RAINFOREST ALLIANCE

A JDE COMMON GROUNDS PROGRAMME PARTNERSHIP

ORIGIN ISSUE ASSESSMENT
ETHIOPIA - COFFEE

Ethiopia is Africa's largest producer of coffee and the world's largest producer of organic Arabica coffee (ICO, 2020; FiBL, 2020). With coffee production forecasted at 7.62 million bags in 2021/2022, Ethiopia's coffee sector is steadily expanding (USDA, 2021). 90% of coffee is produced by smallholder farmers with an average farm size of 0.5-2 hectares (Solymosi & Techel, 2019). Production predominantly takes place in the Southwest, in the Oromia Region, and Southern Nations, Nationalities, and Peoples' Region (SNNPR). 15 million Ethiopian smallholders depend on coffee for their livelihoods, roughly one-fifth of the population (Reay, 2019).

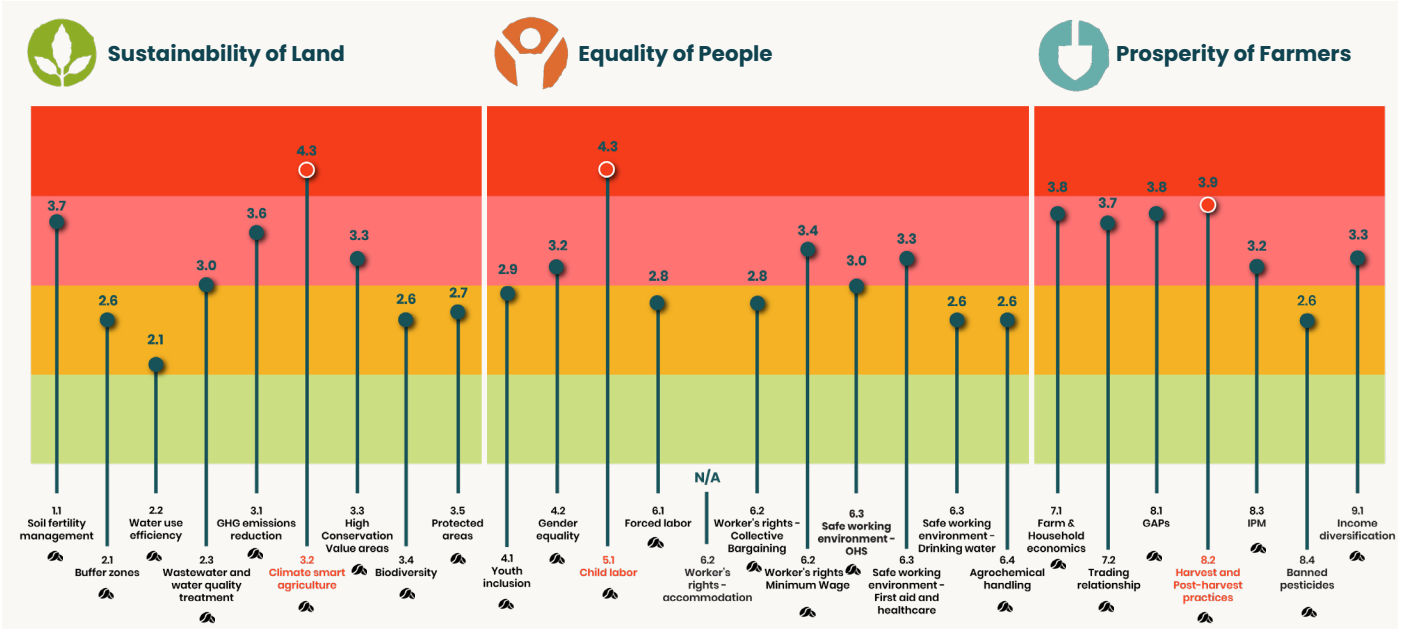
TOP ISSUES

The top issues identified are:

- **Climate Smart Agriculture (risk score 4.3/5)**
- **Child Labor (risk score 4.3/5)**
- **Harvest and Post-Harvest Practices (risk score 3.9/5)**

Climate change negatively affects coffee farmers as they experience less frequent harvests due to adverse weather impacts **(Climate Smart Agriculture)**. Farmers lack the knowledge and technology to implement climate smart agriculture practices. Some coffee farmers switch to farming khat, a drought-tolerant plant used as a stimulant drug. Ethiopia has one of the highest rates of child labor in the world and more than one-third of children are not completing primary education **(Child Labor)**. Economic challenges force coffee growing families to involve their children in farming activities such as harvesting, separating defective beans, and engaging in work at washing and hulling stations. Despite improvements in harvest and post-harvest practices in the country's coffee sector, there remains a lack of resources to further enhance these practices **(Harvest and Post-Harvest Practices)**. Premature harvesting of coffee to ensure cash sources for farmer's families remains an issue.

Further details per topic are provided in a separate annex.



Range	Probability of the issue's occurrence
4.1 -5.0	High probability: Known to occur frequently
3.1 -4.0	Medium-high probability: Known to occur
2.1 -3.0	Medium-low probability: Could occur
1.0 -2.0	Low probability: Not expected to occur

JDE | Common Grounds

ORIGIN ISSUE ASSESSMENT METHOD SUMMARY

This Origin Issue Assessment (OIA) is compiled by the Rainforest Alliance as part of the JDE Common Grounds Initiative. The OIA is a desk-based 'early warning system' identifying potential issues related to coffee production in a country for each of the 23 JDE Common Grounds Responsible Sourcing principles. It focuses on the probability of occurrence, and less on the scale and severity of impacts. Three different data sources are used: i) country-specific law and legislation, (ii) recent evidence (media, reports, papers, UTZ audit results*), (iii) expert opinions survey**. The overall score is calculated based on these three types, however evidence is weighted higher (3x), than expert opinion (2x) and the law and legislation score (1x). The weighted scores are added up and divided by 6 to get the overall weighted risk score for each of the 23 issues.

In case insufficient coffee specific information is found, other evidence related to the country's agriculture sector will be considered.

This icon indicates the evidence is coffee specific.

The OIA covers the overall coffee sector, making no distinction between, e.g. (i) smallholders and estates, (ii) sun-dried and washed-coffee, (iii) sun- and shade-grown coffee.

The data presented is accurate at the time of publication based on the information collected from the above sources. Neither RA nor JDE will be liable for damage as a result of inaccuracies in the information. For more information about the OIA's method, sources and expert surveys, please contact us at OIA@ra.org.

* Through 3rd party audits producer's compliance is evaluated against the UTZ Certification Standard (owned by the Rainforest Alliance). Audit reports provide insights on certification gaps for the analysis."

