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## Nuancing narratives on labour market effects of Large-Scale Agricultural Investments in sub-Saharan Africa: evidence from Kenya, Mozambique and Madagascar

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**Abstract:** The recent surge in Large-Scale Agricultural Investments (LAI) has triggered much debate and analysis on land issues. But what are the debates and results saying about labour issues? This paper offers a comparative perspective by studying Kenya, Mozambique and Madagascar – three African countries having contrasted experiences in terms of LAI. Based on qualitative and quantitative data (LAI inventory and household large-scale survey), it brings comprehensive analysis of both wage employment creation (quantity and quality of jobs created) and distribution (workers and households profiles) attributable to LAI. It offers original results by analysing jointly labour demand and supply, comparing different LAI business models, and prompting debate about agriculture development models (LAI versus family farming).

**Keywords:** Africa, large-scale agriculture investments, wage employment, rural labour markets, business models

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### Introduction

In sub-Saharan Africa (SSA), the rural and agricultural sectors still employ most of the active population (Losch, 2016). Because of slow economic transition and industrialisation, rural labour markets will have to accommodate a large part of the next young active population segment – estimated for the next 15 years at 375 million (Losch, 2016).

In view of these challenges, and at the heart of the debates on agricultural development models, the link between Large Agriculture Investments (LAI) and job creation is reaffirmed (Collier and Dercon, 2014) or questioned again (Deininger *et al.*, 2011). Since 2000, as part of the onset of a phenomenon described as ‘global land grab’ (Borras and Franco, 2012), the African continent has attracted many investors planning to develop large commercial estates (Deininger *et al.*, 2011; Anseeuw *et al.*, 2012)<sup>1</sup>. These companies, which mimic colonial and state farm undertakings, operate in a radically different context, without subventions from the State – except in the form of low-cost access to land – and no provision of forced labour (Baglioni and Gibbon, 2013). Moreover, they no longer jointly seek access to land and labour (Li, 2011). They rather gain access to land in order to deploy large, capital-intensive agricultural activities, thereby raising many questions about effective employment impacts (Li, 2011).

The socioeconomic impacts of recent LAI have been largely studied during the last 15 years – with conclusions that vary greatly according to the rigour of the methodology (Oya, 2013) as well as the scope and level of analyses (Cotula, 2013; Oberlack *et al.*, 2016; Hufe and Heuermann, 2017). However,

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<sup>1</sup> Since 2000, Africa has experienced 40% of deals done and 73% of 57 million ha of land transferred to investors (Land Matrix 2017).

the employment impacts of recent LAI have been little investigated. More research is needed to better describe the heterogeneous employment effects on the different segments of rural communities, and to study their linkages with the business models of LAI (Smalley, 2013; Yaro *et al.*, 2017; Matenga and Hichaambwa, 2017; Hall *et al.*, 2017).

To overcome simplistic narratives on the socioeconomic impacts of LAI, this paper aims to better quantify and qualify LAI labour impacts. It does not focus on labour supply or on labour demand, but analyses both of them and their relations. It then successively asks: What jobs did LAI create (number and quality)? Who received the jobs and why? And, how do these outcomes differ according to production models and contexts?

The research is based on a cross-country analysis of Kenya, Mozambique and Madagascar, conducted in five selected case study areas (Figure 1) and uses qualitative and quantitative data (LAI census and ad hoc survey with 1650 households). It focuses on the “plantation” or “estate” farming model of commercial agriculture, defined as large, self-contained agribusiness farms (Smalley, 2013) – contract farming schemes are not studied. It compares the labour footprint of different companies according to their production models (job demand) and according to the local context (job supply by different categories of rural households). Further, it puts LAI performances into perspective with some small-scale farming results.

Section 2 offers a critical review of LAI labour market impacts. Section 3 presents the cross-country common methodology and the case study areas. Section 4 puts into context the LAI trajectories in the three countries studied. Section 5 explores job creation provided by LAI (quantity and quality dimensions). Section 6 presents the job distribution of LAI (employees’ profiles and household strategies). Section 7 concludes with a discussion about insights for LAI-inclusive policy frameworks.



Figure 1. Selected case Study areas. Source: Afgroland (2018);

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## Literature review: LAI labour impacts in agricultural sector

Contrary to the plantations of the first part of the 20th century, the companies under review do not look for large amounts of labour (Baglioni and Gibbon, 2013). They aim at reducing all labour costs (recruitment and management) and prefer opting for the mechanisation of agricultural activities (Cochet, 2018). Thus, the resurgence of LAI revives the debate about large-scale farming (plantation or estates) for the inclusion of smallholders in labour markets, and about the reduction of poverty when compared with contract farming schemes and family farming (Gibbon, 2011; Van den Broeck *et al.*, 2017; Bruntrup *et al.*, 2018; Barrett *et al.*, 2019). Four issues are decisive to animate this debate, and are briefly discussed below.

How many jobs do LAI create? Over or under evaluations of LAI jobs are frequent and are used to fuel political discourse, both pro and anti LAI (Li, 2011). This said, the quantification of created jobs is not straightforward. It varies according to the sources of information (companies' announcements, administrative censuses, etc.), the types of jobs created (part time or full-time, direct or indirect, etc.) and the companies' development stages (Li, 2011; Anseeuw *et al.*, 2012). It also changes if the assessment simply considers created jobs focusing on net jobs, or considers also the job losses when farmers lose their land and which are to be subtracted from the LAI jobs created (Li, 2011.; Nolte and Ostermeier, 2017; Hufe and Heuermann, 2017; Palliere and Cochet, 2018). A main consensus is that the quantity of LAI jobs strongly depends on the labour intensity and level of mechanisation, which is linked to type of crops (Deininger and Xia, 2017; Ali *et al.*, 2017; Nolte and Ostermeier, 2017; Herrman 2017). Calculations can be done per production model. Sugarcane farms using mechanical harvesting create 150 jobs for 1,000 cultivated hectares, whereas those using manual harvesting create 700 jobs for the same area (Deininger *et al.*, 2011). Calculations can be done per farm. In Ethiopia, the 6000 commercial farms create, on average, 1 permanent job per 20 cultivated hectares (Ali *et al.*, 2017). Often, the bigger the farm is, the lesser the number of created jobs per hectare is (Ali *et al.*, 2017, Deininger and Xia, 2017). Moreover, in many cases, the number of jobs per hectare required by LAI is lower than the number required by family farming is (Jaubertie *et al.*, 2010; Nolte and Ostermeier, 2017; Palliere and Cochet, 2018).

The second issue is about the quality of jobs. Quality is defined in terms of contract duration, returns for labour (level of remuneration and access to side benefits such as social insurance) and work conditions. The shared analysis of limited, mostly qualitative, research in SSA, indicates a trend towards less permanent salaried work, except in management positions, and towards a greater reliance on casual temporary work (Gibbon, 2011; Oya, 2016; Ali and Muianga, 2016 ; Devereux *et al.*, 2017).

The following issue is about who benefits from these jobs. Wage employment can be up taken by migrants, women or landless people (McCulloch and Ota, 2002; Maertens *et al.*, 2011; Herrman, 2017; Ahlerup and Tengstam, 2015). A common question is whether these workers and their households are amongst the poorest, and whether they are able to escape poverty thanks to LAI jobs. In some contexts, where LAI offer mainly casual jobs, the poorest households acquire the LAI jobs as they lack the economic resources and social networks to find alternative employment, and thereby become able to decline low wages and repetitive/physical tasks (Palliere and Cochet 2018). In other contexts, where LAI offer casual and permanent jobs, the better-off rural smallholders are also part of the LAI workers, and they manage to maintain access to the 'high wage' spectrum of the labour market (Baumert *et al.*, 2019).

