. By contrast, 28% of Hmong-Mien, 22% of Sino-Tibetan and 20% of Austro-Asiatic groups are food insecure. Austro-Asiatic groups make up the largest share of the food insecure with 44% of HHs. CFSVA p. 90.

<sup>121</sup> There are both unskilled agricultural and non-agricultural labourers. For agricultural labourers, unskilled labour provides most of their living (average 85%), complemented by some agriculture (8%). For non-agricultural labourers, unskilled non-agricultural labour accounted for 70% of their living. An average of 24% was from production and sale of agricultural crops. For both, on average, 1/4 of food consumed was own produced, about 1/5 was gathered and almost half was purchased.

<sup>122</sup> This group of households reported to rely almost entirely on agriculture for their livelihood (92%) with little livestock. About half of the food they consumed (48%) came from own production, whereas purchasing contributed 38% and gathering 10%.

<sup>123</sup> 72% of the food insecure households do not report any fishing or hunting activities.

hectare of land. The largest proportion of food insecure households were located in Bokeo, Saravane, Xienkhang, and Sekong.

While only 13% of the population was food insecure in 2006, the CFSVA indicated that two thirds were vulnerable to becoming food insecure due to different types of shocks. One quarter were vulnerable to multiple shocks. In the rural areas, 40% of the population was vulnerable to food insecurity because of either loss of access to natural resources, floods, drought, or sudden food price increases.

### **6.3.2 Changing vulnerabilities in the commercial transition**

Vulnerabilities can be both positively and negatively affected in the commercial transition. Below is not an exhaustive list but gives examples of how vulnerability may be affected. The analysis does not take into account the long-term success or failure of the livelihood options.

***It is likely that the new landless and unemployed are food insecure.***

Households who have lost access to their land *without a viable alternative* face losing their primary livelihood and must now resort to coping strategies. This is the case with households who lost land but are ineligible to participate in new labour opportunities because of the age or sex of their primary income earner. Such households likely cope by finding wild foods and may reduce their food consumption patterns.

***It is likely that more people are food insecure as managed access to forests declines.***

Those particularly affected are households with a high dependence on wild foods. As the CFSVA indicated, 25% of households could become food insecure with a loss of managed access to natural resources. Those that have few alternative food sources facing declining managed forest access are now likely to be food insecure.

***It is likely that wage labourers in concessions are vulnerable to food insecurity.***

For households that lost land, the onset of concession farming means an entire livelihood transition to wage labour. The result is dependence on labour opportunities leaving households exposed to fluctuating labour demand and exploitative investors. At the same time, these households are seeing a decline in managed access to forests. Should they lose their labour income, their weaker coping strategies leave them vulnerable to food insecurity as they likely decrease food consumption. In the CFSVA, labourers tend to be among the most food insecure.

Paddy farmers around concessions are also vulnerable to food insecurity. The main change is the content of secondary livelihoods and coping strategies. While they continue to cultivate their paddy land, the declining managed access to forests means that their livelihoods are less diversified leaving them more vulnerable to natural shocks. Coping strategies move away from using communal land to depending on labour opportunities. The degree of their vulnerability depends on the availability of labour as a coping strategy and the availability of other coping options.

***It is likely that the existing landless may find more labour opportunities.***

As concessions increase, agricultural unskilled labourers may profit from increased labour opportunities outside the less intensive traditional cultivation systems. Nevertheless, given declining access to forests, they are still vulnerable to food insecurity should they face a shock to their income.

***It is likely that the asset rich are even less vulnerable to food insecurity.***

Asset wealthy households are already and likely to remain food secure. Successful contract farming can strengthen household food security by increasing assets and strengthening the household safety net. While they are exposed to market risks, they tend to continue to farm subsistence crop which serves as a cushion to potential shocks. Such households are best situated to benefit in the transition to market-oriented agriculture and are usually those engaged in contract farming schemes.

***It is likely that the rural poor are even more vulnerable to food insecurity.***

Poor households engaged in farming or unskilled labourers are likely to be *more* vulnerable to food insecurity because of weakening coping strategies. They do not tend to participate and benefit from contract farming because of the quality, size and location of their land. The loss of managed access to forests associated with agricultural commercialization weakens household coping capacity, leaving them more vulnerable to shocks.

***There is a significant risk of increasing social inequality***

A long-term impact of the commercial transition may be shifting social hierarchies. As relative incomes change, people may discover that previously secure positions in the social hierarchy are under threat. The ‘losing group’ may be forced to sell more labour, possibly on a casual or daily basis, leaving them with different social and economic circumstances. Moreover, poorer groups may previously have benefits from traditional reciprocity arrangements and find themselves disadvantaged as traditional values diminish in importance in the face of the strong cash culture that goes with contracting.<sup>124</sup>

## **7 Conclusion and recommendations**

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This study attempted to shed light on how commercial transitions impact livelihoods and food access in Laos. Using the CFSVA as a baseline and an adapted livelihoods framework, this study identifies what types of changes have occurred, why they have changed, and the resulting implications for household food security. This section will explore the key findings and identify outstanding knowledge gaps.

