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## ***Abstract:***

China's outward FDI started when China opened up to the outside world in 1978. China, however, is not widely recognized as an important FDI exporting country until the discourse of its resource-seeking investment in Africa in recent years. Although most of outward FDI stock actually went just to one destination (Hong Kong), China has been increasing the investment in Asian and African developing countries sharply in recent years.

However, the investment in leasing and business service, banking, and energy/mining sectors create fewer jobs. The small amount of investment in agriculture sector can have larger impacts on agriculture and rural development. There is a very limited existing study on how Chinese investment affects agricultural transformation and inequality in the process of rural development. This paper aims to fill that knowledge gap through a case study of Laos, a country where China's FDI has played a key role in economic development since 2000s.

From the field surveys in Oudomxay Province, Northern Laos in 2009 and 2011, the results suggest that Chinese investment has emergently transformed the agriculture system from subsistence to commercial farming. There is evidence of a significant impact of Chinese investment on reducing the poverty level and income inequality. However, not all households and villages can receive these benefits. Uneven development among households and villages is fundamentally embedded in the starting period and the production choice with Chinese merchants.

***Keywords:*** FDI, Agricultural Transformation, Rural Development, Poverty, Inequality, China, Laos

***JEL Classification:*** E22, I32, O13, O18, O53, Q12

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# **Chinese Outward FDI in Agriculture and Rural Development: Evidence from Northern Laos**

## **1. INTRODUCTION**

China has been well-known as one of the largest recipients of foreign direct investment (FDI) and a global manufacturing hub since the early 1990s. China, however, is not widely recognized as an important FDI exporting country until the discourse of its resource-seeking investment in Africa in recent years. In 2011, China's outward FDI (OFDI) net flows reached US\$ 65 billion. This ranked 9<sup>th</sup> in all economies and 2<sup>nd</sup> among developing economies (UNCTAD 2012).

China's OFDI stock reached US\$ 365 billion by 2011, much over 13 times the US\$ 28 billion recorded in 2000 and far above the insignificant US\$ 4 billion of 1990. China is a late developer in its outward investment, even among large emerging markets. Russia's OFDI stock grew faster than China's, reaching US\$ 362 billion in 2011 compared to US\$ 20 billion in 2000. Brazil had OFDI stock of US\$ 41 billion in 1990, way ahead of China, but fell behind with only US\$ 203 billion in 2011. China, though, did continue to outperform India, with its modest 2011 total OFDI stock of US\$ 111 billion (UNCTAD 2012).

As a reflection of this surge, there are many papers written on China's OFDI over the past decade, which may summarize into mainly three aspects. First, the literature on Transnational Corporations (TNCs) or Multinational Corporations (MNCs) has attempted to identify the motivations of Chinese firms in the line with the famous Dunning seminal works. Cai (1999) identified four motives for Chinese outward FDI: (a) market; (b) natural resources; (c) technology and managerial skills; and (d) financial capital. Deng (2004) identified two additional motives: (e) strategic assets (e.g., brands, marketing networks), and (f) diversification. von Keller and Zhou (2003) found that, for 60% of Chinese TNCs, market seeking was the strongest motivation for outward investment. Resource seeking is the imperative for OFDI for 20% of the firms surveyed. Moreover, Chen and Lin (2008) argued that the main form of Chinese firms in technology acquisition by piecemeal purchase of equipment and technology licensing during the 1980s and 1990s was not satisfactory. Now more and more Chinese companies realize that cross-border M&As can be a quick and useful means to obtain brand names, sophisticated technology and/or well-established channels in one package. Despite the abundance of low domestic labor costs, Chinese TNCs may use OFDI as a means to enhance learning-by-doing and/or achieve economies of scale, thereby improving efficiency.

Second, many scholars have discussed the evolution of the ideological and policy conditions that led to the dramatic growth of China's OFDI. For example, Cheng and Stough (2008) divided

such evolution into three stages based on changes in attitudes toward China's TNCs and, consequently, on the growth in volume of China's OFDI. The first period, from 1978 to 1991, witnessed strong ideological opposition toward TNCs, and heated debates on China's overall development strategy and China's overseas investment. The second period, from 1992 to 2000, saw increasingly muted political opposition to developing China's transnational businesses and officially endorsed and encouraged overseas investment and operations. The last period, from 2001 onward evidences the establishment of a consistent and coherent "going abroad" strategy that actively promotes China's OFDI as an integral part of China's economic development strategy and as a response to the growing competitive effects of globalization. Buckley et al. (2007) argued that in any case, the real driving force behind the process has been the Chinese government. During the initial period, the internationalization of Chinese companies was tightly controlled by the national and provincial government. OFDI remained prohibited for private companies until 2003. The setting up of overseas operations by Chinese firms then became one of the official policies for opening up the economy with the leading role being played by SOEs, which were seen as instruments through which to achieve national objectives. On the other hand, Rosen and Hanemann (2009) viewed that yet China's OFDI profile is poorly understood. The motives and targets of China's OFDI are changing rapidly, driven more by a readjustment in China's economic growth model than by political considerations. More pointedly, the focus of Chinese OFDI will shift toward commercial operations in advanced economies rather than the traditional focus on resource extraction in developing countries.

Third, researcher attentions have focused on Chinese resource-seeking investment (oil, bauxite, etc.) as a leading source of FDI in Africa, which has risen sharply in recent years. This OFDI has frequently been accused of having negative and exploitative consequences for the host countries. Although recipient African nations have received investment inflows, they have come with certain drawbacks. They have negatively impacted local trade and commerce. Also, in some cases African labor has not benefited from Chinese investment (e.g. Brookes 2007, Frynas and Paulo 2007 and Adisu et al. 2010). However, these assessments are controversial for two reasons. First, China's OFDI has become very important for a number of less developed countries. In Laos, for an example, China ranked as the top five investors over the past decade (Investment Promotion Department 2010). Second, rigorous empirical evidence from primary sources of the effects of Chinese OFDI on host-country development is very scarce. Conclusions are often drawn from anecdotal and selective descriptive examples (Kubny and Voss 2010).

