



Food and Agriculture
Organization of the
United Nations

RURAL WOMEN

IN EASTERN EUROPE AND CENTRAL ASIA



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Rural Women in Eastern Europe and Central Asia

Prepared by

Valeria Rocca - REU Gender Specialist
Zsófia Bossányi - REU Gender Specialist
and
Stefania Di Giuseppe - External Gender Consultant

under the supervision of

Salar Tayyib, Regional Statistician

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Abbreviations

CIS	Commonwealth of Independent States
EAP	East Asia and Pacific
EECA	Eastern Europe and Central Asia
EU	European Union
FHH	Female Headed Household /Female Household Head
GDP	Gross Domestic Product
HH	Household
ICTs	Information and Communication Technologies
IDPs	Internally Displaced Persons
ILO	International Labor Organization
LAC	Latin America and the Caribbean
MHH	Male Headed Household/ Male Household Head
NBS	National Bureau of Statistics
REU	Regional Office for Europe and Central Asia
RIGA	Rural Income Generating Activities
SOFA	The State of Food and Agriculture
TLU	Tropical Livestock Unit
UNESCO	The United Nations Educational, Scientific and Cultural Organization
WLD	World

Introduction



The present work takes guidance from the FAO flagship publication, “The State of Food and Agriculture (SOFA) 2010-2011: Women in agriculture – Closing the gender gap for development” (FAO, 2011a). The SOFA report argues that, “despite the diversity in the roles and status of women in agriculture, the evidence and analysis...confirm that women face a surprisingly consistent gender gap in access to productive assets, inputs and services” and that closing this gender gap could result in significant gains “in terms of agricultural yields, agricultural production, food security and broader aspects of economic and social welfare” (FAO, 2011a: 4). The report presents empirical evidence from many countries to support these two arguments, while noting that the potential gains that should occur by closing the gender gap on input use “would vary by region depending on how many women are currently engaged in agriculture, how much production or land they control, and how wide a gender gap they face” (ibid: 5).

With the exception of a few references to Tajikistan, no other countries from Central Asia, and none from Eastern Europe, were included in the SOFA report. The present document attempts to look at the general issues raised in the SOFA report regarding women in agriculture from the perspective of a number of countries in Eastern Europe and Central Asia (EECA). The central point of this work is to assess whether or not the gender gap in the agricultural sector is applicable to the countries covered by the FAO Regional Office for Europe and Central Asia (REU), by making reference to the same or similar kinds of data to those presented in the SOFA report for the other regions. These data focus on rural populations and households, education, agricultural labour force, fisheries and aquaculture, livestock, and access to productive resources (e.g. land, fertilizers, machinery and credit). The data are primarily presented on women’s lives, yet always relative to men.

This publication acknowledges the constraints to providing a comprehensive analysis due to the general lack of sex-disaggregated data in the agricultural sector across the region.

Chapter 1 sets the foundation for the importance of agriculture in Eastern Europe and Central Asia¹ and provides an overview of women’s roles in agriculture as well as of demographic and socio-economic dimensions of rural women’s livelihoods in the region. Chapter 2 focuses on five selected countries – Albania, Bulgaria, Georgia, Kazakhstan, Moldova and Tajikistan.² It documents the differences between women and men in accessing a range of agricultural assets and inputs including land, livestock, agricultural labour, education, agricultural technology, credit, and information and communication technologies (ICTs). The chapters are based on the most up-to-date information from statistical databases and literature. Data gaps are highlighted and addressed. Key messages are included at the end of each chapter to inform current policy debates.

1 Countries included in this chapter are: Albania*, Armenia*, Azerbaijan, Belarus*, Bosnia and Herzegovina*, Bulgaria, Georgia*, Kazakhstan, Kyrgyzstan*, Macedonia*, Montenegro*, Moldova*, Russian Federation, Serbia, Tajikistan*, Turkey, Turkmenistan, Ukraine, Uzbekistan*. Countries marked with an asterisk (*) are focus countries for the FAO Regional Office for Europe and Central Asia (REU). Broader country groups within the region are used when deemed useful.

2 This country selection is not meant to be representative of the region as a whole. However, the geographical distribution should give an adequate picture of the socio-economic status of women in relation to men in different contexts of the region. The countries were chosen according to data availability and geographical distribution.

Rural Women in Eastern Europe and Central Asia

Demographic and socio-economic dimensions of rural women's lives in Eastern Europe and Central Asia

- a focus on agriculture



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2.1 The agriculture sector

Agriculture and the rural sector in general play an important role in the economy of the Eastern European and Central Asian (EECA) region for sustainable poverty reduction, food and nutrition security, and national economic growth.

The share of agriculture in employment and national income in the EECA countries is far greater than its share on average in Western European countries. As shown in Figure 1, the agricultural sector contributed about 14 percent of Gross Domestic Product (GDP) for the region as a whole in 2009. This is a rather high rate, considering that the contribution of agriculture to the global GDP stands at 3 percent, while in least developed countries, agriculture contributes more than 25 percent of the GDP (FAO, 2012a). However, there are considerable variations among the EECA countries. In Central Asia, Uzbekistan and Kyrgyzstan have by far the highest share of agricultural GDP (around 28 percent and 27 percent respectively). Armenia and Moldova have the highest share in the Eastern European sub-region (around 18 percent and 16 percent respectively), while Bulgarian and Russian agriculture are at the bottom of the list (around 6 percent and 5 percent respectively) (Figure 1).

Figure 1: Percentage of agriculture in Gross Domestic Product in 2009



Source: FAO Statistical Yearbook 2010. Data for Albania and Serbia are not available.

Regardless of its relative size in the overall economy, agriculture is still a highly visible activity in all the EECA countries, given its importance in meeting basic needs. The Eastern European region appears to be relatively significant in the world's share of agricultural resources, considering it has 14 percent of the total arable land. Despite its large land surface, the share of Central Asia is only 2 percent of the world's arable land (Table 1) and 13 percent of all arable land of the countries under discussion in the present chapter (FAO, 2013a: FAOSTAT 2012).

Table 1: Share of arable land in 2009³

	<i>World Arable Land (%)</i>
EECA	16
Eastern Europe	14
Central Asia	2

Source: FAO, 2013a: FAOSTAT 2012

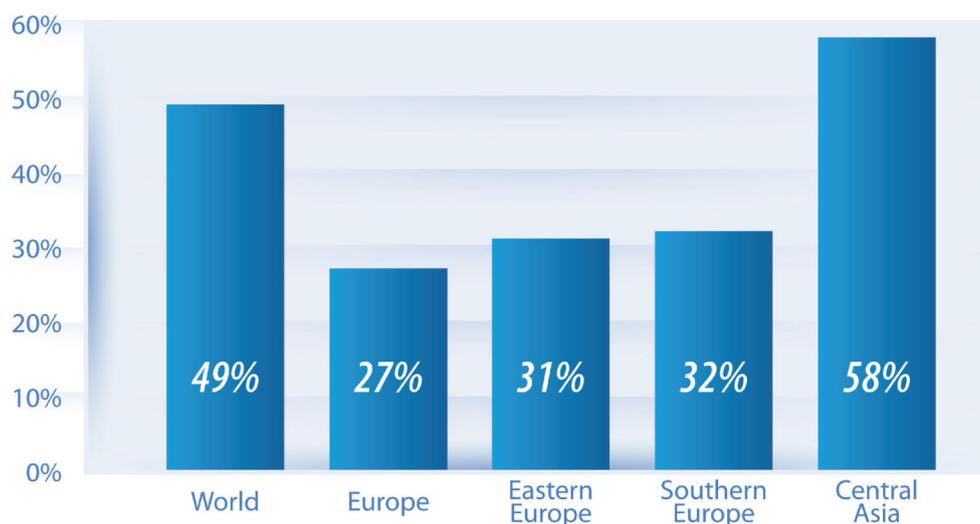
The EECA region makes a substantial contribution to the global agricultural output, practically with all main agricultural products. This contribution is on average quantifiable over 10 percent, with close to 20 percent of the global production of wheat, meat and milk (Csaki, 2008). In terms of crop production, wheat covers the largest harvested area in the region, followed by barley and sunflower seeds. Sugar beet and potatoes enjoy the highest production in terms of quantity produced (FAO, 2013a).

The assessment of the agricultural sector in the EECA Region cannot overlook the legacy of the socialist period, when food production was determined by government planning, a few state-owned firms had the monopoly of input provision, and large-scale cooperatives dominated the sector. After the collapse of the Soviet Union, in the so-called "transition period", the agricultural sector underwent a deep economic and political transformation from a centrally-planned economic system to a competitive market and private ownership-based agricultural system. This resulted in a substantial drop in agricultural output, mainly due to the slow pace of legal, institutional and economic reforms of the agricultural sector. This situation began to improve from mid-1990 with a progressive increase in agricultural output, particularly in Central and Eastern Europe, due to the required economic conditions for EU accession as well as improved access to capital and technology. Politicians and policy-makers have made agriculture a central area of attention, and it remains an important sector, particularly for rural populations (Csaki, 2008; FAO, 2005).

2.2 Demographic profile

A large portion of the population in the region live in urban areas as a result of intense urbanization, yet the rural population continues to be significant. Compared to the world share of the rural population at 49 %, Central Asia has a greater proportion at 58 % (See Figure 2). This is mainly due to the prominence of the agricultural sector as a major source of employment and lower rural-urban migration – even though there are prominent migration flows to Russia and Western Europe. As a consequence of high levels of urbanization, Europe's rural population is below the world average (FAO, 2013a). However, there are considerable variations among the countries (Table 2).

³ Refer to footnote 1 for the list of countries.

Figure 2: Rural population as percentage of total population⁴

Source: FAO, 2013a: FAOSTAT 2012

Table 2: Total population (thousands) and rural share of population (percentage) in 1980, 1995 and 2010

	Population					
	Total (000)			Rural share (%)		
	1980	1995	2010	1980	1995	2010
Albania	2,671	3,134	3,169	66.2	61.1	52.0
Armenia		3,223	3,090		33.7	36.3
Azerbaijan		7,784	8,934		47.8	47.8
Belarus		10,270	9,588		32.1	25.7
Bosnia and Herzegovina		3,332	3,760		58.9	51.4
Bulgaria	8,862	8,357	7,497	37.9	32.2	28.3
Georgia		5,069	4,219		46.1	47.0
Kazakhstan		15,926	15,753		44.1	41.5
Kyrgyzstan		4,592	5,550		63.7	63.4
Montenegro			626			40.4
Republic of Moldova		4,339	3,576		53.7	58.8
Russian Federation		148,497	140,367		26.6	27.2
Serbia			9,856			47.6
Tajikistan		5,775	7,075		71.1	73.5
Turkey	46,161	61,206	75,705	56.2	37.9	30.4
Turkmenistan		4,187	5,177		54.7	50.5
Ukraine		51,063	45,433		33.0	31.9
Uzbekistan		22,919	27,794		61.6	63.1

Source: FAO, 2011a

⁴ For the country groupings refer to Annex 1.

In 2010, of the total 374 million citizens in the countries under discussion, on average 45 percent were classified as living in rural areas (Table 2). Four countries have particularly large rural populations, accounting for slightly less than two-thirds of the total rural population within the EECA. These are the Russian Federation (the largest contributor at 22 percent), Turkey (13 percent), Uzbekistan (10 percent) and Ukraine (8 percent)⁵. In several countries, particularly in the least developed countries of Central Asia, but also in Albania, Bosnia and Herzegovina, and Moldova, the majority of the population live in rural areas, reaching as high as 73.5 percent of the population in Tajikistan.

Policy-makers and other key stakeholders have made the collection and analysis of sex-disaggregated data of rural populations a priority in recent years. In particular, they have focused on assessing differences in ageing between women and men, the gendered causes and impacts of rural-urban migration, and the structure of the agriculture labour force.

In Europe and Central Asia, both urban and rural women outnumber men with a sex ratio (in this report number of women for every 100 men) of 107.5 and 104.5 respectively. However, in the 15 to 49 years age cohort, the female to male ratio in rural areas is 95.6. This suggests that in this region, the overall high female to male ratios (Table 3) are determined by the high number of women in the older population cohorts. On average, in all developing and developed regions, the proportion of older people is higher for rural populations (Anriquez and Stloukal, 2008). Overall, in Latin America, Europe & Central Asia and the developed world, urban female to male ratios are higher, while in Africa, the Middle East and South Asia, rural female to male ratios are higher. Only in Sub-Saharan Africa and Europe & Central Asia do women outnumber men in rural areas, as a result of a generally higher male mortality throughout the lifespan together with a higher female longevity (Table 3).

Table 3: Rural and urban female to male ratios (cross-country averages)

	Female to Male ratios (Population)			Female to Male ratios (Age 15-49)		
	National	Urban	Rural	National	Urban	Rural
East Asia & Pacific	99.2	99	99	100.9	99.9	100.7
Europe & Central Asia	106.2	107.5	104.5	100.3	103.2	95.6
Latin America & Caribbean	102.3	107.2	92.6	103.6	109.2	91.4
Middle East & North Africa	95.7	94.7	96.4	96.4	93.4	99.3
South Asia	94.8	87.6	96.8	97.8	84.3	103.3
Sub-Saharan Africa	104.2	99.4	106	110.3	98.1	116.3
High income: non OECD	99.1	100.8	95	97.8	100.1	92
High income: OECD	103.1	105.6	97.3	98.2	100.7	92.2
Total	101.8	101.9	99	101.9	100.4	99.2

Source: Anriquez (2007), using data from the most recent demographic censuses.

