

Chapter 4

What impacts does migration have on development in Cambodia?

Despite improving economic and social development in recent decades, Cambodia is still challenged by limited employment opportunities in the domestic labour market and relatively low wages compared to other countries in the region. As a result, a growing number of people from rural areas – especially young people – are seeking opportunities abroad. The impacts of this migration on household and national development are not well understood. The various dimensions of migration – emigration, remittances and return migration – are likely to have both positive and negative effects on household wellbeing and key sectors of the Cambodian economy. This chapter investigates the development impacts of migration in four sectors: the labour market, agriculture, education, and investment and financial services.

Cambodia has made great development strides in the last two decades through reform, targeted policies and streamlining its political processes. Despite widespread improvements in economic and social development, however, emigration has continued to rise, mainly to neighbouring countries. Between 2000 and 2015, the stock of emigrants rose from around half a million to almost 1.2 million (an increase of about 160%).

This chapter asks how this migration is affecting Cambodia's development in four policy sectors: the labour market; agriculture; education; and investment and financial services. For each sector the chapter presents the findings of the IPPMD surveys and data analysis to explore the impact of three dimensions of migration: emigration, remittances and return migration. The next chapter explores key policies in each of the focus sectors and their links to migration outcomes.

Migration and the labour market

A growing number of Cambodians, especially young people, are moving abroad to find jobs with higher wages in the region. How is the reduction of labour at both national and household levels affecting wage levels, unemployment and labour supply? Is it constraining productivity and development? Do remittances affect household labour decisions or allow them start up a small business? This section attempts to answer some of the questions by exploring the interrelationships between migration and the labour market in Cambodia.

In 2014, Cambodia's labour force participation rate¹ was 83%: 88% for men and 77% for women. Labour force participation rates in rural areas are higher (84%) than in Phnom Penh (78%) and other urban areas (79%). Unemployment is low, attributable mainly to the fact that most Cambodians are primarily self-employed. The National Institute of Statistics reported an employment rate of 82% in 2014, a 2-percentage point drop from 2009. Since 2008 Cambodia has benefitted from a young labour force, the "demographic bonus", which is expected to last until 2038 (NIS, 2015). The labour force participation rate of young workers (15-24) was 72% in 2014 compared to 74% five years ago.

Despite the growing importance of industry and services, agriculture remains the most important contributor to employment, accounting for 45% of the total employed population (aged 15-64), compared to services (30%)

and industry (24%). However, agriculture's share in employment dropped 12 percentage points between 2009 and 2014, while industry's employment share increased by 8 points and services by 4 points (NIS, 2015). While employment in agriculture is common among both men and women, women are engaged in the sector more than men. There has been an increase in waged employment over the last five years although self-employment remains the dominant form of employment. This increase reflects the increase in wage employment in industry and services. Wage employment is expected to increase further as the economy diversifies more intensively into industry and services.

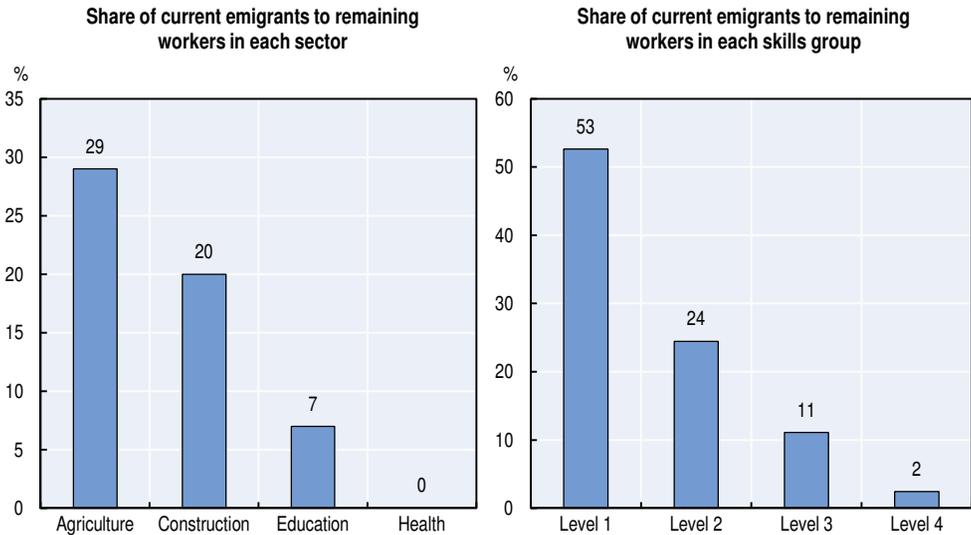
The IPPMD survey data echo these national patterns. For instance, the labour force participation rate among the survey sample (for people aged 15-64) was about 80%: 85% for men and 75% for women. The rate is higher in rural areas (82%) than in urban areas (72%). The employment rate is 79%: 84% among men and 75% among women, and is higher in rural areas mainly because of the prevalence of self-employment. Self-employment remains dominant, accounting for 59% of the surveyed working population (aged 15-64), followed by employment in the private sector (21%) and in the public sector (6%). Around 20% of the working population surveyed claimed not to be engaged in paid employment or to be looking for work. The rate is higher (24%) for all individuals aged 15 and above as this includes retired people.

Emigration and remittances reduce the supply of labour

To understand the impact of emigration on the labour market, it is necessary to look at the characteristics of those who leave. Almost all current emigrants in the survey are of working age (15 to 64). In fact, young people (aged 35 years or under) account for more than 80% of current emigrants. About 83% of the emigrants were employed in Cambodia (in agriculture-related activities and elementary occupations) before leaving the country. Nearly half (49%) were self-employed before leaving; the next largest group were in paid employment in the private sector (32%). Only 17% of emigrants were not in paid work and not looking for work. No discernible difference is observed in employment status between male and female emigrants.

