



Facts and Figures regarding women in forestry in Danube region

Forests in Women's Hands



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BENCHMARKING FOR WOMEN IN FORESTRY IN THE DANUBE REGION

Goals and objectives



Fem4Forest strengthens the capacity of the forest sector at local, regional, and interregional levels through the increased involvement and skills of women. The project is evidence-based and adopts a multi-stakeholder approach. Demand-driven actions are designed and implemented to support equal opportunities and competencies in the labor and timber markets of the Danube Region (DR).

Specific objectives:

- Develop innovative methods and tools for better integration of women into work positions and decision-making in the forest sector of the DR.
- Exchange best practices to increase the capacities of the forest sector at local and regional levels with more active roles for women.
- Support female forest owners to increase job opportunities and income from their forests and enter new markets.

The Fem4Forest project addresses crucial macro-regional challenges, such as knowledge transfer, education, collaboration, and innovation towards a more resource and energy-efficient, environmentally sustainable DR. Overall, the project offers new and well-adapted instruments to facilitate the innovation process and support more active roles for women in the forest sector.

Fem4Forest research approach

The Fem4Forest project is evidence-based. Data collection and analysis at transnational and national levels are key to the design and implementation of feasible steps toward employing more women in the forest sector in the DR. The evidence stands on four pillars:

- **Desk research** to deliver a Status report that describes the current situation of women in the forest sector of the Danube region on the basis is existing research and available data in the 10 participating Fem4Forest countries.
- Two **Surveys** for different target groups: 1. female forest owners and female forest professionals; 2. early-career female foresters.
- 106 **Guided interviews** with female forest owners, female role models in the forest workforce, and decision-makers to create awareness for Fem4Forest at the national level, reveal country-specific perspectives on women in forestry, and identify contributing factors that help women pursue careers in forestry.
- 20 **Round tables** with different target groups at the national level to present selected findings and discuss measures for greater involvement of women in the forest sector.

This booklet provides an overview of the forest sector, female forest ownership, and women in the forest workforce in the DR. To this end, key findings from the project's Status report and the Fem4Forest survey with female forest owners and forest professionals (n=880) are gathered. The booklet defines benchmarking indicators that support a more equal presence of women in the forest sector and their competencies in the labour market. Benchmarking helps to evaluate the upcoming support models for women in the forest sector of the DR.

Figure 1. Info box about respondents to the Fem4Forest survey.



The distribution of respondents among countries is uneven. The largest proportion of respondents lives in Germany (mainly Bavaria), Croatia, the Czech Republic, Slovenia, and Austria. The number of respondents from the other countries, including Ukraine, Serbia, Romania, Bosnia and Herzegovina, and Bulgaria, ranges from 50 to 70.

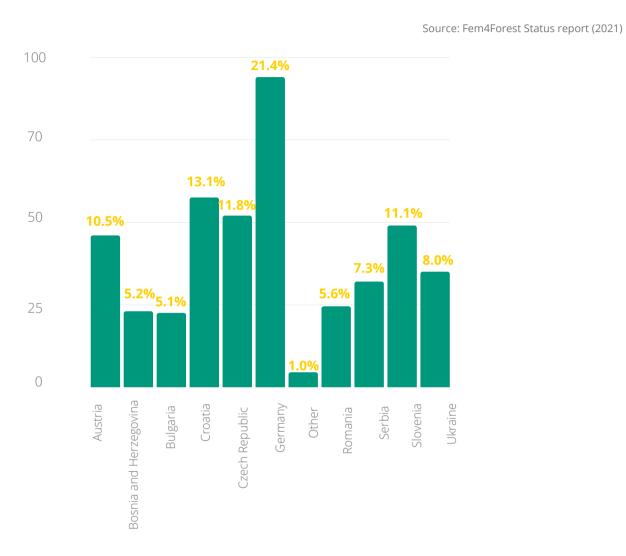


Figure 2. Countries in which respondents of the conducted research live.

