

Annex I – Methodology

This research used mixed methods. First, the team conducted qualitative fieldwork in the western and eastern Black Sea regions in three provinces—Düzce, Sakarya and Ordu—in August and September 2017. Then, the team conducted quantitative analysis using TURKSTAT and International Trade Center (ITC) data to calculate the share of harvest workers' wages in two generic confectionery products that contain hazelnuts. The researchers calculated a living wage for harvest workers, using fieldwork findings of the research team and TURKSTAT household budget survey.

Qualitative Research: As shown in Table 1 below, the team conducted two rounds of fieldwork in six field trips to the Black Sea region. The team also carried out face-to-face and Skype interviews with various company representatives in Istanbul in October 2017.

TABLE 1: BREAKDOWN OF INTERVIEWS

Düzce	Sakarya	Ordu
Akçakoca District	Karasu district ¹	Ünye district Fatsa district İkizce district Provincial center
Total interviews		
Workers: 53	Manavs: 13	Labor contractors: 6
Farmers: 23	Crackers: Representatives of several cracking facilities during and after the harvest	CSOs: 9 Union of Turkish Agricultural Chambers (TZOB) Fiskobirlik (Union of Hazelnut Producers Cooperatives) Support to Life Association (Hayata Destek Derneği) Young Live Foundation (Genç Hayat Vakfı)
2 interviews with supplier firm A	One interview with supplier firm B	2 interviews with representatives of an international food & beverage firm (Skype with international

¹ This part of the field study was not as productive as in Akçakoca and Ordu due to problems of access to the farms. Lack of cooperation of local actors was a particular problem in Karasu.

	headquarters and face-to-face in the Turkish office)
Public Agencies: 12 interviews with representatives of the Office of Soil Products (TMO), district directorates of the Ministry of Food, Agriculture and Livestock (MoFAL), district directorates of the Ministry of National Education (MoNE), district directorates of the Employment Agency (İŞKUR), Social Security Institution (SGK), district governors	

The majority of farmers interviewed were men. Despite all efforts, the research team was unable to interview female heads of farmer households. Interviews with seasonal migrant workers involved both men and women. All of them were Turkish citizens—although Syrian refugee families and seasonal migrants from Georgia also work in the hazelnut harvest—and the interviews were conducted either in Turkish or Kurdish. For interviews with farmers and workers, the research team used the household income strategies approach, which involves questions about incomes from wages, transfers, rents, profits, subsistence activities, and indebtedness.² Farmers responded to detailed questions about production and harvest costs, household expenditures, and seasonal migrant workers. Finally, the research team asked questions about their perceptions of problems in hazelnut production and seasonal work.

Limitations of the Qualitative Analysis: The qualitative research yielded rich information and helped the research team to understand the web of relations between different groups of actors, and various segments of the supply chain. However, not all interviews were of similar quality. Representatives of the public agencies were wary of providing any information that might jeopardize their position and hence information from them was of limited use. Face-to-face and Skype interviews with suppliers and international food firms were conducted under Chatham House rule³, and did not yield any quantifiable information on their companies' position in the hazelnut value chain including profit margins, costs and market share. Similarly, interviews with some of the farmers did not yield accurate data on income, as they were reluctant to share this information. The information on costs of production provided by farmers was also of differing quality, which can perhaps be attributed to their low level of financial literacy.

Quantitative Research: For the quantitative part of the research, TURKSTAT, Türk-İş and ITC data were used in conjunction with the fieldwork findings to calculate the cost of production, the profitability and productivity of farms, seasonal migrant workers' incomes and expenditures, and a living wage for seasonal migrant workers. Using this information, a wage ladder comparing the existing average income of harvest workers with estimates of a living income as well as with the legal monthly minimum wage was calculated. The team then deconstructed the value of two generic confectionery products (chocolate bars with hazelnuts and chocolate hazelnut spread), calculating value at different segments of the chain, and eventually, the share of harvest workers' wages in these products.

² Smith and Wallerstein, 1984; Eroğlu, 2011; Sert, Yüksek and Alniaçık, 2015.

³ The Chatham House Rule aims to provide anonymity to speakers and to encourage openness and the sharing of information. It is used in the world as an aid to free discussion.