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<sup>124</sup> Phil Simmons, "Overview of Smallholder Contract Farming in Developing Countries," in *ESA Working Paper* (2003), p.21.

## 7.1 Key findings

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### 7.1.1 Commercial farming is expanding across rural Laos

- Large scale tracts of land used for concessions
- Increasing introduction of cash crops into production systems
- Poor documentation of scope and scale of changes.

### 7.1.2 Land and market access constrain opportunities in the commercial transition

**Quality land access is the critical factor shaping *how* transitions toward agricultural commercialization impacts rural households.**

- Access to quality land is a necessary condition for direct commercial participation.
- Access to quality land is a necessary condition for sufficient subsistence food cultivation.
- The loss of land necessitates an entire livelihood transition. Wage labour is a likely alternative.
- Communal land and forests are important sources of secondary livelihoods and core coping strategies.

**In the commercial transition, land access is largely shaped by policy.**

- Policy significantly impacts household entitlement to land while creating incentives to pursue different cultivation systems.

**In the commercial transition, the maintenance of quality land depends on sustainable cultivation patterns that require adequate technical knowledge and skills.**

- Poor technical knowledge and skills in new production systems often lead to soil degradation and declining yields. In the medium term, the result is the need for other food or income sources.

**Intensified commercial production is effectively limited to those who have the most suitable land. For such households, market access is critical to effectively converting commodities into income.**

- The households most benefiting from agricultural commercialization are those with the good land near main roads with a safety net of household assets. Social networks also help commercial ventures succeed.
- Poor road infrastructure increases transportation problems and costs. Households thus make less from their production. With smaller incomes, households can purchase less food.

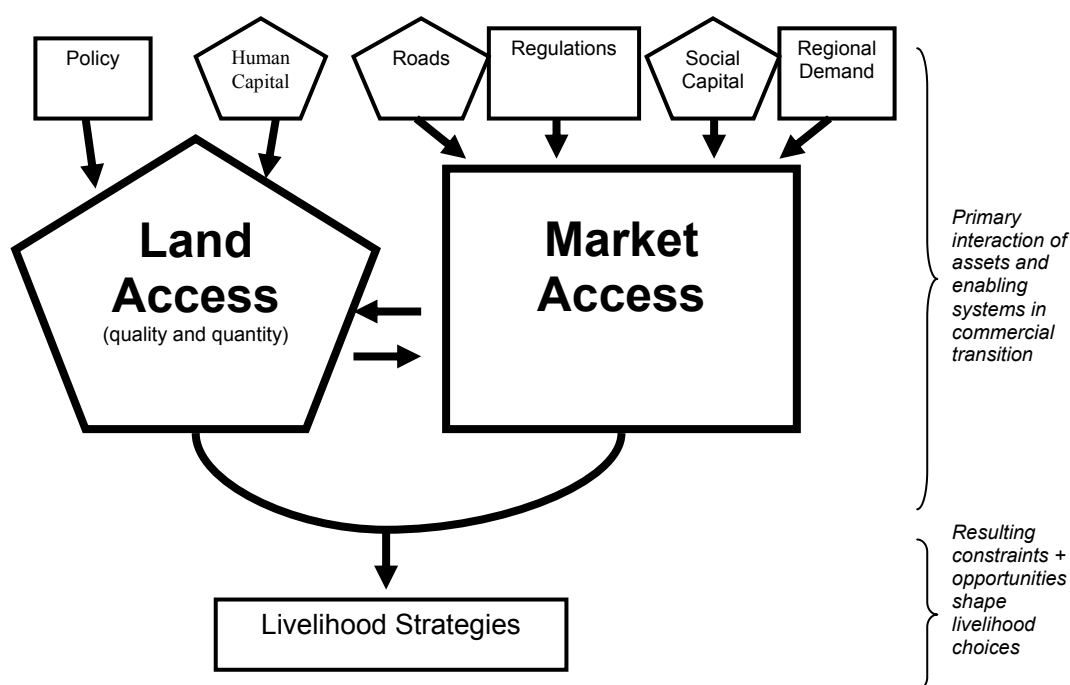


- Sufficient demand and effective regulations minimize risk exposure in commercial production. Social capital may help supplement regulatory gaps.

**Policy is insufficiently sensitive to emerging needs.**

- There is insufficient support for the rural poor. Existing land-use policy has particularly adverse effects on remote upland communities without necessary interventions to address emerging problems.
- Households face more restrictions in their livelihood opportunities and transition options.

**Diagram: Primary channels of effect in livelihood changes**



### 7.1.3 There are varied forms of commercial livelihoods

**Commercial production varies by ownership level.**

- In concessions, households have *no* ownership and participate as wage labourers.
- In contract farming, ownership varies depending on the context. Contract farming is largely limited to the asset rich with good land and sufficient subsistence crop.
- The poor tend to participate in contract farming as wage labourers and continue to plant subsistence crop.

**There are varying production systems cultivating different crops.**

- In the Southern Lowlands, commercialization is largely through industrial plantations and large-scale monocultures. Large plantations of rubber, eucalyptus and other tree crops are rapidly expanding.
- In the Northern Uplands, fixed rotation cropping is emerging as the dominant non-traditional agricultural production system characterized by subsistence production with numerous cash crops increasingly introduced on a small scale. Mono-cropping and large-scale tree plantations are also widely expanding for maize and rubber respectively.

