2024 Living Income Reference Price Update for vanilla sourced from Madagascar

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FAIRTRADE
INTERNATIONAL

EXECUTIVE SUMMARY

The natural vanilla market is highly volatile. A long period (2015–2021) of exceptionally high vanilla prices and resulting product theft repeatedly brought vanilla to the fore of news headlines in recent years. However, the situation changed noticeably in 2023 when farmgate prices plummeted from an average of about €36.0 per kilogram of green vanilla in 2018 (when the first Living Income Reference Price study on Malagasy vanilla was conducted) to €2.2 in 2023 as a result of the extreme boom-and-bust cycle characterizing the industry. This cycle rotates between long periods of excess supply, low prices, and concerns for farmer poverty and short periods of tight supply, excessively high prices, and resulting vanilla bean quality shortages.

A "Living Income Reference Price" (LIRP) for vanilla was established in 2019 by Fairtrade International (FI) as a reference tool to help stakeholders work toward a more stable vanilla market which would, in turn, stabilize the supply of high-quality vanilla and support vanilla farmers´ livelihoods. Yet, the situation has changed considerably since 2019; for example, the Malagasy currency has inflated more than 20%, the costs of living have changed, and there may be a dramatic decrease in purchasing power parity due to low vanilla prices and reduced cash flows in the SAVA region in northeastern Madagascar. The SAVA region is the global center of vanilla production where most rural inhabitants´ livelihoods depend on vanilla cultivation.

This report presents the vanilla LIRP 2024 update and is based on Fairtrade International´s LIRP methodology which is used to determine price levels that enable living incomes (LI) for smallholder farmers of different agricultural commodities. The study analyses the costs of a decent standard of living, as well as the costs of sustainable production for vanilla farmers in Madagascar. The LIRP is the minimum price needed for smallholder vanilla farmers to earn sufficient net income to afford a decent standard of living. It is based on the assumptions that farmers have land holdings sufficient to support their "full employment" in growing vanilla (a farm size on which the adult household labour can be fully employed) and that they have implemented good agricultural practices leading to adequate productivity and quality.

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To estimate the 2024 LI benchmark and establish the minimum productivity conditions, 480 interviews were conducted with smallholder vanilla farmers from 16 villages in the SAVA region of Madagascar (Nov – Dec 2023) and triangulated with focus group discussions and market surveys. Some key assumptions (sustainable vanilla yields, a "full employment" farm size, and labour needed to achieve sustainable yields) remained unchanged and are based on the study conducted in 2019.

Yet, this study takes an additional step of clustering farming households (HHs) into four groups based on the gender of their household head as well as their certification status: (1) female-headed certified farming HHs, (2) male-headed certified farming HHs, (3) female-headed non-certified farming HHs, and (4) male-headed non-certified farming HHs. Data for each household clusters (HHCL) is analysed and presented separately throughout the report. HH sizes, vanilla production output, vanilla prices received, levels of livelihood diversification, food self-sufficiency, and costs of living differ substantially between the different HHCL.

Average vanilla productivity has increased over previous years; however, farmgate prices received were much lower and reports of vanilla theft were rare. Most vanilla farmers reported negative net incomes in 2023, with a substantial share (roughly 50%) of their vanilla harvest being withheld from the market most likely in the hope of attaining better prices in the future.

The prices of all imported goods such as petrol, medicine, rice, and vegetable oil have substantially increased since the 2019 study; whereas, locally produced foods (roots and tubers, fruits, and locally produced meat) have become cheaper. Housing prices (construction material and rent) as well as labour costs have decreased substantially over previous years. In summary, deflation and inflation occurred in the SAVA region, a paradox that is linked to the exceptionally high vanilla price observed in the first vanilla LIRP study (Hänke & FI 2019).

The costs of a decent living have decreased in the SAVA since 2018 particularly due to lower costs of a healthy diet and housing, despite the higher costs of transportation and healthcare. The cost of a decent living is €2.3 or 10,890 Malagasy Ariary (MGA) per person per day[1]. For an average surveyed HH of 4.2 people, the cost of decent living

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1   The average exchange rate for the entire year 2023 was 1€ = 4,816.5 MGA (Oanda.com).

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is €3,466 or 16,694,214 MGA per year with huge differences between the HHCL due to their different HH sizes and compositions. Using productivity benchmarks established in 2019 (350 kg of green vanilla on a viable farm size of 1.0 ha) and considering in-kind income, an average vanilla farming household needs a minimum farmgate price of €10.2 (49,254 MGA) per kg of green vanilla to achieve a LI.

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1 BACKGROUND

Madagascar is by far the world´s largest vanilla producer. Here, an estimated 70,000 to 100,000 vanilla farmers produce around 50 – 80% of the world´s premium Vanilla planifolia (1,500 – 1,800 mt / year). At the same time, Madagascar is among the 10 poorest countries globally. Many vanilla farmers are poor and food and nutrition insecure, and face ample production risks, ranging from price instability to extreme climate patterns. Many vanilla farmers experience low incomes and seasonal food insecurity due to their small land parcels, relatively low productivity, high reliance on vanilla incomes, and low farmgate prices.

Vanilla has attracted increasing attention from the global public in recent years, with prices higher than silver and reports of theft and crime frequently bringing vanilla to media headlines. However, in 2023 vanilla farmgate prices fell dramatically to prices lower than €2.2 per kg green of vanilla at farmgate. This is typical of the extreme volatility experienced by the vanilla market, where prices fluctuate heavily in cycles of boom and bust, often influenced by cyclones in Madagascar (Brown, 2009). In recent years, global demand, speculation by non-vanilla actors, and failed vanilla export policies have further contributed to instable vanilla prices. Currently, there is an oversupply of vanilla on the vanilla market and many farmers are stockpiling their vanilla harvests on farm in the hopes of better prices in the future.

In recent years, vanilla stakeholders have been collaborating to address vanilla quality and sustainability problems. For example, The Sustainable Vanilla Initiative (SVI)[2] was initiated in 2016 as a voluntary industry initiative to increase the supply of sustainable vanilla, improve the livelihoods of vanilla farmers, and address the vanilla quality crisis.

Fairtrade International has developed a model to establish the price for a specific crop from a specific region that is needed for an average farming household with a "full-employment farm size[3]" and an adequate productivity level to earn a Living

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2   The SVI is a voluntary sustainability initiative uniting consumer goods manufacturer, global flavor / fragrance companies, international vanilla bean traders and cooperatives. SVI members represent over 70% of worldwide vanilla bean purchases and have focused so-far on Madagascar, whereas Uganda is being developed as a second origin.

3   A farm size on which the available adult household labour can be fully employed.

Income from the sales of that crop. This Living Income Reference Price (LIRP) is an essential part of Fairtrade's Living Income Strategy, which serves as a tool for raising awareness of income gaps and provides guidance to producers, traders, and governments on sustainable pricing as a critical lever for achieving LI (see section 2 B for more details).

In 2019, Fairtrade International commissioned research into the economic conditions of vanilla farming households (HHs) in Madagascar, with the objective of establishing Vanilla Living Income Reference Prices (VLIRPs) for vanilla (Hänke & FI, 2019) in collaboration with key stakeholders, i.e., vanilla farmers, farmer groups and the vanilla industry. The 2019 study helped inform debate and strategies around the minimum market conditions required to support sustainable livelihoods for vanilla producers.

When implemented, the reference price should support smallholder farmers in achieving sustainable livelihoods through returns sufficient to cover the cost of a decent standard of living when certain baseline conditions are met. Sustainable prices, such as the LIRP, are believed to contribute to market stabilisation and increases in sustainable vanilla production. Likewise, the establishment of a LIRP for vanilla shall empower local farmer organisations to negotiate suitable prices over the long run.

However, since the last vanilla LIRP studies (see Hänke & FI, 2019; Hänke & FI, 2021) the context has changed dramatically: the Malagasy Ariary (MDA) inflated by approximately 20% between 2020 and 2023 (Statista, 2023). The cost of imported goods, such as petrol, medicine, and rice have substantially increased while, at the same time, green vanilla prices have decreased by around 91% between the first LIRP study (€36/kg in 2019; Hänke & FI, 2019) and the present one (€2.2/kg). The regional purchasing power parity has substantially decreased. Consequently, deflation is occurring simultaneously, particularly for locally produced agricultural goods such as yams, fruits, locally produced meat, and other products.

2 METHODOLOGICAL APPROACH

A Living Income

Living Income is defined as sufficient income generated by a household to afford a decent standard of living for all household members. Elements of a decent standard of living include food, water, housing, education, healthcare, transportation, clothing, and other essentials, including a saving provision of 5% for unexpected events. A commonly accepted methodology for establishing Living Wage (LW) and Living Income (LI) benchmarks is the calculation of the cost of "decent living" through the Anker methodology (Anker & Anker, 2017). LW and LI serve as reference points to set wages for hired labour (LW) or target incomes for self-employed smallholder farmers (LI). In Madagascar, all vanilla farmers are self-employed smallholder farmers to whom the LI framework applies.

LI was established in 2019 at €5,337 (23,690,40 MGA) for a typical surveyed household of 4.2 persons per year (€3.7 per person per day; Hänke & FI, 2019). However, in this study, the costs of decent living have been updated to 2023 levels.

B Fairtrade´s reference price model

In recent years, Fairtrade International (FI) developed a Living Income Reference Price (LIRP) model as an integral part of its holistic roadmap toward LI for its certified smallholder farmers. The essential principle behind Fairtrade´s LIRP is the question: What price do farmers who have a viable and "full employment" farm size and sustainable production levels need to reach a LI? In the LIRP, the value of self-produced food is counted as in-kind income and deducted from the costs of living since it reduces HH food expenditure.

In 2019, Hänke and FI established LIRPs for green vanilla from Madagascar (€16.6 / kg) and Uganda (€15.0 / kg). In 2020, the Malagasy LIRP was updated to €13.2 / 60,481 MGA / kg (Hänke & FI, 2020).

Through a consultative process involving vanilla farmers, cooperatives, vanilla stakeholders, and development organisations and a desk review of empirical studies, sustainable yields and viable fam size were established (see below).

Key variables of the Fairtrade's Living Income Reference price model include:

1. Sustainable yields

Adequate productivity levels are based on feasible yields when implementing good, sustainable agricultural practices. The idea is to base the reference price model around a level of productivity that is feasible for farmers who have implemented the recommended good agricultural practices and realised a suitable level of productivity, that is, realistic yields.

In 2019, sustainable vanilla yields were established at 350 kg green vanilla per household (Hänke & FI, 2019) and remain unchanged in this study.

2. "Full Employment Farm Size"

The Universal Declaration of Human Rights establishes that everyone who works has the right to just and favourable remuneration for themself and their family. Following this principle, self-employed farmers who work fulltime on their farms should make a LI from their farm proceeds. In other words, a farm will have to be big enough to fully absorb the household labour force to generate a LI solely from farm revenues. This is considered a viable farm size or a "full-employment farm size".

In Madagascar, the viable vanilla farm size for a typical household was established at 1.0 ha (Hänke & FI, 2019) and remains unchanged. Also, the labour requirements to achieve target yields on a viable farm size remain unchanged.

3. Cost Of Sustainable Production

The costs associated with producing sustainable yields are determined on the basis of an adequate farm investment. Hence, the costs of production are calculated at a sustainable yield level, that is, how much investment is needed to reach adequate yields. This calculation is based on fully employed, non-remunerated, household labour.

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The costs of sustainable production (€626.8 / ha) from Hänke and FI (2019) have been updated in this study to reflect 2023 labour costs, LW for hired labourers, and de-/inflation of the Malagasy currency. Additional hired labour needs are factored in as Living Wage (LW)[4].

LW is calculated as €7.5 per labour-day per person. This is based on the living income €3,466 for an average household of 4.2 members (see **Figure 4**). The average household is composed of 2.5 adults and 1.7 children (see **Table 2**). As a rule of thumb, 75% of the adult working days per year (246 days in total allowing for some leave and sickness) is used in Fairtrade's conversion factors from LI to LW. Thus, there would be 461 working days available to achieve a living income (1.875 × 246 days) translating into a daily LW of EUR €7.5 per person.

Thus, the LIRP covers a LI for vanilla-farming households and a LW for hired workers on smallholder farms. The corresponding formula for Fairtrade's LIRP is:

$$\text{Living Income Reference Price} = \frac{\text{cost of decent living} + \text{cost of sustainable production}}{\text{viable land area} \times \text{sustainable yields}}$$

C   2019 and 2021 vanilla LIRP studies and the reasons supporting a 2024 update

The first vanilla LIRP study was completed for 2018 in 2019 by Hänke and FI (2019). In 2021, an update accounting for changes to the costs of living, in particular food costs, and inflation in 2020 was done with special attention on the effects of Covid-19 (Hänke & FI, 2021).

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4   Even though one Anker Reference values exist for Madagascar (2022), the results are not used in this study. First of all it is a so-called Anker reference value, where no full-fledged study has been undertaken. "Rural Madagascar" means lumping deserts, semiarid areas in southern Madagascar which belong to the most food insecure regions in the world, highlands (centre) and the tropical east and northeast (Sava region). These regions are geographically, economically and ethnically very different. That's why using one "rural Madagascar" reference value appears inappropriate. Moreover, the reference LI value 580,155 MGA ($143) per family per year appears unrealistic. In fact alone the minimum costs for heathy but nutritious diet in Madagascar are estimated at $US 3.7 per person per day (**Worldbank 2023, FAO 2023**). US$ PPP in Madagascar is 1,193 MGA in (OECD 2023) which translates into a minimum costs of healthy diet of 4,366 MGA per person per day. Thus, assuming a household of 5 people (as in the Anker reference value) almost equals the Living Income benchmark (Anker 2022) but without considering any other costs. Moreover, there is strong evidence that food prices differ significantly between rural regions in Madagascar (**WFP 2016**) as well as other costs of living (particularly housing). This is likewise reflected in the data on food costs by **Wageindicator 2023** and other studies (Hänke & FI 2019).

The costs of decent living were estimated at €5,337 (21,993,132 MGA) per household per year in 2018 (€3.7 / 15,247 MGA / day; Hänke & FI, 2019) and €4,668 (21,385,990 MGA) per household per year in 2020 (€3.0 / 13,929 MGA per person per day; Hänke & FI, 2020) for an average surveyed household of 4.2 persons.

However, the situation has changed considerably since then: accumulated inflation has risen approximately 20% between 2020 and 2023 (Statista, 2023) and local farmgate vanilla prices have dramatically decreased (see Figure 1 below). In fact, green vanilla prices decreased around 91% between the first LIRP study in 2019 and the present one.

