

Follo, G., Lidestav, G., Ludvig, A., Vilkryste, L., Hujala, T., Karppinen, H., Mizaraite, D. (2017). Gender in European forest ownership and management: reflections on women as “New forest owners”. *Scandinavian Journal of Forest Research*, 32(2), 174-184.

1 Title page

2

3 **Title: Gender in European Forest Ownership and Management – Reflections on Women as**
4 **“New Forest Owners”**

5 Running headline: Female forest owners

6

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31

32 Abstract and Keywords

33 Abstract:

34 The group of female forest owners is growing across Europe and currently estimated to be about
35 30% of all private owners. This new category of forest owner merits a closer look. By
36 introducing a gender perspective across three different research frameworks, this paper
37 substantiates that gender matters in forest ownership, management, operations, and the
38 understandings of these three aspects. Where gender-disaggregated data is available, and gender
39 is assessed as an empirical variable, we find differences in numbers between male and female
40 forest owners in most countries. By adding the concept of gender as a relational and
41 structuralizing category, we demonstrate that gender-structures affect e.g. actual behavior of
42 female and male forest owners and the self-evaluation of forestry competence. Further, when
43 considering gender as a meaning category we explore how meaning produces behavior and
44 behavior produces meanings, and how both shape institutions and natural and artificial matter.
45 Here forestry competence is the applied example. To further increase the knowledge on new
46 forest owners, we recommend i) fellow researchers in the field to assume that gender matters and
47 design their empirical studies accordingly and ii) policy makers to guarantee access to gender-
48 disaggregated data in official registers and statistics.

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49

50

51 Keywords: Female forest owners, gender-disaggregated data, meta-analysis, NIPF owners

52

53 Text

54

55 **Introduction**

56 In Europe, unlike many other parts of the world, forest land is to a large extent owned by small-
57 scale forest owners (FAO 2010). Typically, a traditional small-scale forest owner also does
58 farming and the entire property constitute the basis for residence and livelihood of the
59 family/household, sometimes as the single or major resource for subsistence, sometimes as
60 complementary to it (Lidestav and Nordfjell 2005; Hänninen and Karppinen 2010; Hänninen et
61 al. 2011). However, recent structural changes in agriculture and forestry, as well as in European
62 lifestyle (Eurostat 2011), have challenged the notion of a family/household based farm-forest
63 ownership as the provider of income and residence. Generally speaking, are the ties between the
64 owner and the land gradually dissolving, and replaced by an ownership relation characterized by
65 little or no involvement in management of the forest, and residence outside the forest property.
66 Fragmentation by sub-division of land and/or by joint ownership is other common attributes of
67 the current changes. The phenomenon is also known as the growing share of “new” types of
68 forest owners (Hogl et al. 2005), which because of their heterogeneity and presumed lack of
69 forest knowledge and economic incentives are considered as a potential problem for the forest
70 industry and policy makers.

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71
72 An industrial wood supply perspective on small-scale forest ownership has also been apparent in
73 research, particularly in studies carried out in the 70ties and 80ties by researchers in countries
74 with a significant forest industry like Finland and Sweden. Typically, large data sets from mail
75 surveys were analysed by different statistical methods in order to identify variables by which
76 forest owners could be categorized by their current management, and furthermore to provide a
77 basis of predicting future behavior in relation to policies and communication strategies (Fischer et
78 al. 2010). The size of the forest property has shown to be positively correlated to harvesting
79 activity and forest management while the age of the owner shows the opposite. A higher degree
80 of forestry activity is also to be expected if the forest owner lives on the property, does farming
81 and performs some forest operations him/herself (see e.g. Boon et al. 2004; Lidestav and
82 Nordfjell 2005; Hänninen et al. 2011). By the influence of a new environmental paradigm, that
83 values forests for their intrinsic as well as instrumental values, more recent research examines
84 attitudes that small-scale owners have towards set-aside areas for nature conservation or other
85 measures associated with new forest and environmental policies. Studies by Eriksson (2012) and
86 Uliczka et al. (2004), among others, indicated the impact of higher education. Another trend shift
87 to be noticed is that researchers with experiences from outside the forestry research area used
88 qualitative studies and applied theories from social sciences, and thereby has also “gender”
89 emerged as a variable and a concept (Fischer et al. 2010).
90
91 Women have only recently been recognized as a category of forest owners (FAO 2006), and
92 should thereby from a research as well as policy point of view be considered “new forest

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93 owners”. Although data and research are very limited, Schmithüsen and Hirsch (2010) estimates
94 that the group of female forest owners across Europe currently amount to some 30% of all small-
95 scale forest property holders. We understand this lack of recognition of women as to be caused by
96 a traditionally predominant focus on active management and self-employment in forestry
97 operations, which has been shown to be limited in the case of females (Strupstad 1991; Lidestav
98 and Wästerlund 1999; Follo 2001). It has been common knowledge that private forestry
99 predominantly has been a masculine socio-technical system, and being a female forest owner or
100 female forestry advisor has been considered an interesting exception (Lidestav and Wästerlund
101 1999). To put it simply, as the paramount activity in forestry is harvesting, and harvesting is
102 conducted by men, forestry can be defined as “what men do”. Given such a definition, the gender
103 equality issue is in effect about making women as competent, active and interested in harvesting
104 as men. However, the scope of contemporary forest policy in Europe is broader than just
105 harvesting, and includes environmental and social aspects as well as consideration of other
106 industries. As a result, policy involves other perspectives, interests and activities than it did
107 previously (Winkel et al. 2013).