**Scale of the transition varies widely between cases.**

- Some households have completely shifted to commercial farming while others have remained full subsistence farmers. Without better information, it is hard to differentiate between crops, regions, ethnicity, and other sub-groups.

### **7.1.4 There are likely increases in food insecurity and vulnerability**

**It is likely that food insecurity is increasing around concession schemes.**

- There are reports of households ceding their land altogether without viable alternative livelihoods. In these cases, households face a severe livelihood shock and must resort to meager coping strategies.

**It is likely that coping strategies are weakening as managed access to forests declines.**

- Natural resources serve as a critical coping strategy for many rural households. Declining managed forest access thus weakens household coping capacity and leaves them more vulnerable to food insecurity should they face a shock.

**It is likely that vulnerability to food insecurity is increasing where livelihoods become less diversified.**

- Households may have less diversified livelihoods due to loss of managed forest access, dependence on a single crop, and complete transition to wage labour, among others. In so doing, households are more exposed to risk. In instances where households are asset poor without readily available coping strategies, food insecurity is likely.

### **Vulnerability Analysis Framework in commercial transitions**

	<b>Livelihood changes</b>	<b>Changes in food access</b>	<b>Exposure to risk</b>	<b>Changes coping strategies</b>	<b>Emerging Vulnerabilities</b>
Concessions	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• (Quality) land available for food production</li> <li>• Scale/size of concession</li> </ul> <b>Anticipated changes</b> <ul style="list-style-type: none"> <li>• Increased importance/dependence on wage labour</li> </ul>	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• (Quality) land available for food production</li> <li>• Quality of access to market and natural resources/ communal lands for food</li> <li>• Level of dependence on subsistence versus income generation from wages</li> </ul> <b>Anticipated changes</b> <ul style="list-style-type: none"> <li>• Increased importance of markets</li> <li>• Reduced importance of food from own production</li> <li>• Changes in reliance on natural resources</li> <li>•</li> </ul>	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• Scale of transition from previous livelihoods to wage labour dependence</li> </ul> <b>Changing exposure to</b> <ul style="list-style-type: none"> <li>• Income insecurity (labour seasonality or restrictions)</li> <li>• Natural disasters to subsistence production/ plantations</li> <li>• Fluctuations in staple food prices</li> </ul>	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• Availability and access to natural resources/communal land</li> <li>• Availability of wage labour opportunities</li> <li>• Household assets</li> </ul> <b>Changing options</b> <ul style="list-style-type: none"> <li>• Gathering and hunting</li> <li>• Wage labour opportunities</li> <li>• Borrowing</li> </ul>	<b>Determining factors</b> <b>Emerging vulnerabilities</b> An estimation of the food security status and vulnerability to food insecurity. <ul style="list-style-type: none"> <li>• Who is facing the greater shocks? Do they have adequate coping strategies? How many people have lost land?</li> <li>• What is availability of wage labour?</li> <li>• Can HHs access natural forests?</li> </ul>
Contract farming and smallholder investment	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• Availability of quality land</li> <li>• Availability of communal lands</li> <li>• Type of scheme (2+3,4+1...)</li> <li>• Technical knowledge/support<sup>125</sup></li> </ul> <b>Anticipated changes</b> <ul style="list-style-type: none"> <li>• Increased importance of commercial production</li> <li>• Increased importance/dependence on wage labour</li> </ul>	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• Dependence on subsistence versus income generation from commodity production<sup>126</sup></li> <li>• Quality of access to market and natural resources/ communal lands for food</li> </ul> <b>Anticipated changes</b> <ul style="list-style-type: none"> <li>• Increased importance of markets</li> <li>• Reduced importance of food from own production</li> <li>• Changes in reliance on natural resources</li> </ul>	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• The scale of transition from previous livelihoods to commercial production.</li> <li>• The level of smallholder ownership (2+3/1+4/0+5)</li> <li>• Production system</li> </ul> <b>Changing exposure to</b> <ul style="list-style-type: none"> <li>• Market risks: crop demand and price fluctuations</li> <li>• Food prices</li> <li>• Natural disasters to commodities (larger for crops with long waiting periods like rubber)</li> <li>• Environmental risks that are shaped by how sustainable cultivation practices are.</li> </ul>	<b>Determining factors</b> <ul style="list-style-type: none"> <li>• Availability of communal land</li> <li>• Availability of wage labour opportunities</li> <li>• Household assets</li> </ul> <b>Changing options</b> <ul style="list-style-type: none"> <li>• Gathering and hunting</li> <li>• Wage labour opportunities</li> <li>• Borrowing</li> </ul>	<b>Determining factors</b> <b>Emerging vulnerabilities</b> An estimation of the food security status and vulnerability to food insecurity. <ul style="list-style-type: none"> <li>• Who is facing the greater shocks? Do they have adequate coping strategies</li> <li>• How diversified are household livelihood strategies?</li> <li>• What is the level of market access?</li> <li>• Can households still access natural forests?</li> </ul>

<sup>125</sup> How well can households meet technical requirements needed to sustainably cultivate new commercial crops?