The left-hand chart in Figure 4.1 compares the share of emigrants lost to the agriculture, construction, education, and health sectors. Agriculture is clearly losing the most labour, and this was also highlighted during the stakeholder interviews. This has led to a shortage of Cambodian agricultural workers, particularly on rice farms and during the harvest. It has also increased costs of production. The right-hand chart in Figure 4.1 displays the share of emigrants who left in each skills group in relation to the remaining workers in that skills group. This reveals that emigrants from Cambodia are mostly from the least skilled occupational groups.

Figure 4.1. **The agricultural sector and less skilled occupations are losing more workers to emigration**



Note: The skills level of occupations has been categorised using the International Standard Classification of Occupations (ISCO) provided by the International Labour Organization (ILO, 2012). Skills level 1: occupations which involve simple and routine physical or manual tasks (includes elementary occupations and some armed forces occupations). Skills level 2: clerical support workers; services and sales workers; skilled agricultural, forestry and fishery workers; craft and related trade workers; plan and machine operators and assemblers. Skills level 3: technicians and associate professionals and hospitality, retail and other services managers. Skills level 4: Other types of managers and professionals.

Source: Authors' own work based on IPPMD data

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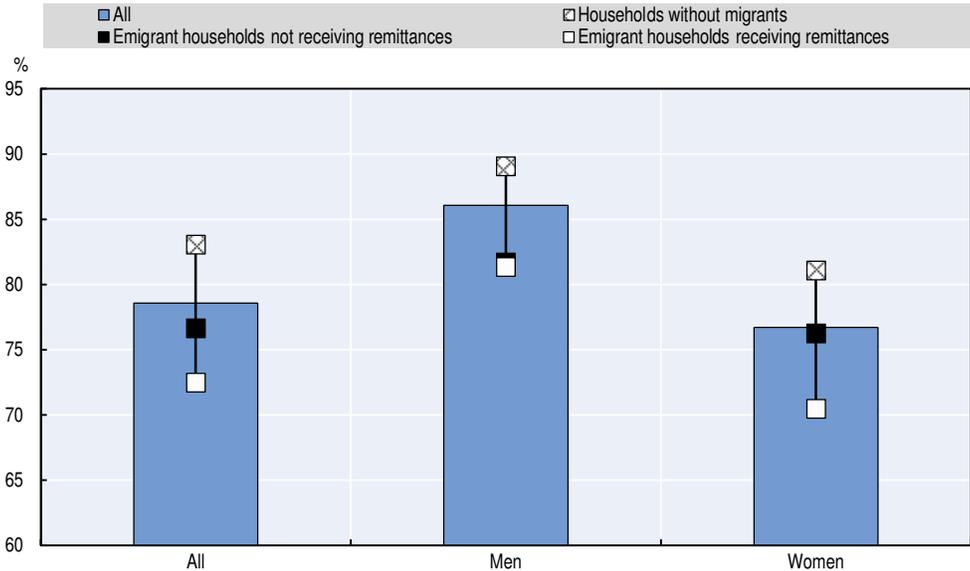
What does this mean for households that are losing their productive labour to emigration? The effects are complicated and depend on whether the emigrant had been employed before leaving and whether he or she then sends home remittances once they find employment abroad. Without remittances, other household members may need to seek work; receiving remittances on the other hand can reduce household members' need to work. These patterns are well identified in various contexts and parts of the world (Acosta, 2007; Amuedo-Dorantes and Pozo, 2006; Funkhouser, 2006; Kim, 2007; Osaki, 2003).

Although this complex picture makes it challenging to isolate individual effects, the IPPMD data do shed some light on this matter. Figure 4.2 compares the average share of working household members in non-migrant households, emigrant households *not* receiving remittances and those that *are* receiving remittances. The graph shows that remittance-receiving households have the lowest share of working adults, suggesting a link between receiving international remittances and the need to seek work by the working-age adults left behind. There is also a gender-differentiated pattern: women in

remittance-receiving households are least likely to work of the three types of household compared while the difference between men living in the two types of household with emigrants remains limited.

Figure 4.2. Households receiving remittances have fewer working members

Share of household members aged 15-64 who are working



Note: The sample excludes households with return migrants only.

Source: Authors' own work based on IPPMD data.

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What does regression analysis tell us about this relationship?² The analysis in Box 4.1 seems to confirm that households reduce labour supply when they have emigrant members and/or receive remittances (Table 4.1). In particular, having an emigrant member and receiving remittances seem to significantly affect female labour supply. This finding is consistent with the literature (Adams, 2011; Acosta, 2007; Cabegin, 2006). It also appears that non-agricultural households are reducing their labour supply in relation to the fact they receive remittances. For agricultural households, however, receiving remittances does not seem to be linked to labour decisions. It is rather having an absent member that is associated with the withdrawal from the labour market for agricultural households; most probably because of the fact that the households may have more difficulties in replacing the absent member.

Box 4.1. The links between migration and employment

To investigate the link between migration and households' labour decisions, the following regression models were used:

$$\text{share_working}_{hh} = \beta_0 + \beta_1 \text{emig}_{hh} + \beta_2 \text{remit}_{hh} + \gamma_1 \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (1)$$

$$m_share_working_{hh} = \beta_0 + \beta_1 \text{emig}_{hh} + \beta_2 \text{remit}_{hh} + \gamma_1 \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (2)$$

$$f_share_working_{hh} = \beta_0 + \beta_1 \text{emig}_{hh} + \beta_2 \text{remit}_{hh} + \gamma_1 \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (3)$$

where $\text{share_working}_{hh}$ signifies households' labour supply, measured as the share of household members aged 15-64 who are working. $m_share_working_{hh}$ is the share of male household members that are working among men and $f_share_working_{hh}$ for female household members. emig_{hh} represents a variable with the value of 1 where a household has at least one emigrant, and remit_{hh} denotes a household that receives remittances. controls_{hh} stands for a set of control variables at the household level.^a δ_r implies regional fixed effects and ε_{hh} is the randomly distributed error term. The models were run for two different groups of households depending on their agricultural activities. The coefficients of variables of interest are shown in Table 4.1.