108
109 Research findings suggest that to be in the world as a forest owner is something different from
110 being in the world as an employee or a shareholder, for instance as regards intergenerational and
111 emotional ownership values (Lidestav et al. 2000; Follo et al. 2006; Follo 2008; Vainio and
112 Paloniemi 2009; Lidestav 2010; Lähdesmäki and Matilainen 2014). Living everyday life as a
113 woman is also different from the everyday life of a man (for a theoretical-philosophical approach,
114 see Irigaray 1985). Consequently to be in the world as a forest owner is something different from

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115 being in the world as a non-forest owner, but to be in the world as a female forest owner is also
116 something different from being in the world as a male forest owner.

117

118 The paper sets out to demonstrate how the understanding of the current changes in small-scale
119 forest ownership in Europe can be improved by including a gender perspective not only by
120 considering *gender as an empirical variable*, but also *gender as a relational and structuralizing*
121 *category* as well as *gender as a meaning category*. We start by exploring how gender is
122 represented as an empirical variable in forest ownership statistics. Next, we consider how these
123 numbers can be interpreted theoretically. By way of the framework gender as a relational and
124 structuralizing category, we ask: What is there to be known about female and male forest owners
125 as categories, respectively, and how are the differences constituted? Thirdly, we investigate what
126 we are able to see if we approach gender as a subsystem of a larger meaning system. Finally, by
127 applying these three gender frameworks, we conclude by recommending some implications for
128 future research and policymaking.

129

130 Socio-cultural practices set different conditions for women and men, and at the same time it is the
131 individuals that constitute society with their social practices. This implies that there are
132 interchanges between structures and actions situated in a social and cultural context (Bourdieu
133 1984; Bhaskar 1989). In this interaction, conditions are reproduced or contested, and when the
134 contesting forces are more influential than the reproducing forces, change will occur and new
135 perspectives will be added. The individual is always preceded by the society, which sets the
136 framework in terms of possibilities and restrictions. This means that forest owners, forestry

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137 professionals and researchers may reproduce these structures consciously or unconsciously (see
138 e.g. Follo 2001; Häggqvist et al. 2010). However, it is also possible for agents to modify the
139 structures, both with thoughts, words and actions. As we consider gender awareness crucial for
140 better understanding the issue of “new forest owners”, we as researchers on forest and forestry
141 have a particular responsibility to problematize the issue using a gender perspective.

142
143 Gender and Sex are categories of difference and differentiation. In everyday language, both terms
144 are often used interchangeably, however in scientific work they are distinguished. “Sex” denotes
145 biological differences whilst “Gender” refers to distinctions between males and females in terms
146 of their social role and status (Squires 1999). This implies that the way women and men are
147 perceived and act can change in time and under changing social and cultural conditions (Moore
148 1988; Arora-Jonsson 2005). However, the main attribute of gender is that it operates through
149 imaginations and stereotypes of “femininity” and “masculinity”.

150
151 In everyday life, gender-aspects are inevitably linked with the physical body, because social and
152 cultural attributes of difference always get attached to the physical phenomenon of the (assumed)
153 mutually exclusive biological dichotomy “male” versus “female” (Braidotti 1994). In such a
154 perception an individual can only either be of male or female sex/gender and presumably never
155 both, never something in-between (for a critique of these assumptions see Fox Keller 2002).

156 Gender socialization is the process by which boys and girls (primary socialization) and men and
157 women (secondary socialization) learn the expectations associated with their sex (see e.g. Berger
158 and Luckmann 1991, p. 149-182.) All aspects of daily life and society are affected, including

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159 personal self-concepts at the individual level, social and political attitudes, and perceptions and
160 relationships about other people. Family, peers, schooling, religious training, mass media, and
161 popular culture are just a few of the institutions through which gender socialization happens
162 (Brooks 1997).

163
164 Including a gender perspective in research is not the same as doing gender research. Whilst the
165 former can be included in all kinds of broader research, the latter focuses on “gender” as its
166 pivotal point. This is not to be confused with doing “feminist research”, a clearly more politically
167 motivated strand of research within the struggle for equality and the change of male-female
168 power relations (on feminist research and feminism see for instance Saarinen 1992 and Holst
169 2005). Thus, there may be several reasons for considering gender and it may include different
170 goals.