The proportion of female forest owners varies widely in the DR. In some countries female forest ownership is widespread, in others (much) less so. The presented data reflects the uneven distribution of female forest ownership in the DR. 185 female forest owners responded to the survey. Most of them live in Austria (53 / 39.8%), Slovenia (30/ 22.6%) and Germany (Bavaria, 33 / 17.3%).

132 reported that they are farmers and/or forest owners, while 52 indicated that they are both forest professionals and forest owners. Moreover, 663 survey respondents identified themselves as female forest professionals. They are unevenly distributed among the countries of the study cohort, ranging between 147 from Germany (mainly Bavaria), followed by Croatia (104), the Czech Republic (85) and Ukraine (70), while female professionals from Austria (30) represent the smallest share.



Forest sector in Danube Region

1. Forest cover in Danube Region



The forest sector covers all economic activities that depend on the production of goods and services from forests. A distinction is usually made between wood supply and non-wood products. The forest sector covers forestry, sawmilling, wood processing, and the manufacture of furniture as well as pulp and paper.

Fem4Forest emphasizes the "provisioning" ecosystem services of forests.

Recent Eurostat data (Dec 2020) indicate that 0.2% of EU GDP was accounted for by forestry and logging in 2018. The number of jobs in forestry and logging in the EU decreased between 2000 and productivity 2018. but increased. In 2018, 519,400 people worked in forestry and logging in the EU-27. The largest workforce was recorded in Poland (73,300 people), Romania (51,800), Sweden (40,000),and Germany (39,000).

The GDP share from forestry and logging differs widely within the DR, ranging between 0.1% in Germany and 0.9% in Romania.

Productivity increased significantly in several countries of the DR, including the Czech Republic, Germany, Romania, and Slovenia. Contracting harvesting operations, transport, and afforestation to smaller firms is a common business model. Moreover, many Fem4Forest partner countries report growing employment in wood processing, manufacturing, and construction. Forestry is significant for rural development.



2. Forestry is key to rural development

- The Czech Republic and Romania are major exporters of roundwood to European markets and home to significant wood processing industries. Moreover, 10 out of 100 Austrians work with wood. After tourism, it is the second most important good in foreign trade.
- Bavaria is home to the largest state forest company and private forest company in Germany. Demand for timber has increased mainly because of the growing capacities of sawmills and wood construction.
- Slovenia and Bosnia and Herzegovina are the most forested countries in the DR with major timber productions. In Slovenia, the number of contractors increased on average by 10.2 contractors per month in 2020. Bosnia and Herzegovina is a net exporter of primary and secondary forest products. Forest stocks are considered a key resource for the country's economic development.
- Croatia seeks to step up and continues to increase the harvesting of roundwood.



- Public enterprises for state forest management in Bulgaria and Serbia harvest and export wood mainly as biomass for heating and energy. The state of logging companies and other forest contractors is critical in Bulgaria and Serbia, but also in, for instance, Bavaria (e.g., old equipment, lack of financial resources to invest in modern machinery).
- Ukraine is an agricultural-industrial country. 25% of Ukrainian wood is harvested in the Carpathian region, while for the whole of Ukraine, 69% comes from sanitary cuts, which impact the quality and commercial value of timber. Woodworking has a long tradition but is challenged to increase the production of high value-added wood products, including furniture. The overall workforce for forestry and woodworking comprises 173,031 full-time jobs in Ukraine (Status: 2018).
- Climate change affects forests and forestry. Extreme weather conditions and bark beetle pests increased the volume of harvested timber in Austria, Bavaria, the Czech Republic, Slovenia, and Ukraine.

3. The forest sector is dominated by men



Most respondents of the Fem4Forest survey perceive the forest sector as a male domain. The great majority thinks that the representation of women is unsatisfactory. Nonetheless, female role models do exist, showing that women bring different perspectives and contribute to efficient solutions.

Source: Fem4Forest survey (2021) Representation of women in the forest sector is satisfactory. Forestry is an economic sector with a male connotation. Women bring in different perspectives and contribute to efficient solutions. Female forest owners emphasize multifunctionality and closeness-to-nature in forest management. Female owners often leave forest management to male family members. There are female role models in the forest sector. 0% 25% 50% 75% 100% Not specified Yes Not sure No

Figure 3. Perceptions about forest sector.