Table 4.1. Remittances and migration seem to reduce labour market participation

Dependent variable: Share of the employed among household members aged 15-64

Main variables of interest: Having an emigrant/receiving remittances

Type of model: OLS

Sample: All households with at least one member working

Variables of interest	Share of the employed household members among:						
	All households			Agricultural households		Non-agricultural households	
	total	men	women	men	women	men	women
Household has at least one emigrant	-0.060** (0.025)	-0.043 (0.033)	-0.055* (0.032)	-0.056* (0.031)	-0.062** (0.032)	0.059 (0.141)	0.014 (0.126)
Household receives remittances	-0.062** (0.026)	-0.051 (0.034)	-0.065** (0.032)	-0.023 (0.032)	-0.041 (0.032)	-0.216 (0.139)	-0.225** (0.126)
<i>Number of observations</i>	1 745	1 423	1 711	1 224	1 451	199	260

Note: Results that are statistically significant are indicated as follows: ***: 99%, **: 95%, *: 90%.

a. Control variables include the household's size and its squared value, the dependency ratio (number of children 0-15 and elderly 65+ divided by the total of other members), the male-to-female adult ratio, family members' mean education level, its wealth estimated by an indicator (Chapter 3) and its squared value.

Migration and agriculture

While Cambodia is primarily an agricultural economy, the economy is growing and diversifying into other sectors. Ever since the early 1990s, agriculture's share of value added in Cambodia's gross domestic product (GDP) has largely remained above 30%, although it is trending slowly downwards, falling to 28% in 2015 (World Bank, 2017). The importance of agriculture to the country and to poverty reduction is clear, however. In 2013, a very high share of the population (49%) was working in the agricultural sector (FAO, 2016a) – the highest for the IPPMD partner countries with available recent data (2012 and beyond).³ This is notably lower, however, than the share of the population living in rural areas in 2014 (79.5%) (UN, 2014), which may reflect an upward shift in agricultural productivity and diversification into other economic activities. Productivity growth in the sector is indeed encouraging. An agricultural production per capita index starting at 100 in 2004-2006 had increased to 157 by 2013, the biggest increase amongst IPPMD partner countries over that period (FAO, 2016b). Similarly, an absolute gross production index starting at 100 in 2004-2006 had increased to 177 by 2013, also highest amongst IPPMD partner countries (FAO, 2016c).

Economic and social development in many countries has been accompanied by a general depopulation of rural areas, and a shift away from agricultural activities. While in many cases this involves internal migration, from rural to urban areas, international migration is also frequent. In Cambodia, for instance, it has become common for individuals from agricultural households – both rural and urban – to seek work in neighbouring countries with labour shortages in their agricultural sectors, such as Malaysia and Thailand. This section investigates what impact this migration is having on Cambodia's agriculture sector.

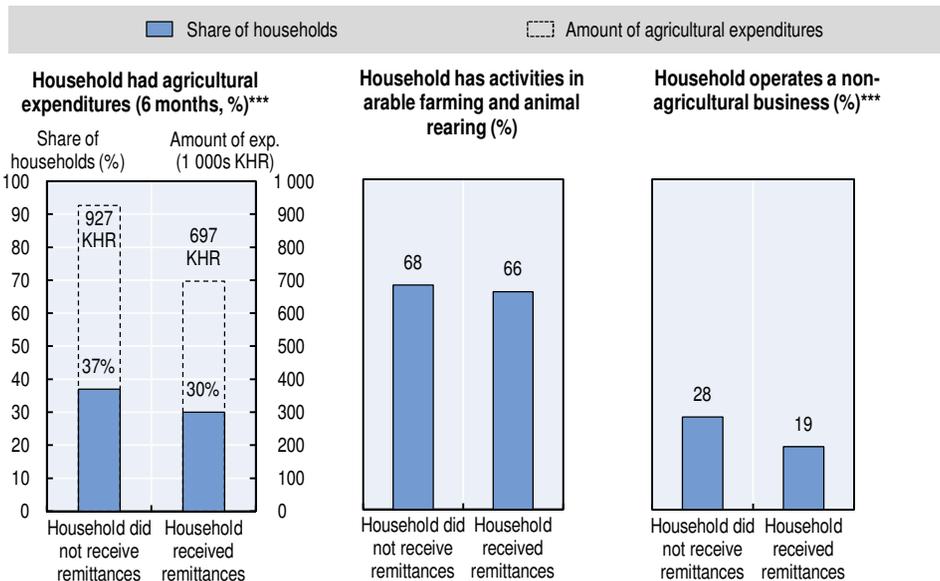
Agricultural households do not seem to invest remittances in agriculture

Migration can be a source of investment and innovation for the sector through remittances and social and financial capital brought home by return migrants. These can be invested in productive assets such as machinery, barns, fencing, feeding mechanisms, irrigation systems and tractors (Mendola, 2008; Tsegai, 2004). The productive investment of remittances can also help households move from labour-intensive to capital-intensive activities (Lucas, 1987; Taylor and Wouterse, 2008; Gonzalez-Velosa, 2011), or into specialisation (Böhme, 2013; Gonzalez-Velosa, 2011). They might also be used to finance entrepreneurial non-farm activities that require capital, such as a retail business or transport services (FAO and IFAD, 2008). This would be consistent with the gradual move away from agricultural dependence occurring in many countries, especially Cambodia. This has been the case in Albania, for instance, where remittances have been negatively associated with both labour and non-labour inputs in agriculture (Carletto et al., 2010).

According to the IPPMD data, agricultural households in Cambodia are less likely to receive remittances than non-agricultural households, although the difference is not statistically significant, either for remittances originating from any source (40% vs. 44%) or for remittances from former household members only (36% vs. 40%). In addition, the rate of emigrant households receiving remittances is also lower in agricultural households than it is in non-agricultural households (89% vs. 93%).