Farmgate prices per kg green vanilla
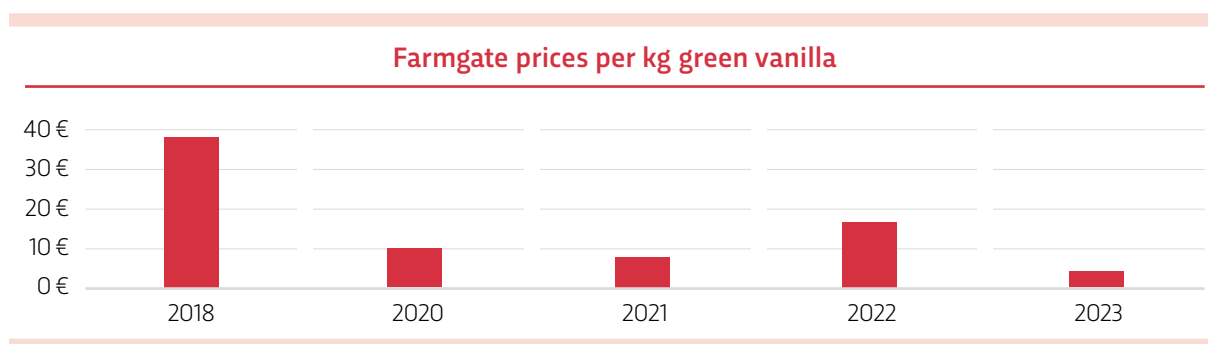
Figure 1:   Average farmgate prices per kg vanilla in the SAVA region of Madagascar (2019 – 2023., Source: Own data)

In the SAVA region, low vanilla prices led to a collapse of the regional economy. This will likely translate to a sharp decline in regional purchasing power parity as the SAVA region is the global centre of vanilla production and, here, most rural families´ livelihoods depend on vanilla (Hänke et al., 2017). Moreover, we expect adoption of different coping strategies by farmers as most farmers will not be able to make a living from vanilla proceeds and, much less, a LI. As such, there are good reasons to update the vanilla LIRP to reflect the realities of living in 2023.

Still, the following assumptions from previous studies (Hänke & FI, 2019; 2020) remain unchanged and are used in the present study:

a. Maximum feasible yield: 350 kg. The maximum feasible yield was established in 2019 through a consultative process with farmer cooperatives, researchers, NGOs, and companies represented through the Sustainable Vanilla Initiative (SVI).

b. The viable vanilla area: 1.0 ha. The viable farm size was established through focus group discussions with farmer cooperatives and cross validated with different stakeholders.

c. Typical farm model: The farm model remains unchanged: vanilla is the most important cash crop in the region. Typical crop distribution and selection have been surveyed and are presented throughout the study. Many farmers also grow cloves, cocoa, or coffee as cash crops. Rice is by far the most important subsistence crop followed by bananas, manioc, yams, and different fruits and pulses.

However, the labour requirements for viable vanilla farm size have been updated largely to reflect the changed security needs of vanilla farms. The typical HH size (4.2) remains unchanged from the 2019 study (see Table 2); however, additional labour needs are factored in the LW of hired labourers. LW (expressed as cost per working day) have been updated to 2023 levels.

D Sampling design

The questionnaires, sampling design, and survey implementation were conceived by the author of this study. One sub-consultant and five research assistants supported data collection. Farmer interviewees were selected from 16 villages that have company-led sustainability/livelihood programmes in four provinces (Antalaha, Andapa, Sambava, and Vohémar). Farmers who are part of these programs are certified (Organic, Rainforest Alliance, and/or Fairtrade). SVI-partnering companies supported the selection of farmers and provided farmer lists from their company-associated programmes. Farmers were randomly selected from these lists (15 farmers per village).

From each of the same villages, vanilla farmers who do not participate in company-led sustainability/livelihood programmes were randomly selected to partake in the study. Research assistants selected every third house in the villages and asked if the household grows vanilla and if they are part of company-related programmes. If they met these criteria, they were selected for subsequent surveys. These farmers mainly sell their vanilla on the spot market to commissionaires. Note that, in 2016, more than 60% of all vanilla farmers in the SAVA region sold on the spot market (Hänke et al., 2017).

This selection process led to a total of 480 farmer interviews. The interviews were conducted between November and December 2023.

Table 1: Sampling design for vanilla farmer surveys

Certified farmers		Randomized sport-market farmers	
Villages	16	Villages	16
Farmers per village	15	Farmers per village	15
Total interviews	240	Total interviews	240
	Total = 480 farmers		

E Household clusters established in data analysis

During subsequent data analysis, focus was put on company-associated sustainability/livelihood programmes ("certified") and gender. Consequently, the following four household (HH) clusters were established and, hereafter, most data is presented separately for these four groups:

a. CF: Certified, female-headed household (n=55)

b. CM: Certified, male-headed household (n=184)

c. NCF: Non-certified, female-headed household (n=67)

d. NCM: Non-certified, male-headed household (n=174)

In addition to the four household clusters, average values (across all HH clusters, n = 480) are presented.

F Questionnaire design and structure

Most of the questions in the questionnaire addressed the entire HH. All questions on agricultural production, livestock sales, food consumption, production costs, expenditure, and income addressed the entire year of 2023. See Annex 1 for an overview of the questionnaire used.

G Market surveys

In each of the four districts, two market surveys were conducted (see **Figure 2** below).

Market traders were asked the prices of their most common crops in January, April, July, October, and November/December of 2023. Food prices were averaged across 2023 and prices from local units/measurements were converted to kg based on Hänke and FI (2019). See **Annex 2** for a list of average food prices in 2023.
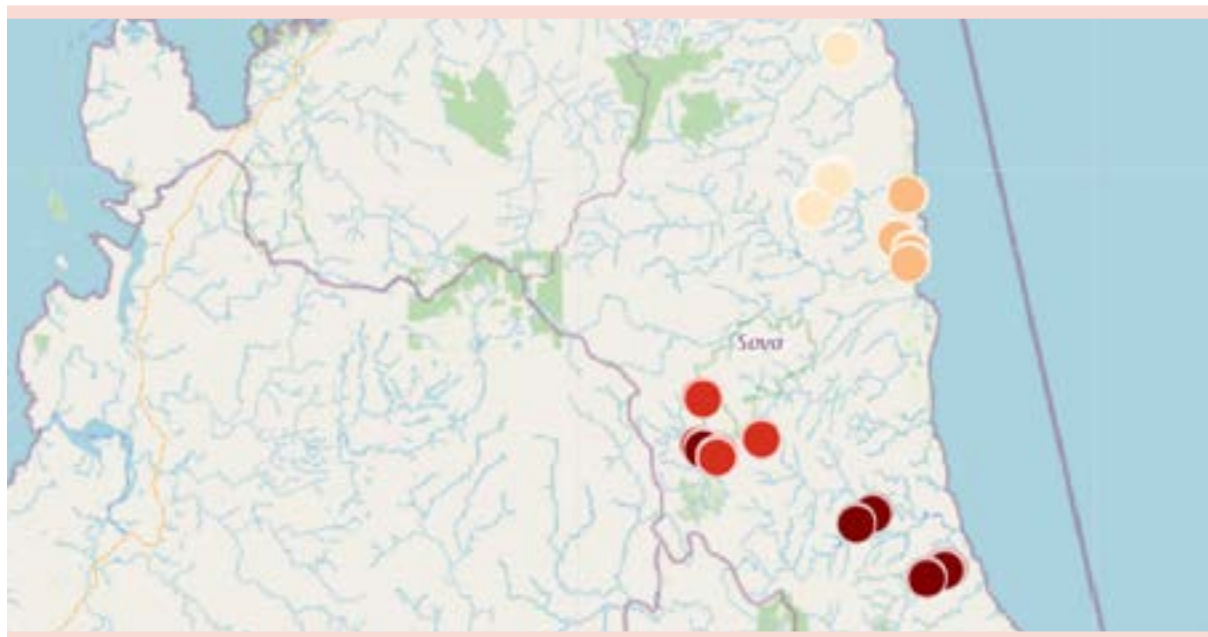
Figure 2:   Map of the surveyed markets

H Focus groups

Two focus group (FG) discussions in each of the four districts were conducted by trained local staff. Each FG discussion lasted about 2 hours and involved six to eight vanilla farmers who resided permanently in their village, half of whom were male and half were female. The key questions discussed were the costs of living for each household member (such as costs for education, health, transportation, clothing, electricity, and housing).

I   Limitations of the study

The author's extensive experience in conducting research in Madagascar on vanilla and the SVI members' great support contributed to the success of this study. However, the livelihoods of vanilla farmers, the vanilla market, and the enabling environment in which vanilla farming takes place is complex and, as such, the present study does not represent every vanilla farmer's reality.

The situation for impoverished vanilla farmers might look different from the data presented in this report. Because many of the surveyed farmers were certified, the results may not adequately represent "average farmers" whose farm sizes, total production, and benefits related to buyers and prices may be different from contract farmers (Hänke et al., 2018). Moreover, vanilla farmers living in remote areas were not surveyed due to limitations posed by weather, road conditions, and budget / time constraints. Vanilla farmers living in areas accessible only via pirogues (canoe) or several days of walking were not included.

As a result of these factors, we recognise this report better reflects the lived realities of better-off farmers.

Also, it should be noted that field sizes and proportions of crops (intercropping) were independently reported / estimated by the farmers and not verified quantitatively.

Some Euro to Malagasy Ariary conversions do not sum up exactly due to rounding on one decimal in € in the presented statistics.

3 RESULTS

3.1 LIVING INCOME BENCHMARK

A Demographics

Table 2:   Demographics of vanilla-farming households showing HH size and average number of HH members working full time / part time on farm and number of children at school

Cluster	Household size	Full time on farm	Part time on farm	Children at school
CF	4.6	1.7	0.9	2.0
CM	4.8	1.7	1.1	2.0
NCF	3.4	1.5	0.6	1.3
NCM	3.9	1.6	0.8	1.5
Average	4.2	1.6	0.9	1.7

The average size of surveyed households was 4.2, including 1.6 adults who work full time on the farm, 0.9 who work part time on the farm, and 1.7 children attending school. Yet, there are important differences between the household clusters (HHCL, see Table 2). NCF have the smallest HH sizes (3.4) whereas CM have the largest (4.8).
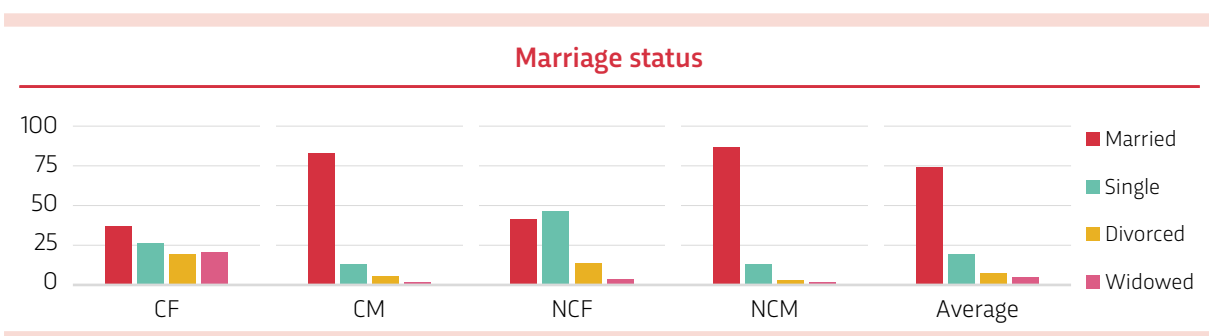
Figure 3:   Marital status of heads of the different HH clusters

B Cost of decent living for different household clusters

a Model diet

In the SAVA region, food security including food availability, affordability, and accessibility is a key concern for many vanilla farmers. Food availability is seasonal as a result of having only one rainy season. Lean seasons are common in Madagascar, lasting usually from January to April. During these times, food savings are scarce, farmers rely on food purchases, and food prices (particularly rice) often increase. Vanilla farmers' rice stores are often insufficient to cope with the lean season (FAO & WFP, 2015; Hänke & FI, 2019), even though the consumption of rice is stable across the year indicating that farmers also buy rice (Andriamparany et al., 2021). In fact, many vanilla farmers in the SAVA region are food insecure (Andriamparany et al., 2021).

The food habits of local farmers are chronicled in Appendix 11 of Hänke and FI (2019). The average prices of food items in local markets in 2023 are presented in **Annex 2**.

The average kcal requirement is calculated as 2,020 kcal/HH member for a typical household based on the activity level, gender, and age of each HH member and the assumption that a typical average household is comprised of 0.9 adults with moderate activity level, 1.7 adults with vigorous activity level, and 1.7 children. However, dietary needs differ between HH clusters due to differing HH composition and are presented separately in **Annex 3**.

Malagasy vanilla farmers eat rice daily (many eat rice three times a day) and prefer eating only the white seed (discarding the rice hull) which contains almost exclusively carbohydrates (USDA, 2019). This often leads to physical underdevelopments and diseases in rural Madagascar as a diet centred around carbohydrates leads to protein, micronutrient, and vitamin deficits, particularly Vitamins A and E (Andraimparany et al., 2021; Golden et al., 2019). Rice prices have increased over the past years; in fact, rice was almost twice as expensive in 2023 as it was in 2019: in 2023, rice sold at 800 MGA/kapoky and, in 2019, it sold at 450 MGA/kapoky. Note that one kapoky fills the volume of a 300 mL can).

Table 3:   Model diet for Malagasy vanilla farmers

Food group	Food item	Grams per day	Cost per day/person in MGA	Cost per day/person in €	Comment
Cereals and grains	Maize	25	45	0.01	4 times a week
	Rice	25	232	0.05	2 – 3 times a week
Roots and tubers	Cassava	150	63	0.01	4 times a week
	Yams	50	37	0.01	Once a week
Starchy fruit / vegetable	Plantains	200	242	0.05	4 times a week
Pulses, legumes, beans	Beans	80	246	0.05	3 times a week
	Groundnuts	60	186	0.04	3 times a week
Dairy	Milk	200	200	0.04	For children one glass per day
Eggs	Chicken eggs	50	783	0.16	5 times a week
Meats and Fish	Beef	30	674	0.14	2 times a week
	Chicken	10	199	0.04	Once a week
	Fish	30	240	0.05	2 times a week
Green leafy vegetables	Bred	60	104	0.02	5 times a week
	Cassava leaves	50	56	0.01	2 times a week
Other vegetables	Onion	51	210	0.04	3 times a week
	Tomato	52	295	0.06	3 times a week
Fruits	Mango	60	56	0.01	3 times a week
	Banana	50	61	0.01	3 times a week
Oils and fats	Vegetable oil	57	397	0.08	Every day
Cost of model diet excluding additional costs below			4,325	0.90	
Percentage added for salt, spices, sauces, and condiments				1%	
Percentage for spoilage and waste				3%	
Percentage added for variety				10%	
Total cost of model diet including additional costs			**5,017**	**1.04**	
Total model diet per family per day			21,070	4.37	

In the model diet in Table 3, rice consumption was reduced to establish a cheap but healthy and nutritious diet. This would mean that rice is eaten 2 – 3 times a week and cheap and locally available tuber roots and fruits are eaten more frequently. Moreover, some tuber roots can be harvested throughout the year and are more drought resistant than other annual plants (e.g., rice, maize, beans). In addition, vegetable and animal protein (particularly fish) consumption were slightly increased in the model diet to satisfy WHO / FAO recommendations. A 1% allocation was made for condiments (the lowest option according to Anker and Anker (2017)) as this best reflects the regional cooking culture.