The growing presence of Chinese OFDI worldwide has sparked a continuing debate in recipient countries on the social and economic consequences, and the policy options for dealing with the rise of China. Despite the prominence given to this issue in public policy debate, there is a dearth of systematic empirical research on the impact of emerging Chinese investment onto sustainable

economic development of developing countries, especially in the terms of agricultural transformation and rural development<sup>1</sup>. The paper aims to fill this knowledge gap through a case study of Laos. Northern Laos, in particular, is an interesting ‘laboratory’ for an in-depth study of the issue at hand, given its heavy dependence on Chinese investment in term of capital mobilization. The investment from Chinese merchants in a form of contract farming can contribute in income generation and poverty reduction, but there is also a growing concern that uneven development is a key obstacle for sustainable development of rural areas.

In this paper we focus specifically on the experience of Oudomxay, Northern Laos because Chinese investment in the agriculture sector is specifically focussed on this province. The core of the paper is an analysis of agricultural transformation and rural livelihood using a field survey conducted in 2009 and 2011. The rest of the paper is organized as follows. Section 2 provides an overview of China’s OFDI flows by region and sector. Section 3 reviews the trends and characteristics of Chinese investment in Laos to set the stage for the ensuing analysis. Section 4, which forms the core of the paper, undertakes an analysis of the changes in agriculture transformation, total income, poverty and inequality in the villages. The paper ends in Section 5 with some concluding remarks.

## 2. AN OVERVIEW OF CHINA’S OFDI

China’s OFDI started when China opened up to the outside world in 1978. During 1978-85, China’s OFDI, mainly by state-owned enterprises, was guided by the central government for the purpose of trade and economic cooperation with other countries. From 1986 to 1991, restrictive policies were liberalised and non-state firms were allowed to invest abroad. From 1992 to 1998, there was a surge in offshore investment by local and provincial enterprises, often in Hong Kong (Wong and Chan 2003). China started to formulate its ‘go out’ policy in the early 1990s. The policy took shape in 1997 when the former president Jiang Zemin declared that Chinese enterprises should better utilize both the domestic and overseas markets and resources both in and outside China. Since then, attracting FDI inflow and ‘going out’ have been regarded as the two wheels of China’s opening-up policy. In 2000, the ‘go out’ policy was included in China’s tenth Five-Year Plan for National Economic and Social Development in anticipation of China’s accession to the World Trade Organization. Since then, Chinese OFDI has grown considerably faster (Chen and Lin 2008).

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<sup>1</sup> For examples, Tang (2009) examines on foreign direct investment in agriculture in China. It describes the existing statement of foreign direct investment in agriculture in China, and analyzes some possible limiting factors about the shortage of FDI in agriculture in China. Furthermore, the increased role for agribusiness and larger scale production in China’s agricultural system is limited by China’s severe lack of arable land. Moreover, Luo et al. (2011) showed that some Chinese companies have sought cheaper and often more accessible land in nearby regions, including Southeast Asia. While such investments have the potential to deliver benefits, including increased productivity, structural constraints such as weak land ownership and environmental laws, highly unequal distribution of land and underdevelopment of peasant organizations prevent many poorer farmers from benefiting from these investments.

During the past three decades, Chinese TNCs have invested in many countries. Figure 1 shows the breakdown of OFDI stock by regions (Chinese Ministry of Commerce 2011). The bulk of China’s OFDI stock goes to Asia, which accounted for US\$ 228 billion (72%) of total OFDI stock in 2010. However, most of that stock actually went just to one destination, Hong Kong (China). Within Asia, Singapore, Macau, Myanmar, Pakistan and Kazakhstan are the attractive places for China enterprises, after Hong Kong. Surprisingly, Japan and South Korea are less attractive destinations for China firms. The second largest attractive region for Chinese investments is Latin America. Much of that stock went to Cayman Island and British Virgin Island known as the financial centers or ‘tax heaven’ islands. Media attention worldwide has focused on Chinese OFDI in Africa, which has risen sharply but was still at 4% of the country’s global total OFDI in 2010.

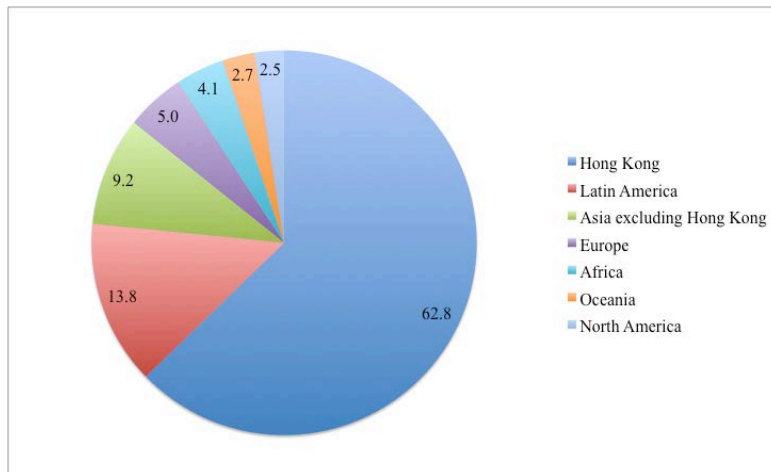


Figure 1: Share of China’s OFDI stock by Region in 2010, (unit: %)

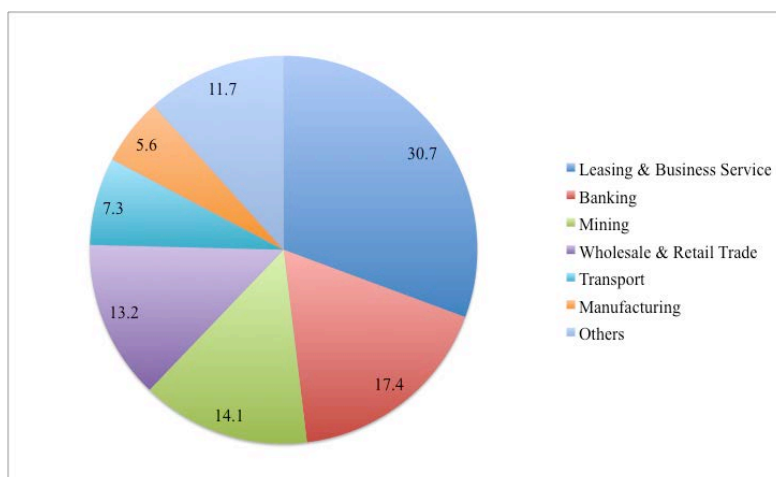


Figure 2: Share of China’s OFDI stock by Sector in 2010, (unit: %)