** Rainforest Alliance experts (country representative, thematic and coffee experts) and external expert(s) (e.g. National Coffee Platform representative) are surveyed.

SOIL FERTILITY MANAGEMENT	JDE Sourcing principle 1.1
Score	**3.7**
Law	Ethiopia ratified the United Nations Convention to Combat Desertification (UNCCD). In collaboration with local communities the government has implemented programs to combat land degradation (Tanto & Laekemariam, 2019, CIGAR). Climate smart agriculture practices are promoted by the government to restore degraded land (CIAT; BFS/USAID, 2017). Despite the efforts on soil practices, land degradation remains a pressing issue due to land tenure insecurity, weak links between research and extension services, an absence of training and awareness campaigns, and the unavailability of technologies (Gurebiyaw, 2019).
Evidence	Land degradation, in the form of soil erosion, soil fertility loss, deforestation and desertification, is a serious issue in Ethiopia (Abiyo et al., 2018). Low soil health and high soil erosion have also been identified as issues occurring across coffee farms (Davis et al., 2020). In southern Ethiopia, poor soil fertility management practices and low soil fertility are considered major constraints of coffee production (Tadesse et al., 2020). A study by Winter et al. (2020) finds that conventional Ethiopian coffee farms (non-certified) do usually not take soil samples to determine fertilizer requirements. On the contrary, research focusing on major coffee growing areas in the country highlights that ~45% of farmers practice soil and water conservation practices (Fikirie, 2021). On some plantations, soil mulching is applied including the use of coffee hulling waste (Davis et al., 2020). Non-conformities regarding soil fertility management were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-high risk: In the coffee-producing regions, some farmers manage their soils in an effective way. "Most farmers in Ethiopia are still following traditional methods of coffee production systems. They are not using good agricultural practices and as a result productivity per unit hectare, as well as overall production, is generally low in all regions" (Expert survey, 2021).

BUFFER ZONES	JDE Sourcing principle 2.1
Score	**2.6**
Law	Ethiopia has passed the Hazardous Waste Management and Disposal Control Proclamation (2018) and the Pesticide Registration and Control Proclamation (2010) to regulate the use of pesticides and to ensure environmentally safe application practices (ILO). The Ethiopian Water Resources Proclamation puts the current Ministry for Water, Irrigation, and Energy in charge to ensure that sewage and industrial effluents do not harm water resources (GIZ, 2020). In 2010, the Pesticide Risk Reduction Program (PRRP) was launched covering pesticide registration and management (Teklu, 2016). However, enforcement regarding pesticide management is known to be a problem and improper disposal of obsolete pesticides is a frequent issue in Ethiopia (IFC, 2017).
Evidence	A study investigating the environmental risk of pesticides in Ethiopia shows that for the seven selected pesticides, the acute human risk resulting from the consumption of surface water is low to negligible (Teklu, 2016). However, the findings also indicate that agricultural pesticide residues may result in medium-high risk to aquatic species. Regarding the coffee sector, there is a low risk of pesticides and fertilizers affecting nearby water streams because 95% of farmers do not use agrochemicals (Solymosi & Techel, 2019; Mitiku et al., 2018). Non-conformities regarding buffer zones were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Low risk: When looking at the country's coffee-producing regions, it is likely that farmers maintain a pesticide and fertilizer non-application zone or buffer zone. "Smallholders in Ethiopia do not use agrochemicals on their coffee farms" (Expert survey, 2021).

WATER USE EFFICIENCY	JDE Sourcing principle 2.2
Score	**2.1**
Law	In 2000, Ethiopia adopted a comprehensive and Integrated Water Resources Management Policy (WWF Water Quality Index). An irrigation policy has been established to increase irrigated areas, however, due to a poor regulatory framework, there is a significant gap between the actual irrigated area and the land area equipped for irrigation (Shikur, 2020). There is no institution directly involved in water management in smallholder-irrigated agriculture which results in a lack of guidance on implementing irrigation/ water harvesting methods (WWF Water Quality Index).
Evidence	Only 1.5% of Ethiopia's total water withdrawal is attributed to agriculture (FAOSTAT, 2017). Most agricultural systems are exclusively rain-fed, including the coffee sector, and the country's irrigation potential is highly underused (CIAT; BFS/USAID, 2017; Etea et al., 2019). (Solymosi & Techel, 2019). Research by Tadesse et al. (2020) on coffee farms in southern Ethiopia reports that 87.8% of farms are rainfall dependent and that the most common method of supplementary irrigation was using watering cans. However, irrigation on coffee farms is mostly confined to places where water is easily available (Davis et al., 2019). 70-80% of the country's coffee beans are dry processed (Tolessa et al., 2018), however, the remaining 20-30% is wet processed and consumes large amounts of water.
Prevailing expert opinion	Low risk: Water availability is an issue in the dry season. "Farmers tend to rely on rainwater for irrigation." "The coffee agriculture is rain-fed. The irrigation system is not yet adopted for coffee areas and during dry seasons there is a shortage of water" (Expert survey, 2021).

WASTEWATER AND WATER QUALITY TREATMENT AT PROCESSING UNITS*	JDE Sourcing principle 2.3
Score	**3.0**
Law	In 2017, the Ethiopian government formulated an Urban Wastewater Management Strategy that seeks to improve wastewater management and develop strong wastewater management institutions (Ministry of Irrigation and Electricity, 2017). The Environmental Protection Agency is responsible for protecting water resources and for ensuring that sewage and industrial effluents do not harm water resources (GIZ, 2020). Although water pollution guidelines are generally stringent, actual law enforcement is weak.
Evidence	Ethiopia ranks 134/134 in the Yale Environmental Performance Index regarding wastewater treatment. Existing septic systems throughout the country are often unreliable and overflow (Media, 2017). Despite most coffee farmers practicing dry processing, the effluent quality of coffee processing wastewater is found to be poor as nearby water bodies and ecosystems located downstream of traditional wet coffee processing plants are at an alarming risk of ecological disruption (Dadi et al., 2018). The environmental impact of wet processing is also made evident in Woldesenbet et al. (2016), i.e., coffee processing waste is disposed of by dumping it into natural water systems or nearby agricultural/grazing land. Organizations like Technoserve are seeking to implement innovative water management systems that reduce the contamination of local rivers (Technoserve, 2017). No non-conformities regarding wastewater and water quality treatment at processing units were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-high risk: When looking at the country's coffee-producing regions, it is unlikely that, at processing units, wastewater is treated and is of good quality before it is discharged into aquatic ecosystems or drainage systems. "The water treatment system among many coffee producers is quite traditional and lacks the necessary quality treatment before it is discharged. The wastewater is often stored in lagoons and possibly discharged into the surrounding water bodies without the necessary treatment" (Expert survey, 2021). *Inadequate wastewater treatment was listed as a top priority issue in the previous OIA Ethiopia (2017).