Table 4 demonstrates the high fertility rates of rural areas. The dependency ratio and the proportion of the population under 15 are on average higher in the rural areas of every developing and developed (i.e. high income) region. Several causal factors explain these differences including, in part, early marriages in rural areas, less accessible rural health services (including reproductive health services), and

⁵ Author's calculation

lower levels of education in rural areas, which have been found to correlate negatively with fertility rates. Women tend to live longer than men - more so in developed than in developing countries. In developed regions, female life expectancy at birth exceeds that of males by five to eight years. In most developing regions the differences are smaller.

Table 4: Composition of rural and urban populations

	Dependency ratio ⁶		Share of Population (%) under 15		Share of Population (%) over 60	
	Rural	Urban	Rural	Urban	Rural	Urban
East Asia & Pacific	0.75	0.57	38	32.5	6.8	5.6
Europe & Central Asia	0.66	0.51	29.2	25.8	15.1	12.2
Latin America & Caribbean	0.84	0.64	39.2	33.3	8.6	8.3
Middle East & North Africa	0.99	0.77	45.2	39.7	6.4	5.7
South Asia	0.91	0.67	43.4	36.8	6.3	5.2
Sub-Saharan Africa	1.02	0.76	45.7	39.8	6.6	4.1
High income: non OECD	0.65	0.56	31.9	28.9	10.3	9.8
High income: OECD	0.57	0.49	23.5	21.5	17.6	15.7

Source: Anriquez and Stloukal (2008): author's calculations using 217 national demographic censuses from 1980 onwards.

The percentage of rural female populations in EECA countries is higher than that of males, with the exception of a few countries, such as Albania, Armenia, Kazakhstan and Serbia, where the percentage is either lower or equal (Table 5).

Table 5: Share of rural male and female populations in EECA regions

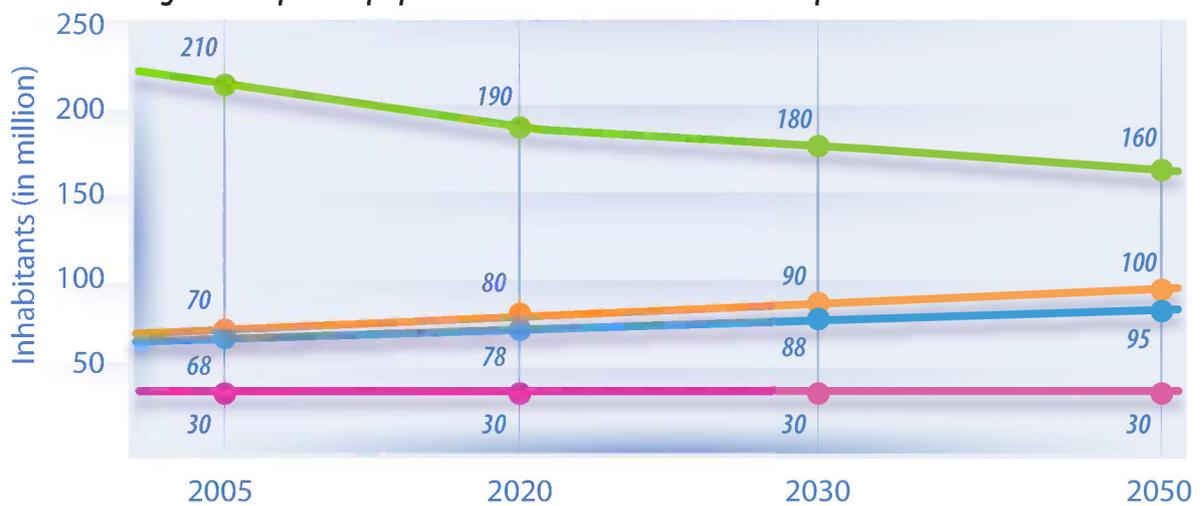
	Total	Rural Male (%)	Rural Female (%)
Albania (2009)	1,620,986	53.0	47.0
Armenia (2010)	1,168,500	50.0	50.0
Azerbaijan	4,252,100	49.9	50.1
Belarus	2,390,436	47.2	52.8
Bosnia and Herzegovina	-	-	-
Bulgaria	2,146,147	49.2	50.8
Georgia	2,091,900	-	-
Kazakhstan (2010)	7,428,600	50.0	50.0
Kyrgyzstan	3,363,851	49.8	50.2
Montenegro	-	-	-
Moldova	2,082,849	48.8	51.2
Russian Federation	37,587,173	47.8	52.2
Serbia	3,007,451	50.0	50.0
Macedonia	-	-	-
Turkey (2005)	3,427,163	48.8	51.2
Ukraine	14,438,152	46.8	53.2

Sources: UN Statistics Division of the DESA, 2013: UN Data 2011, with the exception of Albania, Albanian Institute of Statistics, 2013: 2009 data; Armenia, National Statistical Service of the Republic of Armenia, 2011; Kazakhstan, Agency of the Republic of Kazakhstan on Statistics, 2011; Turkey, Turkish Statistical Institute, 2005

⁶ The dependency ratio measures the number of dependent individuals (i.e. younger than 15 and older than 64) for every working age adult. It is a demographic indicator of great economic significance.

Population ageing is pervasive, affecting all societies worldwide. However, several countries of Eastern Europe and Central Asia are experiencing exceptional population trends. Extremely low birth rates, migration losses, and moderate mortality are leading to a combination of rapid population ageing and population decline in many countries across the region, resulting in stagnation or even a decline in the working-age population. Among the European Commonwealth of Independent States (CIS) countries, by 2025 the largest population decline is occurring in Ukraine (-24 percent), Georgia (-17 percent), Belarus (-14 percent), and the Russian Federation (-12 percent) (European Commission, 2008). This is seemingly due to low fertility and increasing longevity (World Bank, 2012a). In contrast, other Caspian and Central Asian CIS countries are experiencing steady population growth, due to their fertility levels which are above natural replacement. According to the United Nations World Population Prospects (2007), the magnitude of population growth by 2025 will range from 18 percent in Azerbaijan to 38 percent in Uzbekistan and 42 percent in Tajikistan. Population growth in Turkey is projected to reach 23 percent by 2025 due to its young age structure and high fertility (European Commission, 2008) (Figure 3).

Figure 3: Expected population evolution in Eastern Europe and Central Asia



Source: UN, 2007

Rural and urban populations do not follow the same dynamics, as the underlying demographic determinants are different in these groups. The main difference lies in the fertility and birth rates,⁷ which tend to be considerably higher in rural areas. Due to historical and socio-economic differences, the gap between the ageing of rural and urban populations is often significant. Mortality and fertility rates are both lower in urban areas. Therefore, ageing is generally more advanced in urban areas.

2.3 Female-headed households, holdings and poverty

During the last two decades, there has been an increased focus by the development sector and researchers on female household headship and its importance for development planning. The particular interest in female-headed households is due to its link to rural poverty and labor migration and to the resulting “feminization of poverty”, a term which suggests that women are disproportionately represented among the poor compared to men.

⁷ The fertility rate is the average number of children that would be born to a woman over her lifetime. The birth rate is the number of births in a population over time.

Buvinic (1998) suggests that there are three factors that are likely to determine the prevalence of poverty among female-headed households (FHHs). First, female-headed households are poorer because they support more dependents. In other words, they have higher ratios of non-workers to workers compared to other types of households. This is even more relevant in rural areas, where dependency ratios tend to be higher than in urban areas. Second, female heads of households have lower wages, fewer assets, and less access to remunerative jobs and productive resources than male heads of households. Finally, female-headed households face great time and mobility constraints.

Structural adjustments and market reforms in former socialist countries are considered responsible for a “feminization of poverty” – a situation where women bear a greater proportion of transition costs than men (Moghadam, 2005; Schnepf, 2004). In fact, this transition in EECA countries brought a number of changes that negatively affected the welfare of households. In addition to job losses, a decline in public sector employment, the growth of a largely unregulated private labour market, and a rise in prices, individuals were deprived of a number of subsidies, family benefits, social protection and the centralized system of wage setting provided by the socialist system (Paci, 2002).

Table 6 shows the prevalence of female-headed households in various regions, which tends to be globally higher in urban areas than in rural areas. The number of female-headed households is higher in Latin America & the Caribbean (28.8 percent), Sub Saharan Africa (27 percent), and Europe & Central Asia (26.3 percent). Anriquez (2010) stresses that there are other factors, beyond economic determinants that heavily influence the prevalence of female-headed households. For example, out-migration of males for work is a clear cause of *de facto* female-headed households. *De jure* female household headship is positively correlated with the prevalence of women in the older age cohort as widows. It is essential to make a distinction between *de facto* households headed by females because the male figure is absent (e.g. wives of male migrants) and *de jure* households - headed by single, widowed, divorced, or separated women.

Table 6 : Prevalence of female-headed households by developing regions (percentage)

<i>Region</i>	<i>National</i>	<i>Urban</i>	<i>Rural</i>
East Asia & Pacific	19.7	25.8	17.5
Europe & Central Asia	26.3	31.5	21.7
Latin America & Caribbean	28.8	32.7	22.4
Middle East & North Africa	12.3	13.4	10.8
South Asia	15.3	13.5	15.8
Sub-Saharan Africa	27.0	27.8	26.8

Source: Anriquez, 2010:25 based on Rural Income Generating Activities (RIGA) database (FAO, 2013b)

Table 7 shows the distribution of female-headed households among four EECA countries - at national, urban and rural levels. At the national level, self-reported female-headed households represent a quarter of all households included in the survey in Bosnia-Herzegovina and Bulgaria. Tajikistan has a share of 19 percent of female-headed households, while the lowest share is in Albania, at just less than 10 percent. In Bulgaria, nearly 22 percent of households in rural areas are headed by women, followed

by Bosnia-Herzegovina (21.4 percent), Tajikistan (15 percent) and Albania (7.4 percent). In line with the aggregate data presented in Table 6, the share of female-headed households in urban areas is higher than the share in rural areas for all four countries, with differences ranging from 12.3 percentage points in Tajikistan to 3.8 percentage points in Bulgaria. Table 7 also reports on the share of households with widowed female heads, which are *de jure* female-headed households. These make up the largest category in Albania and Bulgaria, accounting for more than 70 percent and almost 60 percent respectively of female-headed households at the national level, with only 19 percent of the total share of female-headed households in Bosnia-Herzegovina and 5 percent in Tajikistan. In rural areas, these shares tend to be higher in Albania and Bulgaria, at 82 percent and 73 percent respectively.

The low percentage of *de jure* female-headed households in Bosnia-Herzegovina and Tajikistan suggests a prevalence of *de facto* female-headed households, due to high out-migration of male partners. A number of studies have recognized that understanding differences in household structure is important for comprehending the relation between household headship and poverty. The “feminization of poverty” can be better understood when examined through an analysis of *de jure* and *de facto* female-headed households. Studies show that the former tend to be more vulnerable and poor, while the latter are typically better off, mainly due to husbands’ remittances (Anriquez, 2010; Lampietti and Stalker, 2000).

Table 7: Female-headed household (FHH) distribution by national, urban and rural area (percentage)

	Albania		Bosnia & Herzegovina		Bulgaria		Tajikistan	
	Share of FHH	Widowed FHH	Share of FHH	Widowed FHH	Share of FHH	Widowed FHH	Share of FHH	Widowed FHH
National	9.82	74.05	24.90	19.33	24.35	58.69	19.12	5.37
Urban	12.45	68.99	26.79	19.93	25.64	52.46	27.47	9.02
Rural	7.41	81.83	21.44	18.16	21.78	73.30	15.15	2.22
Mixed	--	--	23.41	18.90	--	--	--	--

Source: RIGA database (FAO, 2013b). (For Albania Living Standards Measurement Survey 2005, for Bosnia & Herzegovina, Living Standards Measurement Survey 2001, for Bulgaria Integrated Household Survey 2001, for Tajikistan Living Standards Measurement Survey 2007 - World Bank, 2013; authors’ calculation.)

Regarding specifically agriculture, Table 8 presents the number and share of female and male individual holders⁸ of agricultural land in a more extended list of countries from Europe and Central Asia, also including a number of European Union (EU) countries. The average percentage of women holders of agricultural land is rather low, at 23 percent, and ranges from 5 percent in the Netherlands and 10 percent in Germany and Ireland to an average of 44 percent in the Baltic countries. In the countries under discussion for which there are available data the percentage of female holders of agricultural land ranges between 12 percent in Kyrgyzstan, 18 percent in Serbia, 20 percent in Bulgaria, and 30 percent in Georgia.

⁸ A *holder* is a civil or juridical person who makes major decisions regarding resource use and exercises management control over the agricultural operation. The holder has technical and economic responsibility for the holding and may undertake all responsibilities directly or delegate responsibilities related to day-to-day work management to a hired manager (FAO, 2013a: FAOSTAT Glossary 2012).