In terms of industry breakdown, the largest proportion of China's OFDI stock goes to leasing and business service by 30.7%, following by banking sector, 17.4%. Another significant proportion of China's OFDI stock takes place in natural resource related industries, 14.1% (Chinese Ministry of Commerce 2011). For much of the past two decades, the Chinese government has sought to ensure the supply of domestically scarce products through OFDI such as minerals, petroleum, timber and fisheries. Establishing solely funded subsidiaries or joint ventures with local partners has been a major format of China's OFDI. Cross-border M&As by Chinese firms can be further divided into two categories (Chen and Lin 2008). The first is the extension of production and marketing worldwide. The second is resources exploitation. Examples of this include China National Offshore Oil Corporation, which became the biggest offshore oil producer in Indonesia by buying off the stakes of some local companies and China Minmetals Corporation, which became the biggest mining producer in Laos by taking over the stakes of OZ Minerals (Australia).

At the present, although only 1% of China's OFDI stock takes place in Agriculture sector, more and more Chinese enterprises have invested in this sector in developing countries. As shown in Figure 3, China's OFDI stock to agriculture reached US\$ 2.6 billion by 2010, much over 5 times the US\$ 0.5 billion recorded in 2005. Moreover, except for a large plantation project, many investments in form of contract farming tend to be small value and, perhaps, are not recorded in the official statistics. For an example in the case of Laos, the approval investment value under 5 million USD was recorded at provincial or district level until 2011<sup>2</sup>. Thus, considerable investment projects by individual Chinese merchants were not reported in the official statistics.

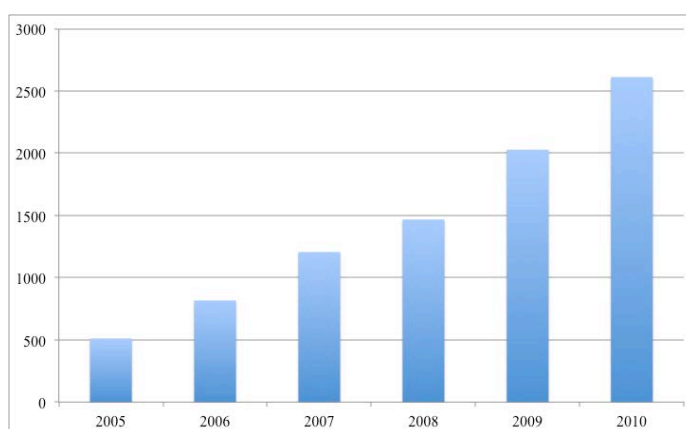


Figure 3: China's OFDI stock in Agriculture Sector over 2005-2010 (unit: million USD)

<sup>2</sup> Since 2011, the foreign investment above 1 billion Lao Kips or roughly over 120,000 USD must seek for the approval at the central level, in order to avoid potential under-report and underestimate the real value of foreign investment (Government of Lao PDR, 2011).



### 3. TRENDS AND CHARACTERISTICS OF CHINESE INVESTMENT IN LAOS

Within Southeast Asia, Singapore, Myanmar and Cambodia are the most attractive places for China enterprises. Surprisingly, a small economy like Laos has also received much attention from China firms. As shown in Table 1, during 2006-2010, Laos has received over 800 million USD of investment flow, which is approximately at the same level with much bigger economies in the region like Indonesia and Thailand. The investment flow to Laos is even larger than Vietnam, Philippines and Malaysia in the same period.

Table 1: China's OFDI flows in Selected Southeast Asia Countries, 2006-2010

Country	2006	2007	2008	2009	2010	Average
Indonesia	56.9	99.1	174.0	226.1	201.3	151.5
<b>Lao PDR</b>	<b>48.0</b>	<b>154.4</b>	<b>87.0</b>	<b>203.2</b>	<b>313.6</b>	<b>161.2</b>
Malaysia	7.5	-32.8	34.4	53.8	163.5	45.3
Philippines	9.3	4.5	33.7	40.2	244.1	66.4
Thailand	15.8	76.4	45.5	49.8	699.9	177.5
Vietnam	43.5	110.9	119.8	112.4	305.1	138.4

Source: Chinese Ministry of Commerce 2011 (Unit: millions of US\$)

China has played a key role in inward FDI of Laos in 2000s. However, China is a latecomer in term of investment to its neighbouring countries, like Laos and Vietnam. Historically, FDI in Indochina dates back to the period of French colonial rule between 1887 and 1953. FDI in the region before 1900 appears to have been utterly insignificant. Initially, the business activity focused on small trading, but industrial revolution made the need for resources in the new markets and foreign investments. Most investments in Indochina were from France during the colonization (Linbald 1998). With respect to Lao PDR, only in tin mining was French capital in any considerable amounts invested under the colonization (Stuart-Fox 1995).

Lao PDR has experienced a rapid change in FDI activity since the late 1980s when the country began the economic transition. According to Onphanhdala and Suruga (2010), law on FDI in Laos was first promulgated in 1988 and amended in 1994, 2004 and 2009. In 1990s, FDI in Laos was heavily dominated by the neighbouring Thailand especially in the hydroelectric power energy sector. In early 2000s, however, China has turned to play the significant role in Laos and, thus urging the Lao's alliance Vietnam to increase her investment to Laos in the late 2000s. As shown in Table 2, China presents as the top 3 foreign investors in Laos in most years over 2000/01 to 2011/2012. Up to 2011/2012, China invests roughly 3 billion USD in Laos and ranks the 2<sup>nd</sup> place in accumulated inward FDI stock to the 1<sup>st</sup> rank Vietnam, and ahead of Thailand and other countries.