GHG EMISSIONS REDUCTION	JDE Sourcing principle 3.1
Score	**3.6**
Law	Ethiopia outlined a vision for a Climate Resilient Green Economy (CRGE) and has developed a strategy for transforming the country into a carbon-neutral middle-income country by 2025 (Hirons et al., 2018). This strategy emphasizes the expansion of renewable energy which is found to be abundant in Ethiopia. Although some initial progress has been made in efforts to exploit this tremendous potential, up to now only a small fraction has been used (GIZ, 2020). The importance of coffee is noted in the agriculture and forestry component of the CRGE strategy; however, none of the 27 agricultural pilot projects implemented under the CRGE by 2016 included coffee (Hirons et al., 2018). The Climate Action Tracker rates Ethiopia's Paris Agreement "2°C compatible" as one of the few countries to earn this rating (CAT, 2020).
Evidence	Despite the traditional dry cultivation methods in Ethiopia's coffee sector, production still releases GHGs on different ends. Unlike the dry milling stations, many wet mills are not connected to the electric grid; they run on diesel engines for pulping and further processing steps (Chala et al., 2018). Moreover, a study by Winter et al. (2020) evaluating the sustainability performance of conventional coffee in Ethiopia found that emissions from land conversion for coffee production are high. Forest loss and deforestation emissions from coffee production are considered lower in Ethiopia compared to other major producing countries (Treanor & Saunders, 2021). Non-conformities regarding GHG emission reduction were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-high risk: When looking at the country's coffee-producing regions, it is unlikely that farmers use energy efficiently and that farmers use renewable energy sources. Generally, "the technology is low advanced" (Expert survey, 2021).

CLIMATE SMART AGRICULTURE	JDE Sourcing principle 3.2
Score	4.3
Law	The Ethiopian Program of Adaptation to Climate Change (EPACC) was passed in 2010 (Grantham Research Institute). Also, the country's Climate-Resilient Green Economy (CRGE) Strategy targets climate change mitigation and adaptation. Upon the ratification of several international climate agreements, the Ethiopian government submitted its Nationally Appropriate Mitigation Actions (NAMA) which included key mitigation strategies for the agriculture sector (CIAT; BFS/USAID, 2017). Overall, the country has a clear institutional and policy framework to support the mainstreaming of climate change action in agricultural sector development. However, it is observed that some efforts are either one-time propaganda or driven without a clear outcome (Nigussie, 2020).
Evidence	Climate change is a growing threat to the future of Ethiopia's coffee industry (USDA, 2016). Research highlights that annual rainfall is decreasing and that droughts cause plants to wilt (Davis et al.,2019). Higher temperatures in combination with less predictable rainfall increase the risk of pests and reduce flower bud formation which has led to farmers expanding their coffee farming higher up the mountain slopes (Reay, 2019; Solymosi & Techel, 2019). Modeling studies suggest that the climatically suitable area for Arabica coffee could decline between ~39-59% by the end of the century (Hirons et al., 2018). Also, the media (2017) highlights that climate change is negatively affecting coffee farmers as they are experiencing less frequent harvests. A study by Eshetu et al. (2020) focusing on coffee farmers from southwest Ethiopia finds that the most common adaptation measures used by the producers include adjustment of planting date, change of the crop type and variety, tree plantation, and farming diversification. However, further efforts are required to improve farmers' access to accurate and timely agro-meteorological forecasts, capacity building, and technical support for income diversification. Due to the change of climatic conditions, some coffee farmers have switched to farming khat, a stimulant drug that has many attractive qualities including heightened ability to withstand drought, diseases and pests, speedy growth, and higher sales (USDA, 2020; Media, 2018; Media, 2017).
Prevailing expert opinion	High risk: Climate change seems to have a negative impact on coffee production and farmers are not able to adapt. "Coffee is produced by smallholder farmers that use intergenerational knowledge on coffee production and processing. The impact of climate change on coffee production is enormous but these smallholder farmers are not well prepared on how to practice climate smart agriculture as they lack modern and good agricultural production and processing skills" (Expert survey, 2021).

FOREST AND HIGH CONSERVATION VALUE AREAS (HCVS)	JDE Sourcing principle 3.3
Score	3.3
Law	The proclamation creating the Ministry of Environment and Forestry was passed in 2013 and gives the ministry the power and duties to address matters relating to forestry issues (Grantham Research Institute, 2021). A participatory forest management (PFM) program has contributed to the rehabilitation of forests and a reduction in deforestation in some areas; however, it has been highlighted that major deforestation has taken place in several other areas where PFM has been scaled up (Ango et al., 2020). The Oromia Forest and Wildlife Enterprise, responsible for conserving existing forests, has been unable to enforce or implement existing laws and the local administration has no resources to provide support at the local level (MEFCC, 2017).
Evidence	Agricultural expansion, particularly of large-scale coffee farms, is one of the major drivers of deforestation in Ethiopia (The REDD Desk, 2017; Sisay, 2018; Davis et al., 2019; MEFCC, 2017). The few remaining high forests are threatened by pressure from investors who aim to utilize the forests for other land-use systems such as coffee and tea plantations (Gebru, 2016). Several sources observe drastic forest degradation in Ethiopia's forest coffee areas without certification (Takahashi & Todo, 2017; Williams et al., 2017). Furthermore, research on Yigracheffe, located in the south of the country, shows that forest coffee cover decreased at a rate of 1.02% per year in 30 years as a result of increasing demand for coffee in the global and national market (Adane & Bewket, 2021). On the contrary, evidence also observes that the coffee production area in Yayu has not experienced any significant deforestation since 2000 (Schuit et al., 2021). Deforestation in coffee-producing areas is generally due to timber extraction and conversion for other agricultural production rather than coffee (GMAP; IFC, 2017). Treanor & Saunders (2021) note that 1.9% of total deforestation related to agricultural activity is linked to coffee. International organizations have provided funds to support sustainable forest and land use in Ethiopia (GIZ, 2020).
Prevailing expert opinion	Medium-low risk: When looking at the country's coffee-producing regions, it is unlikely that farmers have converted High Conservation Value areas to agricultural production or other land uses since January 1st, 2014. "Due to increasing population land expansion for agricultural production is inevitable. There is also a thinking that it is ideal to integrate sustainable coffee production with forest and ecosystem protection" (Expert survey, 2021).