The last issue, which will not be explored in this paper, is as to what the effects of LAI wage jobs are on worker/household trajectories. Here, again, the effects differ, ranging from small to strong impacts for lifting the poor out of poverty (Oya, 2013; Otsuka and Yamano, 2006; Zoomers and Otsuki, 2017). In this context, the paper contributes to nuanced narratives on LAI and aims at enriching the analysis of wage labour impacts, through a rigorous and contextualised cross-country analysis. Its value added is to link LAI job creation and distribution in order to better discuss the labour impacts.

## Method

A common methodology was applied in the three countries studied. In each country, a focus was placed: i) on a region, and then ii) on case study areas.

In order to get a representative picture of LAI and to qualify the jobs created, the research teams<sup>2</sup> engaged in this project implemented an exhaustive inventory of LAI in the targeted regions (Table 1a) and surveyed, in total, 48 LAI. Questions focussed on the investment model, degree of integration, ways of accessing land, and labour structure and policy issues.

	MOZAMBIQUE	KENYA	MADAGASCAR
Level	Study areas	Study area	Country
Period	2000- 2018	1996-2017	2000-2017
Nb of companies in the inventory	25	64	95
Nb of interviewed companies	14	34	20
Nb of companies included in following sections	14	33	1

**Table 1a: LAI companies' census in study areas according to country (2016-2017).** Source: Afrgroland LAI surveys.

In order to qualify the employees' socioeconomic profiles and cross-cut data on job quantities and quality, primary data was collected at key person and household level in factual case study areas (with a diversity of LAI) and counterfactual areas, with similar agro-ecological and population contexts, but without LAI. The ad hoc survey was based on a large sample of 1°650 households (mentioned as HS for household survey in the rest of the text). Households in factual and counterfactual areas were randomly selected. The results are then representative of the study areas, but not of the region/district or country as a whole (Table 1b). HS Modules included questions on: household members' socio-demographic features, on-farm and off-farm economic activities, detailed LAI-related activities, land tenure practices, and perceptions on changes induced by LAI in the last 10 years. It was conducted in October 2016 (Mozambique), in January 2017 (Kenya) and in April 2017 (Madagascar).

<sup>2</sup> For Mozambique, the Land matrix (landmatrix.org), the University of Pretoria, and Cirad has listed and updated information on 25 LAI in Monapo and Gurué districts. Out of the 20 active LAI, interviews were implemented with and/or detailed information was collected from 14 farms (Adalima, 2017).

In Kenya, the Cetrud and CDE from the University of Bern has worked with commercial farms in the Nanyuki area since the 1990s. We started from a list of 64 farms included in the Nanyuki area and updated it. We then did interviews with 34 farms to collect specific data on the company, production process and management strategy (Mutea *et al.*, 2017).

In Madagascar, the Malagasy Land Observatory (www.observatoire-foncier.mg) and Cirad have listed and monitored 95 LAI created after the 2000, excluding farms inherited from colonial times (Burnod and Andriamanalina, 2017). In 2017, 75% of the companies collapsed, 95% in agriculture (op cit). We interviewed 20 LAI on that list. This paper focuses on the only active and recent LAI in Ihorombe region.

	MOZAMBIQUE			KENYA	MADAGASCAR		TOTAL
	Monapo	Gurué	Ruacé	Nanyuki	Satrokala	Ambato	
Factual area (with LAI)	89	59		375	202	199	1052
Counterfactual (no LAI)	118	110	-	170	102	98	598
Subtotal	207	169	128	-	304	297	-
TOTAL	504			545	601		1650

**Table 1b. Households survey sample, by categories and case studies.** Source: Afgröland 2016-17.

### Context: contrasted country trajectories and LAI developments

The three countries studied have followed different agricultural development paths since the end of colonial times and the advent of independence, which have had strong influences on the way LAI developed.

Kenya is a former settler economy with a core of commercial agriculture, and with large-scale farming accounting for 30% of marketed agricultural produce (Dolan and Humphrey, 2000). The regional focus was placed on the Nanyuki region. In this region, the British settlers invested the best land and their private property holdings were confirmed at the time of Independence to avoid generating an economic crisis. At the end of the 1970s, the State supported the development of export value chains and created strong incentives to attract both national and international investments (Jaffee, 1992). The horticulture sector (vegetables, then flowers) enjoyed a quick development. Up to present times, it is one of the most dynamic sectors in terms of production, exportation and smallholder-inclusive labour creation (Dolan and Sutherland, 2002). In the Nanyuki area, no areas of land have been granted to investors by the State since 2000, except through government and clientelist transfers to national elites (Giger *et al.*, 2020). Large-scale landowners reinvest in their ranches to develop horticulture or sell (parts of) their land to new agricultural companies (Giger *et al.*, 2020). Our study area was selected to encompass the majority of vegetable and flower farms, as well as some cereal farms (28 LAI in total).

Mozambique, by contrast, has repeatedly struggled to establish such a commercial agriculture sector (Pritchett, 2002). In North Mozambique, the Portuguese colonial rulers gave huge concessions to private companies that developed operations (mostly cotton, tea and sisal) based on large-scale plantations and contract farming, with both benefiting from the forced labour system (Pritchett, 2002; Abrahamson and Nilson, 1995). After Independence in 1975, the State nationalised the colonial concessions, but the State farms failed due to post-independence warfare, resettlement policy mismanagement, and land claims by smallholders (Abrahamson and Nilson, 1995). The structural adjustment plans from 1986 imposed the privatisation of the productive structures, but the investors were few in numbers and were often discouraged by the civil war, until the mid-1990s (Boche, 2014). After the 1992 peace agreement, the new liberal government engaged in agricultural policies that strongly promoted large farms (Castel Branco, 2010). In the 2000s, the renewal of investors' interest in agriculture was particularly prominent (German *et al.*, 2016). An area of 1 550 000 ha was requested, in total, by private companies (Boche, 2014). Only a fraction of these projects started the procedure to gain access to the land, and this triggered land conflicts (Deininger *et al.*, 2011), despite the land reform measures that protected customary landowners (Tanner, 2010). In 2017, 56 LAI were active and operated only on 120 000 ha of land (Landmatrix.org, consulted in December 2017). The regional focus was on the Nacala corridor, one

of six Agricultural Growth Corridor Developments (GoM 2010, 2014). The Nacala corridor was supposed to be the largest investment zone, related to the Pro Savannah program, jointly funded by the Mozambican, Japanese and Brazilian governments. Three study areas were chosen: Monapo (in Monapo district) where new horticulture farms co-exist with sisal production farms inherited from colonial times, which have evolved towards soya or forestry; the Gurué area (in Gurué district), where the former colonial farms are still specialised in tea, although some have recently orientated toward macadamia and soya; and the Lioma–Ruacé area (Gurué district) where a former state and newly established farms develop soya production.