<sup>126</sup> This may change over the years as commodities occupy greater portions of land as they mature (e.g. rubber)

## 7.2 Further research needed

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### 7.2.1 There are significant outstanding gaps

**There is no sense of the magnitude and geographical scale of agricultural commercialization in the Lao PDR.** The diversity of varied changes is poorly documented, particularly in the South. It is consequently difficult to target needy populations and respond proactively.

**There is a poor understanding of the scope of livelihood changes and the diversity of impacts on food security.** More primary data is needed to confirm the findings of this study and identify missing factors not addressed. At present, the food insecure in the commercial transition cannot be confidently identified and quantified.

**Comprehensive research is needed.** Without a clear sense of how livelihoods are changing, policy cannot be better adapted to minimize negative impact and emphasize positive changes. Future research should aim to refine conclusions of this study through comprehensive primary data collection. Data collection needs to be structured by a common framework of analysis.

### 7.2.2 Objectives for future research

*The prime objective of future research should be to answer the following questions:*

1. **What is the extent and scale of agricultural commercialization in Laos?**
  - Where is commercial farming occurring?
  - Which production systems cultivating what crops are being used? Where?
  - What investment schemes are spreading?
2. **Who is vulnerable to food insecurity and malnutrition in the commercial transition?**
  - Where do they live?
  - How many are they?
  - How severely are they affected?
3. **Why are they food insecure?**
  - How have livelihoods changed in the commercial transition?
  - What are the key determinants of food insecurity in the transition?
4. **What are the recommended interventions and hunger solutions?**
  - In areas where there are food insecurities, what types of interventions are required?

### 7.2.3 Suggestions for future research

**Mapping:** To determine the nature of the changes, accurate and regularly updated mapping is needed identifying where concession and contract farming are happening.

**Comprehensive Fieldwork:** In-depth qualitative case studies are needed shaped by a common analytical framework. It should assess how household food security has actually been affected in reality. Possible baseline could be the CFSVA, Lao Expenditure and Consumption Survey (LECS III and IV); MICS 2006, Population Census 2005, any recent surveys and case studies by development partners on agricultural commercialization and food security issues. It may be helpful to disaggregate groups by livelihood groups, agro-ecological zones, ethnic groups, crops, and investment schemes.

**Livelihood Analysis:** A livelihood analysis will help build understanding of ‘*which type of households are food insecure*’ and ‘*why they are food insecure*’. A livelihood analysis should identify the context of livelihood changes and measure outcomes of changing livelihoods.

**Vulnerability analysis:** A vulnerability analysis will help estimate ‘*who is vulnerable to food insecurity*’ and provide guidance in targeting needy population. A vulnerability analysis should estimate risk exposure, identify available coping strategies and estimate emerging vulnerabilities.

## 7.3 Preliminary recommendations for WFP

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**Conduct Comprehensive study.** Focus on the livelihoods and vulnerability analysis with an emphasis on case studies spanning agro-ecological zones and livelihood profiles as established in the CFSVA.

**Support improvements in human capital.** WFP should consider developing FFW and FFT operations that support human capital improvement through adequate technical training that is sensitive to the challenges of incorporating new systems into indigenous knowledge systems.

**Develop rural infrastructure.** WFP should continue developing rural infrastructure (particularly small-scale, community based rural infrastructure) to support better market access through FFW.

**Consider support for new food insecure households with FFR.** Relief programming may want to find households adversely affected by concession farming and provide support if possible. Certain contract farming may be attractive FFW schemes if they fulfill the right conditions.

**Advocate for better support of the rural poor in the commercial transition.** WFP should encourage the government to adjust its land-use policies in remote upland areas to allow for a smoother transition. Particularly important is good access to quality land and natural resources.

# ANNEX A: Important supplementary information

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## *Food availability in the commercial transition*

Food availability provides the context of livelihood changes constraining what food households can access.

There are several ways in which shifting from subsistence agriculture towards commercial farming might impact food availability at national or even regional (sub regional) levels:

### **1. Reducing the amount of food produced at national or regional level**

The national net production of rice is considered to be enough to meet per capita consumption requirements, however inequalities exist between provinces.<sup>127</sup> As farmers increasingly introduce cash crops and/or perennial trees into their production systems, it is likely that rice production levels correspondingly fall. How much this affects the overall availability of rice (even locally) is difficult to estimate and needs to be assessed.

Food availability is unlikely to be significantly affected in the short-term since upland food production is mainly produced for subsistence (HH own consumption) and it represents only a small proportion of aggregate local production.

### **2. Reducing the existing stocks of food (natural resources)**

The availability of wild food sources is also affected by the transition toward increasing agricultural commercialization by encroaching on common lands and forests. This reduces the availability of NTFPs for affected households and limits the availability of a critical food source. This is a worrying development given the importance of wild food (and animals) as a critical source of nutrients and calories.

### **3. Changing the capacity of the market to bring supplies in from elsewhere**

A main risk is that falling rice production and corresponding increased rice demand will not be accompanied by adequate increases in rice supply imported from other areas. While there is an existing infrastructure of rice distribution across Laos, this infrastructure may not adequately adapt or may miss some areas in transition.