The IPPMD survey also asked whether households had bought any productive assets (such as farming equipment) in the previous six months; 572 agricultural households claimed to have done so. Were those households receiving remittances more likely to invest in these materials? The surprising answer is no. Households receiving remittances were less likely to have made such expenditures (30% vs. 37%). Looking more closely at these 572 households, they also spent less on agricultural assets on average than those not receiving remittances (KHR 697 219 vs. 926 656⁴), counter to the expectations discussed above (Figure 4.3).

Figure 4.3. Remittances are not driving investment or diversification in agriculture
Household expenditures and business ownership, by whether household receives remittances



Note: Statistical significance calculated using a chi-squared test is indicated as follows: ***: 99%, **: 95%, *: 90%. Statistical significance in the first graph on the left is related to the share of households with agricultural asset expenditures, and not the amount spent.

Source: Authors' own work based on IPPMD data.

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Perhaps the households receiving remittances had instead chosen to spend their additional income on either specialising or diversifying their farming activity, such as running activities in both arable farming and livestock rearing, or on financing a non-farm business. Looking across all agricultural households, however, the data suggest little difference between remittance and non-remittance households in terms of diversification (66% vs. 68%, Figure 4.3). In fact, households receiving remittances are less likely to diversify, being significantly more likely to only farm livestock (19% vs. 15%, not shown). While this points to the fact that they are investing in more capital-intensive activities, evidence also suggests that households receiving remittances are less likely to own a non-agricultural business than those not receiving remittances (19% vs. 28%, Figure 4.3).

Regression analysis largely confirms the patterns suggested above: there is a negative link between a household receiving remittances and investing in agricultural assets (Box 4.2). Moreover, receiving remittances makes no difference to whether a household diversifies into both arable farming and rearing animals. In fact, the more remittances received, the less likely the household is to have diversified (Table 4.2, column 3). Instead, there is evidence of specialisation: those receiving remittances were more likely than those not receiving remittances to only rear livestock (not shown). In addition, receiving remittances was also negatively associated with the household running a non-agricultural business.

How does return migration affect the agricultural sector? It has similar potential to remittances, since the return migrants may bring back savings, but in addition, they also bring back their labour, new skills and contacts (financial, human and social capital). The literature underlines the fact that return migrants may bring home novel ideas about activities not currently being exploited in the country (Wahba, 2015). Cambodia still may have some way to go before such ideas catalyse a transition from a primarily agrarian to a more diversified economy.

Box 4.2. The links between remittances and investing in farming

To estimate the probability that an agricultural household has invested remittances in an asset or activity, the following regression models were estimated:

$$\text{Prob}(\text{agri_outcome}_{hh}) = \beta_0 + \beta_1 \text{remit}_{hh} + \gamma \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (4)$$

where the unit of observation is the household hh and the dependent binary variable agri_exp in equation (4) represents the probability that the household is engaged in a particular agricultural outcome (e.g. making expenditures or having a specific activity) and takes on a value of 1 if the household did so and 0 if not; remit_{hh} represents the fact that the household received remittances in the past 12 months; control_{hh} stands for a set of household-level regressors;^a while δ_r represents regional-level fixed effects. Standard errors, ε_{hh} , are robust to heteroskedasticity.

Box 4.2. The links between remittances and investing in farming (cont.)

A second OLS model was also estimated:

$$\ln(\text{agri_exp}_{hh}) = \beta_0 + \beta_1 \text{remit}_{hh} + \gamma \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (5)$$

where *agri_exp* represents the logged amount of agricultural expenditures. All other variables are as defined in equation (4).

Table 4.2 presents the regression results. Column (1) presents results on whether the household has made agricultural asset expenditures; column (2) represents the amount spent on agricultural assets in the past 12 months; column (3) represents whether the household has activities in both farming and animal rearing; and column (4) represents whether the household operates a non-agricultural business. These are analysed against two variables of interest: whether the household received remittances in the past 12 months, and the logged amount of remittances sent by former members of the household in the past 12 months. This limits the sample to only those households that received remittances.

Table 4.2. Remittances have little effect on agricultural and non-agricultural investments

Dependent variable: Investment outcomes				
Main variables of interest: Household received remittances/amount of remittances received by household				
Type of model: Probit/OLS				
Sample: Agricultural households				
Variables of interest	Dependent variables			
	(1) Household has made agricultural asset expenditures (equation 4)	(2) Logged amount spent on agricultural assets in the past 12 months (equation 5)	(3) Household has activities in both farming and animal rearing (equation 4)	(4) Household operates a non-agricultural business (equation 5)
Household received remittances in the past 12 months	-0.071*** (0.025)	0.001 (0.957)	0.013 (0.025)	-0.069*** (0.023)
<i>Number of observations</i>	1 671	598	1 671	1 671
Logged amount of remittances sent from former household members	0.016 (0.100)	-0.057 (0.078)	-0.038** (0.015)	0.001 (0.016)
<i>Number of observations</i>	572	176	598	598

Note: Statistical significance is indicated as follows: ***: 99%, **: 95%, *: 90%. Results reflect marginal effects. Standard errors are in parentheses and robust to heteroskedasticity.

a. Control variables for regression model estimations related to agriculture presented in this chapter include the household's size, its dependency ratio (number of children 0-15 and elderly 65+ divided by the total of other members), the male-to-female adult ratio, its wealth estimated by an indicator (Chapter 3), whether it is in a rural or urban region and a fixed effect for its geographic region.