Table 8: Number and percentage of female and male individual holders of agricultural land

<i>Europe</i>	<i>Female</i>	<i>Female (%)</i>	<i>Male</i>	<i>Male (%)</i>	<i>Total</i>
Netherlands (2007)	3,930	5	68,830	95	72,760
Germany (2007)	35,120	10	330,210	90	365,330
Ireland (2007)	13,380	10	114,710	90	128,090
Finland (2007)	7,200	11	59,980	89	67,180
Malta (2007)	1,290	12	9,690	88	10,980
Denmark (2007)	5,150	12	38,520	88	43,670
Belgium (2007)	6,510	15	37,710	85	44,220
Sweden (2007)	10,230	15	57,690	85	67,920
Czech Republic (2007)	6,480	18	29,970	82	36,450
Serbia (2002 WCA)	141,182	18	637,709	82	778,891
Slovakia (2007)	12,480	19	54,470	81	66,950
United Kingdom (2007)	53,320	19	230,070	81	283,390
Bulgaria (2007)	97,370	20	392,410	80	489,780
Luxemburg (2007)	480	21	1,780	79	2,260
France (2007)	98,840	23	328,790	77	427,630
Hungary (2007)	144,380	23	474,280	77	618,660
Cyprus (2007)	10,110	25	29,550	75	39,660
Slovenia (2007)	19,760	26	55,450	74	75,210
Portugal (2007)	71,210	27	197,350	73	268,560
Spain (2007)	284,620	29	703,440	71	988,060
Romania (2007)	1,172,910	30	2,740,740	70	3,913,650
Greece (2007)	260,290	30	599,220	70	859,510
Georgia (2004 WCA)	211,800	30	517,150	70	728,950
Austria (2007)	51,830	32	109,450	68	161,280
Italy (2007)	535,620	32	1,127,890	68	1,663,510
Poland (2007)	786,710	33	1,600,530	67	2,387,240
Estonia (2007)	9,080	41	12,810	59	21,890
Lithuania (2007)	106,480	46	123,240	54	229,720
Latvia (2007)	50,600	47	57,050	53	107,650
Central Asia					
Kyrgyzstan (2002)	30,254	12	214,150	88	244,404

Sources: Eurostat provided directly to FAO; FAO, 2013c.

2.4 Education

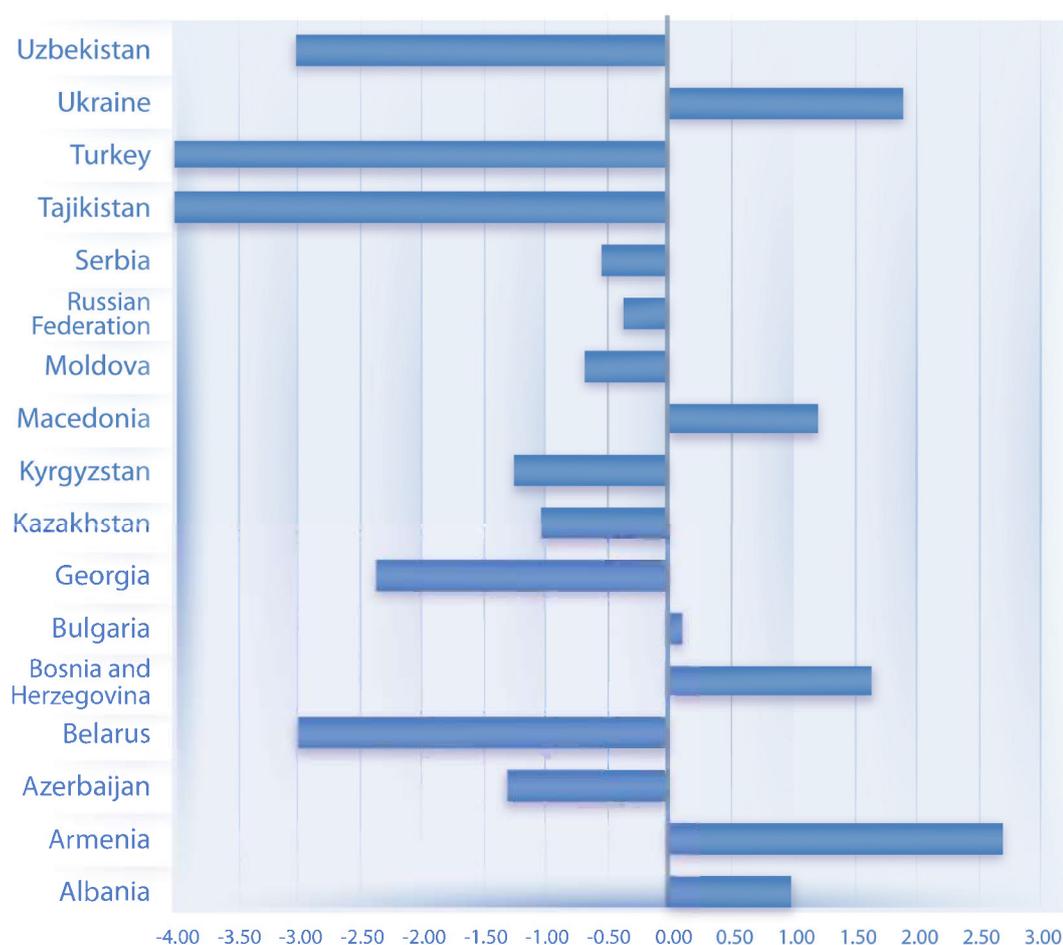
Knowledge is part of people's personal and social capital. The wealth of developed countries is based on a highly educated population. Education is an important tool of empowerment; a number of empirical studies have found that an increase in women's education increases their wages, and these returns to education for women are frequently greater than for men. Empirical evidence also shows that a mother's education has a positive impact on child survival, education and nutritional status (Becker, Hubbard and Murphy, 2009; Malhotra, Pande and Grown, 2003).

EECA countries used to have a tradition of strong investment in education at all levels of schooling for both boys and girls. Before the fall of the socialist regime, the level of enrolment in education placed these regions apart from the rest of the world because of the very small gender gaps in literacy rates. At the national level, this situation has not changed dramatically as there is no major gender gap in adult literacy rates or in primary and secondary school enrolment. For instance, the adult literacy rates for women and men in the countries under discussion are rather high, at 92 and 99 percent, compared to the corresponding world averages, which are 80 percent for women and 89 percent for men.⁹ However, overall, women make up the majority of the small share of adult illiterates in the countries discussed herein (UNESCO, 2012).

In the first part of this section, data refer to the educational sector as a whole, mainly to provide a general overview of education in the region, but also due to the limited availability of sex-disaggregated data on rural areas in the countries included in this chapter.

The average gender gap in primary completion rates is marginal and the variations from the average are minor (Figure 4). The countries with the largest gender gap in primary completion rates are Uzbekistan, Tajikistan and Belarus – with fewer girls completing primary education than boys, even if only with a few percentage points of difference (approximately 3 and 3.50). At the other extreme is Armenia, followed by Bosnia and Herzegovina, where the gender gap is around 2.50 and 1.50 percentage points respectively, due to a lower number of boys completing primary education. Overall, in the majority of countries under consideration, the gender gap is at the expense of girls (Figure 4).

Figure 4: Primary completion rate, percentage point difference between female and male rate

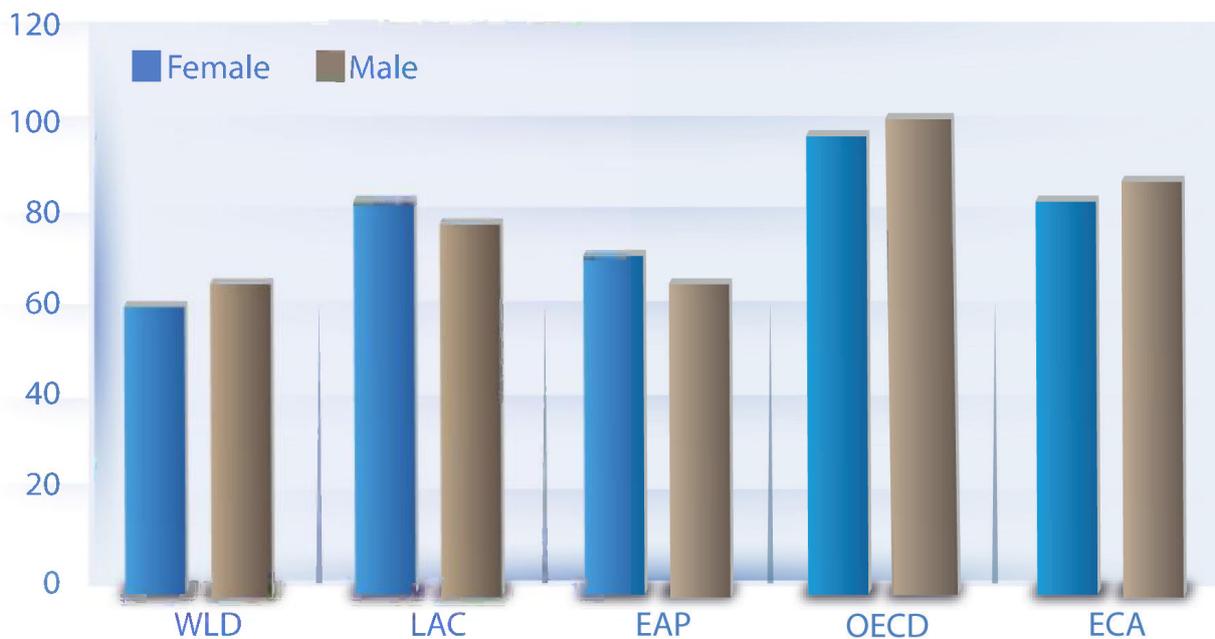


Source: World Bank, 2012a

⁹ Calculated by the authors.

The 1990s and 2000s saw an increase in secondary enrolment rates among girls in the EECA countries, though boys' enrolment also grew at the same time. The gender gap was relatively small as measured by the ratio between the respective female and male gross secondary enrolment,¹⁰ which was 0.96, indicating that for every 100 boys in school, there were also 96 girls. This is lower than in the high-income OECD countries, in which gross enrolment rates are 101 and 102 for girls and boys, respectively (Figure 5). There is increasing concern that school enrolments are not rising to meet the rates in the high-income OECD countries among either girls or boys. Nevertheless, the low-income countries in Central Asia show higher secondary enrolment rates among girls relative to other low-income countries.

Figure 5: Gross enrolment ratio, secondary school by gender (percentage) in 2009



Sources: World Bank, 2012a

Note: EAP = East Asia and the Pacific. ECA = Europe and Central Asia (not including EU). LAC = Latin America and the Caribbean. OECD = high-income OECD countries. WLD = World

According to The United Nations Educational, Scientific and Cultural Organization (UNESCO) (2011), gender, poverty and location strongly influence secondary school attendance and completion. For instance, in Ukraine, the urban poor are 1.7 times more likely to complete secondary school than the rural poor.

In almost all the countries in the region, there is a strong correlation between male and female secondary school enrolment rates, with the exception of Tajikistan and Turkey. The gender gap in these two countries is between 7 and 10 percentage points in favour of boys. In Tajikistan, the net secondary school enrolment rates among girls and boys are 77 and 88 percent respectively, while in Turkey the respective rates are 70 and 77 percent. In Tajikistan, the lower enrolment rates among girls may be caused by the lack of adult male presence (and consequently increased workload of other household members), large families, and above average adolescent fertility rates. However, research is still ongoing to determine the main correlates (OECD, 2012; World Bank, 2012a).

¹⁰ The gross enrolment ratio designates a nation's total enrolment in a specific level of education, regardless of age, expressed as a percentage of the population in the official age group corresponding to this level of education. It can be greater than 100% as a result of grade repetition and entry at ages younger or older than the typical age at that grade level. (UNESCO, 2005)

The gender gap in school enrolment rates by income quintile is on average rather low in the region among 15- to 17-year-old children, even though there is a discrepancy between poor and rich children – the latter with higher enrolment rates. However, there are differences among the countries. As shown in Figure 6, Macedonia, Bulgaria and Tajikistan have at least a 10 percentage point difference between the enrolment rates of girls and boys in the bottom quintile. The gender gap in Bulgaria and Tajikistan — where poor girls are less likely than boys to attend secondary school — is the opposite of the gender gap in Macedonia. However, the gender gap is not of the same magnitude, if it exists at all, in the top quintile in these same countries. Conversely, Albania shows a rather negligible gender gap, which indicates that the disadvantage of poor children is roughly the same irrespective of whether they are girls or boys.

Figure 6: School enrolment rates among 15- to 17-year-olds by income quintile in 2009: Gender gaps, bottom and top quintiles by consumption per capita¹¹



Source: World Bank, 2012b

In almost all the countries under consideration, gender disparities are higher in technical and vocational education than in primary and secondary general education. While these data are not restricted to the agricultural sector, agricultural training plays an important part in technical and vocational education, and therefore this information is considered relevant to this research.¹² In Tajikistan, women accounted for only 15 percent of the total number of students enrolled in technical and vocational education in 2010. Only a few countries have female enrolment rates above 45 percent, i.e. Azerbaijan (51 percent), Montenegro (46 percent), Serbia (47 percent) and Uzbekistan (48 percent). Technical and vocational education is particularly important to improve the transition between school and work, as it enhances skills on the basis of labour market needs.