4. The forest sector is changing



Timber harvesting represents the major source of income from forests. But the forest sector is changing. Climate change and growing attention to biodiversity and nature conservation are topical issues. Moreover, attention for non-wood forest products (NWFP), forests for health and wellbeing, and the circular bioeconomy challenge the traditional business models that equate the forest sector with timber production. Payment schemes and other incentives to monetise forest ecosystem services are flourishing.

Bavaria, Croatia, Serbia, Slovenia, Romania, and Ukraine report that NWFPs are considered to be a potential field for development in rural areas. Mushroom and berry picking, collection of medicinal plants, and hunting are traditional activities in many rural societies, contributing to household incomes and diets. The Czech Republic and Slovenia have begun to monetise the value added from berry and mushroom picking, honey, game hunting, Christmas tree plantations and other forest activities. NWFPs sustain rural livelihoods with women playing important roles therein. The collection, transformation, and trade of NWFPs can be integrated into sustainable forest management and will innovate the forest sector.

The forest sector is changing, and women are part of this transformation. Women are active and becoming more frequently employed in the sector. Their great interest in topical issues including adaptation to climate change, nature conservation, forest maintenance, and the planning of forest operations is key to improving sustainable forest management and making it work for people and the planet.

Female forest ownership



Female forest ownership is common in countries with high(er) shares of private ownership. Fem4Forest distinguishes between publicly and privately owned forest. Public forest ownership includes state and municipal forests. Private forests are owned by individuals and legal persons (churches, NGOs. cooperatives or communities). High shares of state-owned forests are prevalent in many former socialist countries, yet distinctions apply, as shown in the following graph.

Key messages:

- Female forest ownership differs largely across the DR.
- Timber harvesting is a major purpose of female forest ownership.
- Motivations for forest ownership differ from forest uses.
- Female forest owners manage their forests for multiple goals if they have the capacity and the support structure to do so. They decide with others how to manage their forests.

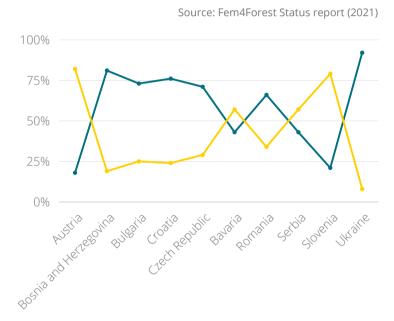


Figure 4. Distribution of forest ownership in the Danube Region countries.

Like in Austria, the bulk of forests in Slovenia is privately owned, but the traditions of private forest ownership vary. Slovenia started the restitution of property that had been confiscated after the Slovenian War of Independence to farmers and other private forest owners, agrarian communities, landowners, and the Church in 1991. In Romania and Serbia, the restitution of public forests to private entities was less transformational than in Slovenia. In the Czech Republic, a major beneficiary of forest restitution has been the church, which owns more than 5% of all forests, while private individuals own 17.5%.

6 of 10 Fem4Forest countries do not have statistical data on female forest ownership: Bosnia and Herzegovina, Bulgaria, Croatia, Romania, Serbia, and Ukraine. In Croatia the share of female owners is estimated to be 7%. In Bosnia and Herzegovina, the share of female owners is even smaller because the inheritance of forest property follows along the male line and women rarely share formal ownership rights with their husbands. In Ukraine, there is almost no private forest ownership.

In Austria, Bavaria, the Czech Republic, and Slovenia the share of women who own forests is between 23% and 35%. The sizes of forest parcels differ greatly. In Austria, the average size of forests owned by women is 11.1 ha, which is smaller than the general Austrian average size of private forest property (14.5 ha) but far larger than that of other countries. The share of private female owners of forested parcels is almost the same in the Czech Republic as it is in Bavaria. In the Czech Republic most female owners own less than 1 ha, while in Bavaria women own on average 1.9 ha. In Slovenia women own an average of 2.5 ha.



n.a. = not available / not announced Source: Fem4Forest Status report (2021)



2. Timber harvesting is a major purpose of female forest ownership

When asked for which purposes they use their forests, female owners revealed that forest ownership goes hand in hand with timber harvesting. Harvesting timber for own use and sale represent the major purposes of forest ownership, followed by nature conservation and recreation. Hunting and extraction/sale of NWFPs are important to 17% and 13% of respondents, respectively, while use of the forest for educational purposes and research play a minor role.