Research is needed to look at the above questions in detail, examining the market channels, composition of trade, and how the market is responding to changing demand as agricultural commercialization intensifies.

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<sup>127</sup> The Northern provinces, in particular, experience annual rice deficits in their largely subsistence production.

## ***Food utilization in the commercial transition***

Food utilization is an outcome of changing livelihoods and food access. It is thus a useful measure of the impact of agricultural commercialization on food security. In the commercial transition, it is likely that:

### **1. The content of household diets is changing**

*From own-produced to purchased food.* The content of household diets may change as households transition toward income-based livelihoods and become more connected to the market. This may result in a greater diversity of food in the household diet (depending on availability), but may also increase intake of unhealthy processed foods.

*Declining access to wild foods.* Households consume less wild foods as access to forests and common land declines. For many rural households, wild foods are an important source of fat and protein. The result is that households may have less nutritious diets if they cannot afford to purchase sufficient alternatives.

*Food insecurity necessitates declining food consumption.* For households that become food insecure in the commercial transition, there is a likely decline in the amount of food consumed. This will lead to increased malnutrition.

### **2. Changes to intra-household food security**

*Migration of some household members.* For households depending on wage labour, fluctuating labour demand may necessitate migration of some household members to find work. This will lead to new distributions of household labour with potential implications on individual health and nutrition.

*Household changes impact individual household members differently.* With different divisions of labour within the households, the commercial transition will impact women, children, men, and the elderly differently depending on their respective roles and capabilities.

## ***Ethnicity in the commercial transition***

Ethnicity plays a very important role in Laos given the diversity of different ethnic groups and their unique cultures and traditions. There is much variation in the livelihoods of ethnic groups. For example, few Lao-Tai and Austro-Asiatic households are involved in non-glutinous rice production, in contrast to high dependence by Sino-Tibetan groups and Hmong-Mien. In fact, Laos is one of the world's most ethnically diverse countries with 49 recognized different ethnic groups, many of whom practice distinct livelihoods with distinct food security structure.

As the CFSVA identified, minority ethnic groups (non Lao-tai) tend to be at higher risk to food insecurity and have less assets. Understanding both the existing vulnerabilities of different ethnic groups and the unique circumstances shaping household livelihood strategies, knowledge systems, and asset wealth, will be important to understanding how commercialization is impacting communities differently.

## ANNEX B: Helpful guidelines and analytical tools

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### ***Conditions for smooth transitions to commercial farming***<sup>128</sup>

#### Cash crop proposed must be more productive than shifting cultivation.

This means that the cash crop must bring more per workday income than the current family income after factoring labour size, technical capability, land quality and quantity, and the proximity to a sealed road.

#### Cash crop proposed must offer more security than shifting cultivation

Farmers cannot be expected to drop the staple crop (rice) for risky crop proposals whose results are not constant. Risks to be minimized include: market volatility (price variations, demand variations) and natural risks (climate, soil, pests, and disease).

#### Staple foods must be accessible

This is particularly important for longer harvests. In order to ensure household food security, there must be an alternative source of income or food during the waiting periods. The solution may lie in the village if the production level is different from one class of farmers to another. If local supply cannot cover the demand for staple food, it must be purchased with new cash income and imported into the village, barring any infrastructural constraints.

#### Cash crop proposed must be easily transportable

Cash crops must be sturdy and non-perishable in order to withstand transportation conditions. This is especially true for more remote regions where high value niche products are arguably the best crop choice.

#### Mutual trust is necessary between villagers and investors

Without mutual trust and in the absence of an effective legal system, it is likely that the contract will be broken resulting in problematic scenarios for both the villagers and investors.

If one condition is not met, the failure of the cash crop is predictable. Cash crops are not a “one size fits all” solution to shifting from slash and burn agriculture. Investments are necessary to ensure that transitioning villages have access to markets and that a secure low cost staple food is available.