¹¹ The variable in the figure is the difference in school enrolment between boys and girls (gender gap) measured as a rate, where a positive value means that more boys enroll than girls.

¹² The only exception might be Kazakhstan, where, as seen in the previous section, the agricultural sector is not predominant.

Table 9: Enrolment in technical and vocational education, total (thousands) and share of females in 2010

	<i>Total (000)</i>	<i>Females (%)</i>
Albania	20	31
Armenia	6	25
Azerbaijan	176	51
Belarus	-	-
Bosnia and Herzegovina	109	45
Bulgaria	160	39
Georgia	5	-
Kazakhstan	113	30
Kyrgyzstan	23	27
Macedonia	58	44
Montenegro	22	46
Moldova	36	42
Russian Federation	1 557	37
Serbia	218	47
Tajikistan	22	15
Turkey	1 419	42
Turkmenistan	-	-
Ukraine	242	36
Uzbekistan	1 623	48

Source: UNESCO, 2012

With respect to education in rural areas, young people face more constraints worldwide, as curricula often do not reflect the needs of the rural economy, and the quality of education suffers from poor infrastructure and unqualified teachers. Women in rural areas are more disadvantaged than their counterparts in urban settings, mainly due to discriminatory social norms and practices and a strong gender-division of labour that limits their participation in education and training courses. Worldwide, rural women are more disadvantaged than rural men in relation to education. According to the UNESCO Global Monitoring Report (2012), even in a country like Turkey with a middle income, the gender gap in education in rural areas is wide, with 65 percent of young women with less than lower secondary education, compared with 36 percent of young men. Similar gender gaps in rural areas apply to Tajikistan and Azerbaijan. Interestingly, Albania, Kyrgyzstan, Armenia, Ukraine and Kazakhstan all demonstrate a level of gender parity in education, and very low rates of rural youth lacking foundation skills. On the other hand, Moldova experiences a slightly higher percentage of men lacking foundation skills in rural areas (UNESCO, 2012).

While there is great diversity among countries in Eastern Europe and Central Asia, the percentage of women with a specialization in agriculture in tertiary education is significant, with an average of 44 percent. This average greatly varies among the countries. In Croatia, the Czech Republic, Slovenia, Latvia, Lithuania, Poland and Turkey between 51 and 60 percent of tertiary agricultural graduates are women, while this is on average 23.5 percent in Azerbaijan, Georgia, Kyrgyzstan and Uzbekistan. Uzbekistan has the lowest percentage of women graduates in agriculture at 16 percent (Table 10).

Table 10: Female graduates from tertiary agricultural education (percentage) in Europe and Central Asia

Country	Female (%)
Albania (2011)	46
Armenia (2010)	39
Azerbaijan (2011)	29
Belarus (2011)	31
Bulgaria (2010)	48
Croatia (2010)	51
Czech Republic (2010)	59
Estonia (2010)	55
Georgia (2010)	24
Hungary (2010)	49
Kyrgyzstan (2011)	25
Latvia (2011)	57
Lithuania (2011)	53
Poland (2010)	56
Romania (2010)	39
Serbia (2011)	46
Slovakia (2010)	47
Slovenia (2010)	60
Turkey (2010)	52
Uzbekistan (2011)	16

Source: UNESCO, 2013

Overall, the general lack of statistics and qualitative analysis does not allow for a more comprehensive analysis of women's involvement in education, particularly in rural areas of Eastern Europe and Central Asia. Nor does it allow for a more thorough understanding of the discrepancies between data at the national level and rural areas.

2.5 Agricultural labour force

Worldwide, women play a significant role in agriculture and rural employment, including in food production and rural marketing. They make up an average of 43 percent of the agricultural labour force globally, ranging from 20 percent in Latin America to almost 50 percent in sub-Saharan Africa.

Women in Europe and Central Asia also play an essential role in agricultural production, and make up a substantial part of the agricultural labour force. The female share of the agricultural labour force is just below the world average in Central Asia, at 41 percent. In Europe, the average is 32 percent, ranging from 29 percent in Eastern Europe to 45 percent in Southern Europe¹³ (Table 11). Overall, in Europe and Central Asia, rural women are less likely to be self-employed than men, yet they are more likely to be involved in wage and salary employment (FAO, IFAD and ILO, 2010; Gindling and Newhouse, 2012).

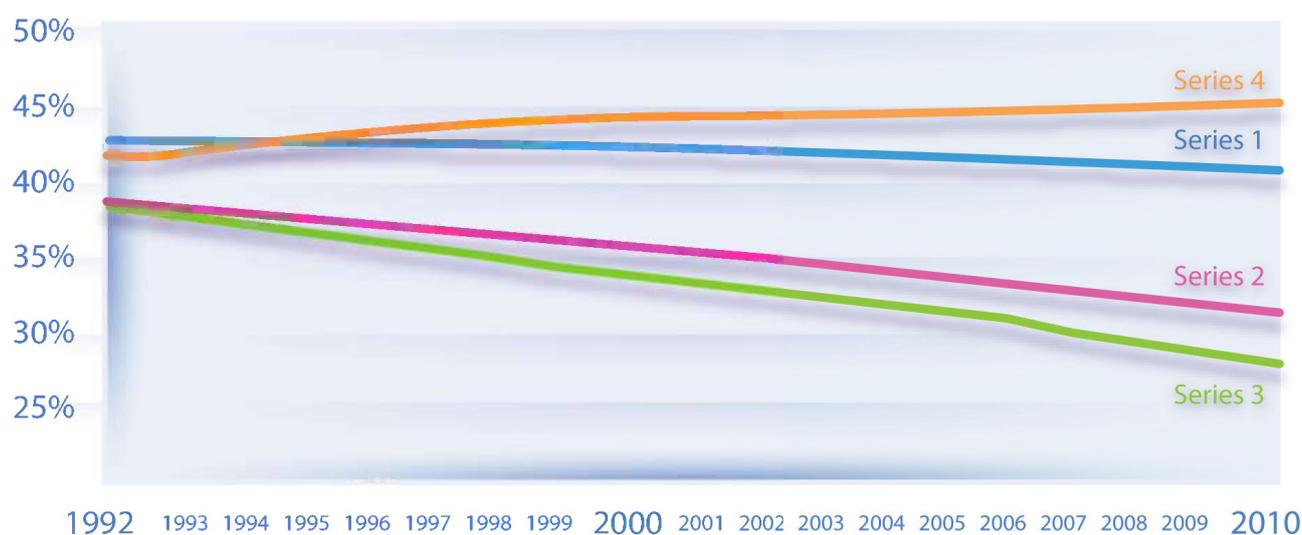
¹³ See Annex 1 for the country groupings.

Table 11: Female share of the agricultural labour force (percentage)

Region	Female (%)
World	43
Europe	32
Eastern Europe	29
Southern Europe	45
Central Asia	41

Source: FAO, 2013a: FAOSTAT 2012

Between 1992 and 2010, the share of women in the agricultural labour force sharply decreased in Europe (by 7 percent) and slightly decreased in Central Asia (by 2 percent) (Figure 7). However, there are substantial differences between Eastern and Southern Europe. In the former, women's share of the agricultural labour force decreased by 10 percent, while in the latter there was an increase of 3 percent. This decline in the share of women participating in the agricultural labour force corresponds to an overall decline of the agricultural employment in Central and Eastern Europe (non-EU) and CIS countries (ILO, 2012).

Figure 7: Female share of the agricultural labour force from 1992 to 2010

Source: FAO, 2013a: FAOSTAT 2010

Rural employment also plays a major role in the countries under consideration. This ranges from self-employed and contract farming to casual and temporary work in the informal sector - such as vegetable market vending and artisanal production to small, medium and large farming, food processing and off-farm enterprises. Women and men working in rural settings are often involved in numerous activities. For instance, they may change their work depending on the season, or may remain unemployed or underemployed for periods of time due to their significant involvement in seasonal and part-time jobs. In rural settings, the domestic sphere and market production appear to be more closely linked than in urban areas, and production activities, which rest to a large extent on women's shoulders, are often constrained because of poor infrastructure and a lack of facilities (FAO, IFAD and ILO, 2010).

Table 12 provides an overview of rural employment data by sex and employment status in Eastern Europe and Central Asia. Data show that non-agricultural activities are the main source of employment for both rural men and women, particularly as wage employees. However, the high percentage of non-active and not-reported status might confirm the pervasive phenomenon of ageing of women in rural areas (i.e. non-active respondents) as well as the prevalence of informal or unpaid work (i.e. not reported respondents). In this regard, there is also under-reporting of women's work, as women tend to classify and report themselves as not-employed, particularly when undertaking unpaid agricultural work. In fact, "women provide a large proportion of the labour of agricultural production, even though official statistics based on census and survey instruments often underestimate women's work and its contribution to national wealth. Problems persist in the collection of reliable and comprehensive data on rural women's work in agriculture and other productive sectors because of: (1) invisibility of women's work; (2) seasonal and part-time nature of women's work, and; (3) unremunerated family (mostly women and children) labour" (Lastarria-Cornhiel, 2006).

Table 12: Rural employment status by gender in Europe and Central Asia in 2000¹⁴

<i>Employment Status</i>	<i>Female (%)</i>	<i>Male (%)</i>
Agriculture	12.3	18.6
Self-employed	6.9	8.5
Wage earner	5.4	10.1
Non-agriculture	19.7	38.7
Self-employed	1.6	7.4
Wage earner	18.1	31.3
Non-active or not reported	46.9	27.5
Total	78.9	84.8
Residual	21.1	15.2

Source: World Bank, 2007c

Note: The omitted group includes individuals out of the labour force and individuals whose economic activity is not defined. Activity refers to the individual's reported principal activity.

Figure 8 shows the distribution of women and men in agriculture, industry and services at the global level, for the developed economies and the European Union (EU), and for Central and South Eastern Europe (non EU) and Commonwealth of Independent States (CIS) countries. While the percentage of women employed in the agricultural sector in developed economies and the European Union is rather small (2.9 percent), the data for Central and South Eastern Europe and CIS countries are relatively higher with 19.8 percent¹⁵. However, this percentage is smaller than the global average of women working in agriculture (36.4 percent), but it is not insignificant. Moreover, several studies conducted by the World Bank and the International Labor Organization (ILO) show that most of the agricultural employment in Central and South Eastern Europe & CIS countries is informal, which includes all economic activities – in

¹⁴ These data are from representative household surveys. It is odd that the figures do not sum to 100. However, despite this limitation, this seems to be the best data source for an overview of gender patterns of rural work differentiated by sex and status.

¹⁵ For complete data refer to Annex 2.

law or in practice – that are not covered or insufficiently covered by formal arrangements (ILO, 2003).¹⁶ The EECA region has had a long experience of informal economic activities, but now it is endemic, involving some high-income illegal activities as well as many that are merely survival activities, involving very low incomes (UNDP, 1999). Since the transition, the region has experienced trends towards informalization and flexibilization of employment, and increasing impoverishment of households.

Figure 8: Distribution of female and male employment by sector in 2010



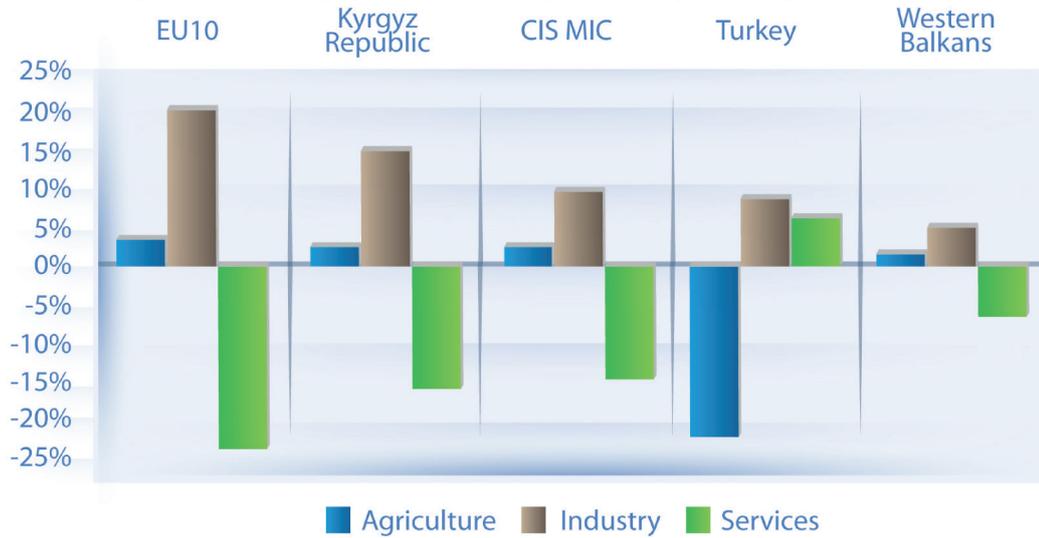
Source: ILO, 2012

Women constitute a significant share of the employees in the agriculture sector even though it is not the largest employment sector for them. Many rural women who are “statistically” classified as “inactive” may in fact be working as farmers on their own account or as unpaid family workers on small farms or in kitchen gardens, but they are less likely to declare themselves as employed in the agricultural sector (Beneria, 1981 cited in FAO, 2011a). Further, labour force statistics do not always adequately capture the true labour participation of rural women, since they are often the principal managers of households responsible for processing and preparing food, ensuring the availability of fuel and water, caring for family members, and maintaining their homes. These so-called “reproductive” activities are typically not defined as economically active employment in national accounts (FAO, 2011a).