8,11% Education/Forest pedagogy 12,97% Harvesting/Selling non-wood products Harvesting/Selling timber 60,00% 17,30% Hunting Nature conservation Other 10,27% 29.73% Recreation Research 6,49% 75,14% Timber and/or Fuel wood for own use

Source: Fem4Forest Collected needs of women in forestry report (2021)

Figure 6. Purposes of female forest ownership.

Most female forest owners who responded to the survey assume active roles in the management of their forests. Very few have either no management plans at all or do not know (2.7% and 3.2%, respectively). Almost every fifth female owner in the survey makes a living from their forest, accounting for more than 50% of their income. On the other hand, 40% of the female owners surveyed responded that their forest does not support their livelihood at all, while another 40% depend on income from their forest in a range between 20% and 50%.

When asked about their management plans, the majority (56.2%) responded that they plan to manage their forests as they have for the past five years, a third (30.2%) intend to manage them more intensively, while a minority (7.6%) indicated that they plan to manage their forests less intensively than they have in the last five years.



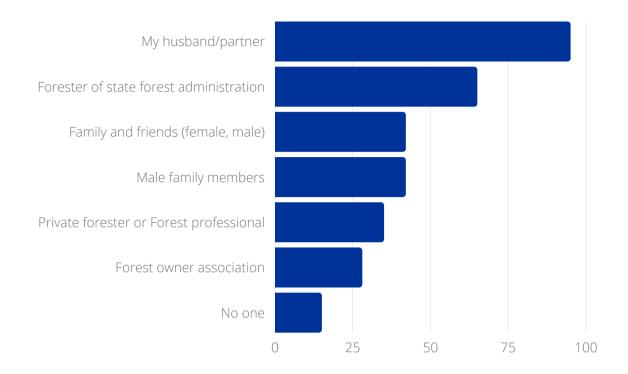


Figure 7. Options for support in management of forests for private female owners.

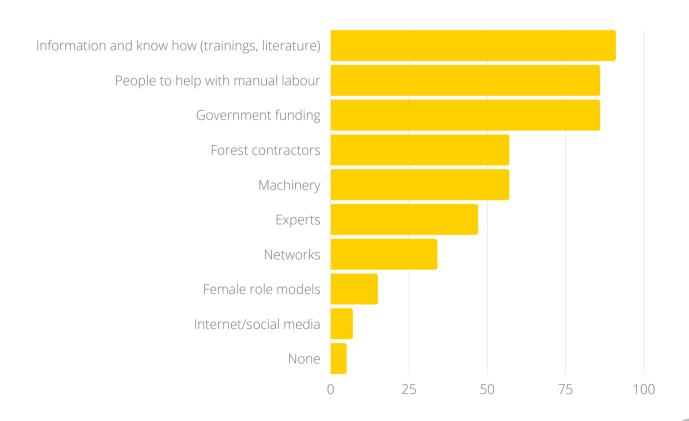


Figure 8. Options for support in management of forests for private female owners.