NATIVE VEGETATION AND ON-FARM BIODIVERSITY	JDE Sourcing principle 3.4
Score	**2.6**
Law	In 1994, Ethiopia has ratified the Convention on Biological Diversity (CBD). The government passed a National Biodiversity Strategy and Action Plan 2011-2020 and has shown substantial progress in its implementation. Ethiopia's accession to the Nagoya protocol highlights the country's commitment to conserve the native coffee resources. Despite this effort, concerns remain regarding the protection and utilization of Ethiopian coffee genetic resources (Hirons et al., 2018).
Evidence	Coffee is a native shrub in Ethiopia's forests. It is likely that native vegetation and on-farm biodiversity are maintained as coffee is commonly grown under full shade or in agroforestry systems (Solymosi & Techel, 2019). Coffee farming systems incorporate specific shade plants — usually indigenous (native) trees or sometimes fruit trees and other crop plants (Davis et al. (2019). Less than 20% of total coffee production is grown with little or no shade (sun coffee). Research by Rodrigues et al. (2018) finds that traditional shade coffee management practices maintain a diverse suite of forest birds. However, coffee farmers usually slash undergrowth once a year to reduce competition for soil nutrients with other species which negatively affects native biodiversity (Mitiku et al., 2018). Moreover, a study by Woyesa & Kumar (2021) indicates that coffee farmers are diverting to agriculture which threatens the survival of the moist montane ecosystem and the gene pool of wild Arabica coffee due to low yields and net profit from the forest and semi-forest coffee.
Prevailing expert opinion	Low risk: When looking at the country's coffee-producing regions, it is likely that farmers contribute to the preservation of native vegetation and on-farm biodiversity. "Coffee production is common under shades and there are many open areas in coffee growing regions. For this reason, it is more likely that coffee farmers practice preservation of native vegetation and on-farm biodiversity conservation compared to other crops" (Expert survey, 2021).

PROTECTED AREAS	JDE Sourcing principle 3.5
Score	**2.7**
Law	The Environment Policy of Ethiopia (1997) is the guiding legislative document to ensure the adequate management of natural resources and the environment (Grantham Research Institute, 2021). Though the size of protected areas (PAs) is increasing in the country, most PAs are under human-induced pressure (Mengist, 2020). Generally, the status of PAs in Ethiopia is poor and wildlife is declining over time due to weak policy enforcement. A lack of funding for conservation efforts is highlighted (Namaga et al., 2020; Wale et al., 2017) and limited federal resources contribute to weak law enforcement to safeguard protected areas (Young et al., 2020; Banti, 2018; Temesgen et al., 2018).
Evidence	Ethiopia has 99 protected areas (15,74% terrestrial protected area coverage) of which 17 have management effectiveness evaluations (Protected Planet index). However, protected areas in the country face a range of threats, for e.g., the encroachment of PAs for farmland expansion, settlements, livestock grazing, and illegal hunting (Mengist, 2020; Wale et al., 2017). Since coffee is a native species to Ethiopia's forests, the effect of coffee cultivation on protected areas is ambiguous. On the one hand, coffee is grown in bioreserves conserving native, wild coffee species ((MEFCC, 2017; Media, 2016). Nevertheless, evidence finds that the UNESCO-recognized Yayu Coffee Forest Biosphere Reserve has faces several challenges beyond management (Media, 2016). On the other hand, intensive coffee production threatens the unique and high biodiversity within the parks (IFC, 2017; GMAP).
Prevailing expert opinion	Highly discrepant risk opinions*: When looking at the country's coffee-producing regions, it remains contested whether coffee is produced or processed in protected areas or their designated buffer zones. Generally, Ethiopia has "a stringent policy in place regarding protected areas or their designated buffer zones in Ethiopia" (Expert survey, 2021). *The averaged risk score does not sufficiently reflect the wide discrepancy in expert opinion, ranging from low to high risk.

YOUTH INCLUSION	JDE Sourcing principle 4.1
Score	**2.9**
Law	Ethiopia has a National Youth Policy that promotes the rights of young people in the country (OECD; Rep. of Ethiopia, 2004). The Ministry of Women, Children and Youth Affairs provides the framework for national priorities towards empowering Women and Youth (OECD, 2018). The government is working on increasing the involvement of youth in agricultural value chains (Osti et al., 2015). Recent efforts to enhance rural youth employment in Ethiopia focused on policy interventions, knowledge and skills development, financial inclusiveness, productive employment, and business parks development (Yami et al., 2020). The government still faces some challenges in implementing the National Youth Policy due to weak monitoring and evaluation tools, a lack of coordination and financial resources, and socio-cultural and economic barriers (OECD).
Evidence	Ethiopian youth have limited access to resources (land), decision-making authority, and leadership opportunities (USAID, 2018). Yet interventions to facilitate youths' access to resources have generated favorable outcomes (Yami et al., 2020). Research finds that Ethiopian youth are abandoning on-farm agricultural work whilst their participation in off-farm activities is increasing (Sakketa & Gerber, 2017). In southern Ethiopia, only 9% of rural youth show interest in taking up agriculture as a career due to negative perceptions about the sector (Yami et al., 2019). A large proportion of coffee workers are young, with an average age of 30 (ILO, 2020). Organizations such as Technoserve have made efforts to incorporate youth in coffee training programs (ICO, 2020).
Prevailing expert opinion	Medium-low risk: When looking at the country's coffee-producing regions, it is likely that the participation of young farmers is promoted. Nevertheless, an expert states that "most youth lack access to quality education/training and jobs (25% unemployed or underemployed), and many are asked to work on their family farm for no pay. There are some programs and policies that support vulnerable youth, but these are limited. Youth are asked to participate in some spaces but lack real decision-making power" (Expert survey, 2021).