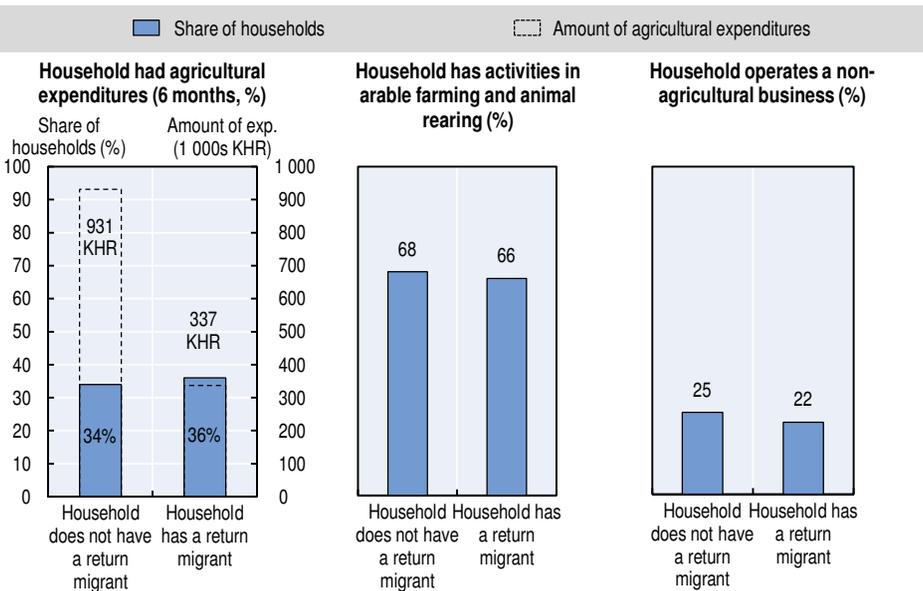
The survey found that the share of return migration in farming households is lower than in non-farming households, though the difference is not statistically significant. Of the 282 households with return migrants, 227 were farming households (14% of all farming households), while 55 were non-farming households (17% of all non-farming households). Looking specifically at migrant households (those with current emigrants or return migrants), non-farming households still hold an edge in the rate of return migration (30% vs. 28%), but again this difference is not statistically significant.

The descriptive statistics suggest that households with return migrants are just as likely to invest in agricultural assets as those without return migrants, although the former invest less (the difference is not statistically significant, Figure 4.4). Moreover, return migrant households are just as likely as non-return migrant households to be involved in both arable farming and animal husbandry (66% vs. 68%), nor were they linked with an activity in particular (either arable farming or animal husbandry), compared to households without return migrants.

Households with return migrants were also slight less likely to be running a non-agricultural business than those without a return migrant (22% vs. 25%), although the difference is not statistically significant.

Figure 4.4. **Return migrants make little difference to agricultural investment or diversification**

Household asset expenditures and business ownership, by whether household has a return migrant



Note: Statistical significance calculated using a chi-squared test is indicated as follows: ***: 99%, **: 95%, *: 90%. In the left-hand graph, the US dollar totals are USD 230 vs. 83 (exchange rate as of 1 July 2014).

Source: Authors' own work based on IPPMD data.

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A similar regression analysis as the one described in Box 4.2 was used to explore whether return migrant households invest in agriculture. The probability of receiving remittances is replaced in equations (4) and (5) with the probability of having a return migrant in the household. The results confirm very little link between return migration and investment, either in or out of the sector (Table 4.3). The only statistically significant finding was that return-migrant households tend to spend less on agricultural assets than households without a return migrant. In addition, return-migrant households are just as likely as households without a return migrant to operate both arable farming and animal husbandry activities or to specialise in one or the other.

Table 4.3. **Return migration has no positive influence on agriculture**

Variables of interest	Dependent variables			
	(1) Household has made agricultural expenditures (equation 3)	(2) Logged amount spent on agricultural asset expenditures (equation 4)	(3) Household has activities in both farming and animal rearing (equation 3)	(4) Household operates a non-agricultural business (equation 3)
Household has a return migrant	-0.015 (0.035)	-0.258** (0.119)	-0.024 (0.036)	0.023 (0.030)
<i>Number of observations</i>	1 671	572	1 671	1 671

Note: Statistical significance is indicated as follows: ***: 99%, **: 95%, *: 90%. Results reflect marginal effects. Standard errors are in parentheses and robust to heteroskedasticity.

Overall, migration would not seem to have any positive effect on the agricultural sector in Cambodia as remittances nor return migration are channelled towards productive investment by agricultural households. This is likely a reflection of the high poverty rates that still prevail throughout the country, where the population still highly depends on agricultural activities for a living. The remittances and benefits from return migration are not enough for households to either invest into more productive activities or diversify out of the agricultural sector. This appears to be an area in which policy could have a role in helping guide such remittances and return migrants towards more investment in the sector, or diversify out of it.

Migration and education

The Cambodian education system includes pre-school, primary education, general secondary education and higher education. Primary education lasts for six years and is compulsory. General education has two levels: lower

secondary (grades 7-9), which in principle is compulsory, and upper secondary (grades 10-12). Students completing lower secondary education can either continue to upper secondary, or enrol in technical and vocational training programmes. Students who pass the national baccalaureate exam can enrol in higher education.

Despite the fact that most public services, including educational infrastructure, were destroyed during the Khmer Rouge regime (1975-1979), the country has managed to expand access to education. Cambodia's education outcomes have improved, but are still lower than in most countries in the Association of Southeast Asian Nations (ASEAN). The average adult in Cambodia has six years of schooling, which across the region is only higher than Myanmar (4.1 years) (UNDP, 2016). The National Institute of Statistics (NIS) estimates that the adult literacy rate – the share of the population aged 15 years and older who can read and write a simple message – is 78%: up from 69% in 2004 (NIS, 2015). The IPPMD data included a lower share of adults who stated that they could read and write: around 70%. This difference is likely to be explained by the preponderance of rural households in the IPPMD sample (Chapter 3), while literacy rates in general are higher in urban areas. Overall, the literacy rate for men is higher than for women.

IPPMD data show that school attendance rates are high for children aged 6-14 (93%),⁵ but drop sharply for youth between 15 and 17 years (down to 60%). School attendance rates for this age group are higher in urban areas (66%) than in rural areas (59%).