Women working in forestry

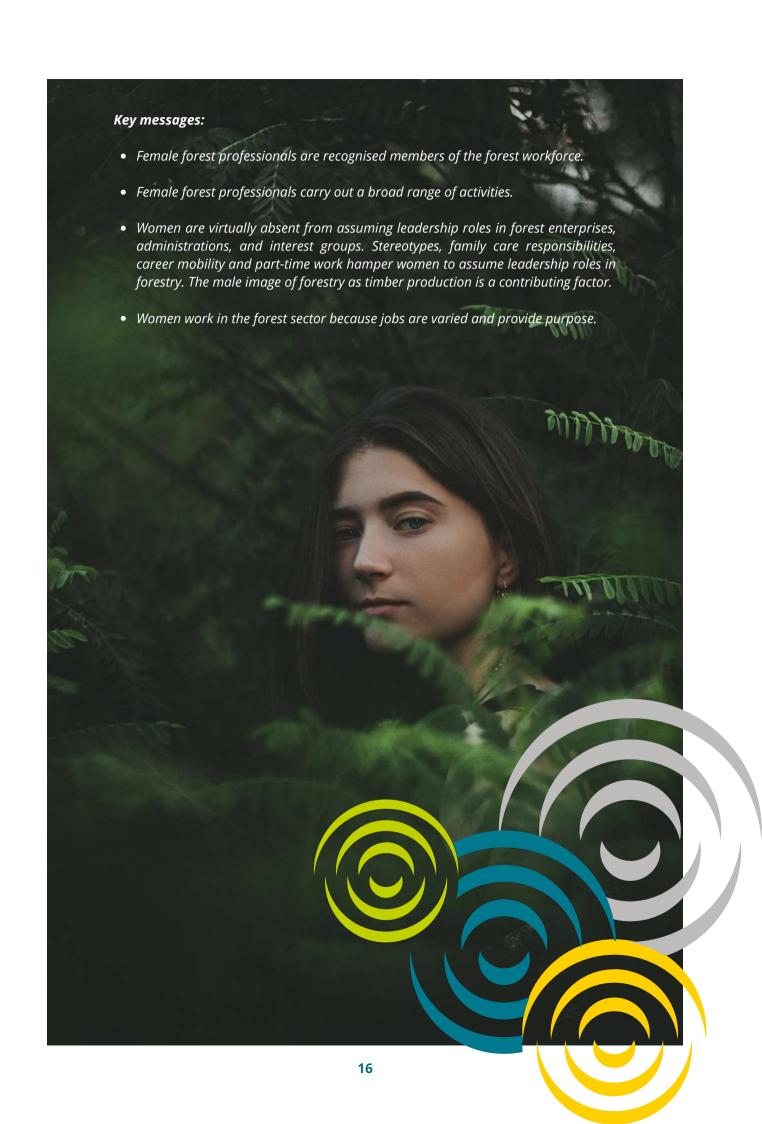
1.Female forest professionals are recognised members of the forest workforce

Highly educated female forest professionals have become more common in the forest workforce. The Fem4Forest Status report shows that their engagement in the sector is more common in the DR than it was two or three decades ago. FAO/UNECE define the notion of forest workforce as "people engaged in or available for work, either in a country or area or in a particular firm or industry" to include both employees and self-employed people who are active in forests and forest-based industries. Fem4Forest sheds light on the number of employees. Statistical data on the number of self-employed women in forestry is lacking.

Data is available for the number of jobs in the public forest sector, including the relative share of women and men. The collected data do not provide insights into the types of work and the qualifications needed. Austrian and Bavarian data covers only foresters, forest managers and forestry professionals, whereas the data from Croatia, Romania, Serbia, Slovenia, and Ukraine show the overall number of women working in forest administrations and state forest companies.

Figure 9. Employment of women in forestry in Danube Region.

Employment in forestry	Forest administrations				State forest companies			
	Female	Male	Total	Share Female	Female	Male	Total	Share Female
Austria	34	683	717	5%	n.a.	n.a.	n.a.	n.a.
Bosnia and Herzegovina	17	172	189	9%	536	3590	4126	13%
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Croatia	740	6840	7580	10%	1465	6547	8011	18%
Czech Republic	310	604	914	34%	n.a.	n.a.	5865	n.a.
Germany/ Bavaria	123	708	831	15%	91	646	737	12%
Romania	1213	9397	10,61	11%	n.a.	n.a.	n.a.	n.a.
Serbia	21	38	59	36%	938	3696	4634	20%
Slovenia	106	581	687	15%	66	235	301	22%
Ukraine	1172	4951	6123	19%	6	246	252	2,4%





2. Female forest professionals carry out a broad range of activities

Typical jobs for women working in forestry cover a broad range of activities, including government oversight, forest extension, forest inventory, nurseries, research, knowledge transfer, pedagogy, nature conservation, and accounting. Moreover, looking at the available data, jobs in the public forest sector seem to be more attractive for women. They work less in positions that require or are associated with physical strength and machinery.