Figure 9 shows the gender gap in sectoral employment, i.e. the difference between male and female employment in a particular sector as a share of total male and female employment. Men slightly outnumber women employed in the agricultural sector in the EU10 and middle-income CIS countries, and Western Balkans (See Figure 9 for list of countries). Noticeable variations can be found among selected countries. For instance, Kyrgyzstan shows the same trend as that highlighted for the above country categories, while Turkey indicates a reverse trend with a rather high negative gender gap in the agricultural sector (i.e. women outnumber men in this sector), at around 20 percent.

¹⁶ The basis used for distinguishing informal jobs is that they are outside the framework of regulations either because (a) the enterprises in which the jobs are located are too small and/or not registered or (b) labour legislation does not specifically cover, or is not applied to, atypical jobs (such as casual, part-time, temporary or home-based jobs) or to subcontracting arrangements in production chains (such as industrial outwork), so that the jobs (and, therefore, their incumbents) are unprotected by labour legislation. In order for most labour laws to be implemented, it is necessary to recognize the existence of an employment relationship between employer and employee. Informal jobs, however, include forms of employment for which there is no clear employer-employee relationship. It includes own account workers employed in informal sector enterprises, contributing family workers (as they usually do not have explicit contracts), employees holding informal jobs (with a job not subject to national legislation, social protection or specific entitlements), etc. <http://www.unescap.org/stat/isie/reference-materials/Definitions/Informal-Employment/Defining-measuring-Informal-Employment-ILO.pdf>

Figure 9: Gender gap in sectoral employment (percentage) in 2008



Source: World Bank, 2012a

EU10 = Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.

CIS MIC = middle-income CIS countries (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, the Russian Federation, Turkmenistan, and Ukraine) in 2008.

Western Balkans = Croatia, Kosovo, Former Yugoslav Republic of Macedonia, Montenegro, Serbia, Slovenia.

There is evidence of gender-based labour market segmentation in both agricultural and non-agricultural sectors in most rural areas. Women tend to be clustered in fewer sectors than men and, in the agriculture sector, tend to be mostly involved in subsistence agriculture, which is the main source of food and income in many rural communities. In fact, a large number of rural self-employed women rely primarily on their own food production.

A brief note on the Soviet legacy is particularly relevant for the analysis of the region's employment sector. Under the socialist states, all citizens of working age were obligated by law to be employed in paid occupations. As a result of these policies, women in Eastern European countries used to have higher rates of economic activities than in other part of the world (UN, 1991: 84). The state commitment for guaranteeing equal access to education and employment to women and men -- and the subsequent high employment rates of women -- spread the perception that gender equality had been achieved. However, these measures did not ensure the transformation of the gender division of labour within the family and therefore resulted in a double burden for women. Also, "as women entered the labour force in large numbers, men moved upwards in the occupational structure or assumed new specializations," reinforcing the occupational segregation and the gender pay gap (World Bank, 2000).

The transition to a market economy also brought a series of negative impacts to the region, such as an increase in the poverty rate due to the fact that employment was no longer guaranteed by the state. In many rural areas, former collective and state farms were privatized, leaving rural workers unemployed and with few opportunities for alternative employment. The incidence of rural poverty is from one to three times that of poverty in urban areas. Key factors leading to rural poverty include the lack of local employment opportunities as well as the distances to markets in the European Union. For many rural poor people, remittances from family members who have emigrated are a vital source of income, also injecting cash into the rural economy (IFAD, 2002).

2.6 Women in livestock

Livestock are key agricultural assets in rural areas, and sources of income, wealth and social status. In developing regions, livestock make up on average about a third of the total agricultural net output, with considerable variations among countries. Table 13 shows that livestock contribute substantially to the agricultural GDP in Eastern Europe and Central Asia, with 67 % in 1990 and 44.5 % in 2007.

Table 13: The contribution of the livestock sector to the total agricultural GDP (in billion dollars)

Region	1990			2007		
	Agricultural GDP	Livestock production	Livestock: Agricultural GDP (%)	Agricultural GDP	Livestock production	Livestock: Agricultural GDP (%)
East Asia & Pacific	244	58	23.7	478	145	30.3
Easter Europe & Central Asia	142	95	67	120	53	44.5
Latin America & Caribbean	111	49	43.8	190	81	42
Near East & North Africa	36	12	33.7	60	22	36.7
South Asia	149	43	29.1	241	82	33.9
Sub-Saharan Africa	61	17	28.1	97	26	26.6
All regions	742	274	36.9	1185	408	34.5

Source: FAO, 2013a: FAOSTAT 2010

Worldwide, women are intensely involved in the livestock sector. They share all types of livestock-related responsibilities with men and children, yet they are associated more with specific species and tasks. In fact, women are often responsible for raising poultry and small cattle, taking care of sick animals, and processing and marketing milk, poultry, meat, and eggs (FAO, 2011a). The SOFA report shows that female-headed households tend to have smaller livestock holdings, particularly in developing countries (FAO, 2011a). However, women do not necessarily automatically control the income they make from their participation in livestock production.

In most Eastern European and Central Asian countries, animal production systems have changed significantly since the transition from the previous regime. They have been largely replaced by smallholder production in backyards and private plots and have centered on processing for family and local consumption. Rural households and plot-owners keep mostly poultry, followed by pigs and cows. Smallholder production systems ensure secure livelihoods for rural people, including those who may not be covered by social security. Despite often facing severe obstacles (e.g. insecure land tenure and exclusion from user associations), women are largely responsible for managing backyard livestock production. For example, in Kazakhstan, where agriculture accounted for around 7 percent of GDP in 2009, grain and livestock are the most important agricultural commodities, and the majority of women are mostly managers of the latter (Vares, 2003).

Numerous social, cultural, political and economic trends in Central Asia are altering gender roles and the division of labour in rural households, holdings and pastures. The limited empirical literature suggests that women's responsibilities in pastoralism are increasing without a similar enhancement in their rights to own, control and access agro-pastoral resources. Simultaneously, the lack of economic opportunities in rural areas has led to a large-scale labour migration to national urban centers and other countries, mainly southern Kazakhstan and Russia. While women make up a significant portion of migrants, migration trends are also increasing the number of female-headed households, raising the burden on women to manage the household, farm, and pasture-related economic practices. In some cases, the increased workload elevates the role of women in decision-making over the household and livestock (Thieme, 2008). Further, in the mountain villages in several Central Asian countries, women are gaining additional income by selling animal fibers -- mostly from goats -- through new commercial channels to China (Kerven, McGregor and Toigonbev, 2009). Studies in Kyrgyzstan found that being extensively engaged in livestock activities strengthens women's decision making power at the household level. At the same time, however, it does not necessarily increase their membership in public bodies such as in Pasture Management Committees (Undeland, 2008).

2.7 Women in fisheries and aquaculture

The fisheries and aquaculture sector is a source of income and livelihood for millions of people around the world. In 2008, about 45 million people worldwide were directly engaged - full time or part time - in the production sector, while around 135 million were involved in post-harvest activities. Unfortunately, comprehensive sex-disaggregated data on the sector are not available. However, it is estimated that women make up 30 percent of those employed in the sector at a global level. The proportion of women in inland water fisheries is at least 19 percent, and as high as 90 percent in secondary activities, such as processing (FAO, 2012a).

Women and men engage in different activities in these sectors depending on their social, economic, and cultural status and context. For instance, women are not generally involved in long-distance capture fishing due to household responsibilities which keep them closer to home. However, they do contribute to net-making, as well as the processing and marketing of fish. Women make up almost half of the people employed in the primary and secondary sectors¹⁷ related to small-scale fisheries. (FAO, 2012a).

Available literature shows that women tend to be more involved in the aquaculture sector than in fisheries. The contribution of aquaculture to employment in the Eastern European region varies greatly among the countries. Although aquaculture plays a smaller role in the economy of many countries, fish farms and processing plants continue to provide rural employment for those who face great challenges finding work in limited labour markets.

The number of people who are involved in aquaculture production is relatively low. The percentage of employees with higher education is low; most employees have primary or secondary school education. Farm managers are usually more highly trained people (FAO, 2007).

¹⁷ The primary sector refers to fish production, while the secondary sector refers to post-harvest activities.

The information available to FAO does not allow for a detailed analysis from a gender perspective. In those countries included in this study, only 5 to 10 percent of all workers in fish farms are women. In Bosnia and Herzegovina, Serbia, and Montenegro, women are mainly involved in administration, food processing and fish cleaning. Their involvement in the aquaculture sector is higher in Ukraine, with a share in the total employment of about 20 percent. In the Russian Federation, women also play an important role in aquaculture production, constituting up to 70 percent of the staff in some fish farms. Moreover, in the Russian Federation, women often own and/or manage fish farms (FAO, 2007).

In Albania, around 1800 people are involved in the aquaculture sector as managers or workers, most of whom are men (91%). Women are mainly represented among seasonal and part-time workers (FAO, 2013e).¹⁸

2.8 Migration

A note on migration is essential in the analysis of the demographic and socio-economic status of rural populations, particularly in Eastern Europe and Central Asia. Analysing migration flows from a gender perspective allows for a better reflection on the causes and processes of migration for both women and men, as well as the different impacts for them. For example, such an analysis provides for a better understanding of the conditions under which women and men migrate, as well as the predominance of women or men in certain labour flows, including temporary, permanent or illegal migration (Boyd and Grieco, 2003).

One of the most significant migration trends in the last few decades has been the voluntary and involuntary entry of women into migration flows as family members and independent migrants. In fact, migration was predominantly a male phenomenon during the labour flows of the 1960s and 1970s in Europe. Women followed only in the subsequent waves in the 1980s and 1990s, particularly for family reunification (Omelaniuk, 2005).

There are two main flows of migration, internal (mainly rural-urban) and external (to another country). Migration occurs with family reunification and formation, labour migration, trafficking and the movement of refugees and internally displaced persons (IDPs). Labour migration can positively and negatively influence gender relations and power dynamics. Women migrants can experience empowerment and autonomy, as well as a greater ability to make household decisions due to their new wage earning capacity. Women left behind also are very likely to encounter changes in gender roles as they might become more responsible for the household, including taking on greater economic responsibility and management of remittances (Martin, 2004). However, labour migration may as well further entrench gender roles. For instance, women and men migrants tend to cluster in different occupations, reinforcing the gender labour segregation. Women left behind in societies with very rigid gender norms may not be able to continue their work in agriculture due to the absence of their husbands. This is often because they are restricted from cultivating and managing their farms alone. (FAO, IFAD and ILO, 2010; Menjivar and Agadjanian, 2007).

¹⁸ At the time of this publication, the source of this information was still a draft report on "Elaboration of the database of the Albanian inland and lagoon fishery and aquaculture subsectors and appraisal of their physical, technical, economic and social aspects". Unfortunately, at the time of the publication, data were not cross checked.

As mentioned in the section on agricultural labour, rising unemployment and economic stagnation have made migration the most effective strategy for women and men in Eastern Europe and Central Asia to support their families. Subsequently, this has also led to high ratios of remittance inflows to GDP. Three countries in the region are among the top 10 countries worldwide in this respect: Kyrgyzstan, Moldova, and Tajikistan (where official remittances in 2010 were some 41 percent of GDP—the world's largest ratio¹⁹). In 2010, the collective share of migration from the three Central Asian countries (Kyrgyzstan, Tajikistan and Uzbekistan) exceeded 50 percent of the overall official labour migration flow to Russia, having grown by three times over the previous 7 years.²⁰

Since the fall of the Communist regime, many young workers from Central Asia and former Soviet republics have been migrating to Russia, making it the second largest immigration country in the world (World Bank, 2007b). Armenia has experienced considerable migration of men to Russia and women have taken on additional tasks when their husbands migrate and they are left behind. These new tasks do not challenge existing patriarchal norms and gender inequalities. In fact, men often acquire more power due to their migrant status and improved access to resources while women continue to be discriminated against by powerful social norms. (Menjivar and Agadjanian, 2007). In Moldova, a survey showed that women migrate because of a lack of resources, such as financial resources or networks, which are generally more available to men. Also, migrant women are more likely to separate or divorce than those left behind (Omelaniuk, 2005). In some villages – studied by IFAD (2007) – as high as 75 percent of women have left their homes.

In Ukraine, there are large outflows of female migrants from rural areas, at 65 percent, and inflows of male migrants from CIS countries, at 56 percent. Low wages and high unemployment, together with a lack of educational opportunities and poor health care infrastructure are the main causes of this migration. Female migrants mainly migrate between 20-39 years of age and often leave husbands and children behind. Ageing of the rural population, fertility reduction, and losses in rural labour potential are all consequences of this type of migration (Kyzyma, 2009). Ukrainian female migrants tend to be employed as domestic workers, thus reinforcing the gender labour segregation in the recipient country. However, in their own families, women challenge the stereotypical gender roles as they become the main family breadwinners and their husbands take over household responsibilities (Yarova, 2006).