Table 2: Top 3 Foreign Investors in Laos over 2000/01 to 2011/2012

Ranks	2000/01	01/02	02/03	04/05	05/06	06/07	08/09	09/10	10/11	11/12
1	<b>China</b>	<b>China</b>	<b>China</b>	Thailand	Thailand	<b>China</b>	Vietnam	Vietnam	<b>China</b>	Vietnam
2	France	France	Thailand	France	<b>China</b>	Vietnam	<b>China</b>	<b>China</b>	Vietnam	<b>China</b>
3	S. Korea	Sweden	Malaysia	<b>China</b>	Japan	Thailand	Thailand	Thailand	Thailand	S. Korea

Source: Investment Promotion Department, Ministry of Planning and Investment.

Note: China were ranked at 5<sup>th</sup> in 2003/04 and 4<sup>th</sup> in 2007/08

Based on the unpublished FDI statistics of Ministry of Investment and Planning (Lao language), it is clear that there is an increasing trend of China FDI to Laos over the past two decades. However, it has been big fluctuations in the flows. Years when no big projects in the mining, industry, and energy sectors were licensed tended to be much leaner. The first Chinese firm made investment in the garment subsector located in Vientiane capital in 1990. However, Chinese OFDI to Laos is mostly resource seeking in the mining sector<sup>3</sup> (e.g. bauxite, copper, gold, iron, zinc, and salt). This subsector alone accounts for over half of the total China’s FDI stock in Laos (see Figure 4). In 1995, a Chinese firm first started the survey and exploitation in mining sector located in Oudomxay province, Northern Laos. Since then, many Chinese firms have expanded their survey and exploitation in the nationwide. The largest Chinese investment in mining sector joined with Thailand and Laos (1.3 billion USD) was approved in 2008 to exploit bauxite and produce alumina (raw material of aluminium) in Southern Laos. Other considerable investment values go to industries, energy (especially electricity), agriculture, and services sectors.

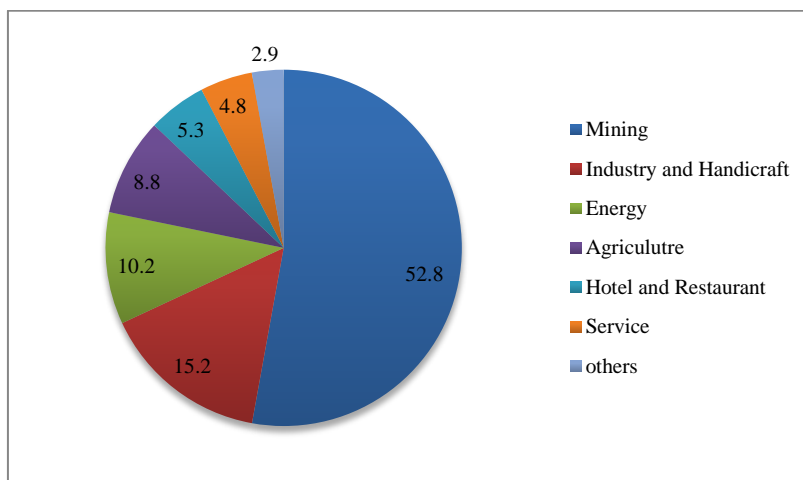


Figure 4: Share of China’s FDI stock in Laos by Sector in 2010, (unit: %)

<sup>3</sup> See Goto (2011) for general discussion on China’s influence in Laos, and World Bank (2010), Menon and Warr (2013) for natural resource management in Laos.

Moreover, Chinese OFDI to Laos has a strong relationship with the Lao exports back to China, especially since the late 2000s. Table 3 shows that Thailand has predominated the trade of Laos in term of import. However, in term of export, China has passed over Vietnam in 2009 and closing its gap with Thailand in 2011. Laos benefits from the comprehensive Free Trade Agreement (FTA) between ASEAN and China that was signed in November 2002. Thus, it is estimated that China will take the lead very soon.

Table 3: Trends in Major Trading Partners of Laos over 1991-2011

	1991	1996	2001	2006	2011
<b>Export</b>					
Thailand	43	97	81	476	1,029
China	2	1	7	45	729
Vietnam	3	158	62	152	297
<b>Import</b>					
Thailand	84	310	452	1,125	3,035
China	23	23	60	186	519
Vietnam	12	26	71	105	245

Source: ADB key indicators 1999 and 2012. (Unit: million USD)

More precisely, Lao exports to China have grown at twice the rate as exports to Thailand in the last ten years. On average, Lao exports to China have expanded by 86% a year since 2005, with year-to-year growth rates ranging from a low of 38% to 174% during that period. That rate of expansion means that the value of exports today are over 30 times what it was in 2005, compared with only a 4-fold increase in the Lao PDR's overall value of exports to all other destinations in the same period. Lao's major exports to China are mainly composed of refined copper and copper ores, wood and articles from wood, and natural rubber. The predominant export category is made up of copper ores and concentrates, which represents two-thirds of the total value of all Lao exports to China. Among the largest emerging exports are maize, sugarcane, essential oils, rice, clothing and apparel, sesame seeds and dried fruit (Lord 2013).

#### 4. AN ANALYSIS OF AGRICULTURAL TRANSFORMATION AND RURAL DEVELOPMENT IN NORTHERN LAOS THROUGH CHINESE INVESTMENT

In this section, the impacts of Chinese OFDI in agriculture and rural development is analysed through the case study of Oudomxay, Northern Laos<sup>4</sup>. First, subsection 4.1 provides an

<sup>4</sup> Existing studies have focused on changes in land use in Northern Laos (e.g. Sandewall et al. 2001; Alexander et al. 2006; and Thongmanivong and Fujita, 2006). These studies explored that farmers are responding to government policies to stabilize shifting cultivation and modifying their farming systems away from a dependency on upland rice cultivation. Besides, farmers are interested in using technologies to change to a market-oriented livelihood strategy

overview of China's FDI in Lao agriculture and briefly shows the influence of China's FDI in transformation of agriculture exports and land use in selected Northern provinces. Then, subsection 4.2 presents the impacts of China's FDI on reducing poverty and increasing inequality in details through the case studies of two villages surveyed in 2009 and 2011.