For the living wage, the research team used the monthly survey conducted by Türk-İş (Confederation of Turkish Trade Unions)⁴ for determining the hunger line (food poverty) and poverty line for a family of four and based on this, calculated the living wage for a family of eight.⁵

It should be noted here that the team's calculations are based on person-days, not on the age of family members (child versus adult). The calculation of a living wage is informed by the Anker methodology,⁶ although the team did not wholly rely on the Anker methodology, as we explain here. The Türk-İş figures are based on expenses for food based on calorie needs for working adults, adolescent children and young children calculated by Hacettepe University's (Ankara) Department of Nutrition and Dietetics.⁷ According to the Anker methodology, the cost of other expenditures, including housing, schooling, transportation, health, etc. should be added to the cost of food. To account for these expenditures, the research team supplemented Türk-İş figures with TURKSTAT micro data. This data—the Survey of Income and Living Conditions (SILC) and Household Budget Surveys (HBS)—has been collected on a yearly basis since 2002, in accordance with EUROSTAT standards and using protocols pertinent for EU member countries. HBS contains data collected from around 12,000 households that includes detailed expenditures and the different goods that each household consumes. Despite the availability of such elaborate dataset, calculating each non-nutrient goods/items/services group separately would create important statistical inference problems. Therefore, the research team opted for the method most frequently used in the literature, which involves determining the cost of non-nutrient goods/items/services from the total expenditure structure.

Limitations of the Quantitative Analysis: The unavailability of financial data on suppliers' and international confectionery producers' costs and revenues necessitated making assumptions about the markups as the team calculated value in each successive segment of the value chain. Given that the data gathered on farmer and worker expenditures and incomes were of a qualitative nature, the research team had to make some assumptions as they

⁴ For the past 30 years, Türk-İş has been calculating poverty levels in collaboration with the Hacettepe University's Department of Nutrition and Dietetics (formerly the Hacettepe School of Food Technologies) in Ankara.

⁵ The research team's own field research and a previous research conducted by FLA on the demographic profile of hazelnut workers in Turkey reveal that the average household size of hazelnut workers in Turkey is around eight. Hence, this study calculates a living wage for a household of eight. For more information on the demographic characteristics of hazelnut workers in Turkey, see <http://www.fairlabor.org/report/hazelnut-workers-turkey-demographic-profiling-duzce-ordu-and-sakarya-2016>.

⁶ Anker methodology calculates living wages and the basic costs of a decent life style for workers and their families in a particular place. This method also determines if the calculated living wage is being paid to workers. For more information on Anker methodology, see Anker and Anker, 2017.

⁷ Türk-İş collects data on food on a monthly basis and publishes a comparison between its food price index and the food component of TURKSTAT's price index, which indicates that these two indices are compatible. For an explanation of these calculations, see <http://www.turkis.org.tr/SUBAT-2018-ACLIK-ve-YOKSULLUK-SINIRI-d14721>.

calculated the cost of hazelnut production, the share of wages in this, and farmers' revenues from hazelnut sales for a representative farmer.

One final note about the overall limitations of the methodology used: as explained above, the fieldwork was based on interviews with a non-representative and small sample of farmers and workers. It is therefore impossible to generalize about farmers' incomes from hazelnut cultivation as well as their incomes from other gainful activities. Also, their labor costs can only be estimated. For this reason, it should be emphasized at the outset that the analyses of farmers' costs, revenues and incomes are not statistically representative for all hazelnut farmers.

The calculation of a living wage for seasonal migrant workers also has some methodological limitations. The migrant workers harvest different crops, derive their income from different sources, and often work only part of the year. Furthermore, in some cases the whole family travels together to work in farms whereas in other instances, teenagers and young adults travel without their parents. Therefore, many assumptions had to be made about a seasonal migrant worker household before calculating a living wage.

It is hoped that future research on the hazelnut value chain can overcome these limitations by means of methodologies designed to collect statistically representative data on costs, expenditures, incomes and wages of both farmers and workers. However, the construction of more robust methodologies also depends on the government, by means of improving land and farmer registration and the registration of seasonal workers.