171

172 **Material and Methods**

173 The study method has two main elements: A compilation of current data and publications on
174 European forest ownership, and a collective meta-analysis of those by a team of researchers from
175 seven countries (the authors).

176

177 Within the Cost Action FP1201 *Forest Land Ownership Changes in Europe: Significance for*
178 *Management and Policy (FACESMAP)* representatives of the participating countries were asked
179 to tell if gender-disaggregated ownership data exist in their country, and if so provide figures and
180 references to corresponding sources and literature on gender in forest ownership issues. Sixteen

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181 of the 28 involved countries reported existence of some gender data, and from the country reports
182 50 sources and publications covering 17 countries were identified, whereof 16 providing figures
183 on female forest ownership (Živojinović et al. 2015). Further, the team of authors provided 15
184 references on additional literature/publications from their respective countries and a summary of
185 the content in English.

186
187 The collective meta-analysis of the total 65 sources and publications was conducted through a
188 process where we together discussed and scrutinized the information by using our expert
189 knowledge on European forestry and forest owners, benefiting from our different professional
190 backgrounds in forestry (5), geography (1), pedagogy and anthropology (1) and political science
191 (1) as well as our country-specific knowledge on the contextual conditions in Austria, Finland,
192 France, Latvia, Lithuania, Norway and Sweden. Deliberately we focused our meta-analysis on
193 information provided in the 49 most relevant publications from our own seven countries, but
194 when needed asked colleagues from other FACESMAP countries for more information regarding
195 their country’s contextual conditions and their included publications/studies. During a series of
196 face-to-face and skype-meetings, and in the draft-writings, the collective wisdom (Landemore
197 2012) of this broad expertise team of researchers was tapped. We asked ourselves: What does this
198 (or that) particular figure (or lack of figures) tell us? How may this (or that) particular finding or
199 statement be understood when applying our country-contextual knowledge, and different gender
200 frameworks? Thereby we were able to identify several knowledge gaps, but also what we
201 considered to be misinterpretations due to a too shallow or limited understanding of “gender”.
202 For example, when differences between male and female forest owners’ forest management

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203 behavior were interpreted as an outcome of being born as man or woman without considering the
204 doing of gender and/or the meaning-making of gender. Our reasoning was social (Sperber and
205 Mercier 2012), that is, the argument from one of us was contested, checked and tested before a
206 common understanding was reached by the group. Further, it was a true collective learning
207 process in the Laats and Simons’ (2002) understanding of the concept: Collective learning process
208 aimed at collective outcomes. Some of us were well aware that gender matters in forestry and
209 how, others had observed that data told them that gender made a difference, without
210 understanding why and how, and still others believed that gender was important but did not have
211 access to data to support this. These different reflexive levels of understandings implied that
212 when it comes to gender, nothing was taken for granted. Instead, our respective understandings of
213 gender were challenged, and through the discussions both our individual and collective
214 understanding of the concept and its explanatory power improved. Further, the discussions
215 strengthened the credibility and the usefulness of three frameworks in order to demonstrate how a
216 gender perspective can improve our understanding of the current changes in small-scale forestry
217 in Europe. As part of the process we also achieved new figures for France, Austria and Finland to
218 be included in the result section. In summary, the result of the process is twofolded: first what
219 numbers there are, and then what does the numbers tell us when we apply the three frameworks
220 introduced below.

221

222 ***Basic Framework***

223 In research there are multiple ways to consider gender. We will mention and apply three
224 frameworks: Gender as an empirical variable, gender as a relational and structuralizing category

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225 and gender as a meaning category. We have chosen these ones mainly due to three reasons. (1)
226 These frameworks are increasingly complex and interrelated: The second one encompasses what
227 the first one is taking into account, the third one encompasses both the two first ones’
228 considerations, but the two last categories require that humans are split beforehand into men and
229 women – which points to gender as an empirical variable. (2) The three frameworks let the
230 researcher look for gender at different, let us call it, “places” in real life, as explicated below. (3)
231 These frameworks are basic but still elaborated enough to our purpose, that is to demonstrate how
232 gender may be included in, and probably improve, research on current forest ownership changes
233 in Europe. The two last frameworks are theoretical approaches to gender. (For an overview of
234 theoretical approaches related to gender and agriculture see Brandth, 2001 chapter 4. For an
235 overview of issues on power and gender in European rural development see Goverde et al. 2004.)
236 Of the three frameworks, gender as an empirical variable is strongly associated with quantitative
237 research, while the other two frameworks are more associated with qualitative research methods.
238
239 The framework gender as an empirical variable is founded on the thought that a person is either a
240 man or a woman, and gender is something we are. Gender is here the biological sex, and the
241 place to look for it is the body. Gender as an empirical variable is manifested in tables telling us
242 that X% of female respondents and Y% of male respondents are doing/saying/thinking Z.
243 Differences and similarities between the perceptions and activities of men and women may then
244 be revealed. In its pure version this framework does not include gender-informed analysis of the
245 reasons behind the differences/similarities found.