In Central Asia, labour migration is widespread and female migrants account for 25-30 percent of the total migrants. Women often migrate on their own, facing more challenges for their safety and their economic and social security (UN Women, 2012a). There are also countries, like Tajikistan, with high percentages of women migrants as well as large numbers of women left behind due to male migration. The migration of Tajik women makes up 10 percent of all migration flows. The cases of abandoned households²¹ in Tajikistan are very high, and over 70 percent of these are *de facto* female-headed households with children. The women in these households receive either insufficient or no financial assistance from their migrant husbands working abroad. As a result, they are forced to search for alternative sources of income, making them vulnerable to trafficking and other abuses (OSCE and UN Women, 2012).

¹⁹ Source : World Bank, 2012a

²⁰ UN Migration Statistics.

²¹ "Abandoned households" are those where a woman whose migrant labourer husband has left her, and who has not received any remittances from him for six months. This includes cases where a woman has no information about her husband's whereabouts and/or where she has had no contact with him for this period of time. This definition is applicable also to those wives of labour migrants whose official marital status in the civil records is left unclear, who are in the process of divorce, or who are mislabeled as "divorced" when in reality they have been abandoned without a dissolution of their marriage.

Human trafficking, refugees, and internally displaced persons (IDPs) are serious issues for Eastern Europe and Central Asia. The countries of the former Soviet Union are the largest source of trafficking of women for prostitution, with more than 100,000 victims of trafficking per year, while around 75,000 women are trafficked from Eastern Europe. Trafficking is particularly widespread in various regions of Moldova, Romania, Albania and Bulgaria. Closely linked to endemic rural poverty, trafficking increases domestic violence and health problems, and violates basic human rights (Omelaniuk, 2005; Martin, 2004). Fifteen countries in the region experience forced displacement, leading to high numbers of refugees and internally displaced persons (IDPs): Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Cyprus, Georgia, Kyrgyzstan, Kosovo, Macedonia FYR, Montenegro, the Russian Federation, Serbia, Turkey, Turkmenistan, and Uzbekistan. In 2010, there were an estimated 2.54 million displaced persons in the region, of which up to 140,000 were refugees and 2.4 million were IDPs. Among other outcomes, forced displacement deeply affects gender roles and relations. For instance, in Azerbaijan, displacement brought about a re-traditionalization of gender roles and relations that confined women to reproductive work, and limited their access to employment. This phenomenon is likely to apply to other countries in the region. Moreover, displaced women tend to be more vulnerable to trafficking and other forms of abuse due to their weak socio-economic status (De Berry and Petrini, 2011).

2.9 Key messages²²

In Europe and Central Asia, female to male ratios (i.e. number of women for every 100 men) are high both in urban and rural areas. Women outnumber men with a sex ratio of 107.5 and 104.5. Disaggregating these data by age shows that the female to male ratio in rural areas is 95.6 in the 15 to 49 years age cohort. This suggests that the region experiences overall high female to male ratios because of the overrepresentation of women in the older population cohorts.

In Europe and Central Asia, the average share of female holders of agricultural land is rather low, at 23 percent. This share ranges from 5 percent in the Netherlands and 10 percent in Germany and Ireland to an average of 44 percent in the Baltic countries. The countries for which data are available show great variations in the share of female holders: 12 percent in Kyrgyzstan, 18 percent in Serbia, 20 percent in Bulgaria, and 30 percent in Georgia.

Eastern European and Central Asian countries once had a tradition of strong investment in education for both boys and girls. Before the fall of the socialist regime, the level of enrolment in education placed these regions ahead of the rest of the world in terms of very small gender gaps in literacy rates. At the national level, this situation has not dramatically changed as no major gender gap arises in the adult literacy rates and in the enrolment in primary and secondary education. However, gender disparities are higher in technical and vocational education.

Across Eastern Europe and Central Asia, women account for about 44 percent of students in tertiary education, although there is great variability between countries. Women make up between 51 and 60 percent of those attending agricultural education in Slovenia, the Czech Republic, Latvia, Poland, Lithuania, Turkey and Croatia. In Azerbaijan, Georgia, Kyrgyzstan and Uzbekistan women hover at around 23.5 percent of those participating in agricultural education, while Uzbekistan has the lowest percentage of women participating at 16 percent.

Women play an essential role in agricultural production in the region and make up a substantial part of the agricultural labour force. The female share of the agricultural labour force in Central Asia is 41 percent -- just below the world average of 43 percent. In Europe, the average is 32 percent, ranging from 29 percent in Eastern Europe and 45 percent in Southern Europe. In Eastern Europe and Central Asia, data show that non-agricultural activities (rural employment) are the main source of employment for both rural men and women, particularly as wage employees. During the period of socialism, the state commitment for guaranteeing equal access to education and employment to women and men, and the subsequent high employment rates of women, spread the perception that gender equality was achieved. However, socialist measures did not ensure the transformation of the gender division of labour within the family and, therefore, resulted in a double burden for women. Moreover, the entry of large numbers of women into the labour force moved men upwards in the occupational structure or into new specializations, enforcing the occupational segregation and the gender pay gap.

²² All information included in this section is referenced above in the respective sections.

In most Eastern European and Central Asian countries the animal production systems have been significantly transformed since the end of the socialist era. They have been largely replaced by small-holder production (in backyards and private plots) and processing for family and local consumption. Despite often facing severe obstacles - e.g. insecurity of land tenure and exclusion from user associations - women largely manage backyard livestock production. In the mountain villages in Central Asian countries, women are gaining additional income by selling animal fibers, mostly from goats, through new commercial channels to China.

In the countries under discussion, only 5 to 10 percent of all workers in fish farms are women. In Bosnia and Herzegovina, Serbia and Montenegro women are mainly involved in administration, food processing and fish cleaning. In Albania, women are engaged mostly in seasonal work and administration of fish farms, making up around 9 percent of all fish farm workers. Women's involvement in the aquaculture sector is higher in Ukraine, with a share of women in the total employment of about 20 percent. In the Russian Federation, women also play an important role in aquaculture production and in some fish farms they make up 70 percent of the total staff.

Because of rising unemployment and economic stagnation, migration has become the most effective strategy for women and men across Eastern Europe and Central Asia to support their families—mostly through remittances. In 2010, Tajikistan's official remittances made up 41 percent of the country's GDP making it the highest ratio in the world. In 2010, migration from three Central Asian countries (Kyrgyzstan, Tajikistan and Uzbekistan) exceeded 50 percent of the overall official labour migration flow to Russia.

Rural Women in Eastern Europe and Central Asia

Documenting the gender gap in agriculture in selected countries



Food and Agriculture
Organization of the
United Nations

This chapter presents statistical data on the differences between women's and men's access to various agricultural assets and inputs in the following countries: Albania, Bulgaria, Georgia, Kazakhstan, Moldova and Tajikistan.

3.1 Land

Land is a key productive asset for households that depend on the agricultural sector for their livelihoods. The use of land is a basic requirement for farming, while land ownership and control over the land (i.e. the ability to make decisions on how to use and benefit financially from the land) are synonymous with wealth, status and power (FAO, 2002 and 2011a). The use, control and ownership of land all depend on complex written and consuetudinary social and legal frameworks (customary law), which also have different gender implications. In all countries for which data are available, women are less likely to own land, and when they do, they tend to own smaller land (World Bank, 2007d).

Sound and reliable statistical data on female farmers are limited. Most women engage in farming within a household production unit, and their activities are not usually separable from those of the household as a whole. Most of the data available on female farmers are collected by household surveys, and these are limited to the activities of female-headed households, which comprise a minority of female farmers in most countries. Unfortunately, the role that women farmers play at the intra-household level in male-headed households is still under-researched (FAO, 2011a; 2011b).

It is also important to clarify the difference between an agricultural holding and a rural household. The former is an economic unit of agricultural production under single management; the latter is based on the arrangements made by persons, individually or in groups, to provide themselves with food or other essentials for living. The agricultural holding is the statistical unit used in agricultural censuses/surveys, while the household is the statistical unit used in household surveys. Often, there is a one-to-one relationship between an agricultural holding and its associated household, particularly for smallholdings. This makes the household the principle unit of management for the holding, and the source of most productive resources, particularly labour. However, different statistical instruments and units should be considered in data analysis and comparison (UN, 1998; FAO, 2005; Wieggers, Curry & Mayo, 2009).

There are stark gender disparities in land holdings in all regions of the developing world. Available data show that men make up the majority of agricultural holders -- the person or persons responsible for making the major decisions in the agricultural holding regarding resource use and the management of agricultural operations (FAO, 2005). Table 14 indicates that in the countries under consideration there is a significant difference between female and male holders of agricultural land, with female holders ranging from 5 percent in Albania to 36 percent in Moldova.

Table 14: Individual holders of agricultural land by sex (numbers and percentage)

Country	No. Female	Female (%)	No. Male	Male (%)	Total
Albania	19,218	5	334,268	95	353,486
Bulgaria (2007)	97,370	20	392,410	80	489,780
Georgia (2004)	211,800	30	517,150	70	728,950
Moldova (2012)	327,689	36	574,525	63	902,214
Kazakhstan	n.a.	n.a.	n.a.	n.a.	n.a.
Tajikistan	5,998	89,7	52,317	10,3	58313

Albania: Data directly provided to FAO REU by INSTAT. The data refers to "Farm operators"; Bulgaria: EUROSTAT provided directly to FAO; Georgia: FAO, 2013c; Moldova: National Bureau of Statistics of the Republic of Moldova, 2011

Table 15 highlights the percentage of female- and male-headed households and the size of holdings in rural areas for the six countries discussed herein. The great majority of households in the countries are male-headed (*de jure*), ranging from 64 percent in Kazakhstan and Moldova to 92.6 percent in Albania. The average family size in the countries under consideration is around 4 members, with a peak in Tajikistan of 6.5 members. Unfortunately, variations in family size between female- and male-headed households cannot be assessed due to a lack of data. In Albania and Bulgaria, male-headed households (MHHs) hold about 20 and 30 percent more land than female-headed households (FHHs) respectively. The average landholding farm size in Albania is 0.66 ha for FHHs and 0.82 ha for MHHs, while in Bulgaria it is 0.40 ha for FHHs and 0.75 ha for MHHs.²³ Tajikistan has less of a gap in terms of farm size of female and male holders, which is 0.12 and 0.14 ha respectively. Specific differences in the size of landholdings by the sex of the head of household could not be found for other countries included in this report.

Table 15 : Rural households by sex of the HH head, size of HH (n) and size of holding (ha)

Item	Albania	Bulgaria	Georgia	Kazakhstan	Moldova	Tajikistan
Female Household Head (%)	13.2	22	29	36	36.2	18.3
Male Household Head (%)	86.8	78	71	64	63.8	81.7
Average Family Size	3.5	3	3.4	4	3.5	6.5
Average farm size landholding/ha FHH	0.66	0.40	n.a.	n.a.	0.86	0.12
Average farm size landholding/ha MHH	0.82	0.75	n.a.	n.a.	1.21	0.14

Source: Dudwick, Fock and Sedik, 2007 and Anriquez, 2010 for data on Bulgaria, Kazakhstan and the Republic of Moldova. Albania: Albanian Institute of Statistics, 2010; Georgia: National Statistics Office of Georgia, 2013. Kazakhstan: World Bank, 2004, UNICEF/ Agency of the Republic of Kazakhstan on Statistics, 2007, The Republic of Moldova: EUROSTAT, 2013, National Bureau of Statistics of the Republic of Moldova, 2011.

Most of the six countries have undergone some sort of land redistribution during the past 20 years. Land reforms have been particularly significant in the transition to a market system. During this process, many households received land in varying amounts - and with some independence as to how the land could be used - whereas many people did not receive any land at all. The available data show that the average farm size is rather small, particularly for female holders. These land reforms have brought about gender inequalities due to the historically disadvantaged socio-economic position of rural women. This has also led to increased vulnerability and unequal access to opportunities and benefits (UN Women, 2012b).

Particularly interesting is the case of Tajikistan, where land was not fully “privatized”, yet the reforms focused on the creation of new regulations to confer use and transfer rights to individuals and groups. In this case, the land cannot be bought or sold as it remains under the property of the government. Nevertheless, in 2005, around 23,300 state agricultural enterprises from the Soviet period were reorganized under the new regulations and plots were provided to individuals, families, and collective farm associations. The share of land cultivated by private farmers increased to almost 60 percent; however, private ownership of land is still not permitted. (UN Women, 2012b; FAO, 2013d; USAID, 2004).

²³ Data for Albania refer to year 2005, and for Bulgaria, 2001.

Given the lack of sex-disaggregated data for land ownership, a complete picture for the six countries is missing. Table 16 highlights the percentage of land owned by female- and male-headed households with respect to the total land owned in Albania, Bulgaria, and Tajikistan. Female heads of households own around 20-25 percent less land than men in Albania and Bulgaria, and 4 percent less in Tajikistan.