The model diet costs €4.4 (21,070 MGA) daily for an average household or €1.0 (5,017 MGA) per person per day. Annual average household costs tally to €1,597 (7,691,951 MGA).

Considering variations in HH sizes and compositions, the differences between HH clusters were relatively large, with the least expensive household cluster being the NCF (€1,293 annually) and the most expensive cluster being CM (€1,825 annually, see Annex 3).

b Housing

To estimate housing costs (rent and utilities), international minimum standards of housing conditions were presented to FG participants. Data for housing costs were collected in eight focus groups discussions. According to Anker and Anker (2017), the cost of decent housing include

1.   separate rooms for children and adults; that is, three separate rooms for an average HH (depending on HH size),

2.   minimum room size of 9m^2,

3.   a safe, watertight roof,

4.   air ventilation,

5.   cement flooring,

6.   concrete walls (wood can be mixed with cement or clay),

7. a separate cooking area,

8. porcelain or improved latrine exterior to the main building,

9. access to water and electricity, and

10. maintenance / repair costs.

Questions discussed with FG participants were: What would it cost to build such a house, how long would it last, and / or what would be the equivalent on the retail market?

Focus group participants agreed that a rental equivalent is realistic as, during the vanilla boom (2014 – 2019), some farmers were able to build comparable houses.

Local farmers estimated the average rental cost of such a house for a family with 4.2 members to be 300,000 MGA (€62.3) per month; however, estimates varied across districts with prices quoted as low as 200,000 MGA (€41.5) and as high as 400,000 MGA (€83.0).

Hence, annual housing costs were established at €747.4 (3,600,00 MGA) per HH per year.

Cluster-specific housing costs were adapted to their respective HH sizes (see **Annex 4**).

c   Electricity

Solar panels are by far the most common source of electricity in the region, with more than 83% of farmers owning a solar panel (cf. Hänke & FI, 2019). Consequently, the cost of solar panels and their maintenance across their operating lifespan were adapted from Hänke and FI (2019). Costs were adapted to the year 2023 to reflect an average costs of 111,110 MGA per month (€23.1) or €276.8 per year for a typical household.

HHCL-specific electricity costs are listed in **Annex 4**.

d Education

Table 4:   Average number of children visiting preschool, primary, and secondary school per HHCL

Cluster	HH size	Children at pre-school	Children at primary school	Children at secondary school
CF	4.6	0.1	1.2	0.7
CM	4.8	0.3	1.0	0.7
NCF	3.4	0.1	0.8	0.4
NCM	3.9	0.3	0.8	0.4
Average	4.2	0.2	0.9	0.6

In Madagascar, schools remain underdeveloped and weakly supported by the government, particularly in rural areas (UNICEF, 2017). Secondary schools are often far from the villages where vanilla farmers live. Teachers are paid irregularly, necessitating parents' support, and corruption is common in all school types.[5] In the vanilla-growing region of the SAVA, parents often take care of teachers' vanilla plantations as they are often (vanilla) farmers.

In Madagascar, children attend preschool (pré-école), primary school (école primaire), lower secondary school (Collège d'Enseignement Générale), secondary school (Brevet d'Étude Primaire Complémentaire), and upper secondary school (Lycée). School fees differ only slightly (see Table 5). The cost of schooling is low and includes school fees, FRAM,[6] school uniforms (shirts), books and pencils, and sometimes transportation, even though many of the pupils in our sample walk to school. School fees do not include food costs.

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5   Many parents complain about "unofficial fees" to be paid to teachers and school directors, which are not included in the model. These costs can be high according to respondents (> than schooling costs)

6   FRAM is an abbreviation for Fikambanan'ny ray aman-drenin'ny mpianatra or "the association of the parents of pupils"

Table 5:   Average schooling costs per child per year

Item	Average costs per child per year		
	Pre-school	**Primary school**	**Secondary school**
School fees	9.9 € (47,717 MGA)	12.3 € (59,143 MGA)	17.5 € (84,429 MGA)
FRAM	3.0 € (14,286 MGA)	4.8 € (23,143 MGA)	7.3 € (35,000 MGA)
School clothes	2.6 € (12,429 MGA)	4.6 € (22,357 MGA)	5.3 € (25,429 MGA)
School bags	4.6 € (22,143 MGA)	6.1 € (29,429 MGA)	6.6 € (31,857 MGA)
Notebooks	1.4 € (6,714 MGA)	4.5 € (21,857 MGA)	9.9 € (47,571 MGA)
Book	0.8 € (3,714 MGA)	2.2 € (10,429 MGA)	3.9 € (18,857 MGA)
Pens and pencils	1.2 € (5,571 MGA)	1.8 € (8,643 MGA)	2.4 € (11,500 MGA)
Excursions	0.0€ (0 MGA)	0.1 € (286 MGA)	0.6 € (2,714 MGA)
Transportation	1.5 € (7,143 MGA)	20.5 € (98,571 MGA)	20.5 € (98,571 MGA)
Other	4.2 € (20,000 MGA)	12.5 € (60,000 MGA)	12.5 € (60,000 MGA)
Total	**29.0 €** **(139,714 MGA)**	**69.3 €** **(333,857 MGA)**	**86.4 €** **(415,929 MGA)**

Almost all children walk to their schools even though secondary schools are often far away from home (>5 km).

An average of 1.7 children per household attend school; however, there are differences in the number of school attendees between the HH clusters (see Table 4). The average cost of basic education totals to €120.0 (577,971 MGA) per household per year (cf. Table 4 and Table 5). See Table 6 below for HHCL-specific education costs.

Table 6:   Average expenditure on education per HH cluster per year

Cluster	Costs for pre-school	Cost for primary school	Costs for secondary school	Sum
CF	2.9 € (13,971 MGA)	83.2 € (400,629 MGA)	60.4 € (291,150 MGA)	146.5 € (705,750 MGA)
CM	8.7 € (41,914 MGA)	69.3 € (333,857 MGA)	60.4 € (291,150 MGA)	138.5 € (666,921 MGA)
NCF	2.9 € (13,971 MGA)	55.5 € (267,086 MGA)	34.5 € (166,371 MGA)	92.9 € (447,429 MGA)
NCM	8.7 € (41,914 MGA)	55.5 € (267,086 MGA)	34.5 € (166,371 MGA)	98.7 € (475,371 MGA)
Average	5.8 € (27,943 MGA)	62.4 € (300,471 MGA)	51.8 € (29,557 MGA)	120.0 € (577,971 MGA)

e   Healthcare

Due to Madagascar's tropical-equatorial climate, lack of hygiene, and unsafe water sources, malaria, dengue, typhus, and cholera are common. In the SAVA region, these diseases lead to particularly high child and mother mortality rates (INSTAT, 2014; Meekers & Yukich, 2016). Health and sanitation facilities in the region are understaffed (and the majority of staff are undertrained), lack equipment, and have few trained doctors (Centre de Recherches, 2013). Many farmers use traditional medicines to avoid the long distances to and costs of western medical centres (Centre de Recherches, 2013).

Health care costs including professional health treatment, medicines, and transportation to treatment centres were surveyed through FG for each HH member and age class. According to FG participants, health expenditures have generally increased in the wake of Covid-19 and medications, in particular, have become more expensive.

During FG, participants agreed that the cost of a using health centres, doctors, or pharmacies average 77,500 MGA per month (€16.1) for a typical family, though this can be driven up by serious illnesses or accidents. On average, health expenditures cost households €193.2 (930,000 MGA) per year with differences between the HH clusters (see Annex 4).

f   Clothing

Data on clothing costs were collected in FG. Costs were discussed by gender for children and adults. School uniforms were included under educational expenses above. Clothes for adults include clothes for on-farm work, every day, and festivities.

Table 7:   Clothing costs per person per year

Cluster	Costs per person per year
0 – 5 years	24.0 € (115,714 MGA)
5 – 14 years	32.4 € (156,143 MGA)
14 – 18 years	41.4 € (199,286 MGA)
18 – 60 years	31.3 € (150,571 MGA)
>60 years	25.5 € (122,857 MGA)

Annual expenditures for clothing are higher for adults (€115.4) than children (€66.8) and higher for women than for men. For a typical household of 4.2 persons, clothing costs total €147.8 (711,879 MGA) per year (see Annex 4 for cluster-specific differences).

g   Transportation

In the SAVA region, 14.0% of vanilla farmers own a motorbike and 21.6% own a bicycle (Hänke et al., 2017). However, 95% of the surveyed farmers walk to their vanilla plots. Many of the vanilla farmers sell their vanilla in their own villages or nearby. Shared bush taxis are commonly used, keeping transportation costs relatively low. Still, petrol costs have increased considerably over the last few years. The average cost of transportation is €123.4 (594,230 MGA) per HH per year.

Table 8:   Transportation costs per HH cluster

HH cluster	Children >14	14 – 18 years	18 – 60 years	> 60 years	Sum
CF	15.3 € (73,743 MGA)	15.0 € (72,240 MGA)	97.1 € (467,438 MGA)	7.7 € (37,135 MGA)	135.1 € (650,556 MGA)
CM	14.4 € (69,479 MGA)	10.3 € (49,577 MGA)	104.7 € (504,105 MGA)	17.1 € (82,327 MGA)	146.5 € (705,488 MGA)
NCF	9.6 € (46,199 MGA)	7.1 € (34,023 MGA)	78.5 € (378,162 MGA)	7.4 € (35,511 MGA)	102.6 € (493,895 MGA)
NCM	12.1 € (58,469 MGA)	4.8 € (23,349 MGA)	88.2 € (424,765 MGA)	12.3 € (59,233 MGA)	117.5 € (565,815 MGA)
Average	13.0 € (62,669 MGA)	3.3 € (16,024 MGA)	94.2 € (453,393 MGA)	12.9 € (62,144 MGA)	123.4 € (594,230 MGA)

h   Communication

The cost of telephone / communication for social and business purposes was discussed in FG. 43.8% of the respondents had a mobile phone in 2020 (Hänke & FI, 2019) and, since then, mobile network coverage has improved. On average, communication expenses were estimated at 30,714 MGA / month (€6.4 / month) or 368,571 MGA / year (€76.5 / year) for a typical household. See Annex 4 for cluster-specific differences.

i   Margin for unexpected events

On average, the margin for unexpected events (5% of the total living income benchmark) is €165.0 (794,952 MGA) per HH per year, though this ranges from €136.3 to €185.9 (see Annex 4).

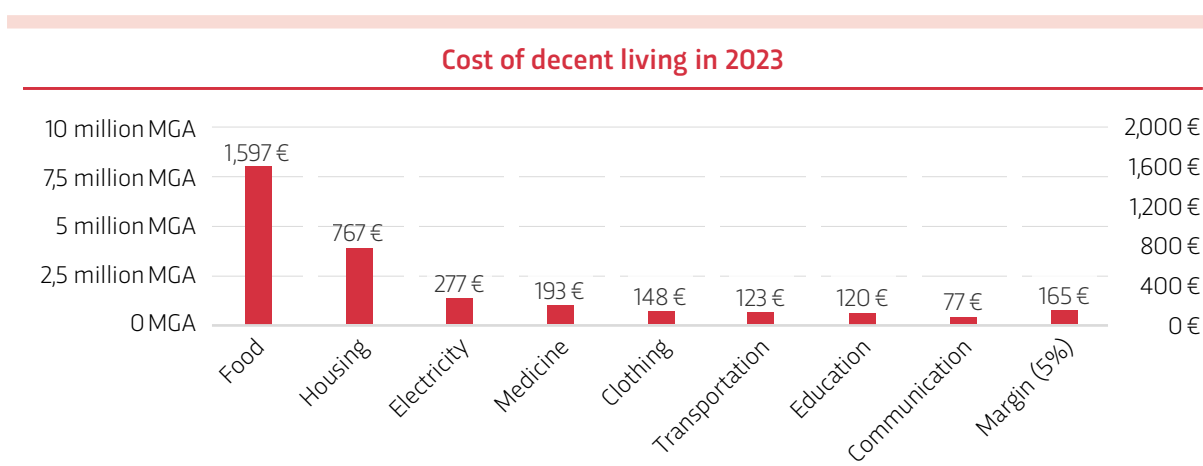## j   Total Living Income per year

Figure 4:   Cost of a decent living per year for a typical household

For an average household of 4.2 persons, the annual cost of a decent living is €3,466 (16,694,214 MGA) or €2.3 (10,890 MGA) per person per day. However, cluster-specific LI benchmarks differ, with NCFs requiring €2,727 and CMs requiring €3,904 (see Annex 4).

C Value of food produced at home

Farmers were asked what kind of subsistence and cash crops they produced in 2023 and in which quantities. The quantities (provided in local units) were converted into cash values (see also Annex 2 for conversion to kg and cash values).

Table 9:   Cash value of subsistence crops produced by an average vanilla-farming HH

Crop	Cash value		% of farmers growing crop
	in €	in MGA	
Rice	370.2	1,783,071	86.5
Banana	53.5	257,775	81.9
Tomato	32.0	154,267	8.3
Manioc	25.8	124,273	59.6
Maize	25.1	121,017	34.0
Coconut	21.4	103,281	27.1
Mango	17.1	82,306	35.6
Yams	16.9	81,250	47.1
Litchi	16.0	77,099	35.2
Cucumber	15.8	76,243	17.3
Beans	15.4	74,272	32.1
Breadfruit	13.7	65,904	32.1
Jackfruit	10.5	50,488	34.8
Sugar cane	10.0	48,241	46.0
Avocado	9.8	47,231	38.1
Brède*	9.8	47,025	25.4
Pineapple	6.5	31,145	71.7
Onion	1.9	9,065	4.0
Peanuts	1.8	8,735	20.4
Total	**692.3**	**3,334,369**	

*referring to Acmella oleracea, in other countries called "toothache plant"

By far, rice is the highest value crop consumed at home (€370.2/1,783,071 MGA per year). Other important crops include bananas (€53.5/257,775 MGA per year), manioc (€25.8/124,273 MGA per year), maize (€25.1/121,017 MGA per year), and fruits and yams (€16.9/81,250 MGA per year). Farmers consumed food with a cash equivalent of €692.3 (3,334,369 MGA) in 2023. However, there are differences between the HH clusters: NCF had the lowest cash equivalent (€588.0/2,832,512 MGA) and CM had the highest cash equivalent (€819.0/3,941,349 MGA), see **Annex 5** for details and differences between the HH clusters.

78.9% of surveyed farmers also own livestock: 75.8% of farmers own chickens, 27.9% own other poultry, 23.5% own Zebu-type cattle, and 9.4% own pigs. There were only slight differences between the HH clusters (see **Annex 6**).