#### 4.1. AN OVERVIEW OF CHINA'S FDI IN LAO AGRICULTURE AND ITS INFLUENCES

Based on the unpublished FDI statistics<sup>5</sup>, the analysis of China's FDI in agriculture sector in Laos shows that there are 67 projects licenced with the total investment value of 233 million USD by 2011. Of which, they can be divided into three period. From 1991 to 1999, about 16% of the total projects were approved. Another 15% of them were implemented over 2000 to 2005. About 69% of the total projects are recently emerging since 2006. This figure is synchronized with the status of overall FDI from China mentioned above.

One-third of Chinese investors are interested in rubber plantation. Other emerging products include maize, tobacco, vegetable (e.g. beans, pumpkins and garlic), fruits (e.g. banana, water melon and passion fruit), and herbal and crude drugs. Except for few projects in Southern region, most Chinese firms got licenses for agriculture investment in the North (e.g. Phongsaly, Luang Namtha, and Oudomxay) and in the Centre (e.g. Vientiane and Savannakhet). Three quarters of investment form is 100% owned by Chinese and the rest is joint venture with Laotians. Regarding to license duration, about 18% of the total projects is within 10 years, 11 to 29 years and over 30 years account both for 41%.

Over the past recent years, in a reflection of emerging Chinese investment in agriculture, Lao agricultural exports to China have been increasing dramatically as shown in Table 4. Maize export value (especially from Xayaboury and Oudomxay) has jumped up by fourfold over 2007-2011. Export of Beans and sugarcane (e.g. Savannakhet and Luang Namtha) has increased by 3.8 times. Export of Vegetables in 2011 has skyrocketed by 26 times from its insignificant level in

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and require improved access to markets and traders, improved extension support and access to affordable credit. Moreover, existing studies have been interested in changes in rural livelihoods caused by rubber plantation projects in Northern provinces (Fujita, 2007; Manivong and Cramb, 2008; and Thongmanivong et al. 2009). On the other hand, little attention has been paid on impacts of FDI from China, agricultural exports and poverty reduction in Laos. For some extent, Thongmanivong and Vongvisouk (2006) examined the impacts of cash crops on rural livelihoods in Luang Namtha, Northern Laos. The study focuses on equity, particularly in terms of access to land and natural resources among local people after the introduction of cash crops. Onphanhdala and Suruga (2011) identified the agricultural transformation induced by Chinese investment in Oudomxay using data of 2009. They found that there is evidence of a significant impact of Chinese investment on income generation.

<sup>5</sup> FDI data provided here should be regarded as a broad indicative with some caution. The FDI data may be inaccurate due to many of investments made by Chinese individuals typically in collaboration with Lao partners. Likewise, small-scale investments may be under-reported. For an example, there are only 6 agriculture projects invested in Oudomxay projects properly reported in the official statistics at the central level, whereas as many as 28 projects are documented in the provincial statistics (authors' interview to a senior officer at Agriculture and Forestry Division, Oudomxay Province in 2011).

2007. Moreover, Lord (2013) shows that high-growth Lao agriculture exports are strongly correlated with dynamic China imports as in Table 5. The increase of above-mentioned Lao agriculture exports is driven by high demand-pull from spectacular growing of Chinese economy.

Table 4: Top Lao Agricultural Exports to China over 2007-2011

	2007	2008	2009	2010	2011
Maize	2,080	4,013	8,094	9,083	8,305
Locust beans & sugarcane	1,998	3,870	4,260	8,006	7,611
Rice	657	908	5,130	1,988	2,147
Cereals	751	617	1,708	1,730	1,477
Vegetable saps & extracts	47	124	121	1,132	1,238
Sesamum seeds	852	476	1,103	1,785	966

Source: Authors' compiled based on Lao PDR Trade Portal (Online). (Unit: thousand USD)

Table 5: Matching high-growth Lao agriculture exports with dynamic Chinese imports

Avg. 2007-2011	Lao exports	China Imports
Dried fruits	2763%	5106%
Cereal grains	251%	526%
Dried vegetable	236%	62%
Extracts of coffee and tea	229%	46%
Vegetable saps and extracts	191%	28%
Grounded nuts	138%	359%
Rice	102%	10%
Cigarettes	89%	10%
Bananas	65%	30%
Coffee	60%	34%
Locust beans	37%	35%
Fruits, nuts	31%	38%
Maize	27%	371%

Source: Authors' compiled based on Lord 2013.

Table 6 shows the quick response of farmers in selected Northern Laos to dynamic China imports over 2005-2011. Many farmers in Phongsaly, Luang Namtha and Oudomxay have transformed their land use from the traditional crops to commercialized crops due to contract farming both written and verbal with Chinese investors. For an example, in Oudomxay, the plantation areas of tobacco, tea, sugarcane, vegetable/bean, starchy roots (cassava) and maize are expanded by 9.2, 5.0, 3.4, 2.9, 1.7 and 1.3 times, respectively. The expansions of new commercialized crops plantation areas are possible partly due to the shift of land use from traditional crops and also come from the reduction of upland rice area. Phomvixay (2012) shows that a basis for choosing farmers is simple just resource endowment (land). Because inputs such as seeds, plastic

sheets, fertilizers and pesticides are all supplied along with technical guidelines (some cases even with processing unit) by Chinese side.

Table 6: Changes in Plantation Area by Product in Selected Northern Provinces

	Phongsaly		Luang Namtha		Oudomxay		Total	
	2005	2011	2005	2011	2005	2011	2005	2011
Maize	2,080	4,600	1,735	5,370	15,685	20,930	86,000	212,105
Vegetable/bean	1,995	5,430	2,235	1,795	2,335	6,775	85,710	130,640
Starchy roots	2,495	3,645	525	885	475	805	20,460	58,120
Sugarcane	550	1,640	1,460	2,170	170	585	5,500	24,765
Tobacco	n.a	n.a	25	45	65	595	5,360	7,755
Tea	625	1,590	n.a	n.a	45 <sup>(a)</sup>	225	825	2,715
Upland rice	12,355 <sup>(b)</sup>	9,594	6,215 <sup>(b)</sup>	4,659	12,570 <sup>(b)</sup>	10,422	122,116 <sup>(b)</sup>	106,682

Source: Lao Statistics Bureau “Year Book” (various issues). (Unit: ha)

