Inter-Agency Working Group

LAO PEOPLE'S DEMOCRATIC REPUBLIC

SECTOR-SPECIFIC INVESTMENT STRATEGY AND ACTION PLAN

G20 Indicators for Measuring and Maximizing Economic Value Added and Job Creation from Private Investment in Specific Value Chains

Pilot Study Results

Advanced unedited draft subject to review by national stakeholder meeting

UNCTAD

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This Report forms part of the work undertaken by the Inter-Agency Working Group for the Private Investment and Job Creation Pillar of the G20 Multi-Year Action Plan on Development

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I. INTRODUCTION

This report is part of a series of six country pilot studies, carried out by UNCTAD in collaboration with other agencies of the inter-agency working group (IAWG), as phase two of the programme of work on "Indicators for measuring and maximizing economic value added and job creation from private investment in specific value chains."[1]

The objectives of this report are:

1. To help refine the indicator methodology developed by the IAWG for the G20, and to provide guidance for the use of development impact indicators in the formulation of policy recommendations in the area of investment.
2. To provide advice to policymakers in the Lao People's Democratic Republic (Lao PDR) on attracting and benefiting from private investment in specific economic sectors. This advice, in the form of recommendations arising from the analysis below, should be considered in the context of the wider strategic development and investment policy framework for the country.[2]

This report focuses on the coffee value chain within the context of the wider agriculture and agribusiness sector.[3] The coffee industry is one of the leading cash crop commodities within the Lao PDR's agribusiness sector, where an established value chain can be discerned and evaluated, and where private investment, including FDI, has been apparent. This broad sector remains a crucial component of the overall Lao economy, it is relatively well organized and a good model for the development of other key agricultural sectors in the country. However, given the dynamics of the global coffee industry, the Laotian coffee sector would require increased private investment and business activity in order to tap its full potential.

The focus of this report and the indicator approach adopted should help:

1. Confirm, nuance or alter current thinking of policy-makers on investment priorities pertaining to investment in general, and the agribusiness sector in particular, including coffee;
2. Identify value chain gaps and opportunities for investment promotion in agribusiness, and coffee in particular;
3. Identify prerequisites or challenges for the targeted attraction of such investment.

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[1] Action item 2 of the Private Investment and Job Creation Pillar of the G20 Multi-Year Action Plan for Development, as agreed at the G20 Seoul Summit in November 2010. This report is to be considered an integral part of the Pillar's work. For further background and explanation of the applied methodology, see the interim report to the G20 Development Working Group (presented for the November 2011 G20 Cannes Summit): "Indicators for measuring and maximizing economic value added and job creation arising from private sector investment in value chains".

[2] The country pilot projects have been designed as an integral part of "Investment Policy Reviews" (IPRs), as carried out by UNCTAD and other agencies of the IAWG (notably the OECD). UNCTAD's IPRs provide an independent and objective evaluation of the policy, regulatory and institutional environment for FDI, and propose customized recommendations to Governments to attract and maximize the benefits from increased flows of investment.

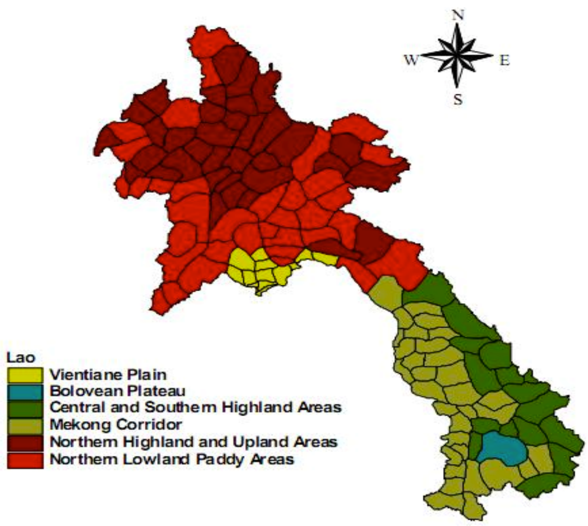
[3] The pre-selection of sectors is necessary to narrow the scope of the pilot studies, even though the ultimate aim of the development-impact indicators framework is also to help policy-makers identify the most promising economic sectors for the attraction of investment. Integrating the indicator approach in the IPR process also implies that policymakers will indicate sector preferences and priorities.

This report is the result of research carried out by UNCTAD, including cooperative effort with Lao PDR agencies, from late 2012 to March 2013. Data were collected from a spectrum of domestic and international sources. Desk research focused on complementing the data and information collected with international comparators in order to establish a reference framework. Data were also collected from local statistical sources with valuable contributions from Lao Statistical Bureau, the FAO Representative in Lao PDR, and the National Agriculture and Forestry Research Institute (NAFRI) (annex I includes a list of people and organisations contacted in Lao PDR).

Lao PDR is a landlocked lower-middle income country in East Asia, situated between China, Vietnam, Cambodia, Thailand and Myanmar. With an estimated GDP of US$8.3 billion and income per capita of US$1,320, it is among the smallest but fastest growing countries in ASEAN. The country has been experiencing an annual growth rate of around 7.5-8 per cent, which is slightly higher than the regional average[4] of around 7 per cent. In addition to some agricultural sectors, the growth in the economy has been largely driven by resource-based activities, notably hydropower electricity (exported primarily to Thailand) and mining (gold and copper), which together account for more than half of the country's GDP (IMF, 2012).

Being the most rural country in Southeast Asia, with over three quarters of the total population currently living in rural areas, the agriculture sector plays an important role in Lao's economy. While only 5-8 per cent of the country's surface is suitable for cultivation (Aquastat, FAO) due to its mountainous terrain and the continued presence of unexploded ordnance (UXOs), the geographic location permits for a range of different micro-climates and ecological zones (figure 1), from the rugged highlands to the north, dominated by swidden cultivation and forest-related activity, to the gentle lowland floodplains in the southern 'panhandle', where paddy harvests tend to dominate the landscape. In the Bolovens plateau there is also coffee and horticulture farming.

Figure 1: Main agricultural and ecological zones, Lao PDR

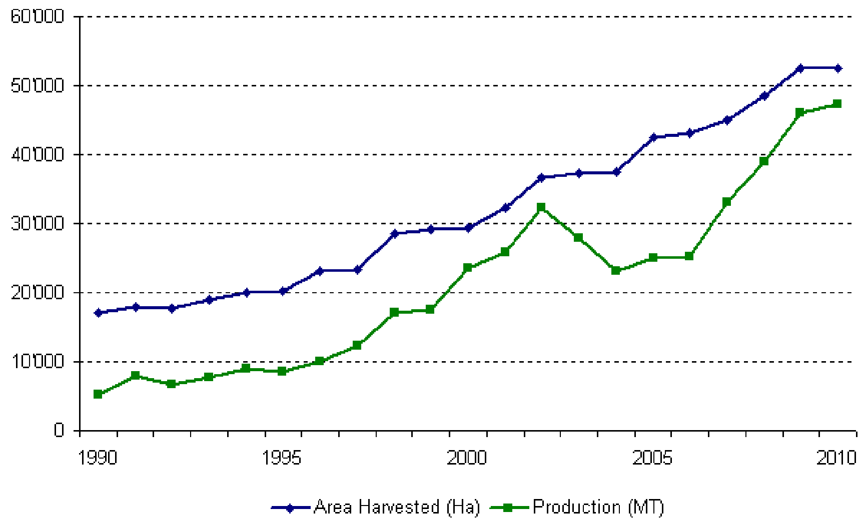


Source: World Bank (2006)

[4] Regional average includes Thailand, Cambodia, Viet Nam, Bangladesh and Malaysia

The main crops cultivated in Lao PDR are rice, vegetables, maize, coffee, tea, fruit, spices, sugar cane and cotton (FAO, 2011). Rice is the dominant crop, occupying 60 per cent (872,900 ha) of the total cultivated area and accounting for 90 per cent of the agricultural output. Grown by about 95 per cent of the farms, it is mainly destined for household use. A much smaller area (52,600 ha in 2010) is dedicated to growing coffee, which is the largest export commodity. Although coffee cultivation has burgeoned from production of just over 5,200 MT in 1990 to 47,200 MT in 2010 (figure 2), Lao remains a small producer as it accounts for less than 1 per cent of total global coffee volumes (Toro, 2012).

Figure 2: Coffee production in Lao PDR, 1990-2010
Area harvested, green coffee production