Madagascar presents a third type of trajectory. The French settlers developed agricultural plantations in very different and scattered territories (Koerner, 1969). At the time of independence, some owners left their business, whereas other families, well anchored in the economic sector, stayed and continued to increase the volume and diversity of their activities (Desjeux, 1979). In the 1970s, the State supported the evolution of former colonial farms into State farms, but the agricultural policies were orientated mostly towards family farming (Desjeux, 1979). The promotion of private investments started in the 2000s (Burnod *et al.*, 2013). More than 3 000 000 ha were targeted by a hundred investors (Burnod and Andriamanalina, 2017). Ten year later, 95% of the projects had collapsed due to the investors' profiles lacking solid funding and experience in agriculture, the complex and predatory practices of administrations, and social contestation at the national or/and local levels (Burnod *et al.*, 2013). Only 5% of the investors formally acquired a land lease (for a total area of 100 000 ha), but their plots infringe on community land, despite the 2005 land reform measures that should protect customary and local rights (Burnod et Andriamanalina, 2017). In 2017, they operated less than 10 000 ha of land (Burnod, 2017). Our research focused on two regions where a few active companies still remain. For this research, only the one large-scale farm is included (producing maize and other crops on smaller areas). The study area is localised in the Ihorombe region (Satrokala), located on a plateau at 1000 m altitude, with good rainfall but poor soil conditions. The region is mostly dedicated to extensive zebu cattle production. The farm under study started from scratch and negotiated access to land on former grazing lands belonging to native people.

### **LAI and labour market demand: local context and production model matter**

In the three countries under study, overall LAI directly contribute to absorb part of the local active population, which is crucial in rural areas where new job opportunities – especially in the formal sector – are scarce. Yet, strong variations do exist.

#### **Quantity of created jobs**

The importance of LAI wage employment within local labour markets varies, up to threefold (from 7% to 20% of active population) (Table 2b), depending on the features of the local economy in each country case study. Proximity to LAI also strongly determines the spatial distribution of the jobs. In Monapo, Gurué and Ruacé (Mozambique), Nanyuki (Kenya) and Satrokala (Madagascar), the companies respectively create 8500, 7800 and 295 jobs (Table 2a). At the case study area level, LAI jobs give benefits between 14% (Kenya) and 30% to the total households (Madagascar and Mozambique) (Table 2b). In the Madagascar and Mozambique study areas, LAI wage labour is a main option and has a substantial effect on local labour market in this context, where official unemployment rates are high and local economies are little diversified, and smallholders are poorly integrated to markets and their connections to small towns or intermediary cities are limited. Conversely, in the Kenya study area, LAI

jobs are not the sole or the best option among existing opportunities, as the local peri-urban economy is quite diversified, and is supported by long-standing developed value chains and by the proximity of small towns that support other sectors (e.g. tourism).

	MOZAMBIQUE	KENYA	MADAGASCAR
<b>Study area levels (district or region)</b>			
Nb of companies assessed	14	33	1
Sum of permanent jobs created	1368 (16%)	5439 (70%)	95 (32%)
Sum of temporary jobs created	7190 (84%)	2339 (30%)	200 (68%)
Total jobs	8558	7778	295
<b>Company level on average per company</b>			
Average permanent job created	97	165	95
Average temporary job created	513	49 (seasonal)	200

**Table 2a. Existing jobs in 2016 by study areas and LAI in average in 2017.** Source: Afgroland HS, 2016 and 2017.

	MOZAMBIQUE			KENYA	MADAGASCAR
	Monapo	Gurué	Ruacé	Nanyuki	Satrokala
% of LAI workers in active population	13	11	9	7	20
% of HH having at least one LAI worker among its members	29	24	20	14	38

**Table 2b. Share of active and household population engaged with LAI in country case study factual areas.** Source: Afgroland HS, 2016 and 2017.

Understanding the labour demand at the company level, or per production model, sheds more light on above contrasted situations. On average, each LAI creates between 95 and 165 permanent jobs (PJ), and 50 to 510 temporary jobs (TJ) (Table 2a). **The rose production** and processing model is the most labour intensive, with 17 PJ and 2 TJ generated per cultivated hectare (Table 3). The processing step clearly contributes to the labour intensity of the company activity. **The vegetable production** model is second, with 2.1 PJ and 2.25 TJ per cultivated hectare (Table 3). All the other agricultural models employ far fewer people. **Tea** generates 0,09 PJ and 0,64 TJ per cultivated hectare, mainly related to manual harvesting, whereas **cereal production**, mostly mechanised, generates maximums of 0,06 PJ and 0,03 to 0,22 TJ per cultivated hectare (Table 3). The impacts are even lower if the number of jobs is analysed in relation to the total area acquired by the farms. On average, the farms cultivate only 39% of their total area in Mozambique, and 57% in Kenya. The number of jobs calculated per hectare then strongly decreases (LAI survey). These results corroborate the broad findings in the literature: labour intensities vary according to annual/perennial crops (with few exceptions), mechanised/non mechanised processes, and inclusion of processing activities (Gibbon, 2014; Di Matteo and Schoneveld, 2016; Nolte and Ostermeier, 2017).

	Country	Nb of companies	Area cultivated Min & max in ha	Area cultivated in average In ha	Mechanization	Processing	Sum of permanent workers	Nb of permanent jobs/ha In average	Sum of temporary	Nb of temporary jobs / ha In average
<b>Horticulture</b>										
Vegetables /mixed	Kenya	15	3 to 105	31	Partial	yes	956	2.1	1046	2,25
Roses	Kenya	10	7 to 81	23	no	yes	4004	17,4	510	2,2
<b>Grain production</b>										
Cereal	Kenya	8	8 to 3000	952	yes	no	479	0,06	46	0,01
(maize, soybean, etc.)	Moz	3	900 to 2000	1467	yes	no	251	0,06	950	0,22
	Mada	1	3500		Yes	yes	95	0,03	200	0,04
<b>Perennial crop</b>										
Sisal	Moz	3	220 to 3000	2073	no	yes	65	0,01	2500	0,4
Tea	Moz	3	1450 to 2500	1872	no	Yes	518	0,09	3600	0,64
Trees (moringa, macadamia, forestry)	Moz	4	250 to 2450	1593	no	some	568	0,12	190	0,04

**Table 3. Number of jobs created by cultivated hectare and production model.** Source: Agroland LAI survey. Note, temporary jobs: according to an employer's statement, these jobs can be close to full-time equivalent jobs when the companies recruit temporary workers almost every day, or close to half jobs when companies recruit only for some agricultural tasks. For that reason, we do not aggregate permanent and temporary workers.

To better grasp the impact of LAI labour demand, it is important to look at alternative land use employment potential. In this case, family farming is the main alternative (and was the previous land use). We roughly estimate that family farming creates 1.5 to 2 PJ per cultivated hectare<sup>3</sup>. In a context where soil and weather conditions are relatively good – as is the case in Nanyuki (Kenya) and in Monapo, Gurué and Lioma (Mozambique) – **rose production** and processing create more jobs per hectare, as compared with family farming, **vegetable** production generates a number of jobs similar to family farming, but all the other production models (cereals and tea) are less efficient than family farming in terms of job creation.

### Quality of created jobs

The job quality provided by LAI is strongly oriented by LAI production models and labour policies, as well as value chain organisation, and their effects on local labour markets. Geographical proximity to LAI, as well as job quantities (5.1), also influences job quality, with larger shares of permanent jobs being created at case study level than at district or regional levels (Table 2a and Table 5).