GENDER EQUALITY	JDE Sourcing principle 4.2
Score	**3.2**
Law	Ethiopia has ratified the Discrimination (Employment and Occupation) Convention and the Equal Remuneration Convention (Tadele, 2010). The rights of women are established in the constitution and in the National Policy on Women (UN). The government of Ethiopia integrated gender concerns into its flagship agricultural program, yet socio-cultural and economic barriers still exist (USAID, 2018). Although Ethiopia covers women discrimination in several areas of the law, much more must be done to enforce the existing laws and close the gender gap in other areas of the legal system (de Silva, 2021).
Evidence	Women's access to resources, such as land, credit, skill training, and education, is relatively poor (Bekana, 2020). Fewer women have control over land compared to men and women's control over resources is limited (Ministry of Women, Children and Youth & UNICEF, 2016; USAID, 2018). Nearly three-quarters of coffee workers in Ethiopia are women, yet less than half of them earn an income (LDC, 2020). Women are burdened with additional household work. An analysis of World Bank census data shows that revenues from selling coffee in Ethiopia are 39% lower for female-headed households (ICO, 2018). Moreover, women account for only 10-20% of cooperative members (de Silva, 2020). Despite the unfavorable position of female coffee farmers, the monthly labor earnings for coffee workers indicate a small gender pay gap as women earn on average $35.6 and men $36.7 (ILO, 2020). Initiatives and programs have been established to address the issue of gender inequality in the Ethiopian coffee sector. For instance, the US Department of Labor entered a 5$ million partnership agreement aiming to empower girls and women in the coffee sector (Media, 2021). Non-conformities regarding gender equality were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-high risk: Women sometimes do not have equal rights, responsibilities, and opportunities. "There is still a high degree of gender inequality in Ethiopia. Up to 75% of the work in the coffee value chain in Ethiopia is carried out by women. But only 43% of the income is earned by those women. Women are especially involved in farming, picking, and managing, men are involved in trading the coffee in the marketplace" (Expert survey, 2021).

CHILD LABOR*	JDE Sourcing principle 5.1
Score	4.3
Law	Ethiopia has ratified the Minimum Age Convention and the Worst Forms of Child Labor Convention (ILO). In 2019, the government issued a new Labor Proclamation raising the minimum age for work from 14 to 15 years (USDL, 2019). Government programs to combat child labor are in place; however, they have not sufficiently addressed incidences of child labor (USDOL, 2019). Enforcement of child labor laws and labor inspection mechanisms remain weak, (GMAP; ILO, 2014). Education is not compulsory by law (Verite, 2018).
Evidence	Ethiopia has one of the highest rates of child labor in the world with 54% of rural 5 to 14-year-old children directly involved in economic activities, mostly as unpaid workers on family farms (Galdo et al., 2019). More than a third of children are not completing primary education (UNICEF, 2020). Due to economic challenges, parents are obliged to use child labor to supplement their family income (Media, 2020). In the coffee sector, children are involved in harvesting, separating defective beans and engaging in some minor work at washing stations (Media, 2017; Galdo et al., 2019). A report from the ILO (2020) highlights that 21.6% of Ethiopia's coffee workers are reported to be 14 years old or less. Nevertheless, coffee is not included on the US Department of Labor List of Goods produced with child labor (USDL, 2020). The Rainforest Alliance Social Risk map attaches a high-risk score to child labor occurring in Ethiopia's coffee sector (RA, 2020).
Prevailing expert opinion	Medium-high risk: Children below minimum age (12/13 years) are involved in under aged child labor (not on their family farm). Children are deprived of school, especially when coffee prices are low. Children under 18 years old perform hazardous work. "Ethiopia has one of the worst child labor figures compared to other coffee growing countries. Child labor in agriculture is common; 41.5% of all children aged between 7 and 14 are involved in child labor, a sheer majority of them in agriculture, including coffee." "Young children often accompany their mothers working at hulling stations where they conduct coffee sorting" (Expert survey, 2021). *Child labor was listed as a top priority issue in the previous OIA Ethiopia (2017).

FORCED LABOR	JDE Sourcing principle 6.1
Score	2.8
Law	Ethiopia has ratified both the Forced Labor Convention and the Abolition of Forced Labor Convention (ILO). Any form of forced or compulsory labor is prohibited by law, though courts are permitted to use forced labor as a disciplinary means (Verite, 2018). The USDA 2021 Trafficking in Persons Report indicates that the government of Ethiopia does not fully meet the minimum standards for the elimination of trafficking. The government significantly decreased the number of trafficking investigations and prosecutions. Corruption also inhibits law enforcement (USDOS, 2021).
Evidence	Evidence highlights that forced labor occurs in Ethiopia's agricultural sector (GMAP). The Social Hotspot Database attaches a high score to the risk of forced labor occurring in the country's crop sector (SHDB). In the coffee sector, casual hired labor is widespread which increases the risk for forced labor (Verite, 2018). A report from the International Labor Organization underlines that unpaid labor is commonplace in Ethiopia (ILO, 2020). However, coffee is not included on the US Department of Labor list of goods produced with forced labor (USDOL, 2020). The Rainforest Alliance Social Risk Map rates a medium risk of forced labor taking place in the coffee sector. No non-conformities regarding forced labor were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-low risk: It is unlikely that forced labor happens in the country's coffee-producing regions. "We are not aware of reported cases in the past 5 years, however, it is possible that forced labor exists because the following risk factors exist: coffee relies mainly on manual labor for land preparation, sowing, weeding, harvest, crop protection; temporary labor is common during periods of peak labor needs on all or a substantial part of the farms; the majority of workers, including seasonal/temporary workers, are paid by piece rate/volume" (Expert survey, 2021).

WORKERS' RIGHTS AND DUTIES	JDE Sourcing principle 6.2
Highest score	**3.4**
ACCOMMODATION	
Score	**N/A**
	At the moment, information collected on accommodation does not allow us to draw specific conclusions. Prevailing expert opinion: Medium-low risk; workers and their families are responsible for their own accommodation (Expert survey, 2021).
COLLECTIVE BARGAINING	
Score	**2.8**
Law	Ethiopia has ratified the Freedom of Association and Protection of the Right to Organize Convention, and the Right to Organize and Collective Bargaining Convention (ILO). The Ethiopian Constitution recognizes general freedom of association and the right of workers to join trade unions (ILO, 2004; Freedom House, 2021). The government has promoted the formation of cooperatives and unions; however, some unions are of the opinion that the government does not support them sufficiently (Suedwind Institute, 2020). Although the law provides for freedom of association, the government limits this right in practice (IFC, 2017).
Evidence	The 2020 ITUC Global Rights Index classifies Ethiopia under rating 4 indicating that systematic violations of rights take place. Also, the Social Hotspot Database attaches a high-risk score to freedom of association in the Ethiopian crop sector. In the coffee sector, labor relations are casual and there is no social security for family workers or hired workers (Winter et al., 2020). Field workers have low bargaining power and are not treated properly by their employers which is largely due to the absence of a minimum wage in the sector (Media, 2021). Most coffee plantations are unionized but the unions do not include temporary workers (IFC, 2017). No non-conformities regarding collective bargaining were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-low risk: When looking at the country's coffee-producing regions, it is likely that workers are fully aware of their rights and duties and that their employers adhere to those rights and duties, including the right of collective bargaining. "The workers know their rights as there are strong labor offices and a vibrant labor law" (Expert survey, 2021).
MINIMUM WAGE*	
Score	**3.4**
Law	Ethiopia has neither ratified the Protection of Wages Convention nor the Minimum Wage Fixing Convention (ILO). There is no consistent minimum wage mechanism in the country, however, some public sector institutions and enterprises have set their own minimum wages (ILO, 2017; Media, 2017). The Ministry of Labor and Social Affairs' inspection department was reportedly unsuccessful in standards enforcement (Verite, 2018). In 2019, the Ethiopian Government published a new Labor Proclamation which sets a framework favorable for the implementation of wage policies (Ahmad, 2021).
Evidence	Agricultural wages are generally lower in Ethiopia compared to other countries, with workers earning on average $2.7 per day (e.g., Nicaragua $6) (FAO, 2015). In the coffee sector, Ethiopian laborers earn 10 times lower than their counterparts in major coffee producing countries due to the large presence of subsistence farming (Media, 2021). A recent study from the International Labor Organization also finds that Ethiopian coffee field workers earn about $38 per month. In contrast, Costa Rican plantation employees earn $380 per month (ILO, 2020). Nevertheless, the Social Hotspots Database indicates a low risk for wages in the Ethiopian crop sector to be below the country's minimum wage.
Prevailing expert opinion	Medium-high risk: Part of the workers is paid less than minimum wage. "There is no minimum wage set. The government employees minimum wage is used as a benchmark" (Expert survey, 2021). *Minimum wage was listed as a top priority issue in the previous OIA Ethiopia (2017).