Note: (a) data of 2006, (b) data of 2009

#### 4.2. IMPACTS OF CHINA’S FDI ON REDUCING POVERTY AND INCREASING INEQUALITY

In this study, two villages from Oudomxay province are selected for analysis. Oudomxay is located in the heart of Northern Laos and shares borders with China. This province has 7 districts, 60 village clusters or “*Kum Ban*” and 276,960 inhabitants. During 2006-2010, Oudomxay achieved high economic development with an average growth rate of 13%. Per capita income doubled from 323 USD to 651 USD. Over the same period, the agricultural sector contributed 56% of the provincial GDP, whereas the industry and service sectors accounted for 21.7% and 22.3%, respectively. In addition to large government expenditure and overseas assistance, recent development is fueled mainly by FDI attraction. Over the past 5 years, FDI inflows to Oudomxay amount to over 115 million USD, which is dominated by domestic investments of 21 million USD. Major investments go to the industrial sector (e.g. processing, energy and mining, 57%) and to the agricultural sector (e.g. commercial crops, rubber, and industrial woods, 33%). Total exports have also increased significantly, especially agricultural products (Investment and Planning Division, Oudomxay Provincial Office, 2011).

China dominates most of foreign investments in Oudomxay. With respect to agriculture, China has perfectly monopolized all investments in this sector. The investors are interested in rubber, tea, banana, tobacco and so on. According to reports of Agriculture and Forest Division, provincial office 2011, the initial Chinese investment in rubber plantation was licensed in 2003. Since then, a number of Chinese businessmen invested in rubber and other crop plantations. Currently, there are more than 28 companies operating in this sector (of which, 20 companies are 100% owned by China and the remainders are joint ventures with Lao investors). Most Chinese investors make contracts in form of “2+3” model, meaning that local farmers provide land and labor, while investors contribute

on capital, techniques and market. Few investment contracts are signed the form of “1+4” model, which means local farmers only provide labor, whereas investors would get permits of land concession from the provincial or central government. Examples of “1+4” model are banana and tobacco plantations.

Similar to many reports in other provinces, our interviewed surveys also found that Chinese investors initially contact the provincial and district officers to find available and suitable lands. The investors will have meetings with village heads (within *Kum Ban*) to explain about the projects. Then, village heads will hold meeting to their villagers whether to participate in the projects or not (voluntary basis). Once the contract is signed with the village head, Chinese investors would support the villagers who joined by sending their technicians to provide free or leased fertilizers, chemical inputs and other needed equipment. The costs are to be deducted after the harvest. A company may have contract farming in one or more types of agricultural products at the same time in varied locations. The form of this contract farming deals at *Kum Ban* or village level. Thus, each farmer does not have a direct contract with Chinese investor(s).

#### 4.2.1. OVERVIEW OF THE FIELD SURVEY

This subsection will show an overview of the field survey. The authors conducted the surveys in several villages in Oudomxay, Northern Laos in 2009 and 2011. Results from the survey suggest that Chinese investments in the agricultural sector have different impacts on the development of Oudomxay. In the central city of Xay, the capital district of the province, we can observe the influences of China in various forms, such as buildings (e.g. hotels, restaurants and shops), goods (especially in Leu Xay market) and many Chinese people in the town. However, their impacts on the agricultural sector in Thin village and the likes are not observed. Most interviewed households are engaging in non-farm activities and there was no specific Chinese investment in the area around. In the peri-urban area, Homxay village and the likes are experiencing an indirect impact of Chinese investments. Although there was no direct investment from Chinese investors in the village, many households are hired as temporary workers in rubber plantation projects in other areas of Xay district. This village locates on National Road No. 13-north (NSEC) and only 7 kilometres from the city. Thus, it is a very convenient for local villagers to be mobilized into rubber plantation projects.

In rural areas of Namor districts, Mainatao and Nasavang are two villages close together that are receiving significantly but different impacts of Chinese investments. It is of interesting since the surveyed two villages had never received any form of contract farming with domestic private and public company, and with other foreign company before Chinese investors appear. The traditional production and land utilization have been transformed due to the growing existence of Chinese

investment inflow in mid 2000s. Thus, this study could examine the full effects of Chinese investment on socioeconomic development from its initial impact.

These villages belong to Khuangkham village cluster, where Chinese merchants have interest to make investments in various agricultural crops. Initially, Chinese investors and Laotian brokers aimed to do contract farming with four out of seven villages within the village group, namely Khaungkham, Nasavang, Mainatao and Numkor<sup>6</sup>. Of which, Nasavang village is the pioneer to accept investments from China and this decision has caused many impacts on the development of the village.

Nasavang village is located about 24 kilometres unpaved road away from North-South economic corridor along the 13<sup>th</sup> national road and then connect to international cross-border checkpoint at Luang Namtha province. However, it is just few kilometres to local cross-border checkpoint with China. The Yang ethnic group inhabits in this village. According to the interview to village head, this village locates in this area for a long time and consists of 149 households in 2011. Agriculture land size is about 268 ha, of which half is upland. An average land size per household is relatively large with enough rainfall. Thus, rice production is high and enough for sale almost every year.

On the other hand, Mainatao is the village of the Khmu ethnic group that has migrated from upland area to settle along the road in 1977. This village is located next to Nasavang along the same unpaved road. According to the interview to the village head, this village is relatively small scale with only 43 households in 2011. Agriculture land size is limited to about 56 ha, of which most arable land is upland with insufficient rainfall. The villagers were not interested in contract farming at first. Witnessing the success of villagers in Nasavang, they later gradually apply contract farming with Chinese investors in recent years. From issue mentioned above, it is interesting to examine the impact of foreign direct investment from China on rural development of these villages.