Table 16: Share of land owned to total land owned by female- and male-headed households

	<i>FHH (%)</i>	<i>MHH (%)</i>
Albania (2005)	28.72	48.17
Bulgaria (2001)	25.21	50.11
Tajikistan (2007) ²⁴	6.56	10.80

Source: author's calculation based on RIGA dataset (FAO, 2013b)

For all six countries, most rural households have access to owned land, and both female-headed and male-headed households without access are able to rent or share land. In a study carried out in Bulgaria, Moldova and Kazakhstan, Dudwick, Fock and Sedik (2007) showed that, on average, the FHHs used less land than the MHHs, and that they were more likely to rent out land to other users. In the study, the authors concluded that while legislation and procedures are gender neutral, women have less access to information and legal recourses than men. FHHs are also less well positioned to use land beyond the household plot because they have less labour availability, less access to better equipment, and heavier household responsibilities. Finally, the reforms and transition periods were accompanied by forced reductions in rural services. This led to FHH's increased time caring for the children and the elderly, thus decreasing their ability to engage in household farming (Dudwick, Fock and Sedik, 2007: 66-70).

3.2 Livestock

Livestock production has been increasing worldwide, yet only Albania seems to follow this pattern, while Bulgaria, Georgia, Kazakhstan, Moldova, and Tajikistan have all experienced a decrease in production in the last two decades. Table 17 highlights the livestock production index²⁵ in the six countries under discussion.

Table 17: Livestock production index

	<i>Livestock production index</i>	
	1990	2009
Albania	58.0	99.0
Bulgaria	248.0	96.0
Georgia	78.0	68.0
Kazakhstan	147.0	115.0
Republic of Moldova	196.0	91.0
Tajikistan	132.0	117.0
World*	74.0	120.3
Euro Area	137.7	119.2
Europe and Central Asia	98.2	100

*Source: World Bank, 2012a (*Food and Agriculture Organization estimate)*

²⁴ As explained in the text, in Tajikistan, the land is in exclusive ownership of the state. Landownership is therefore understood as right to use and transfer.

²⁵ Livestock production index includes meat and milk from all sources, dairy products such as cheese, and eggs, honey, raw silk, wool, and hides and skins. (2004-06=100)

Livestock plays an important role in supporting women and their families. This is particularly true for small livestock, which are often under women's control (FAO, 2011a). As in the case of access to land, the data for livestock holdings show systematic gender inequalities. Recent studies show that male-headed households tend to have larger livestock holdings than female-headed households in all developing countries (FAO, 2011a). There is limited sex-disaggregated data available on the role of large or small animal production in rural household economies in Eastern Europe and Central Asia. The Rural Income Generating Activities (RIGA) database provides information according to the sex of the household head. Data therefore do not reflect the intra-household differences in control over livestock. While these vary by culture and context, in general, men are responsible for keeping and marketing large animals such as cattle, horses and camels, while women tend to control smaller animals such as goats, sheep, pigs, and poultry (FAO, 2013b). In Albania, Bulgaria and Tajikistan, the livestock holdings of male-headed households range between 30 to 50 percent higher than those of female-headed households (Table 18).

Table 18: Total Animal Value²⁶ and Tropical Livestock Unit (TLU)²⁷ for a selection of animals, rural area

		TOT Animal Value	TLU cattle	TLU pigs	TLU sheep	TLU goats	TLU horses	TLU poultry	TLU total
Albania (2005)	MHH	466965.900	0.446	0.036	0.192	0.085	0.141	0.064	0.870
	FHH	210634.700	0.215	0.028	0.025	0.027	0.043	0.036	0.333
Bulgaria (2001)	MHH	122.069	0.087	0.044	0.052	0.035		0.031	0.249
	FHH	27.753	0.021	0.018	0.021	0.024		0.021	0.104
Tajikistan (2007)	MHH	1876.093	0.682	0.002	0.153	0.132			0.733
	FHH	889.124	0.585		0.091	0.070			0.355

Source: author's calculation based on RIGA database (FAO, 2013b)

Data collected by the recently conducted agricultural census in Moldova²⁸ show a similar phenomenon. In Moldova, male-headed holdings generally have more livestock than female-headed holdings. The largest disparities were observed in the case of pigs (on average 2.8 pigs in male-headed holdings compared to 1.8 in female-headed holdings) and poultry (26.7 vs. 16.7), whereas there is almost no difference between male- and female-headed holdings in the number of horses and dairy cows held. Once again, the distinction between sex-disaggregated data regarding livestock ownership could not be found for the other countries in this study (e.g. Kazakhstan and Georgia).

²⁶ The Total Animal Value is the monetary value of animals in local currency unit.

²⁷ Considering the need to use a common unit to describe livestock numbers of various species as a single figure that expresses the total amount of livestock present, Tropical Livestock Unit (TLU) has been used. Different formulae for estimating TLUs may be utilised in different parts of the world, depending on common livestock varieties. (e.g. 1 TLU = Camels 1.0; Cattle 0.7; Sheep/Goats: 0.1). However, a single formula for estimating TLUs in this way is unable to account for different livestock varieties, which may differ significantly in size, and a different approach is required. If the feed eaten is reasonably the same for both species being compared, the ratio of metabolic weights provides the best means of comparison. This relationship expresses that the fact that smaller animals produce more heat and consume more food per unit of body size than do larger animals (Heady, 1975).

²⁸ The agricultural census was conducted in 2010.

3.3 Agricultural labour force

About 65 percent of men and 35 percent of women across the countries are economically active in agriculture, i.e. currently employed or looking for work. The differences among countries are relatively large (Table 19). For instance, the percentage of women economically active in agriculture ranges from a low of 23 percent in Kazakhstan to 53 percent in Tajikistan, where the gender gap in labour force participation is minor. As mentioned earlier, many of the so-called inactive women in rural areas are in fact working as farmers on their own account or as unpaid family workers, yet they do not declare themselves as employed (or seeking work) in agriculture. Furthermore, most labour force statistics do not capture the real labour participation of women who are almost always the household managers, and the activities that belong to this role are not considered as economically active employment by the national account system (FAO, 2011a).

Table 19: Economically active population in agriculture, thousands and percentage (2012)

	Total (000)	Female (000)	Female (%)	Male (000)	Male (%)
Albania	604	254	42	350	58
Bulgaria	107	32	30	76	70
Georgia	336	118	35	218	65
Kazakhstan	1168	271	23	897	77
Moldova	181	52	28	129	72
Tajikistan	783	417	53	366	47

Sources: FAO, 2013a: FAOSTAT 2013

Table 20 shows the household income from crop and livestock activities for Albania, Bulgaria and Tajikistan. It is difficult to compare the two years for Tajikistan, as the currency changed during the transition period. (It is also difficult to measure the real value of the present currency.) Nevertheless, female household heads have less income overall in relation to crop and livestock activities. Also, there appears to be a change in the labour market composition in Albania and Bulgaria where there is a decrease in the share of income from crops over the period of time for both female- and male-headed households.

Table 20: Agricultural income by household head, USD/year in rural area

		Albania 2002	Albania 2005	Bulgaria 1995	Bulgaria 2001	Tajikistan 2003	Tajikistan 2007
Crop	MHH	50	61	282	66	0.0649	868
	FHH	27	42	179	30	0.0574	707
Livestock	MHH	72	73	358	166	0.0358	193
	FHH	59	39	132	94	0.0248	134
Total agricultural production	MHH	221	175	796	719	0.1216	1187
	FHH	192	106	375	169	0.0937	912
share of income from crop ²⁹	MHH	49%	42%	40%	18%	50%	61%
	FHH	40%	28%	31%	13%	45%	62%

Source: author's calculation based on RIGA database (FAO, 2013b)

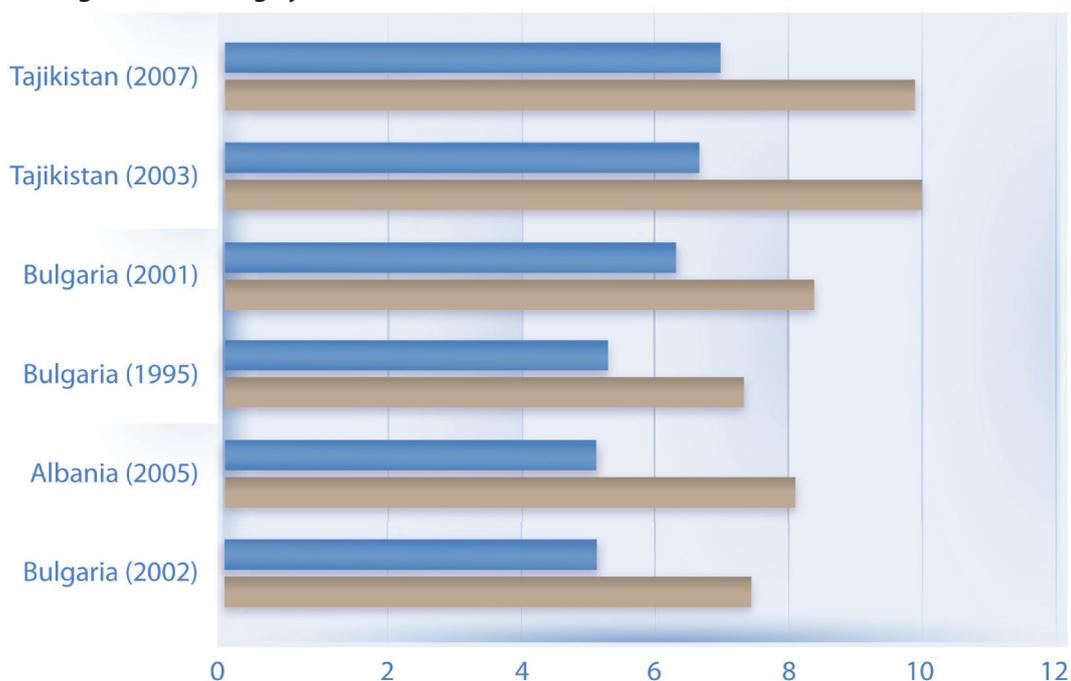
²⁹ As part of the total income, both agricultural and non-agricultural.

3.4 Education

Human capital is a key asset closely related to farm productivity, overall household income, and nutritional outcomes, all of which ultimately affect household welfare and economic growth at the national level (World Bank, 2007c; FAO, 2011a).

Figure 10 shows the gender differences in the years of education of rural household heads for Tajikistan, Bulgaria, and Albania. It also shows the average years of education by two years for both female and male household heads. In these countries, male household heads have, on average, three more years of completed education than their female counterparts. Bulgaria shows a slight increase in the average numbers of years for both women and men. In Albania, the years of education for male heads slightly increased, while for female heads it stayed steady between 2002 and 2005. Tajikistan shows an inverse tendency, with a minor decrease in the years of education of men and a slight increase for women.

Figure 10: Average years of education of female and male rural household heads



Source: author's calculation based on RIGA database (FAO, 2013b)

Table 21 highlights the total enrolment and percent of women enrolled in technical and vocational education³⁰ in Albania, Bulgaria, Kazakhstan, Moldova, and Tajikistan. As highlighted in the first section, these data are not restricted to the agricultural sector. However, since agricultural training makes up an important part of technical and vocational education, this information is considered relevant for this study.³¹

³⁰ This type of programme is designed mainly to lead pupils to acquire the practical skills, know-how and understanding necessary for employment in a particular occupation or trade (or class of occupations or trades). Successful completion of such programmes normally leads to a labour market relevant vocational qualification, recognized by the competent authorities (e.g. Ministry of Education, employers' associations, etc.) in the country in which it is obtained (UNESCO, 2006).

³¹ The only exception might be Kazakhstan, where, as seen in the previous section, the agricultural sector is not predominant.

Women comprise 42 percent of those enrolled in technical and vocational education in Moldova, followed by Bulgaria at 39 percent. In the other three countries the percentage is even lower - at around 30 percent in Albania and Kazakhstan, and 15 percent in Tajikistan.

While data on tertiary agricultural students and graduates are available in some countries (Table 22 and 23), data on vocational and technical education at different levels and specifically for the agricultural sector are only available for Moldova, shown in Table 24.

Table 21: Enrolment in technical and vocational education in 2010³²

	<i>Total (000)</i>	<i>Share of females</i>
Albania	20	31
Bulgaria	160	39
Kazakhstan	113	30
Moldova	36	42
Tajikistan	22	15

Source: UNESCO, 2012

Data on tertiary graduates from agriculture in Albania and Bulgaria show no major difference between the shares of female and male graduates (Table 23). This slightly contradicts the gender gap shown in Figure 10 in terms of the average years of education of rural household heads. This could be explained by the fact that the gap in years of education more greatly affects other areas of specialization than agriculture. It could also be explained by the fact that more urban women graduate in agriculture.

Table 22: Female tertiary graduates in agricultural education (percentage)³³

<i>Country</i>	<i>Percentage</i>
Albania (2011)	46
Bulgaria (2010)	48

Source: UNESCO, 2013

Similar data is available for Kazakhstan and Tajikistan. While in Kazakhstan, the number of female students enrolled in tertiary agricultural education (Bachelor's level) outnumbered the enrolled men, in Tajikistan the share of female students in higher professional agricultural education remained slightly below 10 percent in 2006/07.