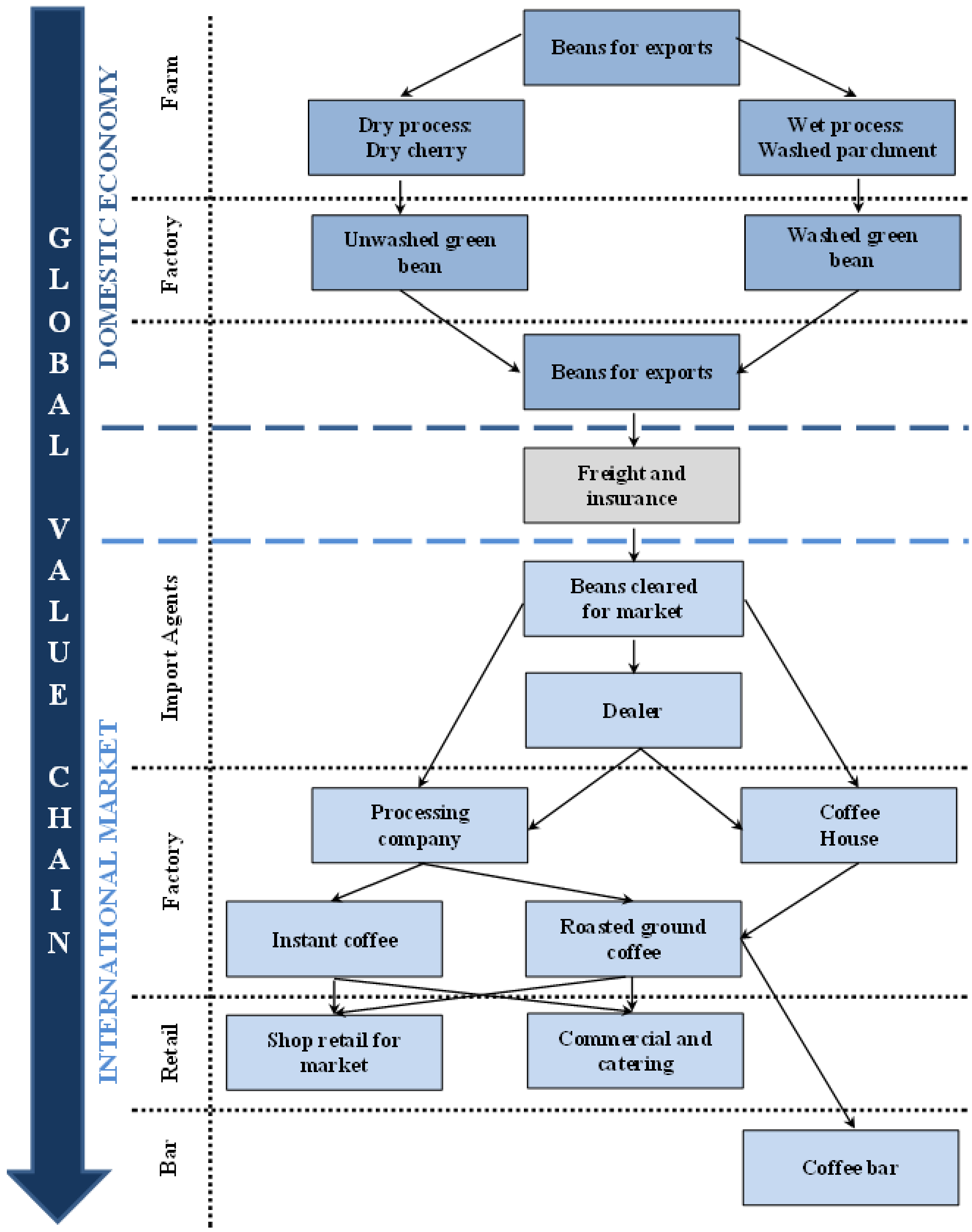


Source: UNCTAD based on data from FAOStat

Similar to neighbouring Viet Nam, much of the coffee produced in the Lao PDR comes from smallholder farmers, typically on no more than three hectares of land. They sell their coffee to local collectors, for cash, and the beans are then on-sold to wholesalers and exporters for washing, drying, roasting and milling; this corresponds to the domestic part of the coffee global value chain (GVC) outlined in diagram 1. At present, there are few foreign companies active in the coffee sector in Lao PDR, which means that interaction with the international part of the coffee global value chain (diagram 1) is largely on the basis of arms-length trade. In consequence, the prices attained for coffee beans exported are essentially determined by global prices, which can be extremely volatile from one season to the next, and even within a single season. From a sustainable development perspective, in coffee, as well as other export crops/products, Lao PDR has to establish a strategy to produce higher variety and quality crops and to further integrate into the GVC.

The agriculture sector plays a key role in the national economic growth and poverty reduction process. As recognized in the Strategy for Agricultural Development 2011 to 2020, improving the commercialization level of the agriculture production and increasing private investment is however necessary to benefit from the full capacity of the sector. That is particularly true in the case of the coffee sector, where the government of Laos seeks to further develop the industry by encouraging the production of Arabica with the goal of obtaining a balance of 50 per cent Arabica and 50 per cent Robusta. Having this objective in mind, this report aims to use the indicators approach in order to estimate the potential impact the sector could have in the economy and to establish a relevant and viable strategy to enhance the creation of economic value added in this value chain, retain a greater share within the country and ensure that it is better focussed on development objectives and individuals and groups in greatest need.

Diagram 1. The Global Value Chain in Coffee



Source: UNCTAD; based on Fitter, R. and Kaplinsky, R. 2001

The structure of the remainder of this report is as follows:

- Section II provides a brief overview of the current profile of investments in Lao PDR, including the agricultural sector and coffee.
- Section III looks at the current impact of investments in the target sector and offers an estimation of the potential effects further private investment would have in the sector and in the overall economy, through the lens of the indicator framework.
- Section IV 'drills down' on the key findings, using the indicator approach, within the agricultural sector value chain, with a particular emphasis on coffee.
- Section V draws final conclusions and formulates policy advice, in the form of key elements of an action plan to attract and negotiate high value-adding investment.

II. INVESTMENT PROFILE

Starting with the adoption of the New Economic Mechanism in 1986, the Laos government has undertaken several economic and policy reforms resulting in increased private participation in the economy. Under the recently adopted Enterprise Law and Investment Promotion Law few restrictions on investment apply (see annex II for an overview of the current foreign investment policy regime and incentives) and the business environment has experienced a considerable improvement (World Bank, 2012).

In 2011, private investment counted for almost 90 per cent of total investment (IMF 2012). The contribution of FDI to the Lao economy is increasingly important and it is expected to expand further owing to deepening economic integration in regional value chains in ASEAN, as well as the country's recent accession to the WTO.[5] Major on-going improvements in domestic transport infrastructure and electricity lines, as well as large-scale regional infrastructural development, will help the country exploit its locational advantage as a centre of the Greater Mekong Subregion (GMS).

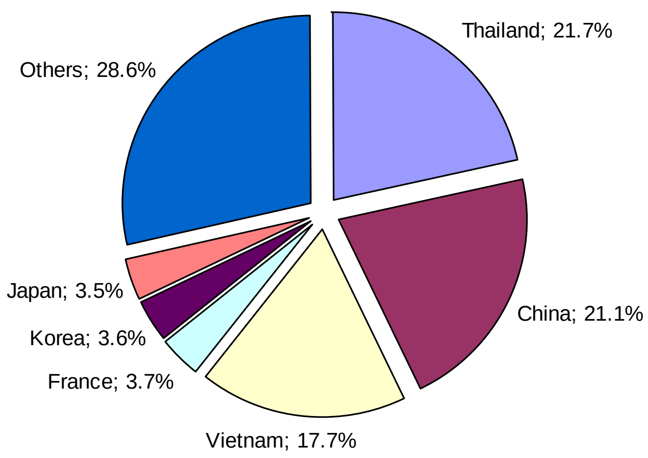
Given Lao PDR's position in ASEAN and Indochina, neighbouring countries are among the largest source of foreign investment. FDI from China, Thailand and Viet Nam together accounts for more than half of total approved FDI in the country between 2000 and 2009 (figure 3). Companies from China, France, Japan, Malaysia, South Korea and the United States all announced plans to establish production bases in Laos in 2012 (EIU 2012). Annex III provides a full list of greenfield investments in Lao PDR since 2003, by source of investment, parent company and industry, as well as proposed investment (for a total of US$ 8196.69 million) and jobs created (total of 21,881 over the whole period).[6] Investment in Lao PDR continues to increase. In 2011, Lao PDR attracted US$450 million of FDI flows, more than doubling the average US$180 million inflows recorded in the 2005- 2007 pre-crisis period.

[5] Laos PDR has officially joined the World Trade Organisation (WTO) on the 2 February 2013. Its membership of ASEAN will be effective in 2015, but many reforms to comply with ASEAN requirements are already being carried out.

[6] M&As in the Lao PDR are uncommon.

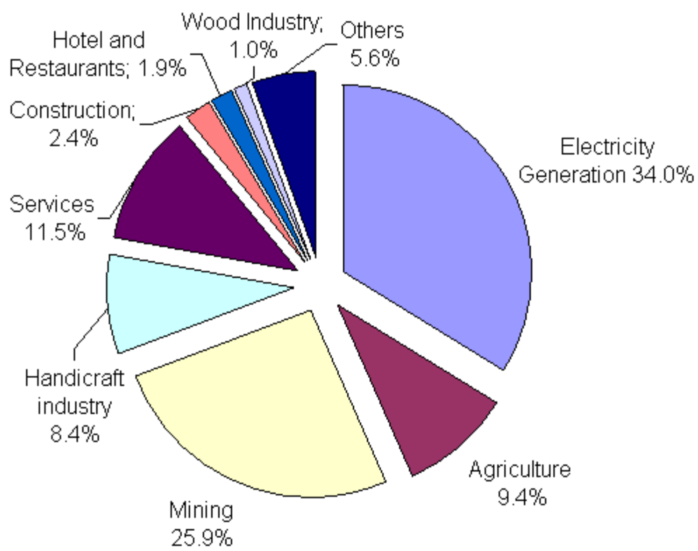
While domestic investment is concentrated primarily in construction and services (World Bank, 2012), FDI in Lao PDR is mainly driven by large mining and electricity generation (hydropower) projects, which together accounted for around 60 per cent of total approved foreign investment projects between 2000 and 2009 (figure 4). FDI in agriculture in the same period was 9.4 per cent.

Figure 3: Approved foreign investment (US$), by origin, 2000-2009



Source: UNCTAD, based on data from the Ministry of Planning and Investment

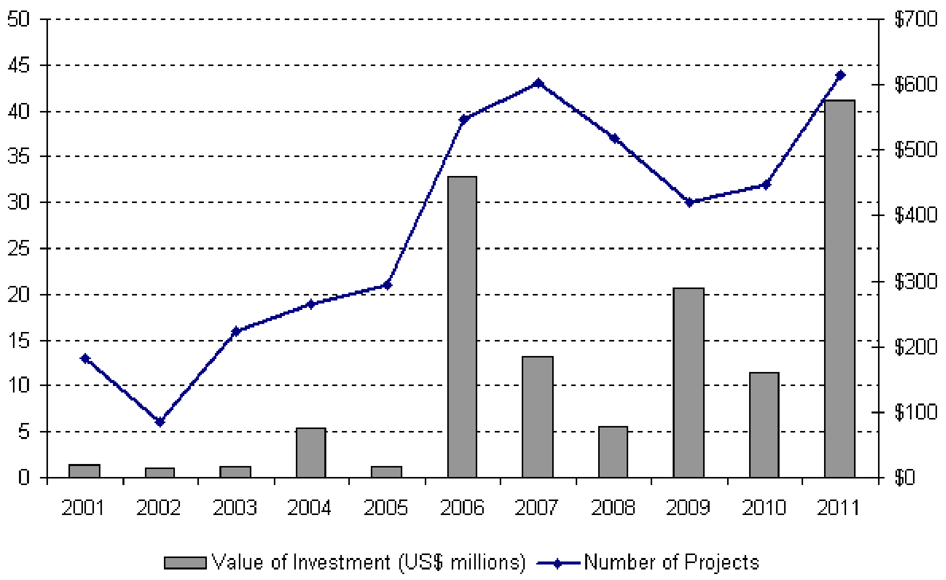
Figure 4: Approved foreign investment (US$), by sector, 2000-2009



Source: UNCTAD, based on data from the Ministry of Planning and Investment

In the same period, the agriculture sector captured 9.4% of the approved foreign investments, with 30 foreign investment projects registered in 2009, twice the number reported in the early 2000s (figure 5), the coffee sub-sector having attracted greater (and arguably more successful) private investment than some others.

Figure 5: Approved foreign investment projects in the Lao PDR agriculture sector



Source: UNCTAD. based on data from the Ministry of Planning and Investment.

Although the agriculture sector in Lao PDR mostly consists of subsistence-based farming, with a limited presence of contract farming and some FDI, recent years have seen a rise in both types of activities (figure 5), especially in coffee, rice and sugar (table 1 indicates some major recent investments by foreign companies, all from the region). A recent inventory on land concessions[7] determined the existence of over 2,600 land-lease and concession agreements covering a total of 1.1 million hectares of territory, which represents 5% of Lao PDR's land. Although 65% of all projects are domestic investment, on average they are around ten times smaller than those under foreign investment. As in other sectors, China, Thailand and Vietnam are the largest foreign investors, both in terms of the number of projects and area covered by these projects (23% of all deals and 53% of all land under lease or concession) (Schönweger et al. 2012).