	MOZ - Monapo percent	MOZ - Gurué percent	MOZ - Lioma percent	KENYA - Nanyuki percent	MADA - Satrokala percent
<b>Type of jobs</b>					
% of permanent workers	27	38	60	82	21
% of temporary workers	73	62	40	18	79
% with **"formalized" contract	19	37	42	80	24
% of **permanent with contract	18	76	62	86	65
% of temporary with contract	24	8	18	37	2
<b>***Level of remuneration per day (local unit)</b>					
<b>Agribusiness jobs</b>	120	80	-	320	7500
<b>Non-agriculture employment*</b>	80	110	220	420	3500
<b>Self-employment</b>	100	90	100	250	2900

**Table 5. Quality of existing jobs in 2016–2017.** Source: Afgroland HS 2016-2017. \*Workers stated to have or not have a formalised contract; they may not know exactly what their employers pay for employing them (e.g extra-direct salary costs). \*\*Permanent workers = working period > 8 months per year. \*\*\*On average, per day, for all the permanent and daily workers.

In Kenya, the quality of jobs is supported by horticulture production models and long-standing, structured high value chains. In the case study area, comprising 28 LAI, 82% of the jobs are permanent (Table 5). This is linked to the roses and vegetables production models that demand labour, all year round. Most of the employment contracts are duly formalised (Table 5). National labour legislation (with effective controls) and export-oriented horticulture value chains, with strong levels of production standards, support minimum levels of returns to labour and their working conditions (LAI interviews 2017; Giger *et al.*, 2020). About half of these permanent formal contracts come with side benefits such as health insurance and vacation entitlements, and a minority with pensions and maternity leave of absence (household interviews, 2017). However, LAI wages are less attractive than those of other local wage jobs are (320 KS/day versus 420 KS/day, respectively) (Table 5), although they are still aligned with Kenyan agricultural minimum wages (280 to 360 KS/day in 2017). The fact that only 3% of the

<sup>3</sup> Table 3 below in (c), for FTE (Full Time equivalent) per household: the mean is 1.77 and the median of 1.26.

interviewees wished, but did not manage, to be recruited (HS 2017), also underlines the point that these jobs are not really attractive. In the rose production models, two points related to drudgery and safety at work were regularly mentioned by workers as being strong drawbacks, and represent the most frequent motive for quitting. These relate to the physical effort required (in particular for rose conditioning tasks) and the basic safety issues related to the use of chemicals, but without required equipment (Afgroland HS, 2017). In the vegetable production models, notwithstanding the majority of permanent and formal jobs, there are temporary jobs without side benefits and harsh working conditions that are part of the picture, which are related to crop peak seasons and menial tasks.

In Mozambique, the trend is toward poor job quality in the tea and sisal models, but amelioration is seen in the renewing and emerging value chains (sisal and soya). The study areas present two broad dynamics. First, the majority of LAI jobs are casual, as is observed in 71% of the cases at the national level (Di Matteo and Schoneveld, 2016). In the Gurué and Monapo areas, with dominant tea or sisal production models, 62% and 73%, respectively, of jobs are temporary, with a large majority of them not being formalised with a contract (Table 5). Tea production performed on aging plantations, and oriented to regional markets, is not associated with standards requirements. It comes with very low levels of remuneration (80 MZN/day), below the minimum agriculture wage (114 MZN/day), and few other sector opportunities (Table 5). Although it is the same for sisal production in Ruacé, an export-oriented value chain is developing (Noticias, 2016), LAI offer slightly better wages than self-employment does (Table 5). In both cases (tea and sisal), jobs have often lacked any kind of side benefits and can present dire working conditions (HS, 2016; Agy, 2018; Governo de Moçambique, 2017). In these sectors, the disconnection between LAI job creation and improvement in the social conditions of work still persists (Ali and Muianga, 2016). A second but limited trend appears in Ruacé-Lioma, where soya-oriented production models have developed more recently (two third of employees were recruited after 2014 – HS, 2016). Permanent employment prevails (60%), and is mostly formal (62%) (Table 5). Such contracts come with combinations of health insurance, leave entitlement and pension rights (HS 2016; Baumert *et al.*, 2019). Missing data do not allow for the calculation of average remuneration, but recent studies in this area indicate that the wages are slightly above the monthly minimum wage, and they are 73% higher in foreign companies than in national companies (Di Matteo and Schoneveld, 2016).

In Madagascar, the quality of jobs related to LAI reflects the labour strategy of the single LAI company. For this maize production model, diversified with plants dedicated to essential oil production, about 80% of LAI workers access temporary positions without signed contracts (98%), although in some cases workers' sign informal records (Table 2b and Table 5). Such dominant casual labour is related to the seasonality of labour demand and poor standards in the national value chain. Casual workers do enjoy limited benefits, mainly access to a local hospital sponsored by the company (household interviews, 2017). They find that the working day for the company is more demanding than daily labour for the local farmers, as in the former case, a meal is not furnished, and working hours end later in the afternoon. The remainder are permanent workers (20%) who are engaged in the more technical tasks, including those in geranium production. They mostly benefit from formal, declared contracts (65%) (Table 5) with side benefits such as combinations of health insurance, leave entitlements and pension rights (HS, 2017). Overall, the level of remuneration offered by the LAI is up to twofold the remuneration of other job opportunities in the rural countryside (7°500 vs 3°500 MGA) (Table 5). LAI job attractiveness is high among non-employed households, as 15% stated that they had tried to get a position, but were not recruited (HS, 2017).

Beyond the general trend of limited and low-quality job creation, impacts vary both between and within case studies in terms of positive (Kenya) or negative (Mozambique and Madagascar) net employment and in terms of strong job quality variations. The main drivers of LAI demands for labour are their production model (in terms of crop labour intensity and in situ processing activities), the level of competition, and the regulation and standards requirements of the related value chain.

### **LAI and labour supply: diversity of worker profiles and household livelihood strategies**

The livelihood strategies of employees and their households depend not only on social categories (based on gender, age, migration, land access and poverty), but also on LAI production models and features of the local economy (existence or not of alternative options). All these factors have to be considered to analyse whether or not LAI have inclusion or marginalisation effects.

#### **Trends and specificities of LAI employees and households' profiles**

In the three country case studies, LAI mostly recruit workers in the 20–29 and the 30–39 age categories (23% to 34% and 28% to 45% employees, respectively) (Table 6). Workers below 20 years old are a minority (3% to 6%), and are clearly under-represented in LAI jobs, compared with non-agriculture wage earners and the self-employed (Tables 7a to 10a). The Madagascar case study shows the youngest age structure, with 40% of workers being between 20 and 29 years old, partly reflecting the country's early demographic transition. Contrariwise, Mozambique has the oldest age structure, as about 30% of workers are above 50 years old (Table 6), likely related to the long-standing presence of sisal and tea companies and youth out-migration dynamics. Lastly, when comparing permanent and temporary workers' ages, contrasting situations appear: they have similar ages in Madagascar, while permanent workers are older than temporary workers are in Mozambique, and it is the other way around in Kenya (Tables 7c to 10c).