#### Coping strategies must be available

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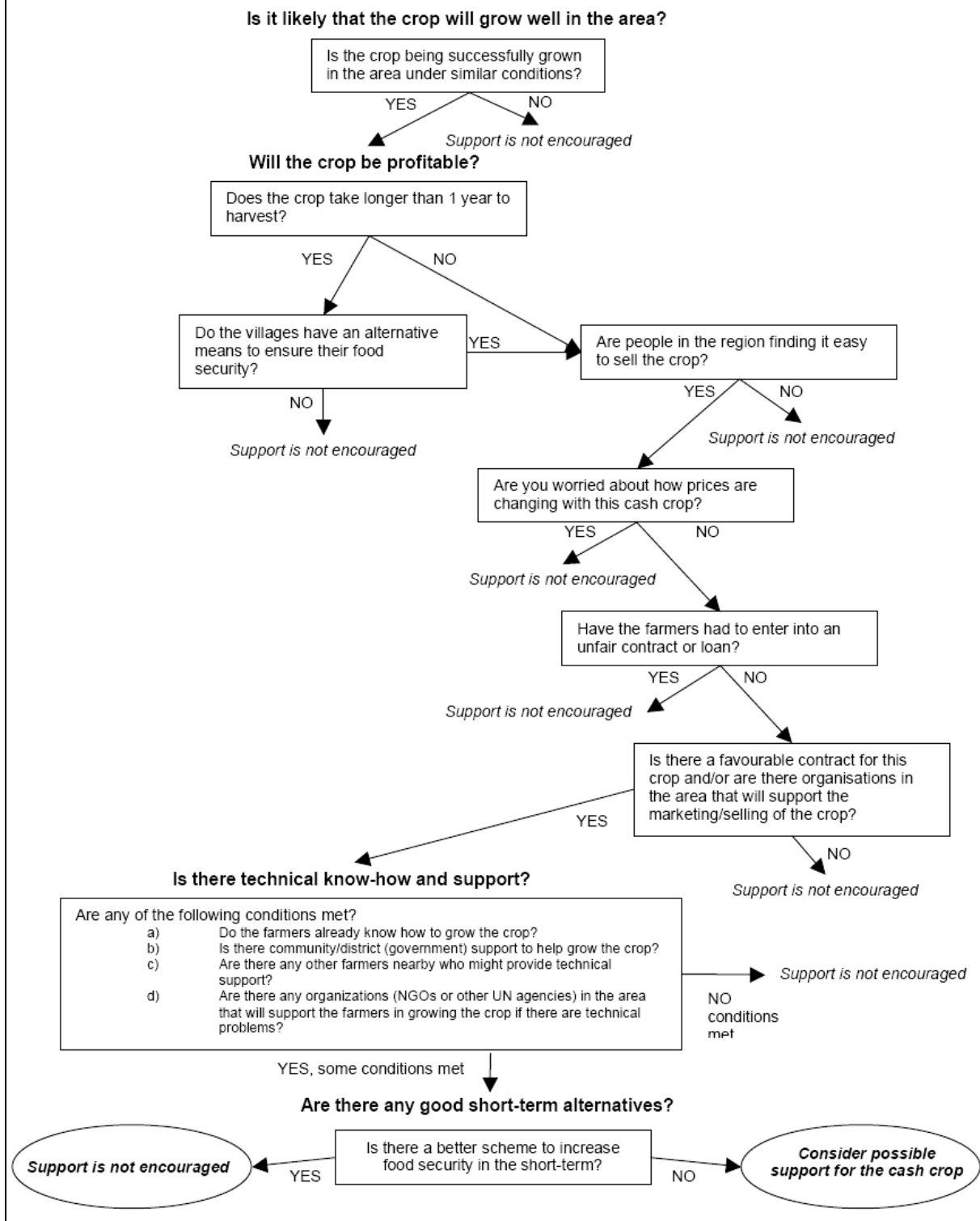
<sup>128</sup> A synthesis of findings from Olivier Ducourtieux, Phoui Visonnavong, and Julien Rossard, "Introducing Cash Crops in Shifting Cultivation Regions - the Experience with Caradmom in Laos," *Agroforestry Systems* 66 (2006)., Shi, "Rubber Boom in Luang Namtha: A Transnational Perspective." and Fullbrook, "Contract Farming in Lao Pdr: Cases and Questions."



While households transition, they must have continued access to resilient coping strategies for dealing with potential shocks.

### **Decision-making tool for WFP Food for Work schemes**

## Should WFP support cash crops/commercial trees in FFW schemes?



## Annex C: Supplementary provincial data

**Table: Provincial commercial farming trends in Northern Laos**

Province	Key trends
<b>Bokeo</b>	<p><u>Maize boom</u></p> <ul style="list-style-type: none"> <li>In 2007, 13,000 ha of maize cultivated (compared to 6,400 ha in 2005) with production concentrated in three districts (Ton Pheung, Huay Xay, Pha Oudom)</li> <li>Improvements and expansion of irrigation infrastructure, albeit small in scale, have further helped to improve the environment for farmers to diversify production into non-rice crops, particularly maize but also soybeans and groundnuts.</li> </ul> <p><u>Thai demand fuelling cash crops</u></p> <ul style="list-style-type: none"> <li>Recent road construction (Route No. 3) has improved transportation links to Thailand and China facilitating trade and investment.</li> <li>Increased Thai demand emerged as dominant driver in promoting commercialized agriculture, and is primary driver of expanded maize production</li> <li>Thai companies and Lao traders purchasing maize directly from farmers, and the market has been able to absorb the expanded production without any marketing problems.</li> <li>Thai agri-business enterprises investing directly through various contract farming schemes.</li> </ul> <p><u>Limited rubber production</u></p> <ul style="list-style-type: none"> <li>Rubber production limited bc of smaller Thai demand. While 15,000 ha of rubber targeted, only 700 ha planted to date.</li> <li>No concessions for rubber plantation development granted, though some individual farmers have begun to plant rubber.</li> </ul>
<b>Luang Namtha</b>	<p><u>Chinese market is a key development priority</u></p> <ul style="list-style-type: none"> <li>Agricultural development shaped primarily by the proximity to southern China. The northern border districts (Namtha and Muang Sing) are most developed areas. There is good transportation and communication infrastructure accessing Chinese markets, as well as penetration of Chinese entrepreneurs into the province.</li> <li>Production of commercial crops for supplying Chinese cross-border markets central provincial development priority.</li> <li>This is in contrast to other provinces that focus on improving food security, improving rice production, and promoting land allocation and forest protection as priorities in line with national policy goals and targets.</li> </ul> <p><u>Investment schemes</u></p> <ul style="list-style-type: none"> <li>In mid-2007, 14 enterprises registered with Provincial DOPI to carry out contract farming.</li> <li>Enterprises Chinese or Lao-Chinese joint ventures.</li> <li>2 land concessions granted totaling approx. 1,600 ha, of which 1,200 if for Citronella grass and 414 is for rubber.</li> </ul> <p><u>Rubber boom</u></p> <ul style="list-style-type: none"> <li>Focus on Chinese demand has led LNT to become center of rubber production. As of mid-2007, approx. 18,800 ha of rubber planted, of which about 6,600 ha established in 2007 alone.</li> <li>Provincial administration collects annual tax of 3-6 Chinese Yuan/rubber tree and</li> </ul>