246

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247 The framework gender as a relational and structuralizing category is often understood as related
248 to doing gender (West and Fenstermaker 1995a, 1995b; West and Zimmermann 2009). The
249 approach builds on John Heritage’s ethnomethodological formulation of accountability from
250 1984, which West and Fenstermarker (1995a, p. 21) formulates as “the possibility of describing
251 actions, circumstances, and even description of themselves in both serious and consequential
252 ways” for example as “unmanly”, “unwomanly”, “manly” or “womanly”. The doing of gender is
253 interactional, and relational, because it rests on a person’s production of the actions in question
254 and another person’s recognition of the actions as what they are. Gender is here an emergent
255 property of social situations, and the place to look for gender is in situated conduct. Even if the
256 acts take place in micro-situations, the effect of the social doings is relatively permanent relations
257 that end up as structures. These structures in their turn work back on what is understood as proper
258 actions for men and women, a process that contributes to production/reproduction of gender
259 norms. From this framework the idea of gender structuralizing is the main one in our paper.
260
261 Finally, the framework gender as a meaning category (Ellingsæter and Solheim 2002) is founded
262 on anthropological theories on meaning. Meanings are system of ideas and understandings, made
263 public in their external forms (e.g. actions, language, artefacts as cloths and production
264 equipment), produced and reproduced through social practices and the meanings invested in
265 material objects. This cultural flow “consists of the externalizations of meaning which individuals
266 produce through arrangements of overt forms, and the interpretations which individuals make of
267 such displays” (Hannerz 1992, p. 4). According to D’Andrade (1993, p. 96) meaning systems
268 have four functions: They represent the world, create cultural entities, direct one to do certain

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269 things (directive function), and evoke certain feelings. The directive function includes the idea of
270 “gender norms” from our second framework. Gender as a meaning category is part of the larger
271 system of meaning, and may be grasped as a kind of subsystem. This framework lets the
272 researchers look for gender everywhere because for instance institutions (organizations, law
273 based, etc.), artefacts, events and abstract understandings may be gendered through different
274 metaphorical links and associations. This may result in male gendered forest research institutions
275 (male researches studying topic interesting for mainly men), male gendered chain saws (need
276 much physical power to start), male gendered forest days (logging and optimal bucking as the
277 only issue), and male gendered understanding of forestry (harvesting is the paramount activity).
278 Further, and this is the idea we later on will apply in the paper, the approach paves the way for
279 asking if and what kind of gender implications the existence of this or that phenomenon have in
280 the context studied, even if the phenomenon at first sight neither seems gendered nor related to
281 the doings of women and men as social actors. This idea is founded on the thought that meanings
282 are part of a system, which is also to say that everything is linked to everything else by way of
283 more or less systematic meaning connections.

284
285 Among the 49 selected focal publications from our home countries 31 has been applying the
286 framework gender as an empirical variable only, 7 the framework gender as a relational and
287 structuralizing category as the most advanced category, and 11 may be categorized as applying
288 the framework gender as a meaning category as the most advanced category. First, this indicates
289 that gender issues in European forestry is theoretically under-analysed. Second, this implies that
290 we, when we tried to understand the gender-information, had a decreasing numbers of

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291 publications to include in our reflections – and then lesser and lesser published country
292 contextual information to rely on. This is reflected in the result section: We start with many
293 countries included in the part on gender as empirical variable, but end with one country in the
294 part that is a re-interpretation of an earlier finding (two of the authors’ home-country). The need
295 for contextual information to understand gender issues in forestry is here met with our own
296 knowledge of our home-countries.

297

298 **Results**

299 *On Gender as an empirical Variable*

300 The availability and quality of gender-disaggregated data varies across Europe. At one extreme it
301 is included in official statistics (as in Sweden), while at the other extreme no public data exists.
302 This appears to be the case in Belgium, Czech Republic, Greece, Hungary, Poland, Portugal,
303 Romania, Serbia, Slovakia, Spain and Turkey according to the country reports of FACESMAP
304 Cost Action (Živojinović et al. 2015).

305

306 As shown in Table 1 the proportion of female forest owners varies substantially across the
307 countries (from 3% to 52%) with the highest proportion in the Baltic countries and Slovenia.
308 Although female owners are in the minority in all countries except Lithuania, women constitute a
309 substantial and growing number and proportion of European private forest owners. Further,
310 considering the missing data and the out-datedness of some data, it can be assumed that there are
311 a large number of unrecorded female forest owners.

312

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313 Table 1. Basic data on female forest owners and their forest ownership in selected European

314 countries [Table 1 here]

315

316 ***On Gender as a relational and structuralizing Category***

317 To explain the different share of female and male forest owners, gender has to be framed

318 theoretically. It is not enough to understand gender as something we are – which is the case for

319 gender as an empirical variable presented above. In a thought-of world where gender is

320 biologically sex, the aggregated results of a given phenomenon for women and men in a

321 population should be equal to the relative distribution of women and men in the same population.