The coffee sector received most land deals (59 in total), which count for 14% of total area under agriculture investment and 36% of total harvested coffee area. Although local private sector investors are to the fore, foreign investors are also entering in all parts of the coffee value chain; to date these companies are from the Asia-Pacific region (table 2). Investment in coffee manufacturing operations is currently very limited and very much concentrated around few investors with the means to apply technical processes on green beans. It should be pointed out that Dao Heuang company, which has the largest cultivating area and is the main coffee exporter in Lao PDR, has recently inaugurated the largest factory for producing instant coffee in Asia,

[7] The report "Concessions and Leases in the Lao PDR: Taking Stock of Land Investment - 2012", launched in January 2013 is the result of the cooperation between the Lao government, Switzerland, and Germany.

an estimated investment of US$ 128 million (Vientiane Times, Vientiane Mai, 18 December 2012). Furthermore, as the domestic demand for coffee increases, private investment on coffee shops has also been on the rise.

Table 1. Major investors in agriculture and agribusiness in Lao PDR

Company	Country	Crops
Mitr Pholl Group	Thailand	Sugar/sugarcane
RTL World Trade Company	Thailand	Cassava
Savannakhet Sugar Corp	Thailand	Sugar/sugarcane
Olam International	Singapore	Coffee
Viet Nam-Laos Coffee Joint Stock Co.	Viet Nam	Coffee
Delta Coffee	Malaysia	Coffee
Tin Nghia-Laos Joint Stock Company	Viet Nam	Coffee
Thai Bev	Thailand	Coffee
Saigon Agriculture Corporation	Viet Nam	Corn and coffee
Hoang Anh Gia Lai Group	Viet Nam	Sugar/sugarcane
Ou Phu Ko Company	Viet Nam	Cassava
Taniyama Siam-Advance Agro	Thailand-Japan	Okra, asparagus, carrots
Indo-China Group	China	Cassava
Government of Kuwait	Kuwait	Rice
Lao Arrowny Corporation	Japan	Rice
Non-food crops		
Oji Lao Plantation Company	Japan	Eucalyptus and acacia
Grasim	India	Eucalyptus
KoLao Farm Company	Republic of Korea	Jatropha
Dau Tieng Viet-Laos Rubber Joint Stock Company	Viet Nam	Rubber
Dak Lak Rubber Company	Viet Nam	Rubber
Saigon Agriculture Corporation	Viet Nam	Rubber
Laos-Viet Nam Friendship Rubber Co.	Viet Nam	Rubber
Yunnan Rubber	China	Rubber
Cherchanghang Company	China	Rubber
Yunan Lilieng Biological Company	China	Rubber
Lao Thaihua Rubber Company	Thailand	Rubber
New Chipseng Company	Thailand	Rubber

Source: Annex I in this report; Baumuller, H. and Lazarus, K. (2011). http://www.tuoitrenews.vn/cmlink/tuoitrenews/business/investment-to-laos-on-rise-currently-3rd-largest-1.54067.

Table 2. Major investors in the coffee sector in Lao PDR

Company	Nationality	Activities
Dao-Heuang Group	Local	Growing, processing, roasting, exporting and retailing
Sinouk Coffee	Local	Growing, processing, roasting and exporting
Lao Mountain Coffee	Local	Roasting, marketing and exporting
Outspan Bolovens Ltd (owned by Olam International)	Singapore	Growing, processing and exporting
Delta Coffee	Malaysia	Growing, processing, roasting, exporting and retailing
Tin Nghia-Laos Joint Stock Company	Viet Nam	Growing, processing, exporting
Viet Nam-Laos Coffee Joint Stock Co.	Viet Nam	Growing, processing, exporting
MTC	Australia	Sourcing through contract farming and exporting
Paksong Highland (owned by TCC Group)	Thailand	Growing, processing, roasting, exporting
Bolaven Farms	Local	Growing, processing, roasting, exporting, retailing
Thevada Café	Local	Sourcing, roasting, exporting, retailing
Joma Coffee		
Ban Vang Gnao Coffee Producers Group	Local	Growing, roasting

Source: UNCTAD

III. INVESTMENT IMPACT

In instituting viable strategies to maximise economic value added, job creation and sustainable development – while minimizing the costs – in suitable value chains, it is essential that Lao PDR use a systematic, impact based method. With this in mind, this section tests the impact indicators approach, introduced in the first section, to establish the actual and prospective impacts which can be expected through further private investment (table 3). In this respect, coffee is a suitable case – though it is the country's largest export crop, there is only a limited amount of private investment, especially foreign, at various stages in its value chain; thus prospective gains through private investment can be readily gleaned.

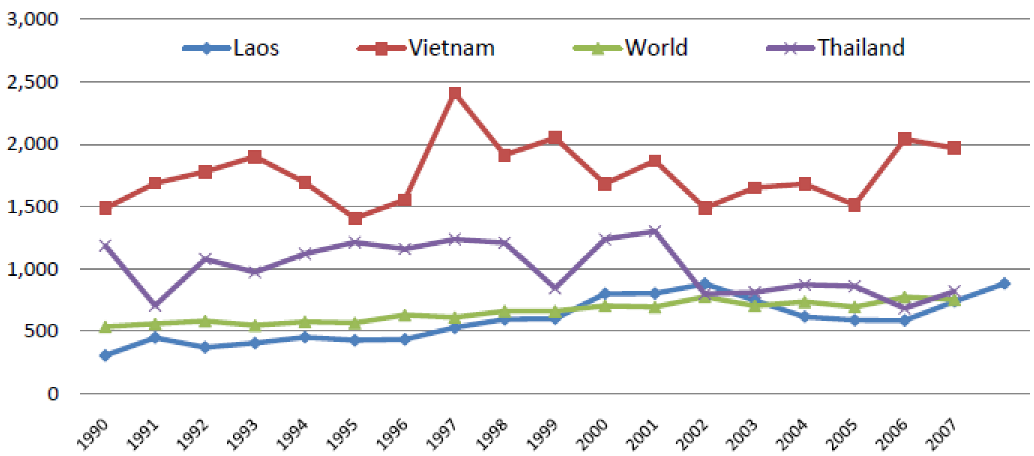
Economic Value Added

Value Added and Gross Fixed Capital Formation. The contribution of agriculture sector in Laos has been stable over the past 5 years, accounting for around 30-35 per cent of GDP in constant terms. Green coffee production makes a relatively modest contribution by generating 1% of total agriculture output and less than 0.5 per cent of GDP. Despite the increase in the harvested area and in the country's production of green coffee, which has almost doubled since 2005, the potential of the sector is not yet fully exploited.

Indeed, coffee farm productivity in Laos is very low compared to countries such as neighbouring Viet Nam with similar climatic conditions (figure 6), as well as productivity further up the value chain, for a number of reasons. First, investment in agriculture, including coffee is limited. In 2007,[8] the gross capital stock in agriculture in the country was estimated to be only US$3.8 billion, of which 51 per cent was attributed to livestock and 24 per cent to land development (FAO statistics). Given the subsistence character of the agricultural sector, little of this investment comes from formal private sources. Data on capital formation in the coffee sector is not available, but given the restrictions on foreign direct investment until 2005, the contribution of private investment has certainly been limited until very recently. Second, agricultural production, including in coffee, is mainly in the hands of smallholders who use traditional farming techniques, resulting in low and highly variable yields dependant on weather conditions (e.g. the dip in output during 2004-2007 in figure 2).

Third, moving to other segments of the coffee value chain, there is little processing of harvested cherries prior to selling. While most small farmers process Robusta coffee as dried cherry coffee using natural methods, arabica coffee is currently hardly processed. Robusta coffee is then very roughly hulled, usually by a contractor, with the result being a relatively low quality green bean product. Fourth, although larger Robusta plants have more professional hulling, cleaning and grading facilities (FAO), only about 1.2 per cent of the green coffee produced is then used for manufacturing in higher value added products in the country. Finally, most coffee grown in the country is of the robusta varieties (about 85 per cent of total green coffee production is dedicated to robusta, the remaining being arabica), while higher prices and value added is more likely to pertain with arabica varieties. Robusta coffee is easier to produce and more resistant to diseases such as rust, however it is generally considered as a lower-segment variety, typically used in collective catering, coffee machines and instant coffees. Conversely, arabica are considered better-tasting beans and command a higher price in international markets (the difference can be almost double), although more vulnerable to rust.

Figure 6. Coffee farm productivity (kg/ha), 1990- 2008



Source: Southichack (2009)

[8] Last data available. Data on GFCF in agriculture and/or in the coffee sector is not currently available.

Table 3. Summary of key quantifiable indicators in the coffee value chain, Lao PDR
(2010 or last available year)

	Agricultural segment of the coffee value chain[a]		
	2010		**Estimated potential**
	Value (US$, number or percentage)	Share of agriculture sector and/or of total economy (%)	Value (US$, number or percentage)
Economic value added[b]	US$29.1 million	1.3% of total agriculture output 0.41% of the total country's output	US$59 - 93.6 million
Export generation	US$33 million	43% of total agriculture exports 1.3% of total exports	US$ 34.7 - 51.6 million
Number of active business entities	25,000 smallholders (including contract farmers) 16 coffee planters About 10 wholesalers Less than 20 exporters Overall, 7 foreign-owned firms[c] 2 international coffee traders	Coffee households are 3.2 % of total farm households (includes semi-formal entities). Coffee households are 2% of all Laotian households	2-3 additional big exporters/manufacturers
Fiscal revenues (tax on profit)	US$ 1.4 million[d]	0.16% of total tax revenue 1.04% of total profit taxes	Could potentially double
Employment	About 44,184 persons from farm households contributing to cultivation, maintenance and harvest of coffee land. Arabica workforce need: 25 day-worker per MT (total 375,000 days-worker) Robusta workforce need: 12.5 day-worker per MT (total 470,520 days-worker) Total (not counting persons in farm households): 882,225	Persons from farm household contributing to coffee production are 2% of active population in agriculture and 1% of total active population. Arabica: 16% of active population in agriculture Robusta: 20% of active population in agriculture	588,150 day-worker would be needed for Arabica harvest (25% of active population in agriculture) 294,075 day-worker would be needed for Robusta harvest (12% of active population in agriculture) Total (not counting persons in farm households): 845,520
Farmers revenue	Average annual household income ≈ US$ 2,200 1.18 - 1.35 US$/kg for Robusta[e]		US$ 2.98 -3.46 per kg of Arabica
Wages	Average 0.9 US$/kg for daily workers Average US$ 100/month for permanent workers	Minimum wage between US$ 44 - 80 per month	Wages are likely to increase as the Arabica harvesting rises
Social Impact (Poverty rate)	14.7% [Poverty rate in coffee growing areas]	≈ 40% Poverty rate in agricultural/rural areas 25-30% Poverty rate in the country as a whole	--

Source: annex IV and section III. Notes: a: estimations based on the assumption that 50% of the production would have been Arabica and the other 50% Robusta –see Annex IV for details; b: data on Gross Fixed Capital Formation not available; c: in 2009; d: based on 2006/2007 fiscal calculation mode; e: data for 2008/2009

In addition, the lack of investment in various segments of the value chain also affects the quality of the coffee produced. This in turn translates into a price penalty and Lao green coffee receives a lower price than other coffee producer countries. Hence, should green coffee production in Lao PDR receive the same prices as in Viet Nam (today the major robusta producer worldwide), the estimated value created by the sector would be of about US$59 million, that is double the value recorded in 2010 for the same output. A proportional shift to arabica would also boost value added, with potentially a reduction in volatility in valued added/farmer incomes because these varieties of coffee are regarded as premium products, with higher prices which are more stable. Thus, if 50 per cent of the production[9] had been of the higher Arabica variety, the estimated value added created by the sector would have been of a maximum of US$ 93.6 million.