Households receiving remittances spend more on education

What effect is migration likely to have on education? Remittances can provide the financial means for households to invest in their children's education. The literature generally finds that in households that receive remittances, school dropout rates fall and the years of schooling increase (Cox-Edwards and Ureta, 2003; Hanson and Woodruff, 2003; Yang, 2008). Households that receive remittances also tend to spend more on education (Adams, 2005; Murata, 2011). At the same time, the emigration of household members may negatively affect child and youth education enrolment rates and increase school drop-outs if they are needed to do more housework, farm work or work outside the household. The most relevant previous study of Cambodia found that children in migrant families are more likely to drop out of school, and this effect tends to be stronger for girls (Hing et al., 2014). One explanation is that gender inequalities in education still persist in Cambodia.

As noted above, primary school attendance rates in the IPPMD sample are high. However, among the children not attending school, those in households without migrants are more likely to be out of school because the household cannot afford school (29% versus 25%). This pattern might be linked to

remittances as the difference is even larger when comparing when comparing households receiving and not receiving remittances (30% among children in households without remittances compared to 24% in households with remittances). Although households' schooling costs have fallen in Cambodia following the introduction of the Priority Action Program (PAP) in 2000, they remain substantial. These costs mainly include pocket money, transport and supplementary tutoring, and increase rapidly with grade (World Bank, 2005). According to the NGO Education Partnership, parents' school-related costs amount to KHR 443 800 (USD 108) per child, or 8.7% of the family's annual income (NEP, 2007).⁶ Fees increase as students progress from grade to grade (an estimated USD 60 for grades 1-3, USD 90 for grades 4-6 and USD 158 for grades 7-9).

The IPPMD data suggest that households receiving remittances spend similar amounts on education than households not receiving remittances. The former spend on average KHR 850 000 (USD 210) a year on education, while households not receiving remittances spend slightly more, at KHR 900 000 (USD 223) a year on average. The share of the household annual budget spent on education is around 6.7% for both household groups (6.6% for households without remittances and 6.7% for those with remittances).

However, more in-depth regression analysis controlling for other individual and household factors shows a positive and significant link between remittances and educational expenditures, in absolute as well as in relative terms (Box 4.3). The results suggest that remittances allow households to spend more on educating their children. These results are also in line with another Cambodia study, which shows that remittances increase educational expenditures (Hing and Sry, forthcoming).

The results in Box 4.3 also show a negative link between emigration and educational expenditures (when simultaneously controlling for household receiving remittances), potentially because children in emigrant households may have to take on more housework or work outside the home.

The prospect of future emigration could also influence school attendance rates. The IPPMD data show that youth who are planning to emigrate are less likely to attend school than those who do not plan to emigrate (Figure 4.5). This may be explained by low returns to education both at home and abroad. Low returns to education in Cambodia, especially in higher education, reduce the incentives to attain education beyond basic levels (OECD, 2013). In addition, if returns to domestic education are low in the country of destination, the prospect of future emigration may also lower the incentive to invest in education. Similar results have been found for rural households in Mexico (McKenzie and Rapoport, 2006).

Box 4.3. The links between migration, remittances and education expenditures

A regression framework was developed to estimate the effect of migration and remittances on education expenditures using the following equation:

$$\ln(\text{edu_exp}_{hh}) = \beta_0 + \beta_1 \ln(\text{remit}_{hh}) + \beta_2 \text{emig}_{hh} + \gamma \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (6)$$

$$\frac{\text{edu exp}_{hh}}{\text{total exp}_{hh}} = \beta_0 + \beta_1 \ln(\text{remit}_{hh}) + \beta_2 \text{emig}_{hh} + \gamma \text{controls}_{hh} + \delta_r + \varepsilon_{hh} \quad (7)$$

where the dependent variables $\ln(\text{edu_exp}_{hh})$ in equation (6) and $\frac{\text{edu exp}_{hh}}{\text{total exp}_{hh}}$ in equation (7) represent household educational expenditures measured in absolute (logged) values or as share of total household yearly budget respectively; remit_{hh} represents a binary variable for households receiving remittances, where “1” denotes a household receiving remittances and “0” if not; while emig_{hh} takes on value “1” if the household has at least one emigrant and “0” if not; controls_{hh} are a set of observed household characteristics influencing the outcome.^a δ_r represents regional fixed effects and ε_{hh} is the randomly distributed error term.

Table 4.4. **Households receiving remittances spend more on education**

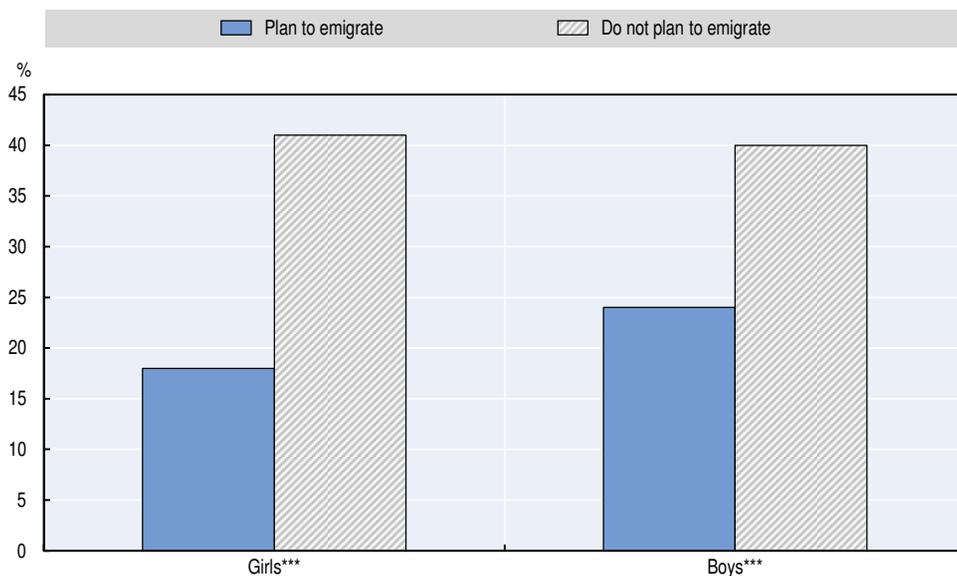
Dependent variable: Educational expenditures (values and share of household budget)		
Main variables of interest: Amount of remittances, having an emigrant		
Type of model: OLS		
Sample: All households with children in school age (6-14)		
Variables of interest	Dependent variable	
	(1) Educational expenditure (log amounts)	(2) Educational expenditure (share)
Household receives remittances	0.196* (0.103)	0.012* (0.006)
Household has at least one emigrant	-0.251** (0.102)	-0.019*** (0.006)
<i>Number of observations</i>	1 029	1 099