Table 10:   Value of livestock a. self-consumed, and b. marketed by Malagasy farmers

Livestock class	a. Home consumption		b. Sale	
	€	MGA	€	MGA
Chicken	28.2	135,825	10.0	48,165
Other Poultry	6.8	32,752	3.2	15,413
Pigs	7.1	34,197	10.5	50,573
Cattle	2.2	10,596	21.7	104,518
Total	44.4	213,853	45.5	219,151

Vanilla-farming households consumed €28.2 worth of their own chickens annually and sold the surplus (with a value of €10.0) on the market. Zebu cattle is less commonly sold in the region and mainly eaten during festivities. In general, livestock husbandry is weakly developed in northeastern Madagascar; Zebu-type cattle, other small ruminants, and eggs are often imported from other Malagasy regions (Kunz, 2018). Poultry and swine markets are localised in the SAVA region (Andriamparany et al., 2022). Livestock diseases, lack of appropriate husbandry management, and lack of market information limit meat markets in the SAVA region (Andriamparany et al., 2022).

The total value of livestock consumed at home by Malagasy vanilla farmers in 2018 was €44.4 (213,853 MGA) on average and the income generated through livestock sales was €45.5 (219,151 MGA). However, there were notable differences between the HH clusters (**Annex 7**).

D Conclusion: The cost of a decent living minus value of self-produced food

The cost of a decent living (€3,466.0 / 16,694,214 MGA) minus the value of crops produced and consumed at home (€692.3 / 3,334,369 MGA) and livestock raised and consumed at home (€44.4 / 213,853 MGA) sums up to €2,729.3 or 13,145,992 MGA per HH per year.

3.2 CROP PRODUCTION, VANILLA PRODUCTION, FARM SIZE, AND FULL-EMPLOYMENT FARM SIZE

The following assumptions are taken from Hänke and FI (2019):

a. Viable farm size: 1.0 ha

b. Maximum feasible yield: 350 kg

However, labour requirements for achieving viable vanilla farm size have been adapted to farm sizes and crop distributions in this study, see D Household labour availability (FTE) and occupation below.

A Crops grown

Crops grown by farmers in %
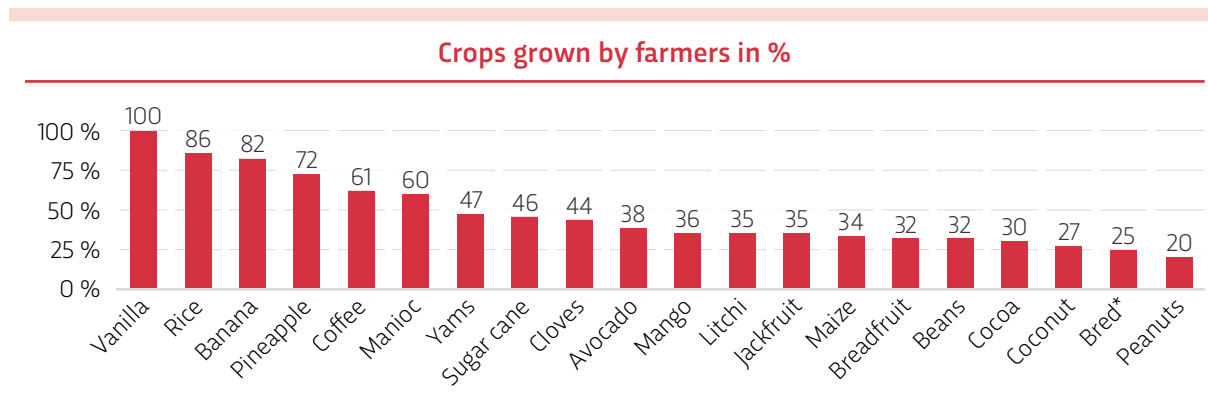
* Acmella oleracea

Figure 5:   % of farmers who grow specific crops

All farmers in this study are vanilla farmers. The second-most commonly grown crop by these farmers is rice (86%), followed by banana (82%), pineapple (72%), coffee (61%), manioc (60%), and yams (47%). There were only a few differences in this pattern between the HH clusters.
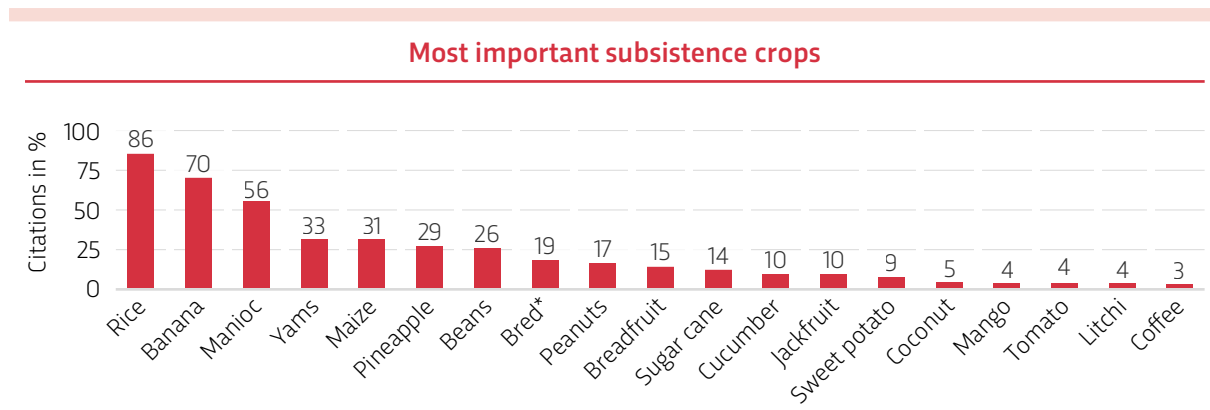
Most important subsistence crops

* Acmella oleracea

Figure 6:   Subsistence crops ranked by farmers as "important", in %

Farmers were asked to list their five most important subsistence crops. The most important subsistence crop is rice (86%), followed by banana (70%), manioc (56%), yams (33%), and maize (31%). There were few reported differences in this pattern between the HH clusters.
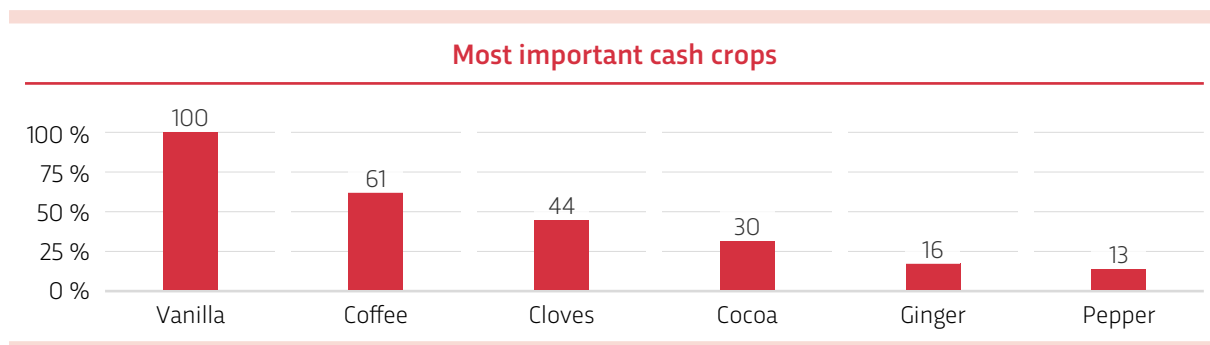
Most important cash crops

Figure 7:   Most important cash crops cited by vanilla farmers, in %

B Vanilla production

The surveyed farmers harvested, on average, 117 kg of green vanilla, with considerable discrepancies reported by different HH clusters (minimum was reported by NCF: 81 kg; maximum was reported by CM: 155 kg; see **Figure 8** below). The average reported productivity (yield per ha) was 134.4 kg of green vanilla (max: 153 kg, min: 113 kg). See **Annex 8** for a histogram of vanilla productivity per farmer and per hectare across all HHCL.

Green vanilla yields per farmer and yields per hectare (in kg)
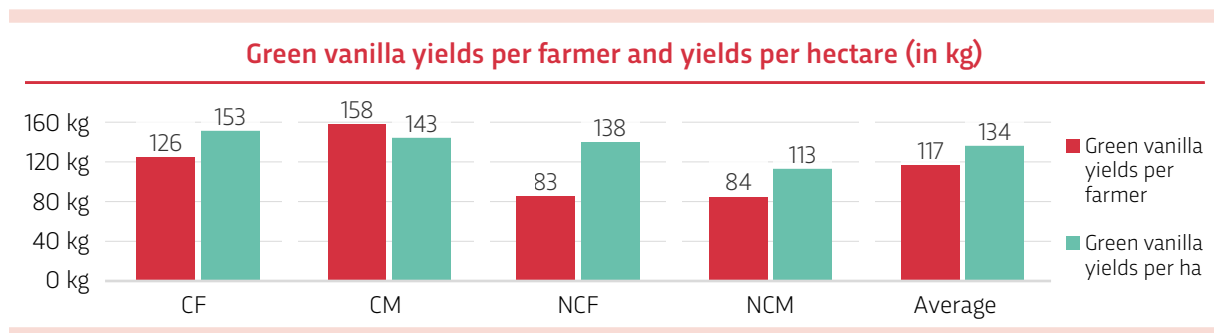

Figure 8:   Average yields of green vanilla per farmer and per hectare in 2023 by HH cluster

As prices for both green and cured vanilla were very low in 2023 (see **Figure 14**), many farmers sold only parts of their harvest (35.4 kg) as green vanilla after harvest between August and September 2023. 22.1% of farmers did not sell green vanilla at all.

On average, 75% of all farmers also cured vanilla with critical differences in behaviour between the HH clusters (see **Figure 9** below). Also, 62.9% of the surveyed vanilla farmers had maintained their stock of cured vanilla and had opted not to sell (presumably as they awaited price increases) at the time of the survey (December 2023, see **Figure 10** for more details). 94% of farmers reported that they had not experienced theft of their vanilla in 2023.

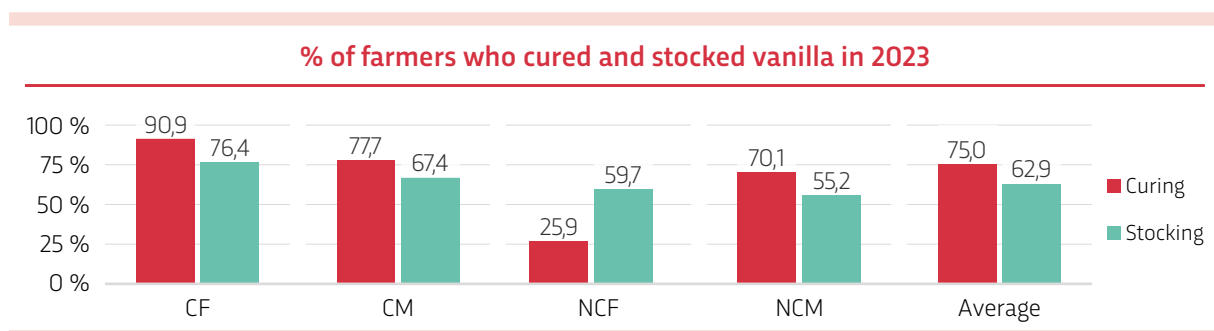**% of farmers who cured and stocked vanilla in 2023**

Figure 9:   % of farmers who cured and stored vanilla in 2023

Farmers sold, on average, 2.7 kg of cured vanilla between September and October 2023, yet, they maintained a huge on-farm store of cured vanilla (22.8 kg, on average). The amount and proportion of cured vanilla sold and stored differed between the HH clusters (see **Figure 10** below).

Reported vanilla sales in 2023 per HH cluster
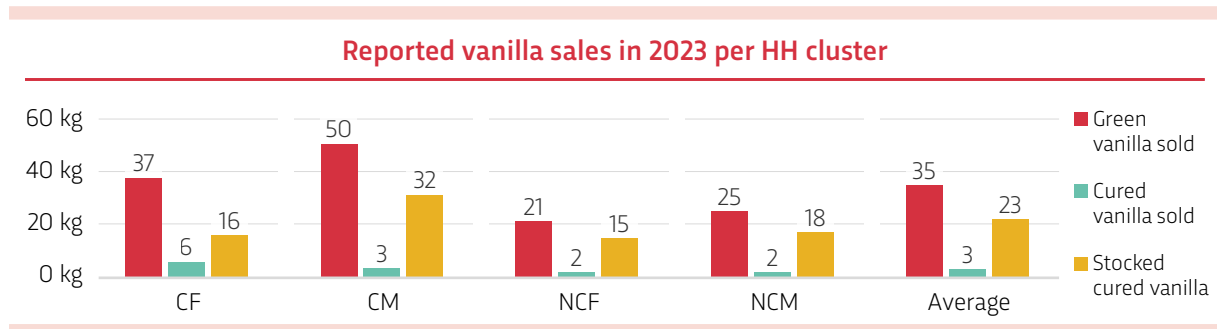
Figure 10:   Reported vanilla sales by HH cluster in 2023

C   Land distribution / crop diversification / typical farm model

Sampled farmers farm, on average, 2.6 plots with few differences between the farmers. The average size of each individual plot is 0.7 ha. On average, farmers own 1.9 ha of land (all crops combined), though different HH clusters report large differences in their total land holdings (see **Figure 11** below). Male-headed households typically have larger land holdings than female-headed households, irrespective of their certification status.

a. Total field size in ha

b. Land distribution of crops

Figure 11:   a.) Total field size in hectare per HH cluster and b.) Land distribution of crops per HH cluster

D Household labour availability (FTE) and occupation

Vanilla farmers experience peaks in labour demands during times of weeding, pollination, harvesting, and high security needs (typically, when prices are high). Even when all household members contribute their labour to vanilla farm operations, a vanilla farm does not fully absorb the household labour costs over the entire year.
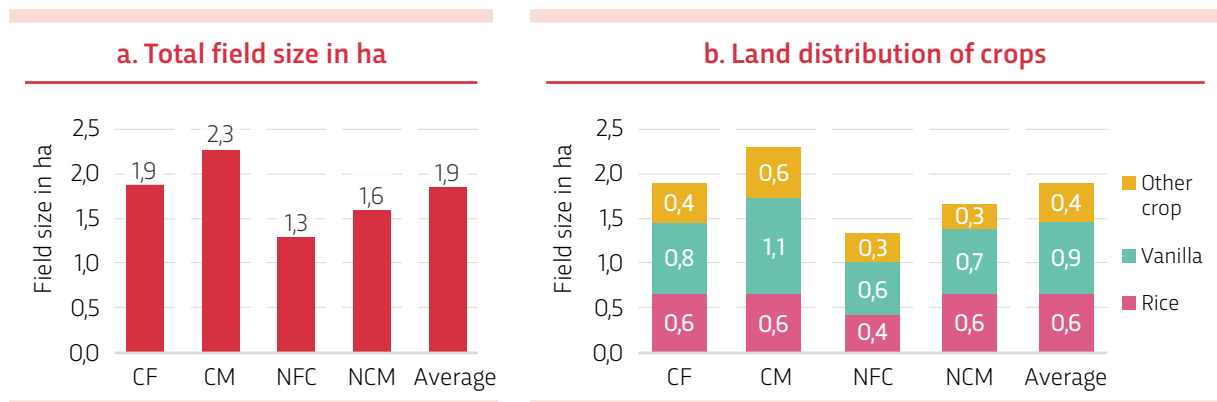
To enable vanilla farmers to achieve their target vanilla yields from 1.0 ha of land, additional labour is required. This is expected because the current average farm size (0.9 ha) is close to the viable, target farm size of 1.0 ha, thus necessitating only a small labour increase (10 – 20%) during seasonal labour peaks.