More prosaically, the very large gap in actual versus potential value added offers the prospects for significant value added gains through additional, targeted private sector investment, even if only some of the gap is closed in the short and medium-term. Moreover, as the harvested area of land increases, and given the current support of the Government of Lao to improving the production of the higher priced arabica variety, capital formation in the sector could increase with private investment. This offers the prospect for further value added gains.

Exports. Coffee is one of the country's top five export earners and the largest agricultural export commodity.[10] Lao coffee is exported nearly entirely in the form of green beans (80-85 per cent of total production). The value of coffee exports rose from US$13 million in 2005 to US$33 million in 2010, whereas the volume of exports was maintained in similar levels (around 17,000 MT). In terms of destination markets, the majority of Lao coffee is exported to European countries, particularly Poland, Germany, Belgium and Switzerland, while the share of the US has also been growing in recent years.

Deficient product quality control at all stages of the commercialization process negatively impacts on Lao coffee exports. Thus, the price received in international markets for Lao green coffee beans is estimated to be US$100-150/MT lower than the average for other countries (NAFRI, 2012), which amounts to a total penalty or loss of export income of between US$1.7-2.5 million (based on 2010 exports volume) (table 3).[11]

In 2010, 66 per cent of green coffee exported was of robusta variety (Saysana, 2011). As the Arabica cherries are more appreciated in the international market, therefore receiving higher prices than robusta, the increase in the production of arabica promoted by the government is expected to have an impact both in the composition and revenues of Lao's coffee exports. If we assume that the 50:50 arabica - robusta balance is also reached in exports[12], the estimated exports revenue would be of US$ 51.6 million (i.e. a variation of 56% in relation to actual 2010 export revenues). The

[9] Calculations based on total green coffee production in 2010 (see annex IV)

[10] In 2010, Lao PDR exported US$77 million agriculture products, green coffee, maize and sesame seed being most demanded commodities. Of this amount, green coffee beans accounted for around 43 per cent (US$33 million) of total exports.

[11] In addition, productivity growth would boost total volumes and total export income (see discussion of economic value added earlier).

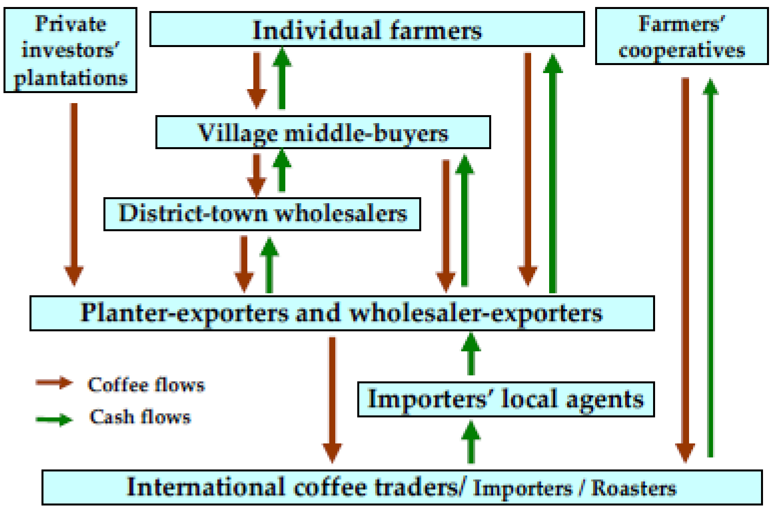
[12] Calculations based on 2010 total green coffee exports (see annex IV)

required improvement in quality and production composition has implications for new investment, public and private at various points in the value chain.

Number of business entities. The coffee value chain in Lao PDR comprises a number of levels, mostly in the agricultural sector and associated supply/logistics activities (figure 7). Overall, it supports the activity of a large number of business entities. Within this there are a number and variety of actors, from fully-commercial private sector investors in plantations to semi-formal businesses associated with smallholders or farmers' cooperatives.

At the farm level, the majority of the land is in the hand of around 25,000 smallholders (3.2 per cent of total farm households) operating less than 10 hectares, although in recent years several domestic- and foreign-invested plantations (section II) cultivating more than 100 hectares have emerged. There are 16 registered private international companies active linked directly to coffee farms in Lao PDR (Saysana, 2011). The biggest planters are foreign companies: Paksong Highland from Thailand (3,100 ha), Outsapan - Olam from Singapore (more than 1,100 ha) and three big Vietnamese companies that have between 500 and 1000 ha. Others are from Canada, China, India, Malaysia and Taiwan Province of China. Foreign-owned firms are more involved in the farming of arabica coffee for niche markets. In addition to investment/FDI, larger domestic and foreign companies are involved in contract farming, most of who are drawn from the larger, more commercially active population of smallholders. At the wholesale level, the number of actors involved is much smaller, with 10 wholesalers[13] being active in 30 to 50 villages (Galindo et al. 2007) within the districts of Paksong and Laongam.

Figure 7. Lao coffee value/supply chain



Source: Galindo et al. (2007)

[13] Last data available for 2007.

Coffee exporters are grouped in the Lao Coffee Association, which counted with 38 registered companies [14] in 2010. Most exporters have got closer to coffee production in recent years, being now also present at different levels of the value chain, although some downstream activities such as seeking new markets are mainly carried out by importer agents (Galindo et al. 2007).

Dao Coffee Company, the most well-known and established local large firm, purchases the vast majority of all Bolaven Plateau coffee. It controls integrated operations from growing to processing, roasting and exporting; and, in fact, is responsible for 60-70 per cent of Lao coffee exports. The remaining exports are by less than 5 other local or foreign companies (Galindo et al. 2007), some of which are themselves involved in coffee plantations or have land concessions (e.g. Sinouk Coffee Company or Olam International, section II). Finally, 2 international coffee traders, namely Noble (Switzerland) and Elite (Poland) are responsible for the purchase of most Lao coffee (Galindo et al. 2007); they also have local agents in the southern part of the country.

As the production of arabica develops, small farmers are expected to switch from harvesting robusta[15] and eventually farmers currently harvesting other crops will be attracted by the higher rewards. However, as the cultivation and processing of arabica is technically more complex than that of robusta, the attraction of further private investment with the technical capacity at the plantation level could help in achieving the government's objectives.

However, it is with the exporting and manufacturing segments of the value chain that the industry could particularly benefit from the entry of 2-3 large exporters/manufacturers (which in some cases could also be active at other levels of the value chain) as they would increase competition in the sector and facilitate the process of integration into the GVC. This in turn would support the sector in turn, capturing further economic gains for the country.

Fiscal revenues. Tax revenues typically make up around 75-80 per cent of total government revenues in Lao PDR, 28 per cent of which comes from taxes on income, profit and capital gains [16] (IMF 2012). Although reliable data is not available, a preliminary assessment suggests that the fiscal contribution of the sector is relatively limited, as the government of Lao PDR has put in place several incentives in order to support agricultural production in the country (and many smallholders and semi-formal entities fall below the tax threshold). For example, the import of agriculture production equipment is subject to a tax of only 1 per cent of the total value of equipment. Moreover, in order to facilitate investment and production in rural and mountainous areas, where infrastructure is relatively underdeveloped, investors are exempt from profit taxes up to seven years after the initial harvest. In the case of some agricultural crops, rubber for instance, the tax exemption may last up to 15 years.

[14] The association stakeholders include the farmers and producers, the roasters and the traders and exporters.

[15] In particular because in Lao robusta variety is in some cases cultivated in higher than usual altitudes, where typically arabica is cultivated. The government and several international agencies are currently supporting and offering coffee farmers training for cultivating arabica.

[16] As of January 2012, the corporate tax rate for both national and international companies has been lowered to 28% from 35% (PwC 2012).

The tax collected on the profit of coffee production in 2010 is estimated to be around US$ 1.49 million, based on the calculation mode applied in 2006/2007, for which US$ 31.6 were paid per MT (Galindo et al. 2007). Thus, the fiscal take from coffee production was 1.04 per cent of profit tax revenue and 0.16 per cent of total tax revenue for period 2009/2010.

Although coffee is the only agricultural product that goes through a 100 per cent formal value chain (post-farm) (Wiemann et al. 2009; Saysana 2011), the price penalties that affects the sector in Lao PDR also translate into foregone tax revenues. Boosting productivity, reducing or eliminating the price penalty, promoting the entry of new formal businesses in the sector and other measures would potentially double the fiscal income.

Job creation

*Total employment***.** The agriculture sector employed 75-80 per cent of the Lao workforce in 2011. Within this, the coffee sector provides jobs and incomes to more than 25,000 smallholders and thousands of hired farm workers in the southern part of the country, according to the most recent Agricultural Census (2010-2011). Since labour and income data indicate that an average of 6 persons reside in each coffee household, and approximately 3 of the persons in each household actively contribute to farming activities (Toro 2012), coffee production -including cultivation, maintenance and harvest of land - is estimated to involve up to 44,184 people in (i.e. about 2 per cent of the total economically active population in agriculture).

The sector creates additional employment as it requires hiring external labour, in particular during peak harvesting periods. Hence, considering that a person can collect an average of 40 kg of cherries per day, it is estimated that the arabica harvest in 2010 employed about 375,000 days-worker, whereas robusta production required 470, 520 days-worker. Since arabica production is more labour intensive than robusta production, an increase of 30 per cent (respect to 2010 production) in arabica would translate in the creation of additional 36,700 days-worker.

A quarter of the increased workforce demand is likely to come from commercial plantations and will continue to be the main source of income for people in the southern provinces.

Employment by category. The economically active population in Lao PDR consists of 48% men and 52% women, with agriculture employing close to 93% of all women in the workforce (FAO).

The coffee industry provides jobs to a relatively large number of small farmers and farm workers, from many ethnic minority groups in Lao. Furthermore, more commercial smallholders employ both permanent workers and make use of additional temporary workers hired during the harvesting season.