Note: Results that are statistically significant are indicated as follows: ***: 99%, **: 95%, *: 90%. Standard errors are in parentheses.

a. The set of household and individual explanatory variables included in all specifications are the following: household size, household dependency ratio (defined as the number of children and elderly in the household as a share of members in working age), the mean education level of adults in the household, the number of young children (6-14 years old) and the number of youth (15-17 years old) in the household, a dummy for urban location, and finally an asset index (based on principal component analysis) that aims to capture the wealth of the household. In addition, a variable indicating whether the household has a migrant or not has been added.

Figure 4.5. **Youth planning to emigrate are much less likely to attend school**

Share of youth (aged 15-22) attending school, by intentions to emigrate



Note: Statistical significance calculated using a chi-squared test is indicated as follows: ***: 99%, **: 95%, *: 90%.

Source: Authors' own work based on IPPMD data.

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Migration, investments and financial services

The idea that migration and remittances can encourage household investments in business and other productive activities has been widely discussed in the literature. Migration and remittances can offer a way to overcome credit market imperfections and enable households to invest in business start-ups or in land and housing, for example. The evidence for such a link is mixed, however, making it hard to draw any firm conclusions. Research in Mexico, for example, found both positive and significant impacts of remittances on business investments (Massey and Parrado, 1998; Woodruff and Zenteno, 2007) and limited links between migration and productive investment (Basok, 2000; Zarate-Hoyos, 2004). To date there is very limited evidence of the impacts of migration and remittances on investments in Cambodia.

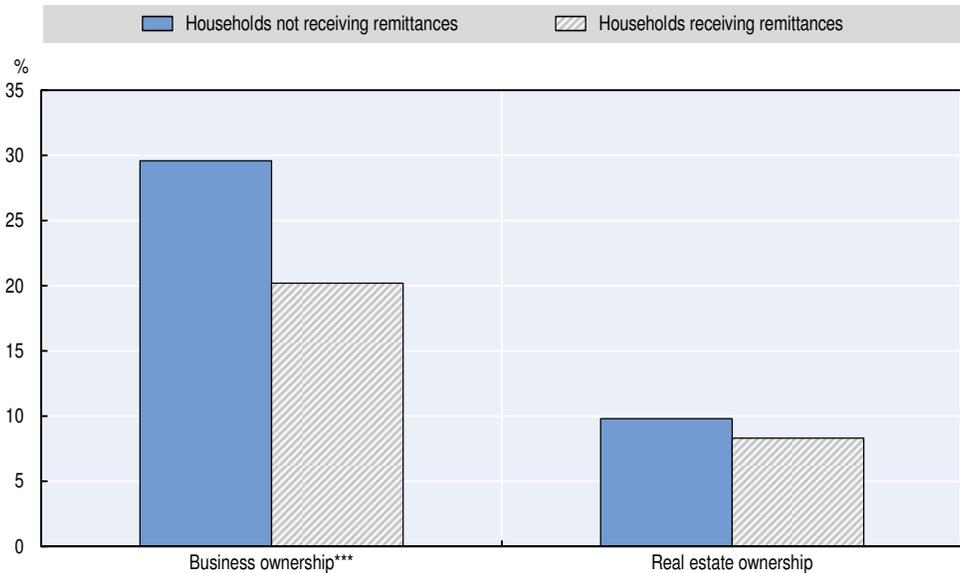
Emigration, return migration and remittances have limited effects on productive investments

The IPPMD data contain detailed information about household business ownership in the non-agriculture sector. About 26% of the households in the overall sample own at least one business (Figure 4.6), but households not

receiving remittances are more likely to than remittance-receiving households (30% versus 20%). The share of households owning non-agricultural land is less than 10% for both types of household (9% versus 7%). The share of households owning housing is less than 1% for both household types. Due to this low share, land and housing are analysed together in the regression analysis (referred to as real estate assets).

Figure 4.6. **Households receiving remittances are less likely to own businesses and real estate**

Share of business and real estate ownership (%) by whether household receives remittances



Note: Results that are statistically significant (calculated using a chi-squared test) are indicated as follows: ***, 99%, **, 95%, *, 90%.

Source: Authors' own work based on IPPMD data.

StatLink  <http://dx.doi.org/10.1787/888933470338>

The relationship between migration, remittances and productive assets was analysed using regression analyses (Box 4.4).⁷ The results show no statistically significant correlation between migration, remittances and having a business or owning real estate. Although migrant and remittance-receiving households have a lower probability of running a business, the link is not statistically significant.

These findings are likely explained by the fact that the decision to migrate in Cambodia is largely influenced by poverty, lack of employment, lack of alternative sources of income, landlessness, and inability to repay debt. This also implies that the amount of remittances that migrants are able to send is generally low and mainly used for securing daily consumption and other

basic needs, rather than to fund investments. Accumulation of debts with high interest rates was mentioned as a push factor for emigration in the qualitative stakeholder interviews, and a majority of the emigrants (55%) in the sample stated that loans were the main means of funding their migration. Repaying loans and debts was also the most common activity undertaken by remittance-receiving households (Chapter 3, Figure 3.8).