In the three country case studies, LAI jobs are accessible even for workers with low education levels: 10% to 15% of the employees never attended school, while almost half of them went to school, to the primary level and or to the secondary level (Table 6). These proportions are similar to the distribution of the total population (Tables 7b to 11c). The results change when permanent and temporary jobs are distinguished. They indicate that LAI jobs, as with other wage jobs, feed a double dynamic, with the more-educated people being in permanent positions and less-educated people in temporary jobs (Tables 7b to 11c).

In Kenya and Madagascar, the results corroborate the literature, underscoring the increasing numbers of women of workers in the LAI plantation milieu. In Kenya, LAI jobs tend to favour gender equality, as women represent 55% of the workers and occupy 77% of the dominant permanent LAI jobs (Table 6). They are over-represented in this LAI sector, compared with other off-farm types of employment (Table 10a). Women are mostly engaged in unskilled positions, and they face important gender-based wage gaps (25 to 40% less than what men receive), whatever the type of contract or the skills required (Table 10b). By contrast, men, who represent 45% of workers, are under-represented in LAI jobs, compared with other sectors (Tables 10a and 11a). They are mostly in technically skilled positions (Table 10b). In Madagascar, women represent 46% of LAI employees. They are largely recruited as temporary workers, and only one quarter of them have access to (limited) local permanent jobs (Table 6). Yet, women do not rely on LAI to find jobs. They are less present in LAI jobs than in other wage or self-employment activities (Table 11a). Strong gender-based wage gaps do exist (50% less than men), mostly because

the technical- or management-skills positions – occupied by men – are better paid than the unskilled jobs – occupied by women (Table 11b). Men represent 54% of LAI workers. They fill 70% of the limited numbers of formal permanent positions, benefiting from attractive wages in LAI activities, where they are over-represented, compared with other sectors (Table 11b). In Mozambique, the gender dynamic of employees is totally different and critical, since a minority of LAI employees are women (3% to 15%), who occupy exclusively temporary positions with high levels of informality (Table 6). A strong cultural taboo against female employment in the northern provinces is likely at play here, which deters women from pursuing employment and, in some cases, investors from recruiting women for fear of generating social conflicts (Di Matteo and Schoneveld, 2016). Women occupy exclusively unskilled positions (90% of LAI jobs) with the lowest levels of remuneration (Reys, 2018). They face strong gender wage gaps since gender-based wage inequalities are the rule in other economic sectors (Mozambique Labour Market, 2017).

	MOZ - Monapo	MOZ - Gurué	MOZ - Lioma	KENYA – Nanyuki	MADA – Satrokala
<b>Amongst the workers</b>					
<b>Workers profile</b>					
% of female workers	3	16	12	55	46
% of female permanent workers	-	-/ 40	-	77	24
% of HH head	92	82	96	38	56
% of HH head's wife or husband	2	7	0	25	31
% of HH dependent/other	6	11	4	38	13
Median age	35	37	36	34	32
<b>Age category (%)</b>					
<20	3	0	0	4	6
20-29	23	33	28	26	34
30-39	28	28	28	45	38
40-49	18	15	21	19	13
>50	30	23	30	7	10
<b>Education level (%)</b>					
No school	13	13	12	12	16
Primary	48	34	48	52	52
Secondary	37	40	24	32	30
Higher	2	13	16	4	3
<b>Migrant status (%)</b>					
Non-migrant	38	56	48	21	26
Migrant nearby	14	16	8	70	8
Migrant far	48	29	42/44	9	66

**Table 6. LAI Workers' profiles - 3 countries' case studies.** Source: HS (2016-2017).

The majority of the workers' **households are migrant households**: 80% in Kenya and Madagascar (Tables 6, 10c and 11c) and about 50% in Mozambique (Tables 6, 7b, 8b and 9b). These workers come from neighbouring counties in Kenya, while they are from more distant, in-country localities in

Madagascar and Mozambique (Table 6). The shares of migrant populations are similar in counterfactual zones in Kenya and in the Gurué area of Mozambique (Table 10c; Tables 7b, 8b and 9b), meaning that agribusinesses are not a cause (or not the only cause) for migration. The situation is different in Madagascar and the Monapo area of Mozambique, where the share of migrant population is much higher in the factual zone than in the counterfactual zone (Table 11c) and where all the migrants declared that they moved to find job opportunities (Reys, 2018). A common view is that migrant labour supports segmentation by generating distinct groups of workers, who are paid and treated differently, although they are not very different in terms of skills, experience and productivity (Bardhan and Rudra, 1986). The use of migrant labour is often seen as a way to depress wages by creating a different faction of workers where different logics, interests and time frames undermine collective action (Standing, 2006). The experiences of the Mozambique and Kenya case studies only partly confirm this trend. The case of Madagascar, where LAI jobs are more attractive than the other sectors are, shows that the situations of migrant workers tend to be better off than, or similar to, those of the locals. This situation may lead to the development of local tensions. Migrants, who are available at all times of the year, are more regularly employed, whereas locals, who have often received promises of jobs from the company against gaining access to their land, invest in their workforces on their own farms, are less often available, and are less often recruited.

In the three countries studied, there are households with workers within all the categories in **terms of poverty status**, but the temporary workers in Kenya and Madagascar are represented more in the poorest household categories, as compared with the total population (Tables 10c and 11c). Although data do not allow the affirmation of a causal relation, or the direction of causality, between household poverty status and LAI employment, this can be interpreted as a sign of the precariousness of these jobs, which are attractive only for the poorest. Conversely, in Madagascar and in Mozambique, the permanent workers are represented more in the richest category, compared with the total population (Tables 11c and 7b, 8b and 9b). In Kenya, the distribution of households with and without employees in terms of poverty status is similar (Table 10c), which is coherent with the fact of LAI remuneration is similar to the minimum agricultural wage.

Lastly, in Mozambique and Madagascar, the development of LAI caused land losses for 20% to 45% of households in the study areas, which is greater than the losses of households in counterfactual areas (Tables 7b, 8b, 9b and 11c). The land lost is mostly agricultural land in Mozambique, for 30 to 45% of the households, and mostly grazing land in Madagascar, for 6% of the households (HS Survey, 2017). By comparison between households engaged in and not engaged in labour relations, this land lost does not seem to have forced people to look for a job with the LAI companies, and has rather induced a proletarian movement.

### **LAI employees and household strategies: perspectives on socio-economic differentiation**

The following section analyses the strategies of employees and households, and on this basis discusses whether LAI jobs are perceived as providing an opportunity to cope with poverty, or as a source of on-going marginalisation.

In Nanyuki (Kenya), both permanent and temporary LAI workers may have a relatively good quality of employment, although they do work under hard physical conditions and exposure to agricultural chemical inputs (cf. 5.2). The average remuneration and the benefits associated with the employment contracts are not sufficient to avoid employee turnover. Accordingly, these jobs often remain a short-term option, taken up as convenient opportunities in livelihood strategies, and are notably adaptable to

girls/sons (20% of the workers) and young mothers' roles within their productive and reproductive trajectories. In fact, LAI jobs appear to provide core opportunities for women, and not necessarily only for the most vulnerable: the leading group of female employees are household spouses (56%), daughters (40%), and (rarely) the heads of households (4%) (Reys, 2018). Reflecting such short-term logic, 50% of the people currently employed have been engaged only recently (2 years ago or less) (Reys, 2018). Interviews confirm this view, pointing out that working on LAI farms is appropriate only for young people (including women) because the work is very physical. In addition, regular salaries allow young people to save money in order to later quit their LAI jobs and develop another activity, which is seen as their first best option (farming, services, etc.).