Following the introduction of a recent new policy on foreign workers, especially applicable to technical workers in industrial plantations such as rubber, coffee, and cashew, and in a number of other industries, thousands of foreign workers from neighbouring countries (Viet Nam, China, and Thailand) have flowed into the country and facilitated technology transfer. (Leebouapao 2008). However, the shortage of labour is still a pressing issue because investors have difficulties in finding available workers during harvest times, as both rice and arabica coffee are harvested at the same time (from October to December). Robusta is less affected than arabica because its seasons are different; and it is less labour-intensive.

The industry also supports other related business activities, including the retail sector (e.g. cafés), finance (e.g. rural banks), transportation, utility services, and other administrative and technical work (e.g. quality checking and processing plants) throughout the value chain (Southichack 2009). Additionally, as the coffee region is also becoming a growing touristic destination, this can also have an impact on employment creation in tourism.

Farmers' revenue and wages. Generally coffee growers receive between 7-10 per cent of the retail price of coffee, which is around US$11/kg in Europe and US$8-9/kg in the United States (FairTrade Foundation 2012; ICO). In 2009 farmers ultimately received between US$1.18-US$1.35/kg for producing Robusta beans (Southichack 2009), which is higher than the price received by Viet Nam farmers in the same period i.e. US$1.08/kg (ICO). The low level of commercialization in agriculture production is one of the main causes of low income for farm family. As the farmers' revenue ultimately depends on the price received in international markets, a shift towards producing arabica would bring about an increase in coffee growers income. Thus, the estimated revenue arabica farmers would receive is of US$ 2.98 - 3.46/kg.

Wages, which are equivalent to 8-20 per cent of the production value, are a major contributor to lower poverty rate in provinces producing coffee. Information collected from companies suggests that the average wage paid to permanent workers is US$ 100/month whereas daily workers receive US$0.9/kg. During seasonal peak times extra workers can be are hired at higher daily rates.

Again, as the production of arabica rises, it is expected that increasing demand for workers will put upward pressure on wages.

Sustainable Development (selected indicators)

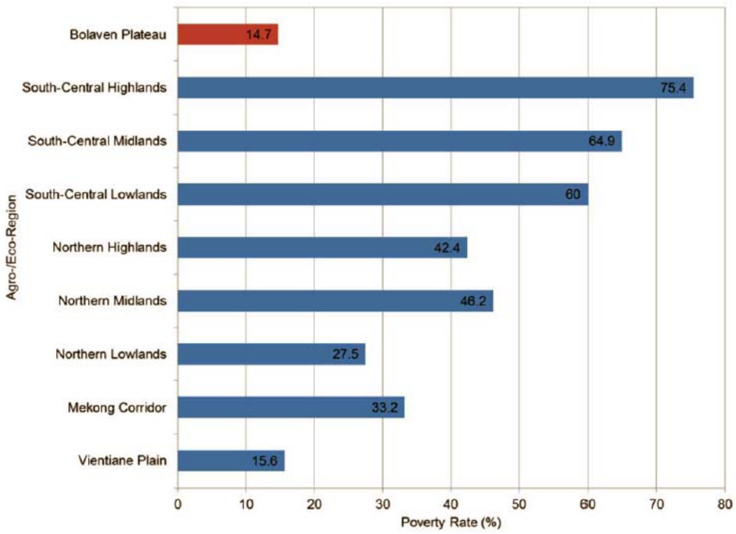
Social impact. According to UNDP's Human Development Report 2010, the Lao People's Democratic Republic is one of the 10 "top movers" in the world in terms of progress on human development over the past 20 years. Nevertheless, even though poverty in Lao PDR has declined steadily in the last decade, recent figures suggest that the nationwide average poverty rate remains at around 30%, making the country one of the poorest and least developed in South-East Asia.

The Lao government considers agriculture a key element in the process of poverty reduction, and improving the commercialisation of the agricultural production is essential for the development of this sector. Indeed, areas where agriculture investment projects occur show an average poverty incidence of 27%, which is significantly lower than nationwide. Similarly, literacy rates in areas under investment are 80%, seven percentage points higher than the national average of 73%. (Schönweger et al. 2012).

Coffee production in Lao PDR - being the main crop not exclusively destined to farmer household consumption - plays an important role in poverty alleviation in the regions where the crop is grown, partly because the sector accounts for more than 80 per cent of farmers’ income in these provinces (see above). According to a recent study, farmers in Lao PDR generate on average US$2,219 from the annual coffee harvest (Toro 2012), although this revenue is very dependent on fluctuations in world coffee prices. Half of the coffee farmers earn more than 50 per cent of their annual income from coffee production; while for about 35 per cent of them coffee production is their only source of income (Saysana 2011).

The contribution of the coffee sector to the socio-economic development of these regions can be further evidenced by comparing the poverty rates by region (figure 8). The percentage of the population living below the national poverty line in rural areas is around 5 percentage points higher than the national average. Indeed, the average poverty rate in the main agricultural areas is reported to be 42.2 per cent (Toro 2012). However, and as figure 8 illustrates, in the Boloven Plateau which is the main coffee growing region, the poverty rate is almost one-third of the average registered in agricultural areas, and the lowest in the country (table 3).[17]

Figure 8. Poverty rates by agriculture region, Lao PDR



Source: Toro, 2012

At the same time, this region's high dependence on coffee is a risk, as the sector – like all agricultural export crops – can be severely affected by commodity price volatility.

Environmental impact. Synthetic fertilizers are seldom utilized by Lao coffee growers, who use mainly organic fertilizers. A recent study reports that around 75 per cent of total fertilizers available in the southern provinces are of organic origin (Saysana 2011). The time required to have better yields is longer with organic fertilizers, but its application generates lower damaging impacts on soil and waterway near the coffee farms. Moreover, health issues related to the application of herbicide or fertilizers are less frequently reported by the coffee producers in organic farming. However, even though the use of synthetic fertilizers is not very common in the area, recently a number of medium and large coffee farms have started to use them in order to create more value in a shorter period without considering the longer term consequences. Moreover, the proportional change in the production of different varieties and the recent introduction of a new coffee variety called catimor has also raised environmental concerns. Increasing production of the catimor arabica variety is

[17] The UN World Food Programme also confirmed this finding through a detailed map of poverty rate per village and poverty density in the country (Saysana 2011).

replacing existing plantation of other coffee varieties, and raising concerns about the clearance and destruction of forest areas (Saysana 2011).

IV. POLICY CHALLENGES AND OPPORTUNITIES

The coffee sector in the Lao PDR is a good example of how entry into domestic and international value chains can support development. From the impact indicators evaluated in section III, despite its small size relative to agriculture or the economy as a whole, the sector contributes considerably to economic value added, employment and, most importantly, poverty alleviation. It is at present operating in an environmentally sustainable fashion (the bulk of produce is organic), though there are some concerns. It could contribute more to the national fiscal take. At the same time, this success of the country's coffee growing regions is founded on a narrow base. The regions are almost solely dependent on this sole crop for their non-subsistence value added, incomes and relative prosperity.

This high dependence can be mitigated by moving to a wider set of coffee varieties, including arabica; a greater diversity of other crops using the lessons of the coffee sector; and into higher value-add, less volatile parts of the value chain, in particular manufacturing. In particular, the unique geographic and climate characteristics of the country offer the sector many opportunities for meeting these challenges and capturing greater value from coffee production. As the impact indicators also show, the potential for boosting coffee productivity, economic value added, incomes and fiscal take – with consequent positive effects on sustainable development – are considerable, and feasible from a technological perspective, especially by looking at comparators internationally. At the same time, private investment in the sector – apart from a few key areas – is still low and, under the right conditions, could provide the necessary capital, research funds, technological resources, quality-control knowledge, competition and international linkages to fully exploit the potential of the sector for the betterment of the affected communities.

Lao has the potential to grow more and better quality coffee through improvements in farming robusta coffee and by facilitating the production/introduction of sustainable arabica varieties.

- The country has not yet fully exploited all the possibilities linked to the uniqueness of Lao coffee. The unique qualities of the Lao Robusta variety derive, among others, from it being grown at high elevations of up to 1,300 meters above sea level (Wilson et al. 2005). Lao has the potential to grow larger amounts of high quality arabica coffee. The volcanic red earth soils and climate of the upper elevations of the Bolovens plateau are an excellent area to develop a specialised and valuable coffee industry.

- The Government of Lao is interested in developing this industry (the objective is to create a balance of 50:50 arabica to robusta). There is a clear market for good quality Lao Arabica coffee; but funding support for essential research, development and extension to support further development to the industry is lacking.

- However quality and certification issues hinder the business development process for Lao coffee.

- There is room for quality improvement through coffee processing – for instance, improving the roasting of green beans. In order to develop high-quality coffee, Lao coffee sector must continue to promote the building of wet-processing units in producing villages.

- However, greater production of arabica coffee would create considerable pressure on the workforce since these varieties are much more labour-intensive than Robusta coffee.

There is a good possibility for specializing in high quality organic coffee for niche markets

- Coffee farming in Lao PDR has the important feature that the majority of coffee producers are small scale and are more amenable to the organic production approach.

- There has been improvement in Laos's certification for organic and Fair Trade coffee. Laos PDR has been listed as one of the 40 countries in the world to receive organic certification for their coffee production (Giovannucci and Pierrot 2010).

- Specializing in organic coffee is considered by the Government to be in accordance with the sustainable development direction the country wants to achieve.

- However, entering niche markets in organic produce, as well as arabica, requires considerable resources, technical and market knowledge and connections. Private investment, as part of a wider strategy, is essential.

At the same time, coffee manufacturing has to be further developed if the country wants to capture more value

- Coffee manufacturing is not keeping up with the production of green coffee beans and the sector is missing out on the opportunity to create much more additional value. While the production of green coffee beans amounted to around 46,300 MT, the coffee manufacturing[18] remained only at around 612.5 MT (i.e. green bean equivalent of 710.5 MT) in 2010, even though coffee manufacturing has been on rise in recent years (Ministry of Investment and Planning).

- The distribution of value-added in the sector further highlights the potential to be further exploited in the sector. In general, coffee growers make a net profit of around US$0.80/kg of green beans when related costs of production such as those of seeds, harvesting equipment and labour are taken into account.

[18] Coffee manufacturing involves the production of roasted coffee, instant coffee and such.

Farmers then pass their products (green coffee beans) to traders who receive around US$1.50-1.90/kg of green beans and make a net profit of around US$0.50/kg. Coffee manufacturers, however, sell their products (e.g. roasted coffee) at around a wholesale price of US$5-5.6/kg and create an additional green-beans-equivalent value of US$2.33/kg, which is almost the sum of value added generated in growing, processing and trading of coffee products.[19]

The sector requires a comprehensive development strategy that includes elements focussing on the attraction of more private investment, including foreign investment

- The sector requires a branding strategy for specific objectives, e.g. entering niche markets in arabica and organic coffees.