Vanilla farmers were asked what factors prevent them from increasing their vanilla production. 66.9% cited "expansion of land", 57.9% cited "available labour for pollination", and 13.1% cited "available labour for securing the fields". If vanilla farmers were to achieve target yields, in addition to own household labour, they would need to bear the cost of additional labor needs particularly for activities that occur in peaks (see **Figure 13** below).

Differences existed in household labour availability and occupation between HHCLs (see **Table 11** below).

Table 11:   Household labour availability and number of HH members working on the farm

Cluster	HH size	Full time on farm	Part time on farm	Children at school*
CF	4.6	1.7	0.9	2.0
CM	4.8	1.7	1.1	2.0
NCF	3.4	1.5	0.6	1.3
NCM	3.9	1.6	0.8	1.5
Average	4.2	1.6	0.9	1.7

*pre-school, primary and secondary school combined

For an average vanilla farming HH, the available family labour to farm one ha of vanilla is illustrated below, totalling about 411 working days per annum for an average HH considering that other crops also have labour peaks (see Hänke and FI (2019) for

details). Many vanilla-related labour activities have peaks (pollination, land prepara-tion, weeding, in high-price phases also securing the crops form thieves before the crops reach maturity), while some months are relatively calm (December – March).

Family labour required to achieve sustainable yields (per ha and year)
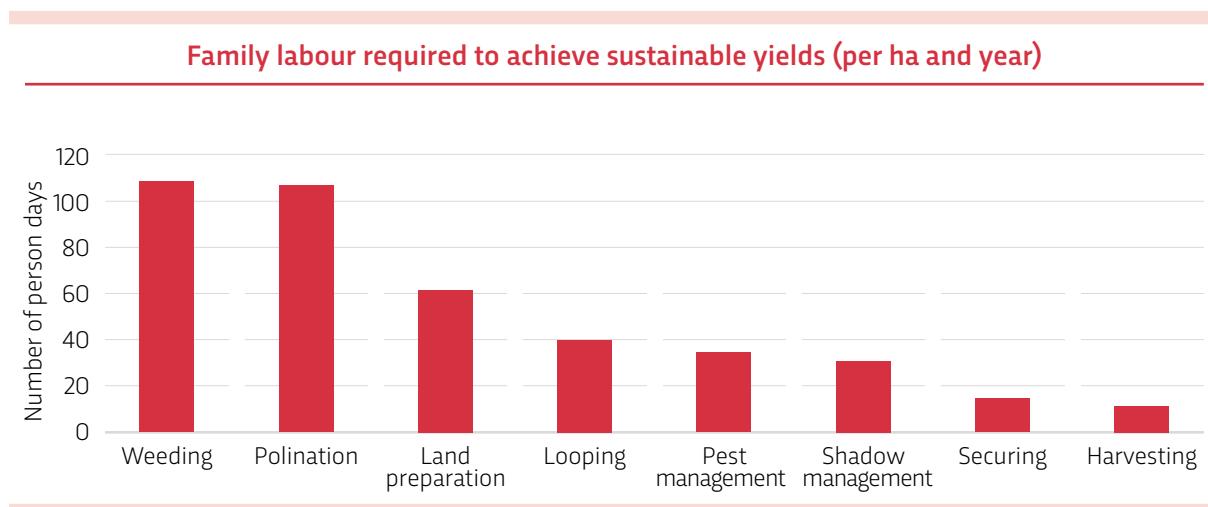

Figure 12:   Labour requirements to farm 1 ha of vanilla, Source: adapted from Hänke and FI (2019)

However, not all vanilla-related labour can be achieved through family labour contri-butions (an average household can deliver about 76.1% of all vanilla-related labour) as family members co-manage labour peaks for other crops (rice, coffee, other annual crops) in the farm model.

3.3 SUSTAINABLE YIELDS

There were very few differences noted between 2019 and 2023 findings around the total size of land holdings and the proportion of land holdings dedicated to vanilla and other crops. Thus, assumptions about maximum feasible yields, full-employment farm size, typical farm model, and land used for other crops remain as established by Hänke and FI (2019). Also, the average HH size of 4.2 persons has not changed.

Sustainable yields were established at 350 kg of vanilla. This was done through a con-sultative process by Hänke & FI 2019 involving many different stakeholders. Around 11% of the sampled farmers have already reached the target yield (see Annex 8 for a histogram of the yield distribution by farmers. The maximum yield achieved was 1,600 kg per ha (Annex 8); yet, the average yield in this study was only 134 kg per ha (as illustrated before in Figure 8).

A   Conclusion full-employment farm size and labour

In Madagascar, the viable field size is 1.0 ha for the reference farm model. This represents a marginal change from the current farming settings. Family labour could cover around 76.1% of all vanilla-related labour if viable farm size would be met; the remaining 23.9% would need to be hired.

3.4 COSTS OF SUSTAINABLE PRODUCTION

A   Description of different cost items

The main expenditure for vanilla farmers is hired labour.

The annual labour peaks in vanilla farming are driven by demands for land preparation (including pruning of trees and planting of lianas) around March, weeding (especially during rainy seasons), provision of security services[7] (April – July), harvest (July – August), and pollination (Oct – Dec); see Hänke and FI (2019) for more details.

Additional hired labour required to achieve sustainable yields (per ha and year)
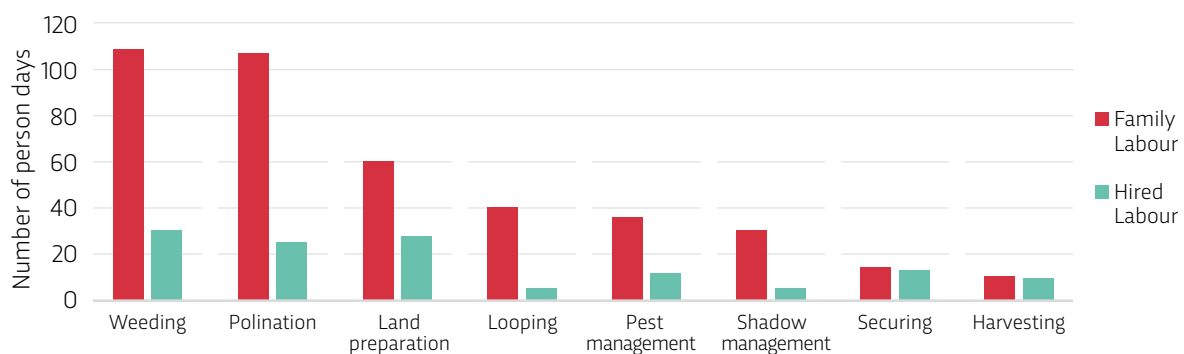

Figure 13:   Number of labour-days of hired labour for vanilla production activities per hectare (2023)

The number of person-days of hired labour correlates with field sizes by the HH clusters, with CM having the largest field sizes and NCF having the smallest. Farmers need to engage, on average, a total of 129 working days of hired labour. Thus, around 23.9% of all vanilla-related labour is hired labour.

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7   In 2020, securing the vanilla fields was the main vanilla farm expenditure (Hänke & FI 2019). According to farmers, securing vanilla fields is practiced even in very low-price phases, such as in 2023 many farmers hired labourers for securing their fields. Securing the field is practiced far less than in previous years due to low farmgate vanilla prices. Still, in a LIRP scenario, we still would assume that vanilla fields are secured 30 days before maturity.

In addition to labour, farmers make expenditures on vanilla lianas, tools, material transportation, and harvest transportation. Expenditures for fertiliser and pesticides are uncommon and were not reported. On average, farmers spent €9.9 on lianas (47, 812 MGA) and €5.0 for transportation of harvests (24,157 MGA) and other materials €1.8 (8,839 MGA) per year.

B Vanilla production costs

The average cost of hiring labourers is 7,560 MGA (€1.6) per working day, with certified farmers (CF and CM) paying wages approximately 8% more than non-certified farmers (7,804 MGA, €1.6). Some work-intensive farm activities (e.g., land preparation) are more amply remunerated than others (e.g., pollination). However, hired labourers are not paid in LW by farmers. LW is calculated as €7.5/36,124 MGA per labour-day per person. This is a direct conversion from the LI in this study (see above for more details).

In Table 12 below, hired labour costs to achieve target yield (350 kg) are extrapolated and factored in as LW in 2023.

Table 12:   Costs of production per hectare per year to achieve a target yield of 350 kg vanilla when living wages are paid

Activity	Average days of hired labour	Costs in €	Costs in MGA
Weeding	30	225.3	1,085,157
Polination	25	187.8	904,298
Preparation of land	28	210.3	1,012,814
Looping	6	45.1	217,031
Pest management	12	90.1	434,063
Shadow management	4	30.0	144,688
Securing	14	105.1	506,407
Harvesting	10	75.1	361,719
Other costs		19.0	96,330
Sum		**988.8**	**4,762,507**

*exluding family labour

In summary, the average cost of sustainable production in 2023 is €988.8 per hectare per year (4,762,507 MGA) if the target yield of 350 kg/ha is to be achieved.

3.5 CASH CROP INCOME

A Income from vanilla

Table 13:   Green and cured vanilla sold in 2023 and gross cash income generated

Cluster	Green vanilla sold (kg)	Income through green vanilla	Cured vanilla sold (kg)	Income through cured vanilla	Stocked cured vanilla (kg)
CF	36.9	157.3 € (757,727 MGA)	6.1	86.9 € (418,945 MGA)	15.9
CM	50.3	203.0 € (978,283 MGA)	2.7	67.7 € (326,293 MGA)	31.7
NCF	21.4	33.5 € (161,321 MGA)	1.8	23.6 € (113,612 MGA)	15.0
NCM	24.6	38.2 € (184,118 MGA)	2.0	16.4 € (79,155 MGA)	17.6
Average	35.4	114.4 € (551,092 MGA)	2.7	45.2 € (217,635 MGA)	22.8

In 2023, farmgate prices for both green and cured vanilla were very low. Prices varied and some farmers sold their vanilla to up to five different buyers at different prices. Farmers received, on average, €3.2 / kg for green vanilla and €5.2 / kg for cured vanilla. Yet, there were substantial differences in the prices received by different HH clusters. CF and CM farmers, that is, farmers who are part of company sustainability and livelihood programmes, received 250 – 269% higher prices (€4.0 and €4.3 / kg) for green vanilla than NCF and NCM farmers (€1.6, see Figure 14), partly due to price premiums associated with certification.

The differences for cured vanilla were less pronounced in 2023; however, many farmers struggled to find buyers for their cured vanilla and / or were unsatisfied with prices and opted to store their cured vanilla in 2023.

Almost all vanilla farmers had a negative cash balance in 2023 (CF: - €187, NCM: - €350, average: - €278).
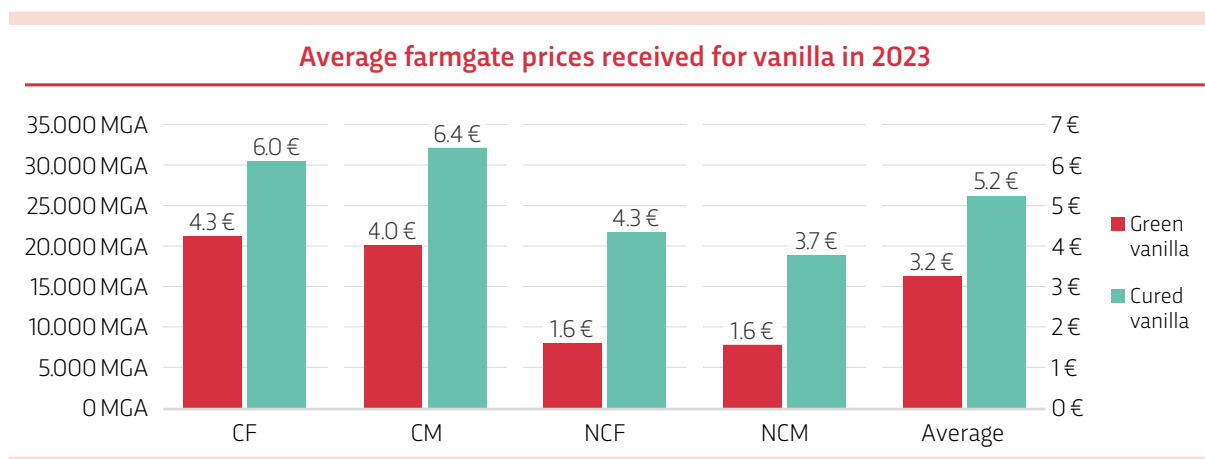
Figure 14:   Average farmgate prices received for green and cured vanilla in 2023 per HH cluster

B Other cash crops

Apart from vanilla, 61% of surveyed farmers reported that coffee was an important cash crop in 2023, followed by cloves (44%), cocoa (30%), ginger (16%), and pepper (13%).

Cloves generated the second-highest average cash income (€46.9 / 25,760 MGA), followed by coffee (€34.8 / 167,714 MGA) and ginger (€34.8 / 71,187 MGA). In 2023, only 7.9% of the sampled farmers sold rice (CF: 3.7%, CM: 5.4%, NCF: 11.9%, and NCM: 10.3%).
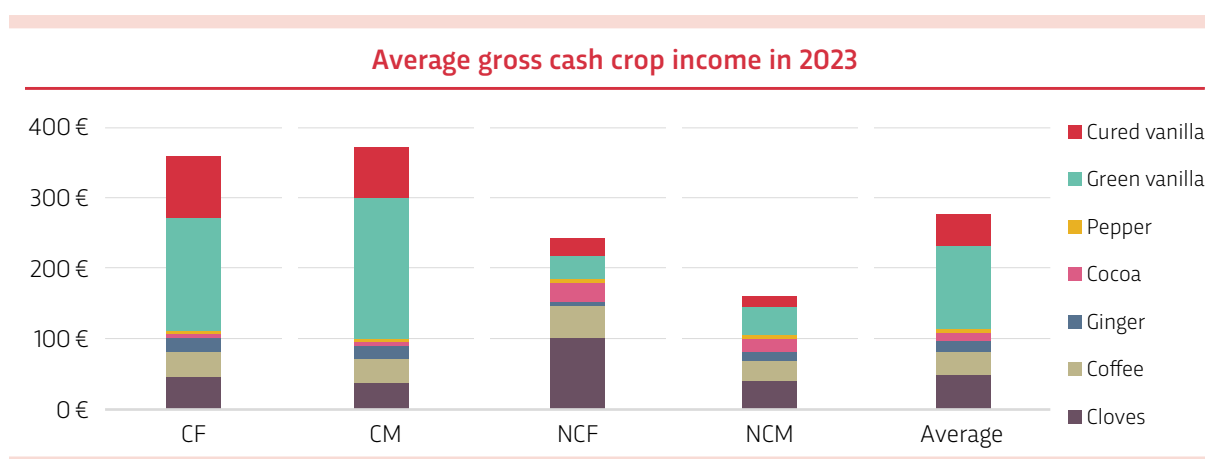

Figure 15:   Average cash crop income in 2023

In summary, €113.6 (547, 000 MGA) was received in 2023 by farmers through sales of non-vanilla cash crops. However, as illustrated in **Figure 15**, there were substantial differences between the HHCL.