#### 4.2.2. IMPACT OF CHINA'S OFDI ON AGRICULTURE TRANSFORMATION

In Nasavang, the village head explained that before 2000, this village was completely subsistence farming. Since 2001, villagers started to sell maize products to Chinese traders by a purchase-on-site basis without a formal contract. This seemed to be the first exposure to a market economy. However, the penetration of market-oriented farming was slow. From 2006, farmers started to grow tobacco, passion fruits, sweet pepper, pumpkins, and so on. At the beginning, there were only 5 households (village head and his relatives) agreed to plant tobacco. As a result of success in generating income, the number of households planting tobacco has increased to roughly

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<sup>6</sup> The remaining three villages (Nummong, Mouteun and Huaylack-vangvan) are inappropriate as they are located far from road or less land available. As a result of increasing income of Nasavang villagers, Khuangkham, Mainatao and Numkor villages have started to do contract farming with Chinese investors since 2009.



65% of all households in the village. Many interviewed households without tobacco plantation claimed that they wish to do so if there is land available. To a lesser extent, Chinese investments in passion fruit and sweet pepper plantations are also showing large expansions in a short time period. At the present, most households in the village are having one or more contract farming with Chinese investors.

In Mainatao, the wave of market-oriented farming was very slow as compared to Nasavang. The village head explained that most households were very poor and, thus, did not dare enough to take the risk of growing new product. For an example of tobacco, there was no one join the contract in 2006 and only one household started growing it in 2007. The agriculture transformation has speeded up since 2009 with various types of crops such as passion fruit and herbal. At the present, similar to Nasavang, most households in Mainatao are having one or more contract farming with Chinese investors.

In terms of agriculture exports in 2010, we found that 65.4% and 50.0% of households sell tobacco to Chinese merchants in Nasavang and Mainatao, respectively. On the other hand, regarding to the traditional crop, 11.1% of households in Nasavang and 76.9% of farmers in Mainatao export maize to China. Therefore, it is clear that Chinese investments have played a significant impact on agricultural transformation of this village. How this transformation affects on poverty reduction and income inequality will be analysed in the next subsection.

#### 4.2.3. IMPACT OF CHINA'S OFDI ON POVERTY REDUCTION

It is of interesting to look more details in the changes mentioned above by income and poverty dimensions. Table 7.1 indicates that the average annual total income per household doubled from 556\$ in 2008 to 1,121\$ in 2010 in Nasavang village. Income from rice was 304\$ in 2008 and 398\$ in 2010, which the share to the total income has declined from 54.7% to 35.5%. On the other hand, the average income from tobacco was 106\$ in 2008 and 582\$ in 2010, which the share of that income source has significantly increased from 19.1% to 51.9% over 2008-2010. Hence, the present of China's role on income generation is clearly observed.

Moreover, Table 7.2 indicates that the average annual total income per household increased dramatically by eleven-fold from 73\$ in 2008 to 786\$ in 2010 in Mainatao village. Income from rice was only 16\$ in 2008 and 90 in 2010, which the share to the total income has declined from 22.4% to 11.5%. We found that average land holdings size per household is about 1.5 ha in both villages. The Mainatao village head claimed that soil quality and water sufficiency are major constraints for most farmers within the village. On the other hand, the average income from tobacco was 403\$ in 2010, greatly increased from its insignificant level in 2008. In fact, about seven households grew tobacco, but six out of them had just started growing in 2008 and yet to get the harvest. In addition,

although the share declined because of tobacco surge, income from other crops also increased from 55\$ to 293\$ over the period of the study.

Table 7.1: Annual Total Income per Household in Nasavang Village

	2008		2010		Change (B/A)
	Mean A (USD)	Share (%)	Mean B (USD)	Share (%)	
Total Income	556	100	1,121	100	2.02
Rice	304	54.7	398	35.5	1.31
Tobacco	106	19.1	582	51.9	5.47
Others	146	26.2	141	12.6	0.97
Observations	104		81		

Source: Authors' calculation.

Note: Exchange rate were 8,744 Kip/USD in 2008 and 8,259 Kip/USD in 2010

Table 7.2: Annual Total Income per Household in Mainatao Village

	2008		2010		Change (B/A)
	Mean A (USD)	Share (%)	Mean B (USD)	Share (%)	
Total Income	73	100	786	100	10.76
Rice	16	22.4	90	11.5	5.50
Tobacco	2	2.1	403	51.3	260.48
Others	55	75.5	293	37.2	5.31
Observations	37		26		

Source: Authors' calculation.

In terms of poverty, Table 8.1 and Table 8.2 show the changes of poverty in Nasavang and Mainatao by Lao PDR's standard. In Table 8.1, there were 96 households or 92% having average monthly income lower than 180,000 Kip or poor status (which is the national criteria of poverty for rural areas) while there were only 8% households stated as non-poor in 2008. In 2010, the share of poor household has largely decreased to 64%. In other word, the share of non-poor household jumped up to 36%. Similar to international standard, it is found that the households earn more income in 2010. Along similar line, Table 8.2 indicates that 37 households or 100% were poor in 2008. In 2010, the share of poor household has dropped significantly to 23%. Therefore, in both villages, the contract farming with Chinese investment has greatly contributed to the poverty reduction in short time.

Table 8.1: Poverty Level in Nasavang Village

Lao PDR's Standard		2008		2010	
	Status	Households	Share (%)	Households	Share (%)
Under 180,000 Kips	Poor	96	92.3	52	64.2
Above 180,000 Kips	Non Poor	8	7.7	29	35.8
Total		104	100	81	100

Source: Authors' calculation.

Note: Monthly income 180,000 Kips equals to roughly 0.7\$ per day.

Table 8.2: Poverty Level in Mainatao Village

Lao PDR's Standard		2008		2010	
	Status	Households	Share (%)	Households	Share (%)
Under 180,000 Kips	Poor	37	100	6	23.1
Above 180,000 Kips	Non Poor	0	0	20	76.9
Total		37	100	26	100

Source: Authors' calculation.

#### 4.2.4. IMPACT OF CHINA'S OFDI ON INCOME INEQUALITY

The Gini coefficient is widely used to measure inequality in the distribution of income, consumption, and other welfare proxies. Decomposing this measure can help us to understand the determinants of inequality (Shorrocks 1982, Lerman and Yitzhaki 1985, Lopez-Feldman 2006). The authors apply this technique to decompose inequality by income source, verifying whether the inequality exists because of traditional crop or new commercial crops contracted with Chinese investors.