SAFE WORKING ENVIRONMENT	JDE Sourcing principle 6.3
Highest score	**3.3**
OCCUPATIONAL HEALTH SAFETY	
Score	**3.0**
Law	Ethiopia has ratified the Occupational Safety and Health Convention but has not ratified the Safety and Health in Agriculture Convention (ILO). The country has passed several policies related to OHS (e.g., Pesticide Registration and Control Proclamation). However, the agricultural sector is not well regulated as there are no specific OHS standards for agricultural workers (IFC, 2017). The 2019 Labor Proclamation states that an employer shall take the necessary measures to safeguard adequately the health and safety of workers (Rep. of Ethiopia, 2019). A decrease in labor inspectors and the lack of resources contribute to ineffective enforcement of the standards (GMAP; Kumie et al., 2016).
Evidence	As 95% of coffee is produced under traditional organic cultivation systems without the use of pesticides and fertilizers, the overall the risk of pesticide poisoning remains very small (GMAP; Winter et al., 2020). Occupational hazards in coffee cultivation relate to heat exposure in drying operations, solar radiation, machine noise, and ergonomic problems from hand tools (GMAP). A study on the chronic respiratory symptoms and lung function among female hand pickers in primary coffee-processing factories of Ethiopia shows a range of adverse symptoms and lung function impairments (Abaya et al., 2019).
Prevailing expert opinion	Medium-low risk: When looking at the country's coffee producing regions, it is likely that workers enjoy a safe working environment, where adequate steps are taken to prevent work-related injuries. "Most coffee producers follow the occupational health and safety procedures, mainly in processing facilities, to avoid any potential injury or health-related risks. In addition, most of the coffee is produced by smallholders and grown in gardens that do not involve the use of dangerous equipment or materials that threaten the safety of farmers and workers" (Expert survey, 2021).
FIRST AID AND EMERGENCY HEALTHCARE	
Score	**3.3**
Law	In its 2019 Labor Proclamation, the Ethiopian government specifies that employers have the obligation to provide an injured employee with first aid in time and to take the injured to the nearest medical facility by an appropriate means of transport (Rep. of Ethiopia, 2019). Employment injury pension and gratuity are provided to a worker who has an employment injury (Mpedi & Nyenti, 2016). Although Ethiopia has a well-established health care system, it lacks significant improvements in emergency medical services (Mosadeghrad et al., 2019).
Evidence	Prehospital emergency medical care is in its infancy in Ethiopia and rural healthcare has been noted as a problem (Debebe et al., 2016). Many facilities do not have a physician present to provide care (Media, 2018). A lack of trained emergency medical providers and misdistribution of trained professionals, the immaturity of medical programs, and a lack of motivation towards emergency medical services are observed (Mosadeghrad et al., 2019). No non-conformities regarding first aid and emergency healthcare were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-low risk: When looking at the country's coffee-producing regions, it is likely that workers enjoy a safe working environment, where adequate steps are taken to prevent work-related injuries. "First aid is available in most, if not all, of the coffee producers. This is a common practice mainly at processing sites" (Expert survey, 2021).
DRINKING WATER	
Score	**2.6**
Law	Ethiopia has not ratified the Safety and Health in Agriculture Convention (ILO). The Federal Ministry of Water, Irrigation, and Electricity is responsible for the management of water resources, water supply, and sanitation (GIZ, 2020). Despite a significant increase of access to safely managed drinking water in absolute numbers, a high percentage of the population still lacks basic drinking water. Ethiopia has a strong political will for improving access to water and sanitation (WHO, 2015; Media, 2017).
Evidence	According to a) report published by UNICF and the WHO in 2019, less than half of the total population in Ethiopia has at least basic access to safe drinking water (GIZ, 2020). The country ranks lowest on access to safe drinking water out of 117 countries (WWF Water Quality Index) despite recent progress to improve its presence (USAID, 2017). Research by Mekonen et al. (2016) highlights that surface water may be contaminated with pesticides because of the nearby agricultural areas. Evidence from Ethiopia's Sidama Zone finds limited access to clean water and sanitation resources, also for coffee growing households (Native, 2017). Here it was reported that coffee families suffered from typhoid and diarrhea due to drinking raw water from the river nearest to their home.
Prevailing expert opinion	Medium-low risk: When looking at the country's coffee-producing regions, it is likely that workers have convenient access to safe drinking water. "For producers that employ a large number of workers safe and potable drinking water is mostly available. In cases of smallholders, however, in some cases they use spring water for drinking" (Expert survey, 2021).

AGROCHEMICAL HANDLING	JDE Sourcing principle 6.4
Score	**2.6**
Law	Ethiopia has passed several policies related to agrochemical handling for e.g., Pesticide Registration and Control Proclamation, Biosafety Proclamation, and Hazardous Waste Management and Disposal Control Proclamation (ILO). The government has also issued a Special Decree on pesticide registration and control which also promotes safer pesticide handling and use (Ministry of Agriculture, 2014). However, enforcement of these policies is often inadequate and improper disposal of obsolete pesticides remains a widespread problem (IFC, 2017; Mengistie, 2016).
Evidence	In Ethiopia's agricultural landscape farmers lack knowledge on proper handling of chemical pesticides. Only a small percentage of farmers use personal protective equipment, and pesticides containers are unsafely disposed of (Negatu et al., 2016; Mengistie et al., 2015). However, in the coffee sector, most smallholders do not use agrochemicals, making about 95% of coffee organic (Solymosi & Techel, 2019; Mitiku et al., 2018). Coffee production in Ethiopia remains largely traditional; therefore, the application of chemical fertilizer for coffee production is almost non-existent (Wolde et al., 2017; Winter et al., 2020). Non-conformities regarding agrochemical handling were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Low risk: When looking at the country's coffee-producing regions, it is very likely that agrochemicals are handled in the right way. "This is non-applicable as smallholders do not use agrochemicals" (Expert survey, 2021).