322 The data in Table 1 contradict this proposition; of course the share of female citizens in Bosnia-

323 Herzegovina is higher than 3%, as is the proportion of female forest owners. We will argue that

324 what actually happens when forest estates are changing owners affect forest ownership statistics.

325 When we do this, we will understand gender as something we do, that is gender as a relational

326 and structuralizing category.

327

328 As pointed out by Schmithüsen and Hirsch (2010), 82% of the private forest area in Europe is

329 owned by families and individuals. In the Nordic countries, West and Central Europe these

330 forests have been (or are being) transferred from parents to children either as legacy or via

331 purchase. In contrast, in many post-communist states private forest ownership is the result of a

332 restitution process causing a disruption of the direct temporal and spatial link between an owner

333 and his/her land. The logical consequence of equal right of inheritance would be that one woman

334 should acquire a forest estate for each forest estate acquired by a man. This explains why the

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335 proportion of female forest owners is higher in Lithuania and Latvia than in the gender equality
336 pronounced Nordic countries. According to Haugen (1994) and Lidestav (2010) the Norwegian
337 and Swedish woman’s inheritance position may, for instance, be contested by a brother or the
338 woman may not be interested. Moreover, the interest in forestry is affected by socio-culturally
339 established understandings and norms, and this is the working of gender as a structuralizing
340 category. Lithuania has the highest percentage of female forest owners (Table 1), yet, does this
341 imply that the Lithuanian state is more concerned with the forest owners’ gender distribution than
342 the Norwegian and Swedish states? This is unlikely. We rather assume that it is the logical
343 consequence of a land restitution process according to western conception of justice and
344 regardless of former inheritance practices; in addition many men were killed during World War II
345 in Lithuania. The fact that mostly men go to the front and most of the women stay home is also a
346 result of gender structuralizing.

347
348 Table 1 indicates also other effects of gender structuralizing. The data shows that female forest
349 owners are older than men, and that the forest estates owned by women generally are smaller than
350 those of men. Considering that the average life expectancy is higher for women than for men, one
351 explanation may be that a number of widows have acquired the forest land from their late
352 husbands. However, according to Swedish study results, widows constitute only a minor
353 proportion of the female forest owners and are in numbers similar to widowers (Lidestav 2010).
354 It might be, as Statistics Norway (2012) suggests as a partial explanation for Norway, that the
355 female owners’ older age is linked to the size of the estates. The larger the forest estates are,
356 statistics show, the fewer are owned by women: The large forest estates are transferred to the next

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357 generation earlier than the smaller estates. This suggestion would imply that the larger estates are
358 transferred to men and not women. Similarly to Norway, in Austria it is forbidden by law to
359 divide traditional farm holdings. This implies that in most cases the estate will be handed over to
360 male heirs. However, Austrian families have found a solution for providing their daughters with
361 some land, as small parts are frequently allocated to other heirs by declaring them as “wandering
362 parcels” (juridical walzende Grundstücke) whilst leaving the core farm intact (Posch 2000). Table
363 1 also describes the forest owners’ place of residence and owners’ level of education. For
364 instance in Finland, Norway and Sweden female forest owners are less likely to live on or near
365 their estate than men do, while in Latvia the situation is the opposite. We assume that this
366 situation in the Scandinavian countries is related both to educational level and an existing
367 virilocal praxis there: The female forest owners in Scandinavia have higher education than the
368 male forest owners and may have had to move to find a suitable job; it is also common that the
369 wife moves to the husband’s place of residence when they get married. The tendency for more
370 educated people to live in urban areas also exists in Latvia, but because of a different historical
371 context, the outcome so far is that female forest owners are more likely to reside on their forest
372 estate. World War II substantially changed the proportion of female and male owners in Latvia,
373 such that female owners were more likely to survive and continue living on family properties.
374 Then, after regaining independence in 1991 properties were given back to previous owners or
375 their legatees. The Latvian government also provided an option to buy forests using privatisation
376 vouchers, and it appears that women were mostly interested in obtaining forest property if it was
377 located near to their residence, whereas men’s decisions were based more on business
378 considerations.

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379

380 Below we give examples of the implications that gender structuralizing may have for an
381 individual female forest owner, and for forest owners in general. In the following we will build
382 on empirical data from six countries, and we focus on differences between women and men, not
383 their similarities. We group the differences in activities on the one hand, and on the other hand
384 more psychological phenomena such as understandings, knowledge, valuations and attitudes.