Women play a minor role in those fields of forestry work that generate revenues, direct including harvesting, forest contracting, and timber sales. Bavaria, the Czech Republic, Romania, and Slovenia report job increases in forestry production and contracting. The number of jobs in these fields has decreased in Bulgaria and Croatia, and to some extent also in Serbia, while Croatia expects an increase of jobs in wood processing, nature protection, and tourism.

Employment trends for Bosnia and Herzegovina, Bulgaria, and Ukraine cannot be provided.

The data on female employment in the private forest sector is limited. Except for Austria (10%) and Romania (11%), there is no data for women in forestry jobs of private companies available while the provided data is not comparable. The 10% share of women in private forest companies of Austria manage forests that are larger than 500 ha whereas the 11% share of women in Romania's private forest sector covers all forest companies including contractors. management and of forests will governance continue to include more women. The number of young women enrolled in forestry programmes is significant and increasing. The share of women in forestry programmes (BA, MA) ranges between 25% in Bavaria and almost 50% in the Czech Republic.

Several countries reported a greater share of women with doctorates in forest sciences, ranging between 27% and 44%. The number of girls in vocational programmes is rising in several countries as well. Girl's Days and other offers to attract a greater share of women to the forest sector are becoming more frequent (e.g., mentoring programmes). The growing number of early career females will affect the forest workforce.

Female forest professionals in the DR are challenged to enter the workforce in forest enterprises in larger numbers to gain a stronger foothold in forestry. The potential is there. Their motivations to work in forestry are assets to ensure sustainable management in the face of growing demands forestry.

3. Female leaders are rare in the forest sector

Women are virtually absent from assuming leadership roles in forest enterprises and tend to play marginal roles in leadership positions of forest administrations in the DR (Bavaria, Bulgaria, Czech Republic, Romania). In some countries, however, it seems common for women to hold leadership positions in forest directorates at ministerial level (Austria, Czech Republic, Croatia, Serbia, Slovenia, Ukraine), manage educational centres and research institutions (Austria, Bavaria, Croatia, Slovenia), hold management positions in municipal forests (Germany, Czech Republic), or hold key positions in the management of protected areas (Austria, Ukraine). In 4 out of 10 Fem4Forest countries, women act as forest ministers (Austria, Bavaria, Bulgaria, Croatia).

Moreover, interest-representation of forest-related matters is dominated by menin several (Austria, Bavaria, Bosnia and Herzegovina, Czech Republic) but not in all countries (Bulgaria, Serbia). Typical forest-focused interest groups include forest owner associations, forest professional associations, hunting associations, forestry societies, and conservationist groups some of which are based in forestry. Several reports have also listed associations that represent entrepreneurs in forestry and wood working industries as well as civil society groups for the advancement of sustainable development in rural societies. The available data indicate that women tend to be more present in forestry societies, play greater roles in ENGOs and civil society groups and may lead entrepreneurial associations.

Forestry is largely understood as a male sector. Asked which factors prevent women from pursuing careers in the forest sector, women mentioned that roles and stereotypes as well as the work environment are significant stumbling blocks for them. The combination of family care responsibilities, career mobility and part-time work hamper women to assume leadership roles in forestry.

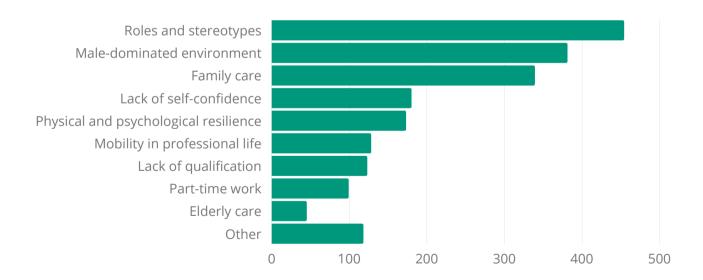


Figure 10. Factors that prevent women from pursuing careers in the forest sector.