FARM & HOUSEHOLD ECONOMICS	JDE Sourcing principle 7.1
Score	**3.8**
Law	In 2019, the Government of Ethiopia implemented reforms in the coffee value chain to enhance production, productivity, and exports (USDA, 2020). The Ethiopian Coffee and Tea Authority was developed to support, guide, protect and empower the development of the Coffee, Tea and Spice industry (Ethiopian Coffee Guide, 2020). The government has demonstrated strong commitment to agriculture and rural development through allocations of more than 10% of the total budget (Ministry of Agriculture and Rural Development, 2010). This effort has led to the creation of farmer training centers throughout the country. However, inappropriate agrarian and land tenure policy have been hindering enforcement (Welteij, 2018).
Evidence	Since most coffee-growing households receive only one annual "paycheck" for their crop, they experience difficulties in distributing the lump-sum throughout the following year to meet all their household needs until the next harvest (Shumeta & D'Haese, 2018). A study by Teshome et al. (2019) focusing on the Gedeo zone in southern Ethiopia reveals that 70% of the coffee farming families suffered from a shortage of money at the harvesting stage. Also, research highlights that coffee farmers are not able to cater for their cash needs and that coffee is often their only source of income (Winter et al., 2020). Moreover, the uptake of proper record keeping is low (IPE Triple Line, 2017). However, evidence also shows how coffee cooperatives and certified farms have higher profits than non-certified farms (Mojo et al., 2017; Mitiku et al., 2018).
Prevailing expert opinion	Medium-high risk: Most coffee farmers are subsistence farmers and not sufficiently aware of the farm and household economics. "Farmers lack the skills in determining their cost of production and determine the best business ventures that could maximize their benefits" (Expert survey, 2021).

TRADING RELATIONSHIP	JDE Sourcing principle 7.2
Score	**3.7**
Law	The Ethiopian Commodity Exchange market (ECX) was set up by the government in 2008 to organize the Ethiopian coffee trade and prices (ICO, 2020). Although success stories claim that the ECX has effectively linked 2.4 million smallholder farmers to markets through agricultural cooperatives, evidence is found to be largely anecdotal and little analysis is provided whether the ECX is responsible for these improvements (Gustafson & Hernandez, 2017; ICO, 2020). The Coffee and Tea Development and Marketing Authority is responsible for the production and trade of coffee and provides agricultural extension services (Hirons et al., 2018).
Evidence	Although Ethiopia is Africa's largest coffee producer, the country's smallholder farmers often cannot access financing (IFC, 2017). Banks are often unwilling to lend to coffee farmers because they lack collateral. Minten et al. (2019) identify a limited access to improved seedlings and savings institutions. There is no public or private entity responsible to produce and market coffee seeds (Tadesse et al., 2020). In comparison to other Arabica-producing countries, Ethiopian farmers earn the lowest share of the export price, at 60% of the export value (Minten et al., 2019). However, research suggests that members of certified cooperatives receive, on average, better prices since these are effective at providing inputs to their farmers. (Handino et al., 2019; Tolessa et al., 2018; Shumeta & D'Haese, 2018). To support Ethiopia's coffee industry, IFC has partnered with the country's Nib International Bank S.C. to help it increase lending to 70 coffee farmer cooperatives (IFC, 2021).
Prevailing expert opinion	Medium-high risk: When looking at the country's coffee-producing regions, it is unlikely that coffee sourcing companies facilitate farmers to access key production inputs, such as plantlets, fertilizer, and agrochemicals, and that coffee-sourcing companies facilitate farmers to access services, such as credit and market information. Nevertheless, "trading companies have started to set up a farmers support program and trade facilitation offices in producer countries. The aim is to provide their suppliers with technical knowledge" (Expert survey, 2021).

GOOD AGRICULTURAL PRACTICES	JDE Sourcing principle 8.1
Score	**3.8**
Law	The Ethiopian government aims to support and promote the almost entirely organic coffee sector (Suedwind Institute, 2020; Minten et al., 2015). The Minister of Agriculture has promoted coffee tree pruning to increase the adoption of this practice and enhance coffee production in the country (Ministry of Agriculture, 2019). Moreover, governmental efforts have focused on distributing improved seedlings; yet access to improved varieties is often still an issue (Minten et al., 2015).
Evidence	Solymosi & Techel (2019) state that about 6% of Ethiopian coffee farms practice Good Agriculture Practices. Common issues identified in the literature include aging coffee plants, a lack of pruning/stumping, and minimal to no fertilizer use (Davis et al., 2019). CIAT; BFS/USAID (2017) highlights that the adoption rate of improved agronomic practices (shade trees, cover crop, compost application, and irrigation) is less than 30%. An important concern for the coffee sector in Ethiopia is the lack of rewards for quality at the producer level and the limited uptake of certification of voluntary sustainability standards (Minten et al., 2019). Nevertheless, programs are in place to train farmers on coffee agronomy best practices, and hulling stations on improved sustainability practices (IDH, 2017; World Bank, 2021). A coffee tree rejuvenation training program in Sidama has generated positive outcomes from which the adoption rate and intensity of stumping have increased by about threefold during the first year of the rejuvenation training intervention (Abate et al., 2021). The application of chemical fertilizer for coffee production is almost non-existent which makes many farmers organic by default (Wolde et al., 2017; Suedwind Institute, 2020).
Prevailing expert opinion	Medium-high risk: Expert estimates on the percentage of farmers in the coffee-producing regions using Good Agricultural Practices vary between <25 and >75%. However, most experts indicate that it is less than 25%. "The Coffee and Tea Authority has taken initiation and responsibility to teach the coffee farmers about GAPs" (Expert survey, 2021).