- The lack of coffee grade standardization, which goes with quality control, is one of the major reasons why Laos-grown coffees have relatively low prices. Although some exporting firms, especially foreign-owned, are investing in technology for sorting and separating coffee beans based on quality differences, most Laos-grown coffee bags today still contain beans of mixed qualities.

- An organic certification and bean grade standardization programme will increase the value of coffee beans exported, which will directly benefit farmers, their dependents and the local communities. The effective establishment of a credible body to serve the entire industry for the bean quality standard control and grade certification in Lao PDR is necessary.

- Farmers required assistance not only on the cultivation/processing of green beans to meet international standards, but also on access to credit, the marketing and other technological/entrepreneurial knowledge and skills. Linkages with private investors could support this. This might be a part of a contract farming strategy.

- Need to develop an investment promotion strategy for the sector. Private/foreign investments could bring a number of benefits to small farmers and the industry as a whole. Among them, these include an access to the international market and capital injections for investment in essential farm infrastructures, modern processing facilities, machineries, tools and equipment. The entry of new investors would also improve the competitive situation in the sector.

[19] The prices paid to growers, retail prices of roasted coffee in Europe and the US are collected from the International Coffee Organization. Average FOB export prices for green coffee are sourced from USDA FAS (2012). All prices are reported for Viet Nam, which are used as proxies for prices in Lao PDR for the purpose of this report.

V. CONCLUSIONS AND POLICY RECOMMENDATIONS

In late 2010, the Lao government issued an Agriculture Master Plan for 2011-2015, and an Agriculture Development Strategy for 2011-2020, with the following main goals: i) gradual introduction and increased application of modernized lowland market-oriented agricultural production, ii) conservation of upland ecosystems, ensuring food security and improving the livelihoods of rural communities, and iii) adoption of sustainable production patterns, including the stabilization of shifting cultivation and climate change adaptation measures. In addition, an Agricultural Investment Plan has been designed to catalyse partnerships with the private sector and international development partners, as part of the drive to meet the goals of the five-year plan and the ten-year strategy for agriculture. The broad potential strategy outlined in the previous section would support the thrust of this plan.

The importance of the agriculture sector for the Lao economy, and concerted efforts to strengthen to strengthen it at the policy-level, made it the focus of this report and the impact indicator approach applied in the analysis. Given that within this sector, coffee production is the primary export commodity and generates an income for more than one third of the economically active population in agriculture, this report zoomed in on the value chain to test the indicators approach and consider policy recommendations to increase development impacts. However, it should be borne in mind that the policy advice in this section – posited for ease of exposition as recommendations – arises from the data analysis provided above and would need to be further developed.

Moreover, the analysis and recommendations should be considered in the context of Lao PDR’s wider country development goals and existing policy frameworks, some of which are mentioned above. These processes may well modify the suggestions in this section; the action plan below should be aligned, harmonized and integrated with other policy decisions. In doing this, policy-makers should also assess the conditions required to fulfil the action plan, some of which are referred to below. The wider policy context and the specificities of sectors will also affect the time scale and sequencing of action plans that are implemented. Finally, it should be noted that the indicators framework is a starting point for decisions about entering, deepening or extending a country's participation in GVCs, rather than an end point. Given this, its application in a particular context may immediately raise more questions than answers. But in the final analysis, understanding better what one needs to know goes a long way towards identifying the solution.

The assessment of value creation and employment contribution in the coffee value chain in Lao PDR can be summarised as follows:

a) In terms of GDP contribution (0.4 per cent of the economy), employment (2.3-4.2 per cent of the active labour force), export generation (43 per cent of agriculture exports) and social impact (the poverty rate in coffee growing areas is a third of the average in agricultural districts and a half of the national rate) the Lao PDR is currently faring relatively well (section III).
b) Investments in the coffee production can be instrumental in poverty reduction in rural areas, as currently the sector is supporting more than 80 per cent of farmers’ income in the southern provinces (section III).

c) The shortage of available labour – especially during the harvest period of October to December – is a serious problem with increasing weight as the production of arabica variety has been increasing (section III).
d) In addition, price penalties on coffee exports significantly undermine the potential of the sector in terms of export revenues and fiscal take (section IV).
e) Lastly, further investments in coffee manufacturing may generate up to 1.5 times as much additional value in the sector (section IV).

Policy recommendations and action plan

Given the increasing volume of coffee production and potentially higher share of Lao PDR in world markets, especially for Arabica, encouraging private companies to invest in new opportunities that are facilitated by evidence-driven sector policies may have significant development impacts. The remainder of this section aims to outline some of the key elements that constitute policy recommendations for the Lao PDR coffee sector, based on the analysis in the report. Three key recommendations are proposed with respect to value chain development in Lao PDR, which can be tied to short and long-run dimensions.

Short- and medium-term recommendations

Prioritize the attraction of private/foreign investment, including contract farming and other non-equity modes, into the coffee sector. This is proposed to help improve (a) the productivity and volume of coffee output, as well as (b) the standards, quality and value added of coffee production. Analysis in the previous section showed that price penalties from international coffee buyers on Lao coffee products significantly reduce the sector's contribution to export revenues, as well as tax revenues. In addition, the productivity of the sector is low in comparison to other producers and can be increased markedly. World markets are increasingly demanding high-end differentiated products, rather than high volumes of goods. This applies to the coffee sector as well others: overall demand has experienced a decelerating trend in recent years, while at the same time worldwide sales of organic coffee – one relevant niche product – grew by about 56 per cent and sales of fair-trade coffee increased by about 73 per cent. Quality-assessment and certification are key instruments to reach niche-markets, including organic and specialist arabica.[20]

Adopting quality-standards and fulfilling the necessary requirements for international certifications in the short-term is a challenge for the Lao coffee sector, especially given the lack of knowledge and experience of quality control, certification etc. This is partly because few significant foreign investors with the requisite expertise and technology are present in the sector. The upgrading of the coffee sector could however be accelerated by attracting foreign investment into the sector, including the use of contract farming arrangements with international companies. These companies

[20] Access to these markets would pay-off in two ways: first, the organic coffee producers would receive a premium of US$0.30/ Ib (per pound) and an additional premium of US$0.20/ Ib for fair trade products. This would lead to a market price of around 15-35 per cent higher than the price of conventional coffee (Oxfam 2002). Second, while the mainstream Robusta circuit leaves the producers with 60 per cent of the total value, producers of Arabica Fair Trade products get close to 80 per cent of the final value (Galindo et al. 2007). Hence, higher access to niche markets not only would generate more value for the coffee producers but also would play a role in the distribution of the value towards the producers.

possess the technical know-how and capital necessary to adjust the production process to international standards.

Focus on attracting investment into manufacturing facilities (e.g. roasting, production of instant coffee). Increasing the level of activity and competition in this value chain segment can yield a number of benefits in the medium-term. Even though the production of green coffee beans has been steadily increasing, further processing and manufacturing of the harvest has been lagging behind. Estimates in this report suggest that higher country involvement in the manufacturing segment of the coffee bean GVC may generate up to 1.5 times as much value in the sector. Manufacturing operations can be boosted by increasing the number of companies operating in this area. It should be noted that currently this segment of the market is very concentrated with only a few investors who possess or have developed the means to apply technically advanced processes to green beans.

Attracting more investment into this area may yield a number of other benefits for Lao coffee producers. For example, as the number of manufacturing and exporting companies increase, there will be higher demand for produce from Lao coffee growers (because of international linkages the former possess), hence the price that the farmers receive for their products could increase. Similarly, with an increased volume of cultivation, there will be higher requirements for labour-inputs, with a consequent upward push in wages paid to farm workers as a consequence of competition for their services.

Longer-term recommendations

Policies should be put in place to encourage the processes of formalization and commercialization in other sectors beyond coffee, especially in agriculture. The formal nature of parts of the coffee sector has been instrumental in improving the welfare of farmers and communities, especially through enhanced value added, knowledge transfer and employment; in consequence, the coffee sector can be a role model for other sectors in Lao PDR. The majority of output in coffee is largely being exported to international markets, mostly for the production of instant coffees. Because local, regional and global value chains involve participation by various actors, both domestic and foreign, including international coffee traders, exporters, and intermediaries who control the logistic processes outside the country (as well as investors who manage the GVC within country), the sector is moving towards a high level of commercialization. This characteristic of the sector has also led to a high level of formalization, which has benefited coffee producers by creating formal employment opportunities and a higher level of income for workers. Moreover, the formal nature of the sector provides room to improve tax revenue collection from commercial entities.

Given that the private sector is still in the process of developing in Lao PDR and there are large gaps in big private actors and the supportive industries, policymakers may consider taking facilitating measures to attract more foreign investors into the agriculture sector, including coffee, and bring in more business actors into the value chains. As the development of the coffee sector shows, the presence of big companies may help to share best-practices, bring in the latest technology and offer training of the workforce in the sector. However, effective regulations which govern the behaviour of companies should be in place in order to avoid undesired, often detrimental, effects on the local economy.

Annex I

List of People and Organisations Contacted

Organization	Contact Person	Title
Ministry of Planning and Investment	Mrs. Bounmisay Thipsomphanh	Officer, Investment Promotion Department
Lao Statistical Bureau, Department of Data Service	Mrs. Thirakha Chanthalanouvong	Director of Social Statistics
Ministry of Agriculture and Forestry, Department of Agriculture	Mr. Bouthsakone Inthalangsee,	Technical Officer, Project Manager
	Mr Vanthieng Phommasoulin,	Senior Officer
	Mr/ Ms. Linglong Sithixay	Technical Officer
	Mr Sinouk Sisombat	President
National Economic Research Institute (NERI)	Dr. Saykham Voladet	Research Officer
	Dr. Leeber Leebouapao,	Acting Director-General
Ministry of Agriculture and Forestry; National Agriculture and Forestry Research Institute (NAFRI)	Mr. Bounhom Thepphavong	Head of Research Management Unit
	Mr. Bandith Ramangkoun	Head of Information Service
	Ms. Pom Panthavong	Deputy Director, Centre for Agriculture and Forestry Research Information
	Dr. Leeber Leebuapao	Deputy Director, Committee for Planning and Cooperation
	Mr. Linkham Douangsavan	Deputy Director
	Dr. Monthathip Chanphengsay	Director General
	Dr. Bounthong Bouahome	Research Leader
Lao National Chamber of Commerce and Industry; Trade, Investment & SME Division		

FAO Representative in Laos	Dr. Tri Naipospos	Technical Coordinator/ Team Leader
		National Project Coordinator, EC-FAO
	Mr. Phouthasinh Khamvongsa, (Food security)	Project
Ministry of Industry and Commerce (MOIC),	Mr. Xaysomphet Norasing	Director of Economic & Trade Policy Research Division, Economic Research Institute for Trade (ERIT)
	Mr. Ektisak Oudomhack	Price-Goods Administration Division, Department of Domestic Trade
Swiss Agency for Development and Cooperation	Mr. Michael Jones	Chief Technical Adviser, Laos Extension for Agriculture Project (LEAP)
	Mr. David Fullbrook	Consultant