Table 23: Female students enrolled in agricultural tertiary education (percentage)

<i>Country</i>	<i>Percentage</i>
Kazakhstan (2010/11)	52.3
Tajikistan (2006/07)	9.6

Source: State Statistical Committee of the Republic of Tajikistan, 2007 and Agency of the Republic of Kazakhstan on Statistics, 2011

³² This table is extracted from Table 8 in the first section.

³³ This table is extracted from Table 9 in the first section.

In addition to the information above, the recent Agricultural Census for the Republic of Moldova provides relevant data on agricultural education in the country at the holding level. As shown by Table 24, less than 20 percent of the total holders have acquired an agricultural education of any kind. A small gender gap can be seen in access to vocational education; while both shares are low, only 6 percent of female holders participated in vocational education compared to 12 percent of men. In higher education the gender gap is minimal, at less than one percentage point. It is worth noting that almost 70 percent of all female holders responded by indicating that they have 10 or more years of practical agricultural experience, in comparison to 67 percent of the male holders (FAO and NBS of the Republic of Moldova, 2013).

Table 24: Level of agricultural education of female and male holders in Moldova

Highest completed education in agriculture	Agricultural holders ³⁴		Male holders	Female holders
	No.	Percentage	Percentage	Percentage
Total	902,214	100	100	100
No education in agriculture	741,249	82.2	79.5	86.9
Vocational education	87,443	9.7	11.8	5.9
Technical secondary education	42,893	4.8	5.0	4.3
Higher education	30,629	3.4	3.7	2.9

Source: National Bureau of Statistics (NBS) of the Republic of Moldova, 2011

3.5 Agricultural technology, ICTs and credit

The use of technology, such as fertilizers and machinery, and access to loans and credit are essential for farmers to improve and optimize their agricultural activities and, ultimately, to increase agricultural productivity. The same applies to reliable and timely information on new agricultural technologies and techniques, particularly when deciding whether or not to adopt an innovation (FAO, 2011a).

The availability and use of mechanization by an agricultural holding helps reduce labour and time constraints and achieve better, timely agricultural outputs. This is particularly relevant for women, considering the triple burden they face in their productive, reproductive, and community roles. In a number of countries worldwide, Anriquez (2010) found considerable evidence of gender inequality in the usage of three different agricultural inputs: fertilizers, mechanized sources (e.g. tractors, threshers, etc.), and irrigation.

In terms of fertilizer use and mechanization, the available household surveys showed a statistically larger adoption rate for male-headed households of each agricultural input, and this appears to be the case in the countries of Eastern Europe and Central Asia for which data were available. Available data on fertilizer use in Albania, Bulgaria and Tajikistan show a gender gap ranging from 16 percent in Albania to a low of 5 percent in Tajikistan (in favour of men). The use of fertilizers is generally low in Bulgaria, at 17 percent for male-headed households and 8 percent for female-headed households.

Overall mechanization is low in the countries under discussion. Noticeably, the use of mechanization is about 15 percent higher among male-headed households in Albania and Bulgaria, while in

³⁴ Also includes "managers" of the agricultural holdings with juridical status.

Tajikistan male-headed and female-headed households have nearly equal access (Anriquez, 2010). Data from Moldova are not comparable to the other three countries due to the different statistical units,³⁵ but they show that almost 90 percent of total machinery, and 92 percent of irrigation machinery, is owned by male-headed agricultural holdings (FAO and NBS of the Republic of Moldova, 2013).

The gender inequality in irrigation use seems to be less acute in Tajikistan and Bulgaria, reserving a slight gender bias. Unfortunately, the inadequate data limits the ability to explain the inequality in input usage by women and men. Possible explanations might include lower purchasing power or more binding time constraints on the part of female-headed households, which might force them to use relatively fewer agricultural inputs. It might also be partially caused by less access of women to newer technologies and training. In any case, the under-usage of agricultural inputs by female-headed households contributes to the lower income levels of rural female-headed households for the countries where data is available (Anriquez, 2010; FAO, 2012b).

Table 25: Percentage of male and female-headed rural households using fertilizers, machinery and irrigation

	Fertilizers		Machinery		Irrigation	
	MHH	FHH	MHH	FHH	MHH	FHH
Albania (2005)	85	69	20	5	62	41
Bulgaria (2001)	17	8	29	13	22	26
Tajikistan (2003)	43	38	3.6	2.9	80	82

Source: Albania and Bulgaria: author's calculation based on RIGA Database (FAO, 2013b)

Data on irrigation for Albania and Bulgaria refer to the share of households with irrigated land.

Table 26: Share of agricultural male and female-headed holdings using machinery and irrigation in the Republic of Moldova

	Machinery		Irrigation	
	MHH	FHH	MHH	FHH
Moldova (2010)	89	10	92	8

Source: National Bureau of Statistics of the Republic of Moldova, 2011.

Note: Data for Moldova refer to those holdings that own machinery/irrigation and the share of female and male-headed holdings within those.

Modern information and communication technologies (ICTs) such as radio, mobile phones, computers and Internet services can play an important role for women and men to access and share information related to the agricultural sector. For instance, ICTs can facilitate the marketing of agricultural produce, as well as networking and knowledge management. These technologies may be particularly useful for rural women whose ability to travel to distant markets is restricted due to a lack of adequate infrastructure (FAO, 2011a). Table 27 shows the percentage of telephones and computers owned by household heads. Although the percentage of computers owned is very low (less than 5 percent) both in female- and male-headed households, the percentage of telephones owned is high in Bulgaria (73 percent for MHH and 68 percent for FHH) compared to Albania and Tajikistan. Female-headed households own more telephones than their male counterparts in Albania and Tajikistan, with an average difference of about 8 percent.

³⁵ Refer to the notes on Table 26 for the statistical units.

Table 27: Percentage of telephones and computers owned by male and female-headed rural households

Country	Telephone (%)		Computer (%)	
	MHH	FHH	MHH	FHH
Albania (n.a.)	25	33	4.9	3.4
Bulgaria (2001)	73	68	4.5	1.8
Tajikistan (2007)	19	28	2.1	1.5

Source: Author's calculation based on RIGA database (FAO, 2013b)

Financial services such as savings, credit, and insurance provide opportunities for improving agricultural output, food security, and the overall economic stability of the household. Many studies have shown that improving women's direct access to financial resources brings about more substantial investments in children's health, nutrition and education (FAO, 2011a). The available information suggests that, among developing countries, female-headed households (FHHs) have less access to credit sources than male-headed households (MHHs). Gender inequalities, deeply rooted in social and cultural norms, affect women's access to credit. Female household heads typically own fewer assets to use as collateral. They are also more likely to be time- and mobility-challenged and therefore less able to pursue such credit. Available studies demonstrate that the unequal distribution of assets among FHHs and MHHs corresponds to the unequal access to credit sources in the respective households (Anriquez, 2010; FAO, 2012b). Unfortunately, a comparison of data between the countries under discussion is not possible, due to limited and fragmented information.

There are no apparent legal restrictions in any of the six countries limiting women's access to formal credit,³⁶ and in some of countries, women do so in significant numbers. In 2006, women in Tajikistan received 42 percent of all micro loans provided in the country. However, no information could be found concerning the amounts of funds accessed (i.e. collateral, joint signatures, etc.), or how these funds were used by rural families. Without these kinds of data, it is very difficult to assess the value of formal credit sources (State Statistics Committee of Tajikistan, 2007; FAO, 2012b). In Moldova there are no legal restrictions on women's access to bank loans, but poverty is high among women (and men) and many, if not most women are unable to borrow because they lack collateral (OECD, 2013). Similarly, in Albania, women have access to bank loans, yet it is rare that they establish businesses based on accessing credit. In most cases, men inherit family-owned land, and women move to the husband's family home upon marrying. Kazakhstan's Civil Code guarantees equal ownership rights for women and men, making provisions for them to possess, use and inherit property. However, despite the fact that more than half of the country's farmers are women, Kazakh women continue to experience discrimination in accessing land and other property (especially in rural areas). Nevertheless, women do not seem to encounter discrimination regarding access to bank loans (OECD, 2013).

³⁶ While informal credit sources may be more important to rural women in these countries, no information could be found to inform this study.

3.6 Key messages

In the six countries included in this Chapter (Albania, Bulgaria, Georgia, Moldova, Kazakhstan and Tajikistan):

There is a striking difference between female and male holders of agricultural land. The share of female holders ranges from 5 percent in Albania to 36 percent in Moldova.

The great majority of rural households are male-headed, with percentages ranging from 64 in Kazakhstan to 92.6 in Albania and Moldova. The average family size in the countries under consideration is around 4 members, with the highest number in Tajikistan at 6.5 members. Male-headed households in Albania and Bulgaria manage about 20 and 30 percent more land than female-headed households respectively, while Tajikistan does not show a wide gender gap in terms of farm size.

According to the RIGA (FAO, 2013b) database, livestock holdings of male-headed households range between 30 to 50 percent higher than female-headed households in Albania, Bulgaria and Tajikistan. The recently conducted agricultural census in Moldova shows a similar phenomenon. In general, male-headed holdings have more livestock than female-headed holdings. Male heads own 30-40 percent more of a certain group of species, such as pigs and poultry.

About 65 percent of men and 35 percent of women are on average economically active in agriculture, i.e. currently employed or looking for work, although differences across countries are rather large. For instance, the percentage of women economically active in agriculture ranges from a low 23 percent in Kazakhstan to 53 percent in Tajikistan. However, many of the so-called inactive women are in fact working as farmers on their own account or as unpaid family workers, yet they do not declare themselves as employed in agriculture.

Male household heads have, on average, three more years of education than female household heads. Women comprise 42 percent of those enrolled in technical and vocational education in Moldova, followed by Bulgaria at 39 percent. In the other three countries, the percentage is even lower - at around 30 percent in Albania and Kazakhstan, and 15 percent in Tajikistan. In Albania, Bulgaria and Kazakhstan the difference between female and male graduates in tertiary agricultural education is minor, while in Tajikistan only 9.6 percent of enrolled agriculture students are female.

Data available for fertilizer use in Albania, Bulgaria and Tajikistan show a gender gap ranging from a high of 16 percent in Albania to a low of 5 percent in Tajikistan.

Households using mechanization are about 15 percent higher for male-headed households in Albania and Bulgaria, and almost equal access is granted in Tajikistan. In Moldova data (not comparable to the other three countries) show that almost 90 percent of total machinery, and 92 percent of irrigation machinery, is owned by male-headed agricultural holdings.

Women do not face any apparent legal restrictions in accessing formal credit, and, in some countries, they apparently do so in significant numbers. In Tajikistan in 2006, women received 42 percent of all micro loans provided in the country. The situation is different in Moldova and Albania; in the former, there are no legal restrictions on women's access to bank loans, but poverty is high among women (and men), and many if not most women are unable to borrow because they cannot provide collateral (OECD, 2013). Similarly, in the latter, Albanian women have access to bank loans, yet it is rare for them to establish businesses using credit.

Although the percentage of computers owned is very low (less than 5 percent) both in female and male-headed households, the percentage of telephones owned is rather high in Bulgaria compared to Albania and Tajikistan (73 percent for male-headed households and 68 percent for female-headed households). It is notable that female household heads own more telephones than their male counterparts in Albania and Tajikistan, with an average difference of about 8 percent.

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ANNEX 1

Country groups

Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.

Europe: Albania, Andorra, Austria, Belarus, Belgium, Belgium-Luxembourg, Bosnia and Herzegovina, Bulgaria, Channel Islands, Croatia, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Isle of Man, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Ukraine, United Kingdom.

Eastern Europe: Belarus, Bulgaria, Czech Republic, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine.

Southern Europe: Albania, Andorra, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, San Marino, Serbia Slovenia, Spain, The former Yugoslav Republic of Macedonia.

ANNEX 2

Distribution of female and male employment by sector

	2000			2007			2010			2011*		
	TOT	F	M	TOT	F	M	TOT	F	M	TOT	F	M
Agriculture												
World	40.5	44.1	38.1	35.5	38.6	33.4	34	36.4	32.4	34.1	36.2	32.8
Developed Economies and European Union	5.5	4.7	6	3.9	3.2	4.5	3.7	2.9	4.4	3.8	2.9	4.4
Central and South Eastern Europe (non EU) & CIS	25.8	25.5	26.0	19.8	19.3	20.2	20.6	19.8	21.2	19.9	20.3	19.7
Industry												
World	20.4	14.9	24	22.1	15.9	26.2	22.1	16.0	26.1	22.1	16.2	25.9
Developed Economies and European Union	27.3	15.5	36.4	25	12.8	34.8	22.4	11	32	22.1	10.7	31.5
Central and South Eastern Europe (non EU) & CIS	24.7	17.9	30.1	25.6	17.3	32.4	24.4	17.6	29.9	26.3	18.2	32.9
Services												
World	39.1	41.0	37.9	42.4	45.5	40.4	43.9	47.5	41.5	43.8	47.6	41.3
Developed Economies and European Union	67.3	79.7	57.6	71.1	84.0	60.7	73.8	86.1	63.7	74.1	86.3	64.0
Central and South Eastern Europe (non EU) & CIS	49.6	56.6	43.9	54.6	63.5	47.5	55.1	62.7	48.9	53.8	61.6	47.5

Source: ILO, 2012

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