385

386 Forestry activities often differ between male and female forest owners. In Lithuania, 75% of male
387 owners and 59% of female owners carry out forest related activities at their property, and male
388 owners mention a wider range of activities. Moreover 47% of male forest owners make decisions
389 about forest-related activities by themselves, while only 7% of female owners do so (Mizaraite
390 2005). The occurrence of self-activity in Swedish family forestry is much more common among
391 male than among female owners (Lidestav and Nordfjell 2005; Häggqvist et al. 2014). This is the
392 case in Latvia too, but also the use of service providers for forest management activities are used
393 less often on female-owned estates (Vilkryste 2008). Harvesting frequency or probability of
394 harvests has been found to be lower on estates owned by women in Finland (Ripatti 1999). Also
395 other behavioral differences are detected: Women sell on average one m³ per hectare and per year
396 less than men do, but on the other hand they sell less frequently and then in larger quantities per
397 sale than men do (Kuuluvainen et al. 2014). In the Norwegian counties of Trøndelag, female
398 owners visit their forests on 10 days per year, while their male counterparts do so on 16 days
399 (Blekesaune 2005). In France, a higher percentage of male owners want to buy more forest (20%
400 for men, 11% for women), and a higher percentage of men does not want to sell off part of their

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401 forests (90% for men, 85% for women) (Didolot 2015). These interests will, if realized, lead to
402 further concentration of forest in the hands of male owners (see Table 1).
403
404 Concerning psychological phenomena, we find numerous differences between male and female
405 forest owners. In France, forest owners are asked about their two main expectations for the forest.
406 For both women and men the response option “emotional affection” turns out to be the dominant
407 expectation, but for women the score is higher than for men (77% against 63%) according to
408 Didolot (2015). Among forest owners in Trøndelag in Norway, 13% of female forest owners
409 express interest in forestry compared to 30% of male owners (Blekesaune 2005). Less forestry
410 competence seems to be another difference between female and male forest owners. Figures from
411 Latvia show that 58% of female forest owners lack forestry knowledge and experience, compared
412 with 23% of male owners. Differences in forestry competence is also evident in their self-
413 evaluations of competence (Vilkryste 2003). Absenteeism is an issue in the scholarly debate on
414 new forest owners (Hogl et al. 2005), and in Sweden female owners living away from their forest
415 has poorer forestry experience, and lower levels of forestry education and knowledge compared
416 with their male counterparts (Häggqvist et al. 2010). Objectives for forest ownership are usually
417 an important factor in explaining the past, and in estimating future forestry-related behavior. In
418 Lithuania and Latvia, female and male forest owners indicate firewood for home consumption as
419 a most important forest objective. However, to male owners, income generation is more
420 important than it is to female owners, while wildlife habitat protection is more important to
421 female owners than to the male owners (Mizaraite 2005). Satisfaction with current silvicultural
422 and harvesting practices may also differ among women and men. Only 47% of Finnish female

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423 owners, compared with 62% of male owners, are satisfied with current practices, and women
424 respond more frequently than men that they cannot say whether they are satisfied (12% versus
425 3%) (Kumela and Hänninen 2011).

426

427 ***On Gender as a Meaning Category***

428 The differences between female and male owners presented earlier, may be a result of the
429 functioning of gender as a relational and structuralizing category, but may also be heavily
430 influenced by the gender meaning-making. Some meaning-making is easy to recognize, meaning-
431 making obviously saturates social institutions as marriage and material structures as forest school
432 toilets with gender. However, Ellingsæter and Solheim’s (2002) approach induces us to look for
433 the more hidden and non-reflected meaning relations that may end up with gender implications,
434 such as forestry competence. If forestry competence is neutral in every respects, still it has gender
435 implications. The poorer forestry competence Norwegian female forest owners have compared to
436 male owners, Follo (2008) argues, makes it both more difficult for female owners to be elected to
437 commission of trust in the main forest owners’ organization, and that they in their forest
438 management to a higher degree than male owners have to rely on what other forestry actors say.

439

440 Forestry competence is, we claim, not neutral but loaded with value judgements. It includes some
441 ideas, but others are left out, among the thoughts included are some evaluated as more important
442 than others, and some arguments are understood as more correct. Such attributes of competence
443 may be forest research based, but also more country specific due to the context’s natural, social,
444 cultural, political and economic conditions. In European forestry contexts then, specific

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445 attributions of competence exist, are developed and spread. Based on Ellingsæter and Solheim
446 (2002) it is possible for instance to ask research questions such as: What gender implications do
447 these attributions of competence have? How does gender interfere with and is reflected in the
448 development of new forestry competence and what kind of forestry competence is understood as
449 proper? Does gender matter in how established and newer forestry competence is spread? As
450 stated previously, female forest owners in general seem to have poorer forestry competence than
451 male owners. Rephrased this claim might read: Given the way forestry competence currently is,
452 developed and spread, female forest owners end up with poorer forestry competence than their
453 male counterparts. For one thing, had the forestry competence been more in accordance with
454 female forest owners’ competence, the mismatch had been lesser.