In Mozambique, the workers are almost exclusive men, who are typically heads of households (83 to 92%). In areas where plantations date from colonial times (sisal in Monapo and tea in Gurué), about half of the workers currently employed have been engaged for 10 years or more (Reys, 2018). For these households, LAI jobs are thus part of a long-term household strategy, although according to two different streams of logic. On one side, LAI permanent jobs are central to the stability of households' livelihoods, although they receive similar salaries, despite their different qualifications and the hard working conditions. On the other side, regular LAI casual jobs are part of a resilience mechanism and a livelihood coping strategy, complementing households' own farming activities. Casual workers are recruited each year during the peak season (November to March), mainly for harvesting tasks. Yet, for many households, LAI jobs can also be either an intermediate step on men's career paths, or the reflection of marginalisation, particularly for the many (44%) households that lost land in Ruacé (Table 9b).

In Satrokala (Madagascar), LAI jobs appear to provide economic opportunities for women (Table 6). About 25% of women LAI employees are heads of their households, mostly divorced or widowed (Table 11; Reys, 2018). For these women with limited or no land access, and who are often the most vulnerable, recurrent casual LAI employment is often their sole off-farm activity and their main source of income (HS, 2017). For employees who are spouses or daughters (75%), most of the LAI jobs are valuable and provide a punctual source of income that is counted as part of their flexible livelihood strategies. LAI jobs could also provide a long-term strategy, as 30% of workers have been employed for 10 years, at least (Reys, 2018). Jobs are largely filled by migrants (76%) (Table 6). These permanent workers can be identified as "winners" regarding their LAI jobs, since they seize attractive wages and side benefits, and such workers centre their livelihood strategies on these jobs, allowing for savings accumulation (Afgroland Households interview, 2017). The limited group of local households engaged with LAI show different strategies. During agricultural working seasons, local smallholders with land access often prefer to work on their own farms for purposes of spreading risk and of maintaining social networks (Medernach and Burnod, 2013). Those who lost land (mainly grazing land) in conflicts with the LAI can reject this option and prefer to look for other jobs (on other farms or in non-agricultural sectors).

## Conclusion

This paper nuances the narratives about the labour impacts of large-scale agriculture investments (LAI) in Africa through a rigorous assessment and contextualised cross-country analysis. It did so by assessing and discussing the labour market effects of LAI in Kenya, Mozambique and Madagascar, developing an original comprehensive analysis of both wage employment creation (quantity and quality of jobs) and distribution (workers' and households' profiles) attributable to LAI.

The results shed light on the debate about the wage employment creation of LAI. Beyond the general trend of limited and low quality job creation, the impacts vary both between and within case studies in

terms of positive (Kenya) or negative (Mozambique and Madagascar) net employment, and in terms of variations in strong job quality. The permanent jobs created represent most of the created jobs in Kenya, and one third to one fifth in Mozambique and Madagascar, reflecting the various systems of logic of the specific technical models. In Madagascar, the level of remuneration offered by the LAI is much better than those offered by other job opportunities; in Mozambique, it is roughly the same, while in Kenya, it is less attractive than jobs in other sectors. Further, the quality of jobs also strongly depends on the labour policies of LAI and on the existing national and sectoral regulations. Overall, the main drivers of demand by LAI for labour comprise their production model (in terms of labour intensities for various crops and in situ processing activities), and the legal framework and standards regulation enforcement of the value chain they relate with.

The results also provide an assessment of the socio-economic profiles of LAI employees and their households. The evidence partly converges with literature, stressing that the common LAI temporary jobs of day labourers or seasonal workers tend to benefit the most vulnerable segments of the population: poor households, migrants, the youth, and women. Indeed, in the three case studies, young people and migrants are the most frequently recruited for temporary and casual labour. Precarious jobs remain more open to women who, unlike men, find it difficult to access employment in other sectors of the rural economy. However, existing standard work status and conditions, though often in the minority, also benefit the same segments (females in Kenya, young people in Madagascar) or other segments, such as older workers accessing permanent, decent opportunities in Mozambique, who use LAI in the building of likely sustainable livelihood strategies. This illustrates how local conditions play a critical role in the unfolding outcomes of LAI labour relations, livelihoods and local economies.

Employment is a burning issue for African governments. The public debate about the right type or model of agriculture for inclusive development often builds a dichotomy between smallholders and large-scale agriculture. This over-simplification misses important intermediary forms for organising agriculture to create jobs, and the fact that the reality is the coexistence of different forms. The findings described above serve to inform decision-makers on the varying drivers of wage labour creation and distribution among LAI. They provide some insight for better appreciating the interactions between LAI and family farming, and strategic policy options in response to SSA employment challenges. Finally, the results stress three points.

First, the impacts of labour creation by LAI depend on LAI production model (crops, mechanisation, processing), quality of jobs (short-term or long-term jobs, joint benefits, labour conditions policy) and context (presence of alternative jobs, and better-paid employment options or not). In sum, the incentivising of policy regarding labour-intensive business model choices, along with in situ post-production, down-stream activities, and the imposition of minimum labour conditions are prerequisites. The need for proper regulation and oversight in support of inclusive local or global high-value chains that boost such production models is also a point to inform and support.

Second, such prerequisites are not sufficient for effective/efficient policies. The relationship between wage employment, escaping poverty, and social differentiation is not easy to assess without proper methodology and databases. Future LAI policies should also take into account that, although positive effects of investments might arise through employment creation and the provision of public goods and services, these benefits might be offset by land conflicts, environmental degradation and inadequate compensation to those affected. The quantity and quality of LAI jobs *per se* do not justify either the displacement of farmers or the alteration of existing agricultural models. Indeed, subsidising investments (notably by making cheap land available) does not automatically yield higher-value benefits. In

particular, the quantification of the jobs created by cultivated area makes it possible to compare the performances of large-scale farming with those of family farming. This information, depending on land contexts and land density levels, reinforces the demonstration of the lack of economic relevance of expelling farmers.

Third, the results of the contrasted cross-country case studies suggest that there is room for different combinations of agriculture models to meet the challenges of the rural and agricultural sectors. Choices in terms of the promotion of inclusive investments have to be made and articulated with a broad agricultural development strategy, according to the trade-offs resulting from the different agricultural models available. The types of farming, by region and key commodity, the interactions of these types of farming, and the role of agrifood chains in employment are central in SSA development strategies. For this purpose, strategies based on knowledge of regional contexts are key to identifying adapted investments that are conducive to the inclusive development of the broad and still-growing family farm sector. Such context-specific strategies determine when and how smallholders would benefit from the introduction of new forms of commercial agriculture.

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## Annex

VARIABLES	FACTUAL ZONE			COUNTERFACTUAL ZONE	
	Large-scale farm wage employment %	Off-farm Non-agriculture employment %	Off-farm Non-agriculture self-employment %	Off-farm Non-agriculture employment %	Off-farm Non-agriculture self-employment %
% active (18-65 yo) with job	33	2	13	5	9
Total observations	58	3	24	11	19
% Sex					
male	97	100	58	91	84
female	3	0	42	9	16
% Age					
18-29	28	33	33	27	37
30-39	29	67	33	45	21
40-49	29	0	13	18	32
50-59	12	0	21	0	11
60-65	2	0	0	9	0

Table 7a. MOZAMBIQUE MONAPO. Employment of the active population (18-65 y.o.) and their -demographics profiles (sex and age), by type of jobs, factual and counterfactual zones. Note: The p-values of the chi-square tests are equal to 0,059 for non-agricultural employment and 0,176 for non-agricultural self-employment when comparing factual and counterfactual zones (Table 4a). Source: Afgroland survey (2016).