HARVEST AND POST-HARVEST PRACTICES	JDE Sourcing principle 8.2
Score	3.9
Law	The Ethiopian Coffee and Tea Development and Marketing Authority is responsible for reinforcing modern extension services for providing support to coffee processing facilities (Duguma, 2017). The government has also been supporting coffee washing stations and has helped with providing hand pulpers (Suedwind Institute, 2020; Musebe et al., 2007). However, poor post-harvest practices remain responsible for quality deterioration (Duguma, 2017).
Evidence	An increase in the number of washing stations in Ethiopia has been associated with major improvements in the quality of coffee produced (ICO, 2020). Minten et al. (2019) observe the increasing adoption of improved production, harvest, and post-harvest practices in the country's coffee sector. This is demonstrated by the lower share of green cherries in the coffee harvest and the increase of farmers utilizing traditional beds rather than drying the cherries on the bare ground. Despite this progress, there is a lack of resources to make significant investments in coffee processing (Davis et al., 2019). Many of the washing and hulling stations are not well-managed and do not have access to good equipment (Suedwind Institute, 2020). Furthermore, premature harvesting of coffee to ensure cash sources for their families remains an issue (Teshome et al., 2019). While wet mills have become more widespread over time and have helped in improving coffee quality, only a minor share of Ethiopia's coffee is exported as washed because 70-80% of coffee beans are processed via dry processing methods (Tamru & Minten, 2018; Tolessa et al., 2018). Non-conformities regarding harvest and post-harvest practices were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	High risk: Expert estimates on the percentage of farmers in the coffee-producing regions implementing good harvest and post-harvest practices vary between <25 and 75%. However, most experts indicate that it is less than 25%. "Harvest and post-harvest losses constitute the major challenges constraining quality and sustainable coffee production among smallholder farmers in Ethiopia" (Expert survey, 2021).

INTEGRATED PEST MANAGEMENT	JDE Sourcing principle 8.3
Score	3.2
Law	The Pest Management Support Services Strategy for Ethiopia is a national policy that encourages Integrated Pest Management (FAOLEX, 2016). The low use of modern inputs might have been driven in part by a deliberate government policy that discourages chemicals in the coffee sector, especially by smallholders (Minten et al., 2015). The government has taken initiative to promote a balanced and integrated use of fertilizers (Tamene et al., 2017).
Evidence	In Ethiopia, coffee farms are mostly managed with hardly any use of external inputs that could cause contamination, regardless of the certification status (Winter et al., 2020). As a result, around 95% of smallholder coffee farms are organically managed. According to Teshome et al. (2019), cultural disease control mechanisms are frequently used. This study also highlights that farmers from the Gedeo zone (southern Ethiopia) are not using any type of chemical as control mechanism. On well-managed plantations, integrated weed and pest management systems are in place (Davis et al., 2019). However, an assessment carried out in eastern Ethiopia indicates that diseases and insect pests are causing considerable crop losses (Tadesse et al., 2020). Non-conformities regarding Integrated Pest Management were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-high risk: Expert estimates of the percentage of farmers in the coffee-producing regions applying Integrated Pest Management vary between <25 and >75%. However, most experts indicate that it is less than 25%. "Ethiopia's coffee is mostly produced without any application of agrochemicals and farmers use traditional and biological methods of pest control. In addition, commercial agrochemicals are too costly, and farmers cannot afford their use" (Expert survey, 2021).

BANNED PESTICIDES	JDE Sourcing principle 8.4
Score	**2.6**
Law	In 2003, Ethiopia ratified the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (UN Treaty Collection). Ethiopian law demands that no pesticide should be registered unless the efficacy, safety, and quality are tested under field or laboratory conditions and approved by the Ministry (Rep. of Ethiopia, 2010). Ethiopia has also issued a Special Decree on pesticide registration and control (Ministry of Agriculture, 2014). However, research finds that the existing law does not function in an adequate way due to inefficient implementation and missing legal instruments (Mengistie, 2017).
Evidence	Ethiopia's agricultural systems lacks training and knowledge regarding the safe use of chemical pesticides in all farming systems (Negatu et al., 2016). However, the application of chemical fertilizer and pesticides for coffee production is almost non-existent (Wolde et al., 2017; Mitiku et al., 2018; Minten et al., 2019). 95% of coffee farms are organic as they are largely restricted to the use of composted animal waste products and composted farm and household waste (Davis et al., 2019). Nevertheless, the IFC Global Map of Environmental and Social Risk in Agro-Commodity Production (2017) highlights that some toxic ingredients may at times be used in coffee production (e.g., Endosulfan is used to control the coffee berry borer). Non-conformities regarding banned pesticides were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Low risk: When looking at the country's coffee-producing regions, it is very unlikely that banned pesticides are used. "The farmers do not use pesticides. It is strictly forbidden to use banned pesticides" (Expert survey, 2021).

INCOME DIVERSIFICATION	JDE Sourcing principle 9.1
Score	**3.3**
Law	Ethiopia's rural development strategy has mainly focused on the intensification of agricultural production; however, this strategy has been broadened beyond its initial focus recognizing the need to encourage nonfarm growth (World Bank, 2009). The Government of Ethiopia implemented a Productive Safety Net Program (PSNP) aiming to enhance household incomes by helping families learn new skills to diversify their income sources and to become self-sufficient (USAID, 2021). Despite these efforts, poor outcomes in Ethiopia's rural development policy are observed due to inappropriate agrarian policy (Welteij, 2018).
Evidence	Garden coffee is produced by Ethiopian farmers in the vicinity of their homes and in small quantities alongside other crops and shade-providing trees (NABU, 2021). Alternative sources of income have emerged from a range of products such as wild honey, Ethiopian cardamom, and a spice known as long pepper (Media, 2020). The Suedwind Institute (2020) examines that the percentage of coffee income measured against total income of the household ranges from 30% (Harar) to 50% (Sidama), but most regions are near to a level of 40%. On the contrary, evidence also finds that coffee is often the only source of income (Winter et al., 2020). Research by Tadesse et al. (2020) on major coffee growing districts in southern Ethiopia identifies coffee as the primary source of cash in all assessed areas, except Gamo Goffa where banana ranked first among cash crops. The study also shows that several annual and perennial crops are produced alongside coffee for cash and family consumption in the assessed areas (e.g., avocado, banana, cabbage, carrot, etc.). Many farmers have been switching from coffee to growing khat, a plant with stimulating properties, for economic reasons (USDA, 2021). Non-conformities regarding income diversification were found in UTZ audits between 2016-2020 (RA, 2020).
Prevailing expert opinion	Medium-high risk: Expert estimates on the average percentage of farmer's net income generated from coffee production vary between 35 - 90%. "Coffee is the major source of income among the main coffee producing regions. The coffee farmers are too old to shift to other business ventures than coffee as this is something they have been doing for their entire life" (Expert survey, 2021).