455
456 By organizing themselves in networks, female forest owners in Sweden and Norway are
457 challenging the traditional understanding of forestry as a competence for men and of men
458 (Lidestav and Andersson 2011; Brandth et al. 2015). These networks offer a place for alternative
459 co-production of knowledge and identity as forest owner, a place where “simple questions” can
460 be asked and non-traditional subjects can be explored. Also, by their plain existence not only the
461 individual female forest owner but the forestry sector at large has to consider gender.

462
463 ***A Re-interpretation of a Gender-as-empirical-variable Result***
464 Gender structuralizing and gender meaning-making presented above lead to the conclusion that in
465 addition to real material conditions, the meaning of forest ownership may also differ, depending
466 on whether the owner is a woman or a man. The mode of entrance to forest ownership and

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467 forestry, the process of socialization, the (lack of) physical presence of persons of the same sex in
468 the industry, the activities that male and female owners are involved in, and the (lack of) public
469 recognition within the forest owner society, have impacts on the identity formation and self-
470 perception of current and future female forest owners. This contributes to new/reproduction of
471 gender structuralizing and gender meaning making.

472
473 The knowledge of how gender may matter, and matters also may be gendered, give us a basis to
474 scrutinize an interpretation and a conclusion when gender is understood as an empirical variable,
475 i.e. something we are. We have chosen a finding on price sensitiveness as a re-interpreting
476 example because the original interpretation is surprising. Based on a nation-wide mail inquiry
477 among Finnish forest owners in 1990, Ripatti (1999) finds that women react more strongly to
478 changes in stumpage prices than men, in terms of the probability that they will sell timber. Price
479 sensitiveness requires in-depth knowledge of forestry and of timber prices, and how they vary
480 depending on buyers, assortment, time windows and the structure of the forest to be cut (Follo et
481 al. 2006, p. 57-72; Follo 2008, p. 51), and therefore also a continuous interaction with the
482 industry and a keen eye on price fluctuations. This is generally more in tune with male owners
483 than with female owners given what we have presented earlier in the paper on their involvement
484 with forestry, forestry competence, values, etc. Thus the higher price sensitiveness among
485 Finnish female forest owners is a rather surprising conclusion. However, in this respect Finnish
486 female owners may differ from other European female owners, perhaps because of the social,
487 cultural and economic importance given to forestry in Finnish society. Which will be the reasons
488 behind these female owners’ higher price sensitiveness? One explanation can be that in order to

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489 manage and succeed in timber sales in the masculine Finnish forestry, a female owner needs to be
490 “a tough guy”, i.e. to have even more male kind of economy-driven attitudes and behavior than
491 an average male owner. An alternative and close to practice explanation will be that if female
492 owners have less economic-profitability-related objectives and/or smaller holdings than males
493 have, they will sell timber more seldom, which will allow them to adjust their sales to years with
494 higher prices.

495
496 But, what if Ripatti’s (1999) result in fact has nothing to do with female owners’ price
497 sensitiveness? In this case, one explanation may be that harvesting is related to actions of timber
498 brokers/purchasers because they are more active when the timber demand and price are high.
499 This stimulates them to search for forest owners who have not harvested recently. Another
500 explanation based on social interaction may be that the Finnish female forest owners are more
501 likely than their male colleagues to take into account advice on the price-optimal moment for
502 timber sales. This explanation compares well with two Finnish studies. Firstly, Korhonen et al.
503 (2012) finds that female owners more frequently strongly rely on the local Forest Management
504 Associations (FMA) in timber sales than male owners (22% and 14%, respectively). FMAs are
505 forest owners’ associations, funded and administered by the owners themselves. The associations
506 “act as mediators between the seller and the buyer” (Korhonen et al. 2012, p. 89), and they give
507 recommendations to forest owners. They provide market information, specific advice on optimal
508 time to sell timber, and information on most recent timber price development as well as on future
509 prospects in timber prices. Secondly, according to Karppinen and Berghäll (2015, p. 282),
510 Finnish female forest owners’ intentions to timber stand improvement “are more influenced by

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511 norm pressures and less by attitudes than the men’s intentions”. Forestry professionals of FMAs
512 and timber purchasers are important sources of norm pressures. Thus, it is likely that female
513 owners are also rather responsive to what these professionals advice on the optimal time to sell
514 timber.

515

516 **Discussion**

517 After given female forest owners a closer look by introducing a gender perspective across the
518 three introduced frameworks, we can summarize as follows. First, when we assessed gender as an
519 empirical, dichotomous variable, we found that there are differences in numbers between male
520 and female forest owners. By adding the concept of gender as a relational and structuralizing
521 category, we demonstrated that gender-structures have effect on e.g. actual behavior of female
522 and male forest owners and the self-evaluation of their forestry competence. The third framework
523 gave us the chance to explore how meanings produce behavior and behaviors produce meanings,
524 and how both shape institutions and natural and artificial matters – forestry competence was the
525 applied case.