	<p>requires investors to construct roads to those areas where concessions are being granted or where the firms intend to invest.</p> <ul style="list-style-type: none"> <li>Provincial authorities also actively promoting production of maize, tobacco, peanuts, sugar cane, cassava, Jatropha, organic vegetables, and livestock.</li> </ul> <p><u>Cassava/Sugarcane</u></p> <ul style="list-style-type: none"> <li>Traders from China are promoting cassava production. A Chinese-Lao joint venture is establishing a plantation of 1,000 ha with a target of producing 22,000 tons of cassava (to yield 9,000 tons of chips for export to China).</li> <li>The LT plan is to cultivate 6,000 ha of cassava in the province, with an outreach contract farming program to smallholder farmers</li> <li>There has also been an expansion of sugar cane being sold to processors in northern Thailand and China and to Vietnamese traders.</li> </ul> <p><u>Neglected districts</u></p> <ul style="list-style-type: none"> <li>Viengphoukha, Nalae, Long, and Xiengkok have been detached from market dynamics and remain poor. LNT pursues active strategy to connect these districts to vibrant northern border districts</li> <li>Completion of Route 3 will link Viengphoukha more closely to provincial town and likely foster trade with China and Thailand.</li> </ul>
<b>Oudomxay</b>	<ul style="list-style-type: none"> <li>ODX is emerging agriculture trade hub in the Northern Uplands, similar to Luang Namtha. Located close to China at junction of routes 1, 2, and 4.</li> </ul> <p><u>Crops produced</u></p> <ul style="list-style-type: none"> <li>Principal crops include maize, rubber and cassava</li> <li>In 2007, 21,000 ha of <u>maize</u> planted. Province has target of 30,000 ha of <u>rubber</u>, of which 2,000 planted in 2007 and 6,000 planted before. In 2007, ODX exported 100,000t of <u>cassava</u> to China, 30,000t to Thailand, and 20,000t to Vietnam.</li> <li>Local demand for soybeans, maize, cassava, and other crops is expected to develop in response to recent Thai investments in a livestock feed mill at Tha Ngon district.</li> <li>The principal crop producing areas are in Beng, Houn, and Pak Beng Districts, located along recently upgraded (2004) Route 2W. Here, agricultural produce is transported to China by truck. Access to Thailand is by boat. Market pull expected to increase with further infrastructure improvements.</li> </ul> <p><u>Investments</u></p> <ul style="list-style-type: none"> <li>27 Chinese, Thai, and other foreign investment companies are known to operate in ODX under concession and contract farming arrangements.</li> <li>19 are Lao/Chinese/Lao-Chinese firms.</li> <li>Remaining 8 operate contract farming or buyer programs for commercialized crops, including soybeans, mushrooms, cardamom, tea, maize, cassava, castor beans, orchids, and Eucalyptus trees. Some firms promoting domesticated NTFP production while others just purchase NTFPs.</li> </ul>
<b>Phongsaly</b>	<ul style="list-style-type: none"> <li>One of poorest provinces populated almost entirely by ethnic minority groups and remains one of the poorest provinces in the Northern Uplands.</li> </ul> <p><u>Stabilization of Shifting Cultivation policy</u></p> <ul style="list-style-type: none"> <li>Government priority aimed at replacing swidden farming, reducing area from est. 26,000ha to 7,700 ha in 2007. Provincial authorities acknowledge that it will not be possible to halt all shifting cultivation by 2010.</li> <li>Stabilization of Shifting Cultivation Policy has reportedly led to out-migration of upland communities to other locations where policy enforcement less rigid (1000-</li> </ul>