The estimates show that income inequality in Nasavang village has risen from 0.395 in 2008 to 0.440 in 2010. Table 9.1 illustrates the results of income from the traditional crop (rice) show that a 1% increase in that income source, all else being equal, increases the Gini coefficient of total income by 0.074% in 2008 and 0.045% in 2010. Income from rice is unequally distributed (0.558 in 2008 and 0.600 in 2010), and the Gini correlation between rice income and total income is very high (between 0.803-0.826), indicating that rice income favours the rich more than any other income source.

Regarding to commercial crops, income from tobacco is unequally distributed, but decreasing from 0.819 in 2008 to 0.544 in 2010. In 2008, there was only about 31% of households grow tobacco, but this number increased to 65% of households in 2010. Thus, the widespread of growing tobacco partly contributes to the decline of income inequality. On the other hand, income from other crops is unequally distributed, but increasing from 0.528 in 2008 and 0.803 in 2010. So far, this income source still has a low Gini correlation, but it possibly becomes the factor

determining the inequality in the near future. Overall, the fundamental factors explaining the income inequality in this village are rice and tobacco.

Table 9.1: Gini Decomposition by Income Source in Nasavang

	2008			2010		
	Gini Coefficient	Gini Correlation	Elasticity (% Change)	Gini Coefficient	Gini Correlation	Elasticity (% Change)
Rice	0.5581	0.8027	0.0740	0.5999	0.8257	0.0451
Tobacco	0.8191	0.6680	0.0739	0.5439	0.7729	-0.0226
Other crops	0.5281	0.3256	-0.1479	0.8034	0.4493	-0.0225
Total Income	0.3946			0.4395		

Source: Authors' calculation.

Table 9.2: Gini Decomposition by Income Source in Mainatao

	2008			2010		
	Gini Coefficient	Gini Correlation	Elasticity (% Change)	Gini Coefficient	Gini Correlation	Elasticity (% Change)
Rice	0.9138	0.8025	0.0349	0.8596	0.6143	0.0285
Tobacco	0.9730	1.0000	0.0113	0.6646	0.8614	-0.1816
Other crops	0.6708	0.8878	-0.0462	0.4129	0.4460	-0.2102
Total Income	0.6344			0.4228		

Source: Authors' calculation.

Moreover, the estimates show that income inequality in Mainatao village has declined from 0.634 in 2008 to 0.423 in 2010. Table 9.2 illustrates the results of income from rice show that a 1% increase in that income source, all else being equal, increases the Gini coefficient of total income by 0.035% in 2008 and 0.029% in 2010. Income from rice is highly unequal- distributed (0.914 in 2008 and 0.860 in 2010), and the Gini correlation between rice income and total income is high (between 0.614-0.803).

Regarding to commercial crops, income from tobacco is unequally distributed, but largely decreasing from 0.973 in 2008 to 0.665 in 2010. In 2008, there was only about 19% of households grow tobacco, but this number increased to 50% of households in 2010. Thus, similar to Nasavang, the widespread of growing tobacco greatly contributes to the decline of income inequality in Mainatao village. Furthermore, income from other crops is unequally distributed, but also decreasing from 0.671 in 2008 and 0.413 in 2010. Other crops in 2009 was mainly maize, but now turns to become various types. So far, this income source still has a low Gini correlation, but it possibly becomes the factor determining the inequality in the near future. Overall, the fundamental factor explaining the income inequality in this village is tobacco.

## 5. CONCLUDING REMARKS

The growing presence of Chinese OFDI in Asian and African developing countries has sparked a continuing debate in recipient countries on the social and economic consequences. Despite the emerging China's OFDI to agriculture sector in recent years, there is a very limited of systematic empirical research on this issue. The paper attempts to fill this knowledge gap through the case of Northern Laos. The surveyed villages are deemed very interesting in aspects that they provide the area study where we can purely examine the influence of China's investment in agriculture sector without any other factors.

It is not much to say that the findings here showing a significant impact of Chinese investment in form of contract farming on various dimensions. The study shows that it can contribute greatly to income generation (consumption smoothing) and poverty reduction in the short period. Besides, other benefits include technological transfer on diversified crops and risk-averse against disequilibrium. It promotes agricultural modernization (e.g. tractor, fertilizer) and raises quality awareness for higher price. Moreover, the (annual) commission charge on land use is pooled as village fund. This fund helped Nasavang village to introduce electricity in 2010. Furthermore, an increase in earnings also promotes the movement and cross-network among ethnic groups, and investment in education of their children.

Table 10: China's Import Demand of Laos' selected Export Categories, 1990-2020

	Historical		Forecast
	1991-2000	2001-2011	2012-2020
Edible vegetables	42%	40%	41%
Oil seeds and oleaginous fruits	58%	29%	40%
Cereals	5%	39%	25%
Rubber and articles thereof	18%	27%	24%
Coffee and tea	13%	26%	21%

Source: Lord (2013)

On the other hand, the Chinese investment comes with a certain price. It can affect on enlarging income inequality of households within the village and the gap among villages, based on the level of investment deepening with China. Moreover, a concern on China's risk deserves for attention. Chinese investors now have a strong power in price control because of monopoly. They sometimes disappeared in the harvest season (e.g. water melon, pumpkin). Inappropriate use of chemical fertilizer can cause environmental pollution and conflicts among households (e.g. dead of livestock). In addition, the surge in investment and trade affects dynamic changes in rural livelihoods.

Traditional events such as “Van Sin” and labor exchange are experiencing dynamic changes. Increase of teenager outbound to the cities is causing lack of labor in farming season.

At the present, China’s economy seems to continue its fast growing for a certain period. China’s import demand of agriculture goods is forecasted to keep at a high level for many countries (See Table 10 for an example of the Lao context). Not only natural resource sector (e.g. mining and energy), but also China’s OFDI in diversified agriculture and rural development in Asian and African nations deserves more attentions for researchers and policy-makers. Chinese OFDI in Agriculture sector is getting up speed since mid 2000s. Urgently, more and more further studies on the evaluation of its economic and social impacts are needed to draw a clear public policy. Lesson learned from this study suggests that policy on capacity building of local institution, land allocation and infrastructure development is significantly importance for poverty reduction with mindful in income inequality for promoting sustainable economic development in rural areas.

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