Return migration also has the potential to affect investment. Migrants may return with new knowledge and capital as a resource to launch business activities or to invest in productive assets (Labrianidis and Hatziprokopiou, 2006; Mesnard, 2004; McCormick and Wahba, 2001). On the other hand, the fact that the return migrant spend time abroad may also have a disruptive effect on labour market integration if the migration experience involves employment below the migrant's qualifications and if social ties in the country of origin are weakened. Creating a business can sometimes then be the "last resort" for return migrants who cannot find a job locally (Mezger Kveder and Flahaux, 2013).

The regression results in Table 4.5 show that return migration is negatively associated with the likelihood of households having a business. Having a return migrant is also not associated with a higher probability of owning real estate, but is negatively associated with business ownership. Hence, the hypothesis that migrants return to the country of origin with capital to invest in productive activities does not seem to hold in Cambodia's case. The profile of return migrants suggests that as the majority have a low level of education (Chapter 3) and take agriculture or other elementary jobs in the country of destination, they do not accumulate enough savings for remitting or investing on their return.

Box 4.4. The links between migration, remittances and business ownership

To analyse the link between migration and business and real estate ownership, two probit model regression were run with the following forms:

$$Prob(investment)_{hh} = \beta_0 + \beta_1 remit_{hh} + \beta_2 emig_{hh} + \gamma controls_{hh} + \delta_r + \varepsilon_{hh} \quad (8)$$

$$Prob(investment)_{hh} = \beta_0 + \beta_1 return_{hh} + \beta_2 emig_{hh} + \gamma controls_{hh} + \delta_r + \varepsilon_{hh} \quad (9)$$

where $investment_{hh}$ is either business ownership or real estate ownership (depending on the specification) undertaken by the household; $investment_{hh}$ takes on a value of "1" if a household owns at least one business or real estate and "0" if not; $remit_{hh}$ in equation (8) represents a binary remittance variable with value "1" for households that receive remittances and "0" otherwise $emig_{hh}$ represents a binary variable for whether the household has a migrant or not; $controls_{hh}$ are a set of observed household and individual characteristics that are believed to influence the outcome; and ε_i is a randomly distributed error term indicating, in part, the unobservable factors affecting the outcome variable.³ In equation (9) $return_{hh}$ is a binary variable taking on the value

Box 4.4. The links between migration, remittances and business ownership (cont.)

of “1” if the household has at least one return migrant, and “0” for households without return migrants. δ_r represents regional fixed effects and ε_{hh} is the randomly distributed error term.

Four different specifications were carried out (Table 4.5). Specification (1) investigates the link between migration/receiving remittances and household business ownership, controlling for household characteristics, and column (3) analyses the link between migration/receiving remittances and real estate (land and housing) ownership. Specifications (2) and (4) investigate the link between return migration and business ownership and real estate respectively.

Table 4.5. Return migration is negatively correlated with business ownership

Variables of interest	Dependent variable			
	(1) Business	(2) Business	(3) Real estate	(4) Real estate
Household receives remittances	-0.037 (0.036)	n/a	-0.019 (0.023)	n/a
Household has at least one emigrant	-0.023 (0.046)	n/a	0.012 (0.023)	n/a
Household has a return migrant	n/a	-0.047* (0.027)	n/a	0.010 (0.019)
<i>Number of observations</i>	1 940	1 940	817	1 940

Note: Statistical significance is indicated as follows: ***: 99%, **: 95%, *: 90%.

a. The set of household and individual explanatory variables included in the model are the following: household size and household size squared, household dependency ratio (defined as the number of children and elderly in the household as a share of the total adult population), mean education level of the members in the household, number of children in the household, binary variables for urban location and household head being female, and finally an asset index (based on principal component analysis) that aims to capture the wealth of the household.

Conclusions

This chapter has presented how migration affects the four sectors in Cambodia: the labour market, agriculture, education, and investment and financial services. The results indicate that migration can have both positive and negative impacts on household wellbeing and Cambodia’s national development.

Emigration appears to reduce the incentives for the remaining household members to seek work, and might also lead to labour shortages in certain sectors,

particularly agriculture. While in some countries remittances can compensate for these negative impacts by helping households overcome constraints such as access to financial and human capital, this study suggests that these impacts are limited in Cambodia. This is a major missed opportunity for a country that is rebuilding much of its capital stock. Policies to support and enable households to channel remittances towards productive use, and measures that stimulate investment by return migrants would not only benefit the household, but also the country's development as a whole.

On the other hand, remittances do seem to be invested in education. Not being able to afford school is more common among households without emigrants or remittances, and money sent back to households by emigrants is often channelled towards education-related expenditures, which is likely also boosting attendance. At the same time, the findings show that the prospect of future migration may in some cases lead to youth school drop-out. It is therefore important to ensure that all children and a household have the means and incentives to complete the full mandatory cycle of national education. These policy issues are the subject of the next chapter.

Notes

1. Defined as the ratio of labour force to the working age population (15-64).
2. See Chapter 3 for methodological background on the regression analyses used in this project.
3. The figure by the FAO was provided for comparative reasons (with other IPPMD countries). Note that the Cambodian National Institute for Statistics (NIS) provides a figure for the relative share of agricultural workers in the country of 45% in 2014 (NIS, 2015).
4. Using the exchange rate on 1 July 2014, the equivalent totals are USD 172 vs. 229.
5. This is in line with NIS data which report school attendance rates at 96% for 2015 (NIS, 2015).
6. These include matriculation costs (school uniforms, textbooks, school registration); daily costs (food and transportation); educational fees (lesson handouts, private tutoring and payments to teachers for various purposes); and additional costs.
7. The questionnaire asked households to report the number of assets they own, such as land and property, but did not ask when these assets were acquired. The analysis is therefore limited by the fact that it is not possible to distinguish assets that were acquired before and after a migrant left the household, or before or after a household started receiving remittances.

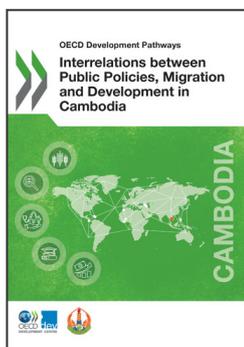
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