Annex II

Lao PDR: Foreign investment policy regime and incentives

Area	Comment
Government agency dealing with FDI	Investment Promotion Department, Ministry of Planning and Investment
Limits on foreign equity participation	At least 30% foreign capital is required in joint ventures 100% foreign ownership is allowed in all sectors except mining and electricity
Tax incentives	Investment in Zone 1- Mountainous, plateau zones with no economic infrastructure.: 7 year tax holiday and 10% income tax thereafter Investment in Zone 2- Mountainous, plateau zones with a moderate level of economic infrastructure: 5 year tax holiday and 7.5 % income tax thereafter Investment in Zone 3 - Mountainous, plateau zones with good economic infrastructure: 3 year tax holiday and 10% for the next 2 years and 20% thereafter 3 Reduced import duties on inputs: 0% for exporters and 1% for other foreign firms • In agriculture: Tax exemption for a certain number of years followed by a reduced rate of tax • Exemption from minimum tax requirements • Exemption from tax of profit used for expansion • Exemption of import duties and taxes on equipment, spare parts, vehicles used directly for production and raw materials • Exemption of export duty on exported products.
Tax on repatriation of profits and expatriates income	100 per cent repatriation of capital, profits and dividend is allowed after paying a 10% withholding tax, creditable against corporate tax.
Ownership of land	Following the 2009 FDI law revision, foreign invested companies can own a piece of land for building their residences (Certain conditions to be applied)
Employment of foreign personnel	Up to 10 per cent of total employment
Performance requirements	Not applicable
Protection of foreign investment	(i) Settlement of disputes is governed by the Indian Arbitration Act 1940 (ii) UN Convention for the recognition and enforcement of foreign arbitral awards

Source: UNCTAD, based on Asian Development Bank and UNESCAP

Annex III

Greenfield investments in Lao PDR (2003-2012)

Source country	Industry/Sector	Function	Amount invested US$ million	Jobs created	Parent company	Project type	Year
Australia	Metals, Copper, nickel, lead, & zinc mining	Extraction	168	186	Oxiana	New	2003
Australia	Metals, Gold ore & silver ore mining	Extraction	79.4	217	Oxiana	New	2003
Australia	Metals, Copper, nickel, lead, & zinc mining	Extraction	79.4	217	Pan Australian Resources	New	2004
Australia	Metals, Gold ore & silver ore mining	Extraction	15	17	Pan Australian Resources	New	2004
Australia	Metals, Nonferrous metal production & processing	Extraction	79.4	217	Rox Resources	New	2005
Australia	Metals, Copper, nickel, lead, & zinc mining	Extraction	178	197	Oxiana	Expansion	2007
Australia	Metals, Gold ore & silver ore mining	Extraction	40	44	Pan Australian Resources	Expansion	2007
Cambodia	Financial Services, Retail banking	Headquarters	50.9	76	Acleda Bank	New	2008
Cambodia	Financial Services, Retail banking	Business services	41.5	69	Acleda Bank	New	2009
Cambodia	Financial Services, Retail banking	Business services	41.5	69	Acleda Bank	New	2009
Cambodia	Financial Services, Retail banking	Business services	41.5	69	Acleda Bank	New	2009
Cambodia	Financial Services, Retail banking	Business services	8	42	Acleda Bank	New	2009
Cambodia	Financial Services, Retail banking	Business services	8	42	Acleda Bank	New	2009
Cambodia	Financial Services, Retail banking	Business services	8	42	Acleda Bank	New	2009
China	Alternative/Renewable energy, Hydroelectric power	Electricity	284	95	China Southern Power Grid	New	2007
China	Metals, Alumina & aluminium production and processing	Manufacturing	500	1579	China Nonferrous Metal Industry's Foreign Engineering and Construction (NFC)	New	2009
China	Metals, Copper, nickel, lead, & zinc mining	Extraction	60.4	67	China Minmetals Group	Expansion	2009
China	Paper, Printing & Packaging, Pulp, paper, & paperboard	Manufacturing	105.5	149	Sun Paper (Shan Dong Sun Paper Industry)	New	2009
China	Metals, Iron & steel mills & ferroalloy	Manufacturing	201.7	228	Wuhan Iron and Steel Co Ltd (Wisco)	New	2010
China	Business Services, Schools, colleges, universities, & professional schools	Education and training	25	81	Soochow University (Suzhou University)	New	2011
China	Financial Services, Retail banking	Business services	41.5	69	Industrial and Commercial Bank of China (ICBC)	New	2011
Hungary	Food & Tobacco, Animal production	Manufacturing	3.4	176	Vitafort	New	2010
Hungary	Food & Tobacco, Animal food	Manufacturing	3.4	176	Vitafort	New	2010
Hungary	Food & Tobacco, Animal slaughtering & processing	Manufacturing	3.4	176	Vitafort	New	2010
Hungary	Food & Tobacco, Animal food	Manufacturing	2.2	11	Vitafort	New	2010
Hungary	Food & Tobacco, Animal food	Manufacturing	1.5	8	Vitafort	New	2010
India	Wood Products, Forestry & logging	Manufacturing	350	749	Aditya Birla	New	2006
India	Rubber, Tyres	Manufacturing	79.1	271	Apollo Tyres	New	2011
Japan	Textiles, Cut & sew apparel	Manufacturing	40.9	1412	Yagi (Yagi & Co)	New	2007
Japan	Medical Devices, Medical equipment & supplies	Manufacturing	25.8	152	Mani	New	2009
Japan	Communications , Communications equipment	Sales, marketing and	8	20	Nippon Telegraph &	New	2011

		support			Telephone (NTT)		
Japan	Financial Services, Retail banking	Logistics, distribution and transportation	38.5	69		New	2012
Japan	Financial Services, Corporate & investment banking	Logistics, distribution and transportation	38.5	69		New	2012
Korea, Republic of	Alternative/Renewable energy, Biomass power	Manufacturing	31	39	Kolao Group	New	2006
Korea, Republic of	Alternative/Renewable energy, Hydroelectric power	Logistics, distribution and transportation	281.3	20		New	2012
Lao People's Democratic Republic	Financial Services, Retail banking	Business services	41.5	69	Phongsavanh Bank	New	2008
Lao People's Democratic Republic	Warehousing & Storage, Warehousing & storage	Logistics, distribution and transportation	150	999	Lao Marine Transport Services	New	2008
Malaysia	Hotels & Tourism, Accomodation	Construction	22	52	Sun Holding	New	2004
Malaysia	Real Estate, Commercial & institutional building construction	Construction	13	82	Sun Holding	New	2005
Malaysia	Alternative/Renewable energy, Hydroelectric power	Electricity	500	68	Giant Group (GGL)	New	2007
Malaysia	Coal, Oil and Natural Gas, Oil & gas extraction	Extraction	15	13	Roxwell	New	2007
Malaysia	Alternative/Renewable energy, Hydroelectric power	Electricity	284	95	Mega First Corporation	New	2008
Malaysia	Financial Services, Retail banking	Business services	41.5	69	ICB Financial Group Holdings AG (ICB)	New	2008
Malaysia	Transportation , Rail transportation	Logistics, distribution and transportation	152.8	110	Giant Group (GGL)	New	2009
Malaysia	Real Estate, Real estate services	Construction	50	316	Universal Pacific	New	2009
Malaysia	Non-Automotive Transport OEM, Motorcyle, bicycle, & parts	Manufacturing	71.4	813	Tan Chong Motor Holdings	New	2011
Netherlands	Beverages, Breweries & distilleries	Manufacturing	17	44	Heineken	New	2006
Qata	Financial Services, Retail banking	Business services	41.5	69	Qatar Islamic Bank (QIB)	New	2008
Singapore	Chemicals, Paints, coatings, additives & adhesives	Sales, marketing and support	11.7	48	Olam International	New	2009
Singapore	Business Services, Legal services	Business services	8	42	Rajah & Tann	Expansion	2010
Singapore	Food & Tobacco, Crop production	Logistics, distribution and transportation	5.8	182		Expansion	2012
Taiwan Province of China	Plastics, Plastic bottles	Logistics, distribution and transportation	28.1	73		New	2012
Thailand	Food & Tobacco, Sugar & confectionary products	Manufacturing	7.63	1000	Khon Kaen Sugar Industry	Expansion	2006
Thailand	Food & Tobacco, Sugar & confectionary products	Manufacturing	22.5	800	Mitr Phol Sugar	New	2006
Thailand	Food & Tobacco, Fruits & vegetables & specialist foods	Manufacturing	3.4	176	Lampang Food Products	Expansion	2006
Thailand	Food & Tobacco, Fruits & vegetables & specialist foods	Manufacturing	5	26	Lampang Food Products	New	2007
Thailand	Food & Tobacco, Grains & oilseed	Manufacturing	3.4	176	Charoen Pokphand Group	New	2008
Thailand	Food & Tobacco, Fruits & vegetables & specialist foods	Manufacturing	0.65	3	River Kwai International Food	New	2008

					Industry		
Thailand	Food & Tobacco, Animal production	Manufacturing	4.56	23	Betagro	New	2008
Thailand	Business Services, Legal services	Business services	1.7	6	Siam Premier	New	2011
Thailand	Healthcare, Outpatient care centres & medical & diagnostic laboratories	Business services	59.5	145	Wuttisak Clinic	New	2011
Thailand	Healthcare, Outpatient care centres & medical & diagnostic laboratories	Business services	3.2	25	Wuttisak Clinic	New	2011
Thailand	Alternative/Renewable energy, Biomass power	Manufacturing	558.2	700	Thai Biogas Energy	New	2011
Thailand	Coal, Oil and Natural Gas, Gasoline stations	Retail	31.7	356		New	2012
Thailand	Electronic Components, Electric lighting equipment	Logistics, distribution and transportation	43.5	240		New	2012
Thailand	Rubber, Other rubber products	Logistics, distribution and transportation	79.1	271		New	2012
United States	Hotels & Tourism, Accomodation	Sales, marketing and support	2	11	Best Western	New	2008
United States	Beverages, Soft drinks & ice	Logistics, distribution and transportation	40	100		New	2012
VietNam	Plastics, Laminated plastics plates, sheets & shapes	Manufacturing	1.3	8	Saigon Plastic	New	2003
VietNam	Building & Construction Materials , Cement & concrete products	Manufacturing	0.6	4	Hanoi Construction	New	2003
VietNam	Financial Services, Retail banking	Business services	41.5	69	Eastern Asia JS Bank	New	2003
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Dak Lak Rubber Company	New	2005
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Dak Lak Rubber Company	New	2005
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Dak Lak Rubber Company	New	2005
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Dak Lak Rubber Company	New	2005
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Dak Lak Rubber Company	New	2005
VietNam	Chemicals, Basic chemicals	Sales, marketing and support	1.6	19	Viet Nam Chemicals	New	2005
VietNam	Food & Tobacco, Food & beverage stores	Retail	56.6	581	Golmart	New	2006
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Dak Lak Rubber Company	Expansion	2006
VietNam	Alternative/Renewable energy, Hydroelectric power	Electricity	284	95	Vietnam Oil and Gas Corporation (PetroVietnam)	New	2007
VietNam	Metals, Iron ore mining	Extraction	15	17	Vietnam National Coal and Mineral Industries Group (Vinacomin)	New	2007
VietNam	Coal, Oil and Natural Gas, Other petroleum & coal products	Sales, marketing and support	7.5	34	Vietnam Oil and Gas Corporation (PetroVietnam)	New	2007
VietNam	Food & Tobacco, Grains & oilseed	Manufacturing	2	10	Huynh Phuoc	New	2007
VietNam	Communications , Wireless telecommunication carriers	ICT and Internet infrastructure	35	14	Viettel	New	2008
VietNam	Alternative/Renewable energy, Hydroelectric power	Electricity	284	95	Mai Linh Group	New	2008
VietNam	Metals, Nonferrous metal production & processing	Extraction	79.4	217	Dai Thang	New	2008
VietNam	Metals, Nonferrous metal production & processing	Extraction	79.4	217	Dai Thang	New	2008
VietNam	Rubber, Rubber hoses & belting	Manufacturing	30	173	Ho Chi Minh City Rubber	New	2008
VietNam	Hotels & Tourism, Travel arrangement & reservation services	Sales, marketing and support	2	11	Mai Linh Group	New	2008
VietNam	Rubber, Rubber hoses & belting	Manufacturing	79.1	271	Hoang Anh Gia Lai (HAGL)	New	2008