32

3.6 OTHER HOUSEHOLD INCOME

A Off-farm income

Many farmers (56.9%) had off-farm income in 2023, with 32.5% of FG respondents citing "other" off-farm income, 11.0% citing "paid work", 7.9% citing construction, and 6.7% citing paid farm labour.

As illustrated in **Figure 16**, paid labour on other farms contributed very little to off-farm income, as well as construction and "other paid work". Income sources summarised as "other" include private businesses as vanilla commissionaires, running small food stands ("gargotte"), selling petrol, motorbike taxi services, rice resale, apiculture, and fishing. These activities contributed an average of €87.9 (423,370 MGA) per HH per year in 2023, with differences noted between the HH clusters.
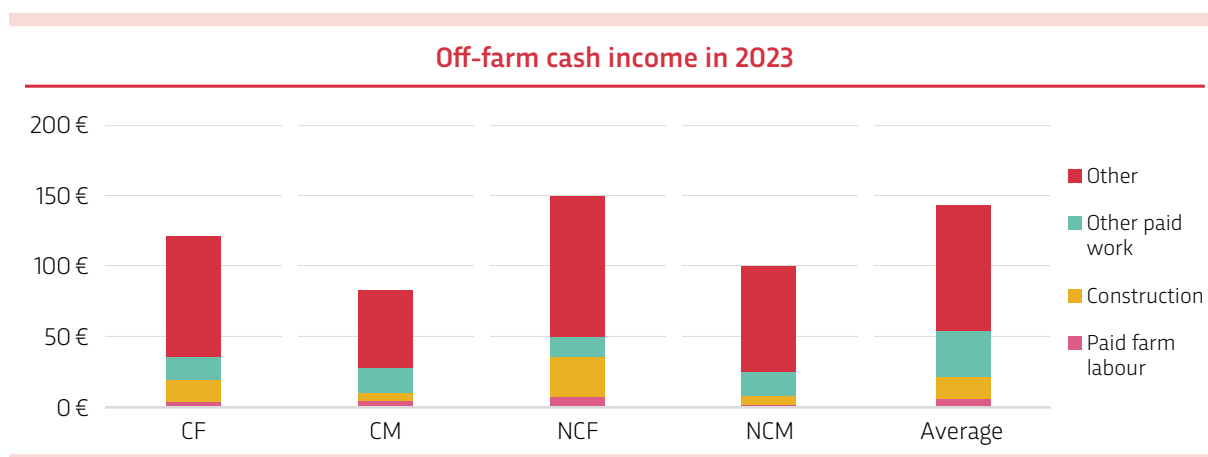

Figure 16:   Off-farm income in 2023 per HH cluster

Farming HH clusters had average off-farm incomes of €143.0 (688,692 MGA) in 2023. Female-headed HHs (CF and NCF) had much more off-farm income than male-headed HHs.

B Other in-kind income

Many vanilla farmers receive in-kind income through benefits provided by their va-
nilla buyers; the most common ones are illustrated below. For vanilla farmers who
are not affiliated with company programmes (NCF and NCM), additional benefits are
uncommon (see **Figure 17**).
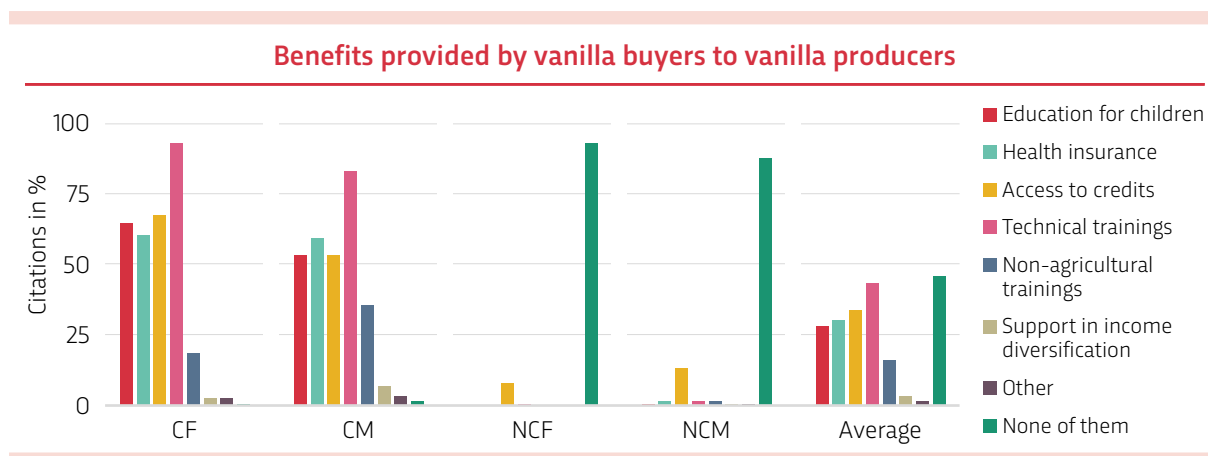
Figure 17:   Benefits provided by vanilla buyers to vanilla producers

Services and benefits offered to CF and CM farmers are diverse and commonly include
technical training, access to credit, health insurance, and education support for chil-
dren. Advantages for non-certified farmers (NCF and NCM) are uncommon; support in
income diversification was cited by 13.2% (NCM) and 7.5% NCM) of respondents.

Farmers were asked to estimate the monetary value of the services they received
from vanilla buyers in 2023. They stated the monetary value of support for health and
education was highest.

Monetary value of support
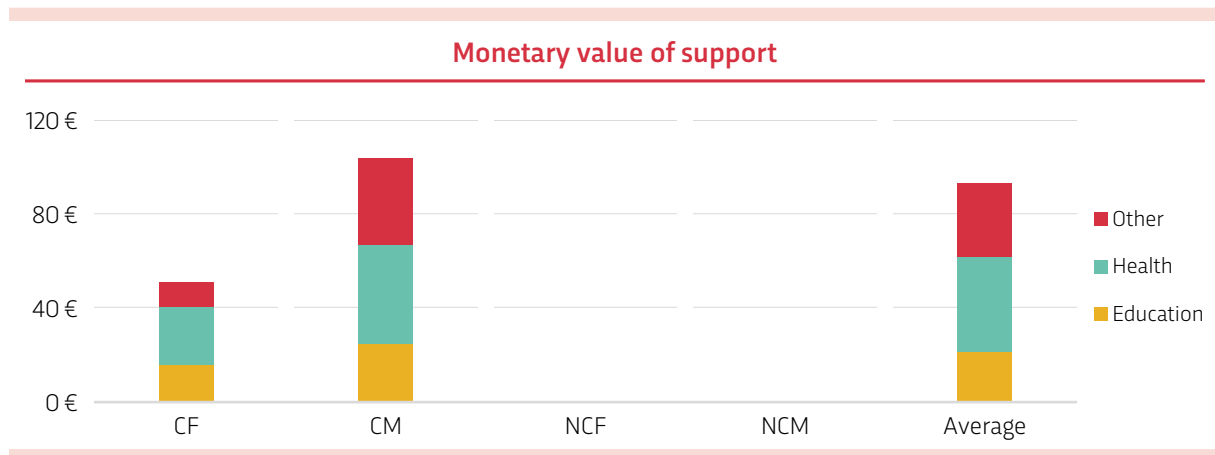
Figure 18: Monetary value / cash equivalent of support received

The monetary value equivalent of services received is highest for CM farmers (€104.4 / 502,901 MGA, on average per year), compared to €52.2 / 251,278 MGA, on average, for CF farmers. NCF and NCM farmers estimated the cash equivalent to €0 / MGA.

3.7 DISTRIBUTION OF INCOME OVER TIME IN 2023

% of households who generated income in respective month

Figure 19: Months in which HHCL reported respective income source in 2023

Figure 18 Illustrates the months in which vanilla farmers generated income. Apart from the items illustrated above, farmers also sold cash crops for which they could not recall the exact months and quantities. 61% of the farmers sold coffee (between May and September), 44% sold cloves (between October and January), 30% sold cocoa (year-r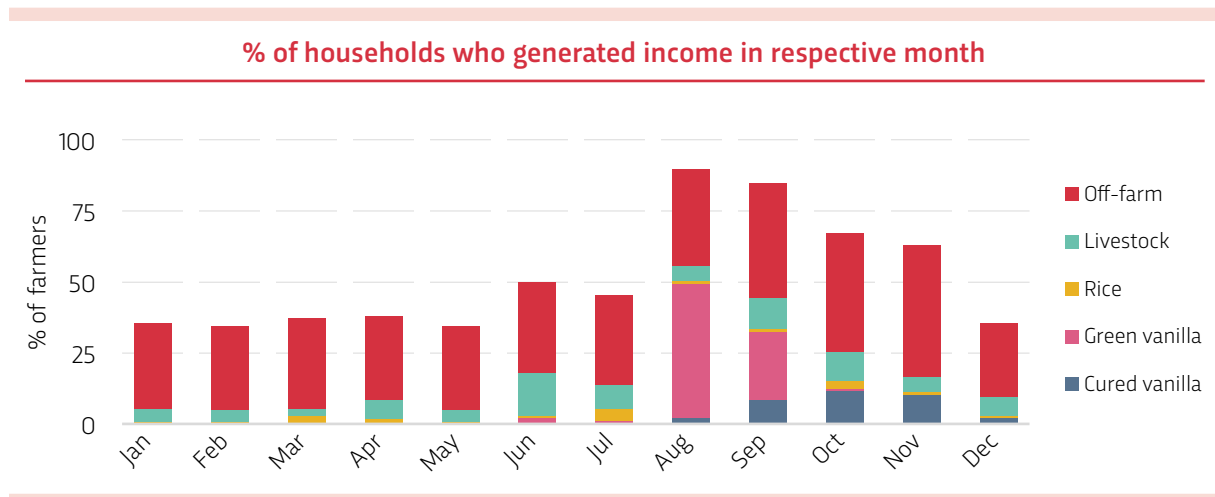ound in three-month cycles with the main season falling between June and September), and 16% of all farmers sold ginger around April. See **Annex 9** for differences in the distribution of income over time between the HH clusters.

3.8 OVERVIEW AND LIRP CALCULATION

Table 14:   Summary of key variables used for Living Income Reference Price calculation

Variable	Value
Farm size total (ha)	1.9
Vanilla (ha)	0.9
Full employment vanilla farm size (ha)	1.0
Production costs in € per ha and year (incl. living wages)	988.8
Farm gate price green vanilla in 2023 (€, incl. price premiums)	3.2
Average vanilla yields (kg green per ha in 2023)	130.0
Max. feasible yield per ha of green vanilla (kg)	350.0
Gross income from other cash crops (€)	113.6
Income produced through livestock (€)	45.3
Value food produced for home consumption (€)	692.3
Household size (number of persons)	4.2
Value livestock produced home consumption (€)	44.4
Living income per HH per year (€)	3,466.0
Extreme poverty line (2.15 US$/person/day) expressed in €*	1,894.2

*(US$2.15, purchasing power parity adapted to Malagasy MGA based on Worldbank 2022)

Table 14 summarises the key variables accounted for in the calculation of LIRP **Figure 20**. For a comparison of key variables in 2019, 2020, and 2024, please see **Annex 10**.

Living Income Reference Price for vanilla from Madagascar
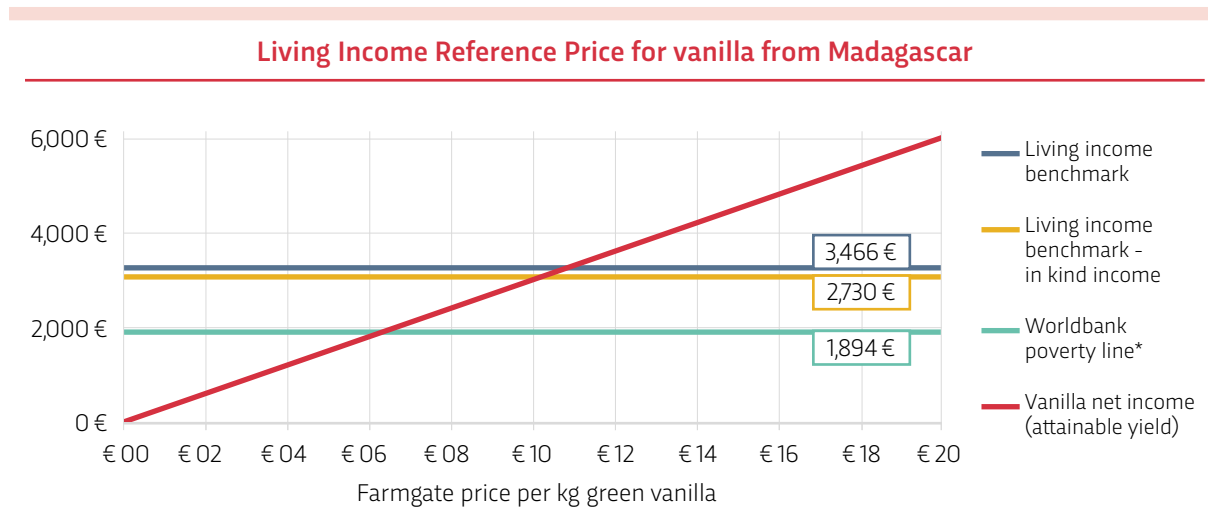
* the Worldbank poverty line (US$ 2.15 per person per day) is purchasing power parity adapted to Malagasy MGA in 2023.

Figure 20: Vanilla LIRP model

Figure 20 summarizes the farm model and the finding of this study, and illustrates the price that is needed per kg of green vanilla (assuming that farmers attain sustainable yields (350 kg) to achieve (1) a living income (blue line), (2) a living income minus in-kind income (yellow line), (3) Worldbank Poverty line (PPP adapted).

When looking at vanilla net income only, farmers would need a LIRP of €10.6 (51,166 MGA) to achieve a LI and €6.1 (29,536 MGA) to reach the poverty line.

When we look at vanilla and other income (other cash crops, livestock sales etc.), farmers would need a LIRP of €10.2 (48,979 MGA) to reach LI and €5.6 (26,945 MGA) to reach the poverty line.