4. Women work in the forest sector because jobs are varied and provide purpose

What motivates women to work in forestry? Female professionals find their work interesting and varied and believe that they do a meaningful job that provides a sustainable benefit. Working in and for the forest is a strong motivation. Female professionals are intrinsically motivated to work in the forest sector, not because they are rewarded with attractive salaries and benefits packages but because in many cases these jobs offer a sense of stability, opportunities for work-life balance and happiness. Career-related factors are far less important. For example, people-oriented leadership and support from colleagues rank quite low as motivating factors. In addition, female professionals find it difficult to link their personal values with those of the company, which underscores the existence of structural and cultural barriers for women working in the forest.

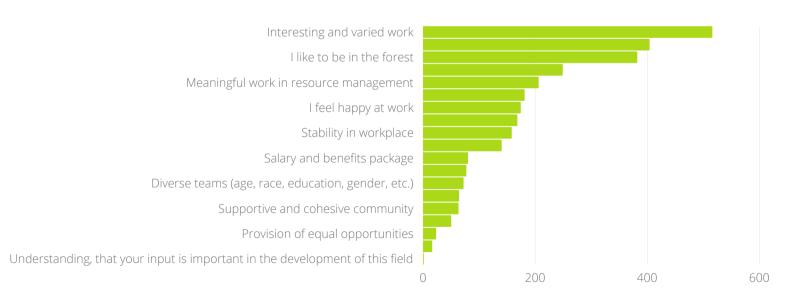


Figure 11. Factors that motivate women to work in forestry.

Examples of good practice to support women gaining a stronger foothold in the forest sector

There is a host of good practice examples (GPEs) to support women gaining a stronger foothold in the forest sector. They target female forest owners, women in the forest workforce, female students of forestry as well as women in rural areas. GPEs put the topic of women & forestry on the agenda.

Forest walks for female forest owners

Forest walks for women are established in Austria and Bavaria. They represent low threshold offers for women with a stake in forests. Organisers are: the Forest Training Center Pichl (FAST Pichl), the Bavarian Community of Interest for Female Forest Owners as well as local Bavarian forest services and forest owner associations. Forest walks facilitate knowledge transfer and exchange. They aim to encourage women to assume active roles in the management of their forests. Forest walks are safe spaces: women feel (more) comfortable to ask questions they might not ask if men were present. The forest walks in Austria are a key component of the country's Forest in women's hands project, which started in 2011. Since then, 106 walks and other events have taken place with 1750 female participants (Status: Autumn 2021). A promising example from Bavaria is the forest walk series "Forest management in the course of the seasons" (Sept 2021-Aug 2022), which is organised by a local forest service in Eastern Bavaria as part of the Fem4Forest project.



• Setting up and professionalising female owners/female professional associations

Networking and collaborating among women at local, national, transnational, and international levels creates momentum for joint interests, helps the recognition of a distinct target group by other players in the forest sector, and builds capacity to get things done for women in the sector. The "Forstfrauen" (women in forestry) associations in Austria and Germany are good examples for the need to professionalise in terms of institutionalisation and communication. Loose networking is not sufficient to sustain the effort and gain traction in the forest sector. Female networking and the building of associations in the sector is in its infancy. Many women are active and volunteer in their free time. Much can be learned, though, from Austria. A milestone was reached with the international conference "Forest in women's hands" in April 2021. See: https://forstfrauen.at/en/konferenz-2021.

• Applied research on women in forest-based industries

Applied research on female professionals and women entrepreneurs in forestry and related industries is a means to raise awareness for their role and status. Promising examples exist in Bulgaria, Croatia, and Ukraine, including for instance the EU-funded Interreg project "Innovative cooperation initiatives in cross-border region" which studied women in forestry (2016-2018), and the Swiss-Ukrainian forest development project which conducted a gender analysis and training sessions (2008-2010). Key to raising awareness with applied research is the communication of project results to a broad audience and active engagement with stakeholders to encourage joint lesson drawing and the planning of next steps. International donors and EU sources play important roles in project funding in South-Eastern Europe.