	Percentages in column				
	Permanent Workers	Temporary workers	Non-engaged	Counter-factual	Total
<b>Poverty status</b>					
Poorest	17.65	31.71	48.28	43.59	39.71
Intermediary	17.65	19.51	20.69	35.90	28.92
Richest/ Less Poor	64.71	48.78	31.03	20.51	31.37
Total	100.0	100.0	100.0	100.0	100.0
<b>Education of head</b>					
No school	5.88	17.07	20.69	20.51	18.63
Primary school	35.29	53.66	51.72	55.56	52.94
Secondary school	52.94	29.27	27.59	18.80	25.00
Higher	5.88	0.00	0.00	5.13	3.43
Total	100.0	100.0	100.0	100.0	100.0
<b>Age of head</b>					
29 and -	35.29	21.95	17.24	31.62	27.94
30-39	17.65	31.71	24.14	27.35	26.96
40-49	11.76	36.59	13.79	20.51	22.06
50-59	17.65	9.76	20.69	10.26	12.25
60 and +	17.65	0.00	24.14	10.26	10.78
Total	100.0	100.0	100.0	100.0	100.0
<b>Migration status of head</b>					
Migrant far	47.06	43.90	41.38	16.24	27.94
Migrant nearby	17.65	14.63	10.34	17.95	16.18
Native	35.29	41.46	48.28	65.81	55.88
Total	100.0	100.0	100.0	100.0	100.0
<b>Sex of head</b>					
Female	0.00	2.44	24.14	10.26	9.80
Male	100.00	97.56	75.86	89.74	90.20
Total	100.0	100.0	100.0	100.0	100.0
<b>Land taken by an agribusiness</b>					
Yes	35.29	19.51	27.59	0.85	11.27
No	64.71	80.49	72.41	99.15	88.73
Total	100.0	100.0	100.0	100.0	100.0

Table 7b. MOZAMBIQUE – MONAPO. Distribution of households with or without workers in an agribusiness by main characteristics (in %). Source: Afgroland HS (rev 2020).

VARIABLES	FACTUAL ZONE			COUNTERFACTUAL ZONE	
	Large-scale farm wage employment %	Off-farm Non-agriculture employment %	Off-farm Non-agriculture self-employment %	Off-farm Non-agriculture employment %	Off-farm Non-agriculture self-employment %
% active (18-65 yo) with job	29	4	5	3	10
Total observations	38	5	7	7	23
% Sex					
male	84	100	86	71	87
female	16	0	14	29	13
% Age					
18-29	34	20	14	29	39
30-39	29	60	43	14	22
40-49	16	0	29	43	22
50-59	18	0	14	14	13
60-65	3	20	4	0	4

Table 8a. MOZAMBIQUE - GURUÉ. Employment of the active population (18-65 y.o.) and their demographics profiles (sex and age), by type of jobs, factual and counterfactual zones. Note: The p-values of the chi-square tests are equal to 0,766 for non-agricultural employment and 0,092 for non-agricultural self-employment when comparing factual and counterfactual zones (Table 4a). Source: Afgroland HS survey (2016).

	Percentages in column				
	Permanent Workers	Temporary workers	Non-engaged	Counter-factual	Total
<b>Poverty status</b>					
Poorest	14,3	39,1	36,4	57,0	48,2
Intermediary	14,3	34,8	40,9	30,8	31,3
Richest/ Less Poor	71,4	26,1	22,7	12,2	20,5
Total	100,0	100,0	100,0	100,0	100,0
<b>Education of head</b>					
No school	14,3	13,0	22,7	17,8	17,5
Primary school	35,7	34,8	50,0	51,4	47,6
Secondary school	42,9	34,8	18,2	26,2	27,7
Higher	7,1	17,4	9,1	4,7	7,2
Total	100,0	100,0	100,0	100,0	100,0
<b>Age of head</b>					
29 and -	14,29	30,43	27,27	32,71	30,12
30-39	7,14	43,48	22,73	20,56	22,89
40-49	14,29	21,74	4,55	23,36	19,88
50-59	42,86	4,35	36,36	12,15	16,87
60 and +	21,43	0	9,09	11,21	10,24
Total	100,0	100,0	100,0	100,0	100,0
<b>Migration status of head</b>					
Migrant far	7,14	39,13	31,82	29,91	29,52
Migrant nearby	7,14	26,09	4,55	14,02	13,86
Native	85,71	34,78	63,64	56,07	56,63
Total	100,0	100,0	100,0	100,0	100,0
<b>Sex of head</b>					
Female	0	8,7	27,27	14,95	14,46
Male	100	91,3	72,73	85,05	85,54
Total	100,0	100,0	100,0	100,0	100,0
<b>Land taken by an agribusiness</b>					
Yes	14,29	13,04	31,82	0	7,23
No	85,71	86,96	68,18	100	92,77
Total	100,0	100,0	100,0	100,0	100,0

Table 8b. Distribution of households with or without workers by main characteristics (in %) MOZAMBIQUE – GURUÉ. Source: Afgroland HS (rev 2020).

VARIABLES	FACTUAL ZONE		
	Large-scale farm wage employment %	Off-farm Non-agriculture employment %	Off-farm Non-agriculture self-employment %
% active (18-65 yo) with job	8	12	13
Total observations	22	31	34
% Sex			
male	86	94	76
female	14	6	24
% Age			
18-29	32	35	35
30-39	27	29	35
40-49	14	19	18
50-59	27	16	9
60-65	0	0	3

**Table 9a. MOZAMBIQUE - LIOMA. Employment of the active population (18-65 y.o.) and their demographics profiles (sex and age), by type of jobs, factual and counterfactual zones. Note: No comparison between factual and counterfactual zones can be done. Source: Afgroland survey (2016).**

	Percentages in column				
	Permanent Workers	Temporary workers	Non-engaged	Counter-factual	Total
<b>Poverty status</b>					
Poorest	10	14,29	20,59	-	19,05
Intermediary	20	71,43	25,49	-	30,16
Richest/ Less Poor	70	14,29	53,92	-	50,79
Total	100.0	100.0	100.0	-	100.0
<b>Education of head</b>					
No school	10	7,14	9,8	-	9,52
Primary school	40	57,14	46,08	-	46,83
Secondary school	40	14,29	28,43	-	27,78
Higher	10	21,43	15,69	-	15,87
Total	100.0	100.0	100.0	-	100.0
<b>Age of head</b>					
29 and -	20	42,86	28,43	-	29,37
30-39	10	28,57	33,33	-	30,95
40-49	40	0	16,67	-	16,67
50-59	30	21,43	11,76	-	14,29
60 and +	0	7,14	9,8	-	8,73
Total	100.0	100.0	100.0	-	100.0
<b>Migration status of head</b>					
Migrant far	50	35,71	49,02	-	47,62
Migrant nearby	10	7,14	16,67	-	15,08
Native	40	57,14	34,31	-	37,3
Total	100.0	100.0	100.0	-	100.0
<b>Sex of head</b>					
Female	0	14,29	9,8	-	9,52
Male	100	85,71	90,2	-	90,48
Total	100.0	100.0	100.0	-	100.0
<b>Land taken by an agribusiness</b>					
Yes	30	50	44,12	-	43,65
No	70	50	55,88	-	56,35
Total	100.0	100.0	100.0	-	100.0