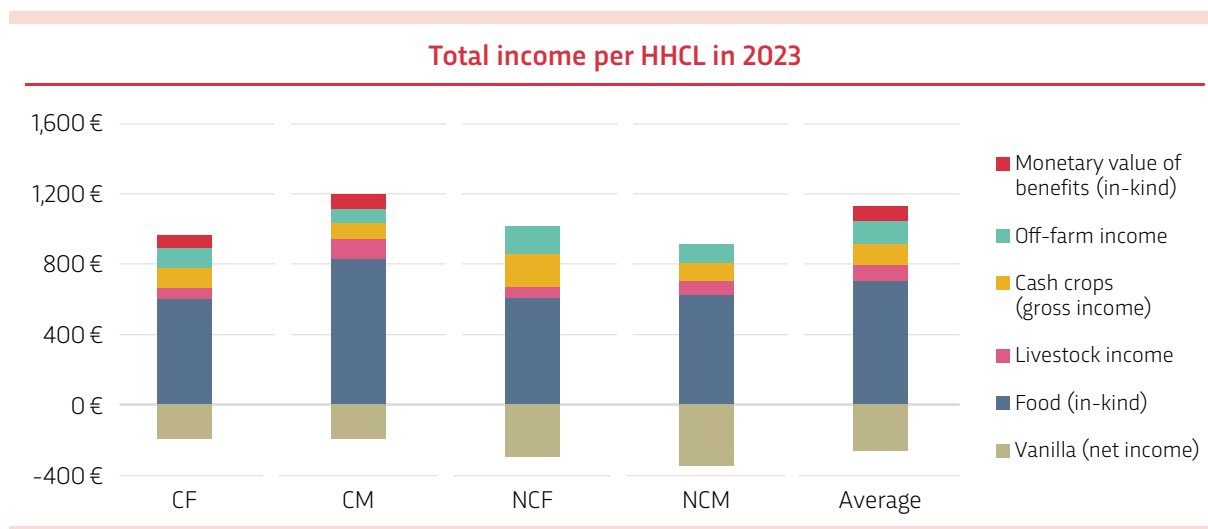# 3.9 ACTUAL INCOME IN 2023 (CASH + IN-KIND) AND LIVING INCOME GAP

Figure 21: Total Income in 2023 (net vanilla income, gross income from other cash crops and livestock, and in-kind income)

Figure 21 above summarizes all income sources by vanilla farmers in 2023 that were presented before in this report. On average, vanilla farmers had a net income of €854.5 in 2023 per HH. The differences between the HHCL are relatively huge, however, with CM having highest total net income (€985.8) and NCM having lowest (€556.6). This translates into an average income of €0.6 per person per day.

However, it should be noted that shares of vanilla cured in 2023 are still stocked by farmers and not yet sold (see **Figure 9**).

The LI Gap (the difference between actual net income and income needed to achieve a LI) per HHCL is illustrated below in **Figure 22**.

On average, the LI gap is €2,612 in 2023. In other words, vanilla farmers earned 24.6% of a necessary LI in 2023. There are differences between the HHCL, though.
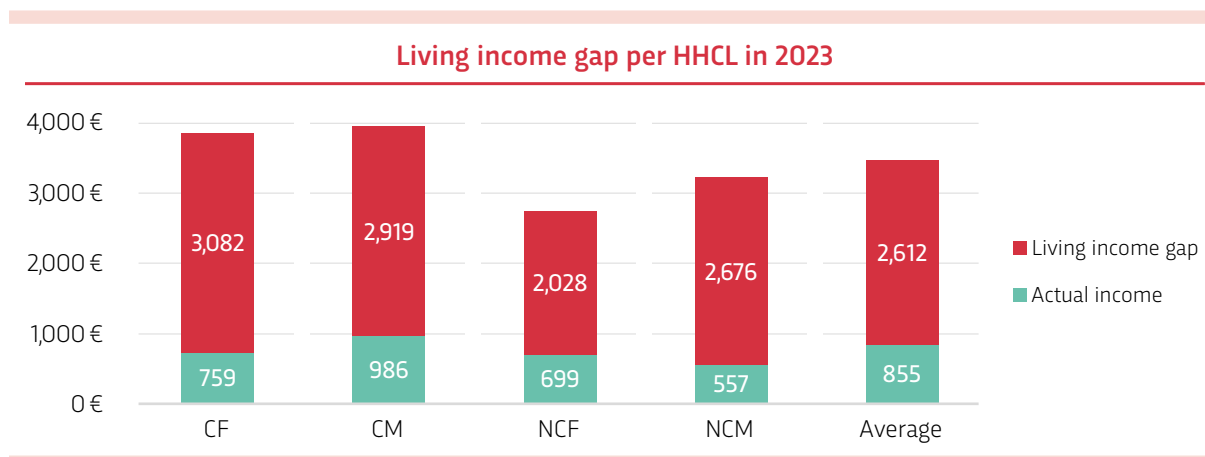
Figure 22: Living Income Gap in € in 2023 by HHCL
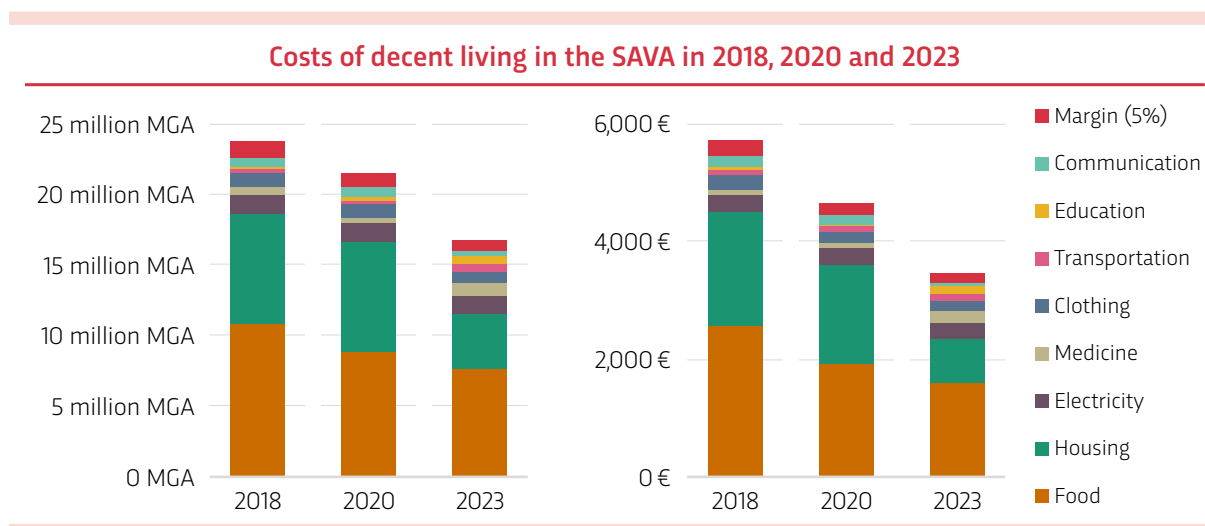
Figure 23: Costs of decent living in the SAVA in 2018, 2020 and 2023

When current commodity prices were compared with those reported in Hänke and FI (2021), it is clear that the price of all imported goods such as petrol, medicine, rice, and vegetable oil have increased; whereas, locally produced goods such as yams, cassava, fruits, and meat have become less expensive. However, the differences are less pronounced in MGA than in € (see above).

Since 2018, the cost of a model / ideal diet has steadily decreased as well as housing costs (material and renting). Prior to 2019 when vanilla prices were exceptionally high, access to land was limited and cost prohibitive. This situation has been partially ameliorated by falling vanilla prices (see **Figure 1**) which, in combination with farmers' decisions to grow and harvest larger quantities of subsistence crops, has also decreased the price of locally produced foods.

4   DISCUSSION AND CONCLUSION

While the Covid-19 pandemic and Russia's war in the Ukraine propelled an upward spiralling of global food and living costs around the world, the SAVA region might be an exceptional case. Here, the overall costs of decent living decreased.

The SAVA region is the global centre of vanilla production and its regional economy largely depends on vanilla production, transportation and marketing, processing, and sales. Between 2018 and 2023, vanilla farmgate prices decreased around 91% (own data, see Figure 1) following the general trend of declining prices for all locally and regionally produced items with a more marked difference when prices are converted into € or $US due to inflation of the Malagasy currency. In 2018, the average farmgate price of one kg of green vanilla was around €36, while in 2023 prices dropped to €1.6 (when excluding price premiums associated with certification (around €1 per kg)). Simultaneously, costs of production fell with notable declines in the cost of labour, land, and housing, but may be partially negated by increases in the prices of imported goods such as petrol, medicine, technical and electronic goods, etc.

The cost of a model diet "based on cheap but nutritious foods" decreased for vanilla farmers in the SAVA region, with the average of cost of a good diet (€1.0 / 5,017 MGA per person per day) being in line with data for the whole of Madagascar reported by the World bank and FAO (2023). The generally lower cost of a model diet is associated with a drop in prices of locally produced yams, cassava, fruits, and meat. Increasing rice prices have little effect on the model diet since rice consumption is reduced in the model to achieve health benefits (cf. Hänke & FI, 2019).

The results of the study show that both deflation and inflation can occur simultaneously for different items and that the context matters. Many living wage and living income studies base benchmark updates simply on inflation; however, the results of this study show that this does not always work out.

Even though infrastructure in the SAVA has improved since 2018, the region is still relatively isolated and transportation costs are higher than in previous years.

The sharp drop in vanilla prices resulted in negative net incomes from vanilla for most farmers. Moreover, the price drop came in a year when weather conditions were particularly good for vanilla farming and average harvests were higher than in previous years (117 kg per HH with large differences between the HHCL). As presented throughout this report, the different HHCL employed different coping strategies in their unsuccessful attempts to mitigate their financial losses on vanilla, e.g. female-headed HHS produced more off-farm income, many farmers grew other cash crops (e.g., cloves, coffee, cocoa, and ginger) with NCF farmers generating the highest amount of gross income through cloves and coffee. Another common strategy to cope with the drastic drop in vanilla prices was increasing the production of foods for home consumption. Vanilla farmers in the SAVA region generated 92% more in-kind income through food produced and consumed at home than in 2018, creating an average in-kind income of €692.3 of in-kind income per household – a significant increase over 2018 when they produced €358.7 / HH. Sale of non-vanilla foods produced on farm may also have dropped at this time, with only 5% of vanilla farmers selling rice in 2023. This could indicate that farmers adapted progressively to declining vanilla prices between 2018 and 2023.

It should also be noted that half of all sampled vanilla farmers in this study are certified and, thus, certified farmers are "oversampled". There are general estimations that around 20% of all vanilla farmers are certified in the SAVA region (Fairtrade, Organic, Rainforest Alliance, and others). The relatively high diversification and vanilla productivity could be a reflection of the certification and sustainability programmes offered by companies and their partners. Yet, the study design does not allow for establishing any causal relationships.

The Living Income Gap is pronounced this year (€2,612 compared to €855 of total net income). This shows that the LIRP is a necessary tool to stabilise vanilla markets and livelihoods and to provide fair prices to vanilla farmers who generally had negative net cash incomes in 2023. If all vanilla farmers received a vanilla LIRP of €13.2 / 60,481 MGA (as reported by Hänke and FI in 2020), the Living Income Gap would have been substantially reduced to €1,227 (assuming farmers sell their vanilla when green). Still, vanilla farmers are, on average, far from producing the target yield of 350 kg established in 2019 by farmers, cooperatives, and other stakeholders. Around 11% of farmers reach or exceed the target yield (max 1,600 kg / ha, see **Annex 9**).

In summary, the results of the study show that simultaneous work on stabilising vanilla prices, improving vanilla productivity, diversifying livelihoods, and increasing food production for home consumption are necessary to progressively close LI gaps. Likewise, the HHCL require different and partly "gendered" interventions; for example, most female farmers have smaller land holdings than male farmers and would benefit from targeted interventions outside of vanilla farming, such as off-farm income-generating activities and support for intercropping crops that can be grown on little land, such as pulses or cloves.
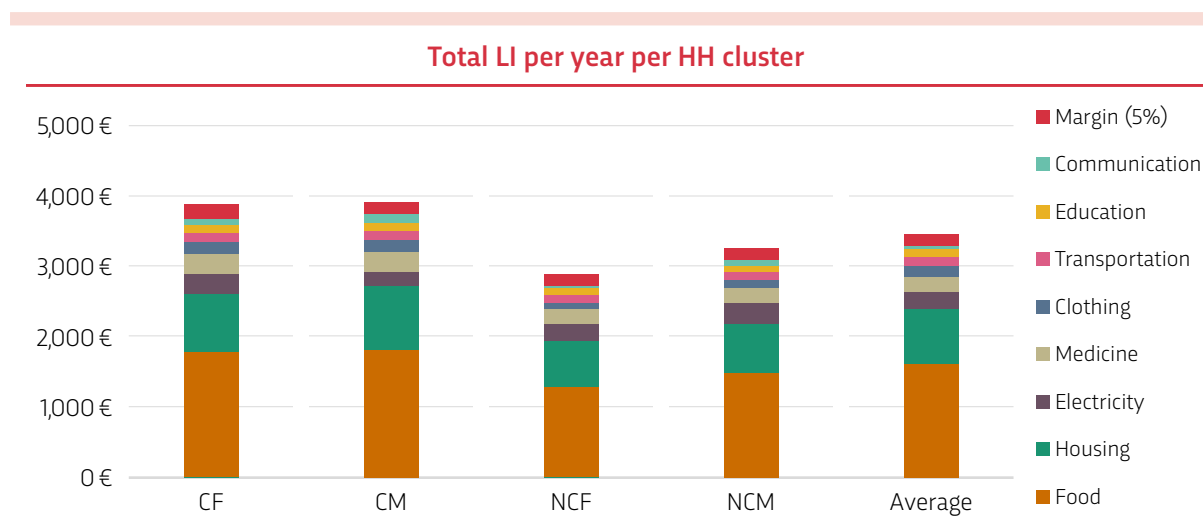
ANNEX

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Annex 1:   Link to vanilla farmer survey

https://kf.kobotoolbox.org/#/forms/aAEttNnvGJf8HDZhjcUTo9

Annex 2:   Average food prices per kg in the SAVA region in 2023

Item	Price per kg (€)	Price per kg (MGA)	Item	Price per kg (€)	Price per kg (MGA)
Fruits			**Cash crops**		
Pineapple	0.04	188	Cocoa	1.11	5,367
Bananes	0.16	787	Coffee	1.15	5,538
Sugar cane	0.12	585	Cloves	4.59	22,125
Coconut	0.30	1,437	Pepper	1.39	6,675
Jackfruit	0.12	568	Ylan ylang	1.25	6,000
Litchi	0.08	400	Ginger	0.56	2,697
Mango	0.14	660	**Meat**		
Orange	0.20	973	Zebu (beef) meat	2.86	13,788
Vegetables			Chicken	2.80	13,500
Avocado	0.07	338	Porc	2.76	13,289
Brède mafane	0.26	1,253	**Fish and Seafood**		
Chinese cabbage	0.19	893	Big fish	1.59	7,680
Cucumber	0.11	529	Small fish	1.39	6,700
Bredfruit	0.08	376	Crabe	1.14	5,500
Ginger	0.68	3,276	Shrimps	3.07	14,800
Onion	0.77	3,693	**PPN**		
Tomato	1.08	5,200	Sugar	1.00	4,811
Pulses			Oil	1.45	6,985
Peanuts	0.64	3,104	Salt	0.21	1,013
Beans	0.64	3,072			
Peas	0.55	2,647			
Staples					
Yams	0.13	636			
Manioc	0.07	351			
Maize	0.30	1,454			
Rice	0.48	2,318			