VietNam	Paper, Printing & Packaging, Pulp, paper, & paperboard	Manufacturing	2	360	Long Van	New	2008
VietNam	Metals, Nonferrous metal production & processing	Sales, marketing and support	3	8	Viet Phuong Investment (VPG)	New	2008
VietNam	Financial Services, Insurance	Sales, marketing and support	37.6	381	Bank for Investment and Development of Vietnam (BIDV)	New	2008
VietNam	Wood Products, Furniture, homeware & related products	Manufacturing	4	9	Savimex	New	2008
VietNam	Financial Services, Corporate & investment banking	Business services	41.5	69	Saigon Thuong Tin Commercial Joint Stock Bank (Sacombank)	New	2008
VietNam	Food & Tobacco, Coffee & tea	Manufacturing	45.15	117	Dao Huong	New	2008
VietNam	Hotels & Tourism, Accomodation	Construction	1000	2371	Long Thanh Golf Investment & Trading	New	2009
VietNam	Textiles, Clothing & clothing accessories	Retail	21.9	119	Vietnam National Garment & Textile Corp. (Vinatex)	New	2009
VietNam	Financial Services, Corporate & investment banking	Business services	41.5	69	Saigon Thuong Tin Commercial Joint Stock Bank (Sacombank)	New	2009
VietNam	Hotels & Tourism, Travel arrangement & reservation services	Sales, marketing and support	2	11	Buffalo Tours	New	2010
VietNam	Financial Services, Retail banking	Business services	41.5	69	Vietnam Military Bank (Military Joint Stock Commercial Bank)	New	2010
VietNam	Beverages, Breweries & distilleries	Sales, marketing and support	23.4	24	Hanoi Liquor (Halico)	New	2010
VietNam	Financial Services, Retail banking	Business services	41.5	69	Saigon Thuong Tin Commercial Joint Stock Bank (Sacombank)	Expansion	2010
VietNam	Software & IT services, Custom computer programming services	Business services	2.5	173	FPT Corporation (Financing and Promoting Technology)	New	2010
VietNam	Financial Services, Retail banking	Business services	41.5	69	Vietnam Joint Stock Commercial Bank for Industry and Trade (Vietinbank)	New	2011
VietNam	Business Services, Architectural, engineering, & related services	Business services	8	42	Consultant and Inspection Joint Stock Company of Construction Technology and Equipment (Coninco)	New	2011
VietNam	Financial Services, Corporate & investment banking	Business services	41.5	69	Vietnam Oil and Gas Corporation (PetroVietnam)	New	2011
VietNam	Financial Services, Investment management	Business services	41.5	69	Bank for Investment and Development of Vietnam (BIDV)	New	2011

Source: UNCTAD FDI/TNC Database

Annex IV

Breakdown of the Economy and Sectors under Review by Impact Indicators and Estimated Potential

<table>
<tr><td rowspan="5">VALUE OF PRODUCTION
Gross production in physical terms by output prices at farm gate. It represents the market value of food and agricultural products at the time they were produced</td><td rowspan="5">In 2010, 80% of production was Robusta and 20% Arabica</td><th colspan="3">2010</th><th colspan="3">ESTIMATION
(Hypothesis: 50% of the production[21] is Robusta and 50% Arabica)</th></tr>
<tr><td>Value US$</td><td>MT</td><td>US/MT</td><td>Robusta average price Us cent per lb in 2010 (at farm gate)</td><td>Mild Arabica average price US cent per lb in 2010 (at farm gate)</td><td>Estimated value US$</td></tr>
<tr><td rowspan="3">29,100,000</td><td rowspan="3">47,052</td><td rowspan="3">618.5</td><td>58.9</td><td>121.6</td><td>93,622,009</td></tr>
<tr><th colspan="3">ESTIMATION
(Hypothesis: Same Robusta/Arabica proportion but improving quality, i.e. no price penalty)</th></tr>
<tr><td colspan="2">Proxy: value of production of green coffee in Vietnam in 2010 = 1254.45 US$/MT</td><td>59,024,381</td></tr>
</table>

Source: UNCTAD, based on FAOStats

[21] Estimations are based on total coffee production quantity in 2010 (i.e. 47,052 MT)

<table>
<tr><td rowspan="5">EXPORTS</td><td rowspan="5">In 2010, 66% of the exports were Robusta</td><th colspan="3">2010</th><th colspan="3">ESTIMATION
(Hypothesis: 50% of the exports[22] is Robusta and 50% Arabica)</th></tr>
<tr><td>Value</td><td>Quantity (MT)</td><td>US/MT</td><td>Robusta average price in 2010</td><td>Arabica average price in 2010</td><td>Estimated value US$</td></tr>
<tr><td rowspan="3">33,000,000</td><td rowspan="3">17,088</td><td rowspan="3">1931.2</td><td>78.14 US cent per lb</td><td>195.96 Us cent per lb</td><td>51,630,329</td></tr>
<tr><th colspan="3">ESTIMATION
(Hypothesis: Same Robusta/Arabica proportion in exports but improving quality, i.e. no price penalty)</th></tr>
<tr><td colspan="2">The price received in international markets for Lao green coffee beans is estimated to be US$100-150/MT lower than the average for other countries, which amounts to a total penalty or loss of export income of between US$1.7-2.5 million</td><td>34,700,000 - 35,500,000</td></tr>
</table>

Source: UNCTAD, based on FAOStats; Sysana, 2011 and Nafri, 2012.

[22] Estimation based on total export in 2010 (i.e. 17,088 MT)

BUSINESS ENTITIES	2010					ESTIMATION (Number of new business entities needed to further develop the coffee sector)
	Total farm households 2010/2011	Coffee households	Coffee planters	Wholesalers	Exporters	
	782,800 77% of all housholds are farm households	25,000 3% of total farm households are coffee households	16 International private companies, of which: Pakxong Highland Cy (Thailand) - 3000 ha Outspan/Olam (Singapore) -+ 1100 ha 3 Vietnamese - between 500 and 1000 ha	There are less than 10 wholesalers (they live in district towns of Paksong and Laongam). Their range of action includes 30 to 50 villages within the limits of the district (2007)	Less than 20 exporters 70% of exports in hands of 1 company.	**2-3 additional big exporters/manufacturers**

Source: UNCTAD, based on Lao economic census 2006, DoS, MPI; Galindo et al. 2007 and Southichack 2009.

FISCAL REVENUE		2010			
	Tax on profit: 31.6 US$/MT of coffee (according to 2006/2007 fiscal regime)	Production (MT)	TOTAL US$ million	2009/2010 Estimated Tax Revenue US$ million	2009/2010 Estimated Profit tax revenue US$ million
		47,052	1.49	953.9	143.02

Source: UNCTAD, based on FAOStats, Galindo et al. 2007 and IMF 2012

<table>
<tr><td rowspan="4">EMPLOYMENT</td><td rowspan="4">For each hectare of productive coffee land (52,600ha) , approximately 0.84 (~1) persons contribute to the cultivation, maintenance, and harvest of that land. Arabica harvest requires almost the double of workers per hectare compared to robusta harvest.</td><td colspan="6">2010</td><td colspan="2">ESTIMATION (Hypothesis: 50% of the production is Robusta and 50% Arabica)</td></tr>
<tr><td>Total active population</td><td>Agricultural population</td><td>Total active population in agriculture</td><td>Overall - persons from farm households contributing to cultivation, maintenance and harvest of productive coffee land</td><td>Arabica (20% of total production)</td><td>Robusta (80% of production)</td><td>Arabica</td><td>Robusta</td></tr>
<tr><td rowspan="2">3,161,000</td><td rowspan="2">4,646,000</td><td rowspan="2">2,368,000 (75% of agri. population)</td><td rowspan="2">44,184 (i.e. 2% of active pop. in agri. and 1% of total active population)</td><td>375,000 days-worker (i.e. 25 day-worker per MT, considering average weight of cherries picked per person of 40kg/Day)</td><td>470,520 days-worker (12.5 days-worker per MT)</td><td>588,150 days-worker</td><td>294,075 days-worker</td></tr>
<tr><td colspan="2">TOTAL = 845,520 days-worker</td><td colspan="2">TOTAL = 882,225 days-worker</td></tr>
</table>

Source: UNCTAD, based on FAOStats, Galindo et al. 2007 and Toro, 2012

	2008/2009	ESTIMATION (Revenue farmers would have received if they had produced Arabica, i.e. 69-80% of Arabica average world price in 2010)
FARMERS' REVENUE	In 2008, average household income ≈ US$ 2,200 Farmers received between 1.18US$/kg and 1.35 US$/kg for Robusta (i.e. 69-80% of the average world price for Robusta in 2009. The farmers' price as % of world price was roughly the same as in 2008 and 2009	**2.98 - 3.46**

Source: UNCTAD, based on Southichack 2009 and Toro, 2012

	2010		ESTIMATION (Hypothesis: 50% of the production[23] is Robusta and 50% Arabica)
WAGES	Daily workers	Permanent workers	**Wages are likely to increase as demand for workers for Arabica harvesting rises**
	average 0.9 US$/kg	average 100 US$/month	

Source: UNCTAD, based on company interviews.

[23] Estimations are based on total coffee production quantity in 2010 (i.e. 47,052 MT)

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