**Table 9b. Distribution of households with or without workers by main characteristics (in %) MOZAMBIQUE – LIOMA. Source: Afgroland HS (rev 2020).**

VARIABLES	FACTUAL ZONE			COUNTERFACTUAL ZONE	
	Large-scale farm %	Non-agriculture employment %	Non-agriculture self-employment %	Non-agriculture employment %	Non-agriculture self-employment %
% active (18-65 yo) with job	8	15	17	17	8
Total observations	54	107	112	65	30
% Sex					
male	46	63	58	74	60
female	54	37	42	26	40
% Age					
18-29	29	24	27	28	13
30-39	45	28	27	31	53
40-49	19	22	16	20	20
50-59	6	22	22	15	10
60-65	2	3	8	6	3

**Table 10a. KENYA – NANYUKI Rate of employment of the active population (18-65 y.o.) and their socio-demographic profiles (sex and age), by type of jobs.** Note: p-values of the chi-square tests on unweighted data are equal to 0,362 for non-agricultural employment and 0,000 for non-agricultural self-employment when comparing factual and counterfactual zones. Source: Afgroland survey (2017).

		All	Male	Female
Daily wage	agribusiness employee	320	420 (24 obs.)	280 (30)
	non-agriculture employee-FACT	420	420 (73)	320 (41)
	Non-agr. self-employee-FACT	250	250 (76)	180 (49)
	non-agriculture employee-CF	420	580 (48)	250 (17)
	Non-agr. self-employee-CF	250	280 (18)	250 (12)
Daily wage large-scale farm only	management	1330	830 (3)	1330 (1)
	technical skilled	420	580 (13)	320 (5)
	unskilled	280	320 (8)	220 (25)
	permanent	320	580 (18)	280 (20)
	temporary	320	350 (2)	320 (2)
	declared	320	420 (19)	280 (24)
	non-declared	280	370 (5)	250 (6)

**Table 10b. KENYA – NANYUKI Median daily wages in KSh, by type of activity, areas, gender (weighted data).** \*Note: number of observations are unweighted and indicated between (parenthesis). Source: Afgroland survey (2017).

	Percentages in column				
	Permanent Workers	Temporary workers	Non-engaged	Counter-factual	Total
<b>Poverty status</b>					
Poorest	36,64	47,87	31,9	35,5	32,77
Intermediary	29,79	20,21	34,18	34,32	33,77
Richest/Less poor	33,56	31,91	33,92	30,18	33,46
Total	100	100	100	100	100
<b>Education of head</b>					
No school	10,62	24,47	20,85	24,26	20,79
Primary school	37,67	75,53	50,34	47,34	49,79
Secondary school	45,21	0	22,15	20,71	22,75
Higher	6,51	0	6,67	7,69	6,67
Total	100	100	100	100	100
<b>Age of head</b>					
Less than 29	19,52	36,17	23,36	20,71	23,08
30-39	47,95	31,91	15,76	20,12	18,03
40-49	26,03	0	12,64	18,34	13,71
50-59	0	31,91	22,25	14,79	20,51
60 and +	6,51	0	25,99	26,04	24,66
Total	100	100	100	100	100
<b>Migration status of head</b>					
Migrant far	10,27	11,7	10,88	3,55	10,05
Migrant nearby	75,34	88,3	77,31	71,01	76,69
Native	14,38	0	11,81	25,44	13,26
Total	100	100	100	100	100
<b>Sex of head</b>					
Female	29,79	47,87	39,4	36,09	38,71
Male	70,21	52,13	60,6	63,91	61,29
Total	100,0	100,0	100,0	100,0	100,0

Table 10c. Distribution of households with or without workers by main characteristics (in %) KENYA – NANYUKI. Source: Afgroland HS (rev 2020).

VARIABLES	FACTUAL ZONE			COUNTERFACTUAL ZONE	
	Large-scale farm %	Non-agriculture employment %	Non-agriculture self-employment %	Non-agriculture employment %	Non-agriculture self-employment %
% active (16-65 yo) with job	19	11	15	4	10
Total observations	80	45	76	13	32
% Sex					
male	55	50	29	51	35
female	45	50	71	49	65
% Age					
<30	6	49	42	45	24
30-39	34	34	27	20	34
40-49	38	10	15	30	32
50-59	13	5	6	6	9
60-65	10	2	9	0	0

Table 11a. MADAGASCAR – Employment of the active population (18-65 y.o.) and their social-demographics profiles (sex and age), by type of jobs. Source: Afgroland HS survey (2017).

VARIABLES		All	Male	Female
Salary (median)	agribusiness employee	7500	7500	4200
	non-agriculture employee-FACT	3500	3200	3500
	self-employee-FACT	2900	3500	2100
	non-agriculture employee-CF	2500	2100	4200
	self-employee-CF	2900	2100	2900
LAI Salary (median)	Permanent	5800	7500	4200
	Temporary	7500	7500	3500

Table 11b. MADAGASCAR - Daily wages earned in MGA, by type of activity and location (weighted data). Source: Afgroland HS 2017.

	Percentages in column				Total
	Permanent Workers	Temporary workers	Non-engaged	Counter-factual	
<b>Poverty status</b>					
Poorest	6.67	40.38	24.62	20.08	22.98
Intermediary	33.33	42.31	37.95	39.50	38.86
Richest/Less poor	60.00	17.31	37.44	40.42	38.17
Total	100.0	100.0	100.0	100.0	100.0
<b>Education of head</b>					
No school	6.67	30.77	16.92	10.50	14.63
Primary school	40.00	42.31	52.31	74.41	61.21
Secondary school	46.67	23.08	30.77	12.99	22.41
Higher	6.67	3.85	0.00	2.10	1.76
Total	100.0	100.0	100.0	100.0	100.0
<b>Age of head</b>					
29 and -	26.67	32.69	23.59	24.02	24.86
30-39	46.67	44.23	30.26	26.38	30.70
40-49	6.67	11.54	18.97	31.36	23.48
50-59	13.33	7.69	12.82	12.20	12.05
60 and +	6.67	3.85	14.36	6.04	8.91
Total	100.0	100.0	100.0	100.0	100.0
<b>Migration status of head</b>					
Migrant far	93.33	63.46	40.00	4.59	28.37
Migrant nearby	0.00	9.62	11.79	4.72	7.53
Native	6.67	26.92	48.21	90.68	64.09
Total	100.0	100.0	100.0	100.0	100.0
<b>Sex of head</b>					
Female	29.79	47.87	39.40	36.09	38.71
Male	70.21	52.13	60.60	63.91	61.29
Total	100.0	100.0	100.0	100.0	100.0
<b>Land taken by an agribusiness</b>					
Yes	0.00	5.77	3.08	0.00	1.69
No	100.00	94.23	96.92	100.00	98.31
Total	100.0	100.0	100.0	100.0	100.0

Table 11c. Distribution of households with or without workers by main characteristics (in %) MADAGASCAR – SATROKALA. Source: Afgroland HS (rev 2020)