• Mentoring for early career professionals in forestry

Mentoring is a means to pass on knowledge and experience from senior professionals (mentors) to early career people (mentees). Mentoring programmes for women institutionalise these types of work relationships. The forest faculty at the Bavarian University of Applied Sciences in Weihenstephan started its mentoring programme for female students in 2010. The Austrian Ministry for Agriculture funds the development of a mentoring programme for women in forestry at University of Life Sciences in Vienna. There is a mentoring programme for forestry students at the Ştefan cel Mare University of Suceava in Bucharest, Romania to reduce dropout. The Fem4Forest project builds on these and other experiences and offers transnational knowledge exchange and training for mentors in forestry.



• Government policies for women & forestry initiatives in rural development

Women play a vital economic and social role in rural development. However, their contributions and entrepreneurship to farming, forestry, tourism or cultural heritage projects often go unnoticed. Government funding for rural development represents an important resource for women & forestry initiatives. The Austrian forest walks for women are co-financed by rural development funds. The Agricultural Development Fund Fenomena in Serbia supports projects that link gender issues and entrepreneurship in rural areas. Networks of women may influence the distribution of public funds for rural development. A promising example is the Slovenian Council for women in rural areas. In its role as a consultative body of the country's Ministry of agriculture, forestry and food, it raises attention to female owners in forest management.

Benchmarking for women in forestry in the Danube Region

Benchmarking for women in the forest-sector of the DR provides indicators that support their more equal presence and competencies as forest owners and professionals in the sector's workforce. The benchmarking incorporates (a) the needs and interests of female owners and professionals, draws on (b) Fem4Forest conclusions about how women can get a stronger foothold in the sector, learns from (c) examples of Good Practice, and focuses on (d) goals and methods for female involvement. The GPEs illustrate how greater involvement and empowerment of women can be achieved. Their strengths and limits are included to inspire lesson-drawing for creative imitation at the national and local level that fits with own circumstances.

The benchmarks for female owners and professionals are a report card, a guidebook, and a comparison of available knowledge all in one. They help to compare and evaluate the pilot activities in Fem4Forest partner countries. The benchmarks anchor the idea of equality in forestry and can lead to the creation of structures and frameworks that increase the involvement of women in interest groups, institutions, working staff and businesses in forestry.

The needs and interests of female forest owners:

- Forest ownership is a family tradition.
- Main purposes are timber harvesting for own use and sale, followed by nature conservation and recreation.
- Closeness to nature and achieving resilient forests are major motivations in forest management.
- Women are aware of the many things that need to be done to actively manage forests and feel comfortable doing so but face physical limitations or are assigned physical limitations.
- They need supportive environments to assume responsibility and implement decisions.

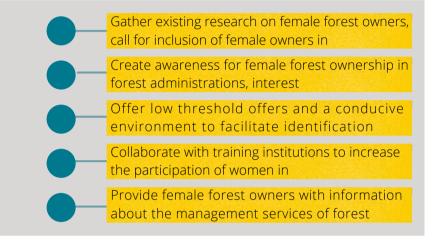
The needs and interests of female forest professionals:

- They are intrinsically motivated to work in the forest sector not because it offers attractive careers with extensive benefits packages one of the main motivations is their interesting, varied, and meaningful work in the forest.
- They often bring diverse and interconnected perspectives but face significant barriers in the male-dominated culture when it comes to having their voices heard and their expertise valued.
- Gender equality is unsatisfactory women working in forestry consider it to be important for the sector.
- Female professionals are highly engaged, well educated, committed, organised and meticulous when working in and for forests/ forestry.
- Female professionals need a strong network and better recognition of work-life commitments to take on leadership roles.



Benchmarks for greater visibility and involvement of female forest owners in forestry:

- Research
- Raising awareness
- Low threshold offers
- Training
- Supportive environment



Benchmarks for a stronger foothold of female forest professionals

- Careers for women and men
- Career planning for women
- Job postings
- Recruitment
- New business models





Facts and Figures regarding women in forestry in Danube region

Forest in Women's Hands

www.interreg-danube.eu/approved-projects/fem4forest



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