	<p>1200 people annually)</p> <p><u>Cash Crop promotion</u></p> <ul style="list-style-type: none"> <li>• Government promoting cash crops, particularly rubber.</li> <li>• 8,000 ha of rubber plantations established. Several village clusters designated to exclusively produce rubber</li> <li>• Important emerging cash crops include maize (4,300 ha harvested in 2006), sesame, pigeon peas, watermelon, fruits and vegetables and tea (880 ha), and domesticated NTFPs (galangal and cardamom).</li> </ul> <p><u>Infrastructure</u></p> <ul style="list-style-type: none"> <li>• Road and transport infrastructure remain poor. Few roads are paved, and those not paved are impassable during the wet season.</li> <li>• As a result, market pull factors not strong. Strongest in northern areas, though less than other provinces. In southern PSY, market forces from Vietnam more prominent.</li> </ul> <p><u>Concessions</u></p> <ul style="list-style-type: none"> <li>• 3 land concessions granted to firms seeking to invest in rubber plantations, ranging from 2,000 to 14,000 ha (although plantations have only been partially established).</li> <li>• Concessionaires required to assist province in expansion of paddy areas and finance irrigation systems.</li> </ul>
<b>Xayabury</b>	<p><u>Thai demand and Maize/Cotton production</u></p> <ul style="list-style-type: none"> <li>• Thai market dominant pull factor in agricultural commercialization</li> <li>• Southern districts are center of cotton production for Thai market – though insect infestation, requiring the need for costly insecticides, and declining demand from Thailand have resulted in a shift away from cotton to maize in recent years.</li> <li>• XBY has become one of the largest maize producing provinces with 147,000t harvested in 2007 (compared to 5,600 t in 1995).</li> <li>• Maize is supplied nearly exclusively to markets in Thailand</li> <li>• Provincial targets for rubber are in the range of 50,000 ha by 2010, of which less than 100 ha had been planted as of late 2006.</li> <li>• 2 concessions have been granted</li> </ul> <p><u>Northern Districts and FS</u></p> <ul style="list-style-type: none"> <li>• For northern districts, which are poorly connected to Thai markets, ensuring food (rice) security remains a priority in combination with the promotion of livestock raising.</li> <li>• Upland agricultural development is constrained by isolated from other areas and low production of food and agricultural products.</li> </ul>
<b>Luang Prabang</b>	<ul style="list-style-type: none"> <li>• Increased tourism has led to creation of market for quality food and agricultural products. This has led to farmers expanding fruit and vegetable hardens and processing of traditional foods for Western and Asian tourists.</li> <li>• In attempt to increase forest cover, province promoting tree crops.</li> <li>• 2 concessions for rubber granted totaling 25,000 ha, of which 4,000 ha already established. 22,600 ha teak planted. Provincial target for rubber set at 30,000 ha. In addition to upland rice, other important cash crops include maize, sweet potato, soybean, groundnut, and domesticated NTFPs.</li> <li>• LPB and Huapan are main production centre for soybean. Total cultivation area has more than doubled from 3,700 ha to 8,100 ha. Soybeans produced for markets in China, Thailand and Vietnam.</li> </ul>

<b>Xieng Khouang</b>	<ul style="list-style-type: none"> <li>• Paddy production prevails with 20,000 ha</li> <li>• Maize production expanding rapidly since 2005</li> <li>• Maize dominating landscape along major highways and extending to upland areas.</li> <li>• In 2006, estimated 9,000 ha maize harvested, which increased to 11,000 ha in 2007.</li> <li>• Vientiane and LPB main destinations for maize and livestock</li> <li>• Vietnamese traders active throughout maize growing areas, providing seed on credit to farmers and returning at harvest time to purchase the maize on the basis of informal contracts.</li> <li>• Livestock trading exists, dominated by Hmong ethnic group.</li> </ul>
<b>Houa Phan</b>	<p><u>Cash Crop Production</u></p> <ul style="list-style-type: none"> <li>• Almost entirely dependent on Vietnamese market</li> <li>• Farmers responding to Vietnamese demand by growing maize, soybeans, sesame, pumpkin, mungbean, tea, NTFPs, and livestock</li> <li>• Also producing cotton in response to local textile demand</li> <li>• Maize production increased moderately from 3000 to 4000 ha (1995-2005)</li> <li>• Soybean cultivation increasing in response to stronger demand pull from Vietnam (increasing by approx 685 ha)</li> </ul> <p><u>Contract Farming</u></p> <ul style="list-style-type: none"> <li>• Several contract farming arrangements taking place between Lao producers and Vietnamese traders operating in Houa Phan that is actively managed by government</li> <li>• Contract system includes measures for enforcement of contract obligations if producers and/or buyers do not meet contract requirements that can lead to fines.</li> </ul>
<b>Vientiane</b>	<ul style="list-style-type: none"> <li>• Good communication and transportation infrastructure. Large urban market of capital provides marketing opportunities for wide variety of food and agricultural products.</li> <li>• Agricultural crops being produced include vegetables, mungbean, peanuts, and maize.</li> <li>• Trend is for the area cultivated in upland rice, sugar cane, and tobacco to decrease, while vegetables and maize are increasing (some 17,500 t of maize produced on 4,110 ha in 2005)</li> <li>• It is expected that maize production will continue to expanding response to pull from Thai market and re-opening of livestock feed factory.</li> <li>• Soybean production (only 380 ha in 2005) expected to increase.</li> </ul>

*Summary of findings from World Bank (2008) report, p. 31-40*

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11. Michael Victor, NAFRI
12. Adam Folkard, Consultant
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