Annex 3: HH cluster-specific cost of model diet

	CL1	CL2	CL3	CL4	Average
HH size	4.6	4.8	3.4	3.9	4.2
No of persons vigorous activity level	1.7	1.7	1.5	1.6	1.6
No of persons moderate activity level	0.9	1.1	0.6	0.8	0.9
Children at school	2	2	1.3	1.5	1.7
Average kcal needed	2014	2009	2038	2057	2,030
Total cost of diet per per household per day (MGA)	23,077	24,080	17,057	19,565	21,070
Per household per day (€)	4.8 €	5.0 €	3.5 €	4.1 €	4.4 €
Total cost of diet per household per year (MGA)	8,422,926	8,789,127	6,225,659	7,141,189	7,690,498
Total cost of diet per household per year (€)	1,748.8 €	1,824.8 €	1,292.6 €	1,482.7 €	1,596.9 €

Annex 4: Total Living income per year per HH cluster


Total LI per year per HH cluster

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Annex 5:   Cash value in MGA of food produced and consumed at home, by household cluster

Crop	CF	CM	NFC	NCM	Average
Rice	1,773,579	2,194,607	1,464,770	1,451,990	1,783,071
Banana	138,108	268,892	182,182	310,889	257,775
Tomato	65,520	147,333	195,000	261,733	154,267
Manioc	96,371	133,517	114,112	125,875	124,273
Maize	73,820	155,648	93,894	103,538	121,017
Coconut	74,057	108,959	111,086	100,255	103,281
Peas	49,286	134,079			91,682
Mango		98,933	84,800	72,237	82,306
Yams	39,206	87,279	92,460	81,441	81,250
Litchi	59,167	88,627	76,000	68,750	77,099
Cucumber	42,240	78,989	59,840	88,926	76,243
Beans	75,410	93,341	60,970	58,874	74,272
Breadfruit	82,603	83,958	81,510	39,307	65,904
Jackfruit	35,485	62,405	38,002	47,711	50,488
Sugar cane	31,500	46,677	45,800	55,224	48,241
Avocado	49,183	58,011	44,643	39,271	47,231
Bred	97,440	47,760	36,480	29,800	47,025
Pineaplle	22,793	39,313	21,796	28,700	31,145
Onion	22,299	7,911	11,101	5,394	9,065
Peanut	7,732	5,110	18,067	9,287	8,735
Sum all	**2,835,799**	**3,941,349**	**2,832,512**	**2,979,203**	**3,334,369**

Annex 6:   Livestock ownership by HHCL


Livestock possession by HHCL
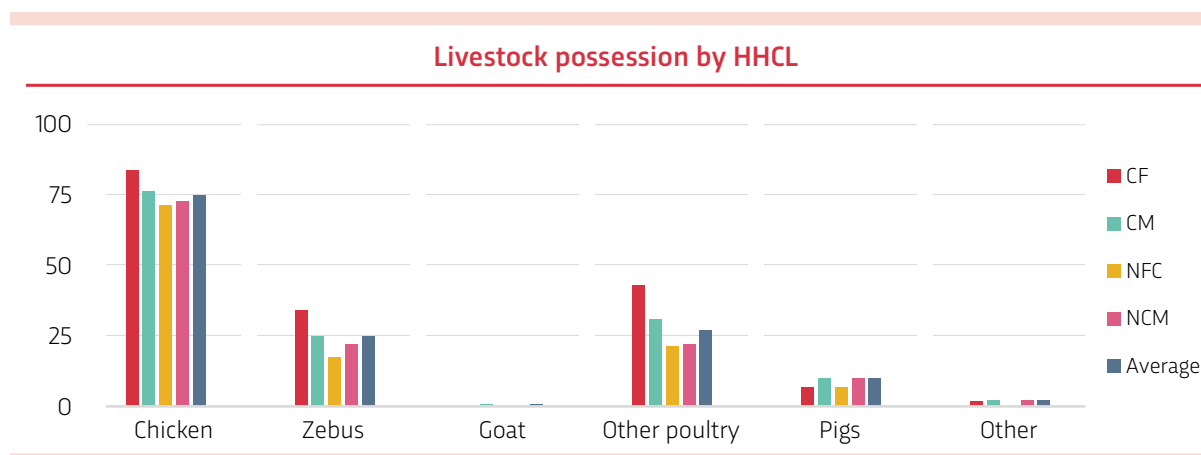
Annex 7:   Cash value of livestock consumed at home and sold, by HH cluster

In-kind income	Chicken	Poultry	Porcs	Zebus	all (sum MGA)	all (sum €)
CF	126,562	40,436	0	3,636	170,635	35.4
CM	158,574	48,216	24,366	14,130	247,026	51.3
NCF	91,002	25,978	14,870	5,970	137,820	28.6
NCM	132,497	16,255	62,984	11,494	223,230	46.3
Average	136,021	32,635	34,248	10,833	214,404	44.5

Sold	Chicken	Zebu	Porcs	Other poultry	all (sum MGA)	all (sum €)
CF	41,473	100,909	20,000	16,909	179,291	37.2
CM	49,163	154,620	73,913	18,168	296,299	61.5
NCF	56,672	49,254	20,896	15,970	142,791	29.6
NCM	46,293	74,425	47,126	11,983	179,828	37.3
Average	48,290	104,688	50,625	15,475	219,244	45.5

Annex 8:   Vanilla productivity per farmer per hectare
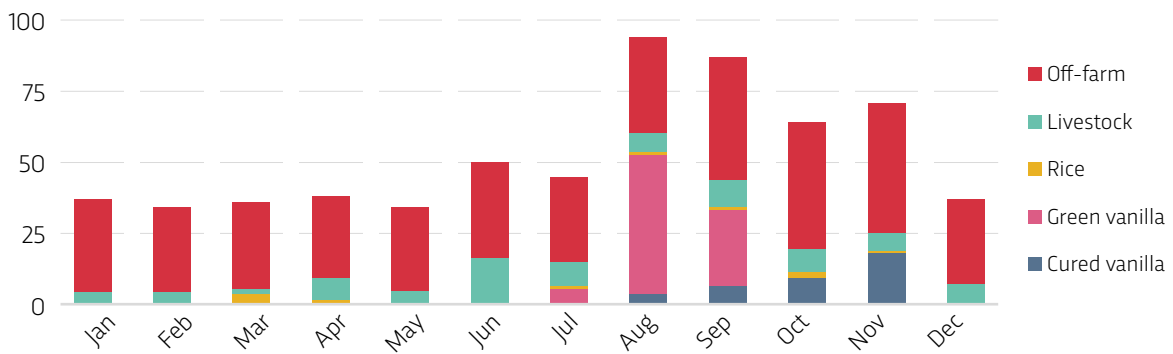

Productivity per ha
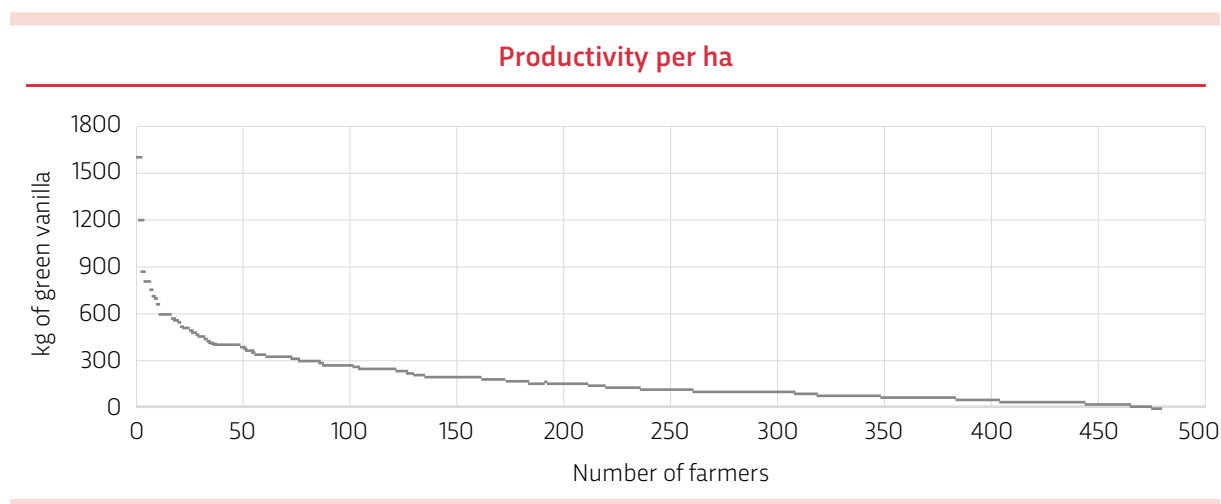
Annex 9:   Percentage of farmers generating income in each month of the year
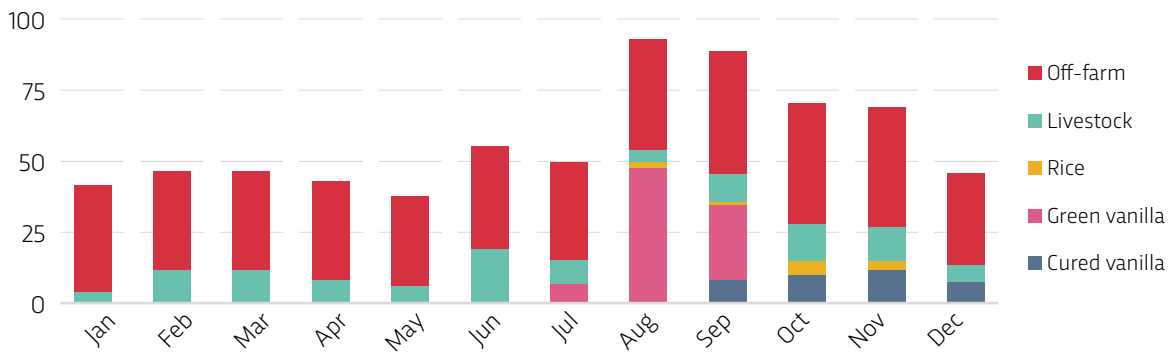
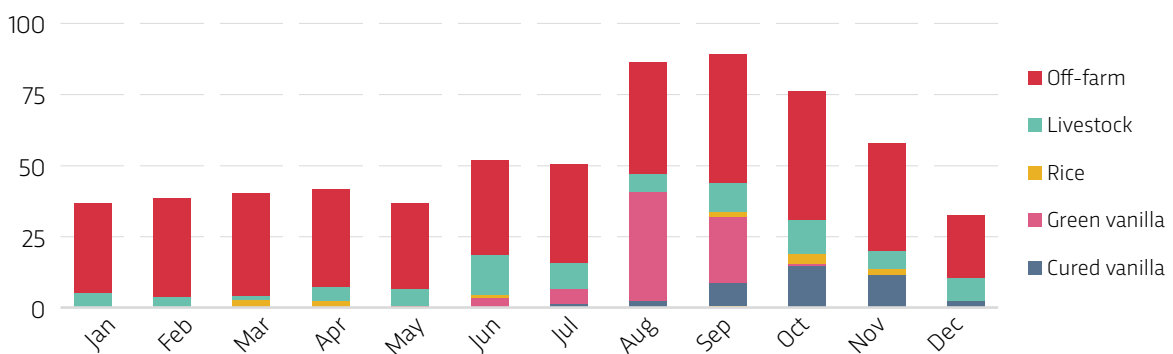### CF: % of farmers generating income in month
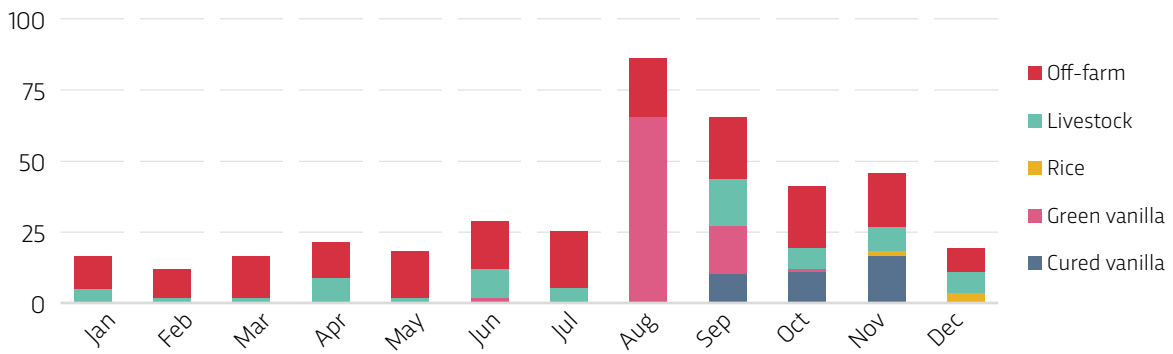
CM: % of farmers generating income in month

NCF: % of farmers generating income in month

NCM: % of farmers generating income in month

Annex 10: Comparison of key variables used for Living Income Reference Price calculation

Variable	2019	2020	2024
Farm size total (ha)	2.08	2.08*	1.9
Vanilla (ha)	0.9	0.9*	0.9
Full employment vanilla farm size (ha)	1.0*	1.0*	1.0*
Production costs (incl. living wages)/ha/year	626.7**	392.7**	988.8**
Farm gate price green vanilla (€ incl. premiums)	38.2	10.2	3.2
Vanilla yields (kg green per ha in 2023)	49.2	81.27	130.0
Max. feasible yield per ha of green vanilla (kg)	350.0*	350.0*	350.0
Net income from other cash crops (€)	149.8	149.8*	143.0
Value food produced for home consumption (€)	413.0	303.0	692.3
Income produced through livestock (€)	212.16	212.16*	90.0
Household size	4.2	4.2*	4.2
Living Income per HH per year (€)	5,751.0	4,777.5	3,466.0
Living income per person per day	3.7€ (14,980 MGA)	3.0€ (13,987 MGA)	2.3€ (10,890 MGA)
Extreme poverty line (Worldbank)	1,592***	1,592*	1,894***
Living Income Reference Price (€ per kg green vanilla)	16.6€ (68,407 MGA)	13.16€ (60,481 MGA)	10.2€ (43,072 MGA)

*   unchanged assumptions

**   In 2019, data from Wageindicator.com was used and based the LW on €4.4 per labour day (Hänke & FI 2019). However, Fairtrade uses conversion factors studies that draw LW directly from LI as in this study (7.5€ per labour day). Consequently, costs of production are considered higher.

*** The Worldbank poverty line is purchasing power parity adapted to Malagasy MGA based on Worldbank, 2022 and OECD 2023. The Worldbank poverty line is 2019 was 1.9 US$ per person per day, however, in 2023 it changed to 2.15 US$ per person per day.

IMPRINT

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