526

527 Through three analytical lenses (gender as an empirical variable, a relational and structuralization
528 category and a meaning category) and empirical evidence from 16 European countries we
529 conclude that gender matters in forest ownership, management, operations, and their
530 understandings. Because these countries differ in socio-economic background, political and legal
531 system, natural resource base and importance of private forestry, the conclusion is strongly
532 substantiated: Being a female forest owner is different from being a male forest owner.

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533
534 While focusing on differences between female and male forest owners, we purposefully leave
535 three aspects unaddressed. The first aspect is the similarities between female and male forest
536 owners. Gender similarities are neither actively searched nor registered via non-found
537 differences. Second, differences among female forest owners are not contemplated in this paper,
538 although it is reasonable to assume that female forest owners, just as male forest owners, are not a
539 homogeneous group of people. The idea of “women as a group” has indeed been questioned and
540 contested for long by research on intersectionality between gender, race and class (Crenshaw
541 1989, 1991). Third, we have not spent time on systematic cross-country comparisons of specific
542 gender differences and similarities. While distinguishing a range of various types of gender
543 differences and remaining on conceptual and qualitative level, the study has thus omitted the
544 more specific distributional comparisons.

545
546 As regards the interpretation of gender related data we have presented alternative interpretations
547 of one particular set of results which show that Finnish female forest owners react more strongly
548 to changes in stumpage prices. Our analysis highlights the importance of the theoretical and
549 methodological approach. If the approach is very theory-driven, it restricts the range of options
550 for explanation or interpretation. Price sensitiveness may then be the most appropriate
551 interpretation given the theory’s options. This raises a more general question: Are the theories
552 and methods applied in forestry research able to take into account gender aspects? Rational
553 choice theories are not easily able to fulfill this quest, as they very much relate to gender as one
554 demographic variable and not a category of structure that has specific impacts on society and

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555 behavior. The same limitation goes for rational decision and game theories, which have a gender-
556 neutral rational individual as their main unit of analysis.

557

558 Numbers matter. Numbers increase the visibility of women. Data about 100% non-gendered
559 forest owners do nothing to enhance gender visibility, whereas data which differentiates X%
560 female forest owners may reveal 5 000 forest owners who both have female bodies and live lives
561 as women. Numbers make it possible to create more numbers and let both halves speak up. If the
562 ”whole” is divided into two halves, women and men, comparison between these halves is an
563 option. The comparison may reveal that gender matters in areas where gender previously was
564 thought to be of no relevance, or worse, where it was implicitly assumed that the particular
565 category of “forest owner” is male. When “family” or “the head of household” is the basic unit of
566 analysis in the research, we often end up with men’s stories rendering women both invisible and
567 muted. Based on the empirical evidence at hand, we have shown that the interests, preferences
568 and activities of female forest owners are not clearly aligned with those of male forest owners.
569 Figures presented above give the female owners a chance to make their case. The number of
570 female forest owners matters: The more they are, the more they will come into view and the more
571 normal it will be to be a female forest owner.

572

573 A better understanding of the issue of new forest owners requires gender awareness. The apparent
574 “newness” of female forest owners may reflect a number of possibilities: They may have recently
575 been recognized in registers, been taken as a separate owner category with numbers and shares,
576 recently started as forest owners in real life or may just be different from traditional forest owners

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577 in understandings, activities and personal attributes. To the extent that traditional forest owners
578 are male, the female forest owners are in fact in many ways different from them. A quest for
579 better understanding of new forest owners leads to a demand for a more reflexive notion of
580 knowledge in forestry research and “the difference that gender makes to what we know and how
581 we know it” (McDowell 1992, p. 400). If not, we the researchers on “new forest owners” just
582 keep up the non-visibility of female forest owners and contribute to the reproduction of gender
583 structures.

584
585 Based on our reflections and analysis, we recommend that fellow researchers in the field of
586 European family forest ownership should assume that gender matters and should design their
587 empirical settings accordingly. Gender-blindness and gender biases may be mitigated by
588 addressing questionnaires explicitly to legal owners, and by querying decision-making powers
589 within families, as part of surveys. Another reasonable research strategy is to take a
590 representative sampling from registers on individuals, and not from registers of properties that
591 disregard some of the owners. If the problems with incomplete ownership registers cannot be
592 overcome by choosing another methodological approach than the registers, researchers must
593 demand adequate official records and official basic statistics. Qualitative studies, by necessity
594 using small samples, may give more in-depth knowledge, but cannot fully replace more general
595 and comprehensive research and longitudinal studies. Therefore, we recommend that policy
596 makers make sure that official registers and statistics provide gender-disaggregated data, both for
597 researchers and for forest agencies and forest service providers. We also recommend to employ
598 gender sensitivity and to conduct gender impact assessments when renewing the forest owner

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599 related policy instruments. Similar gender awareness activities should take place when
600 redesigning the approaches and practices of soft communication tools, including the use of
601 language. A practical way to foster equality in policy and innovation processes is to ensure both
602 female and male representation in different working groups and other participation activities.
603 Only by considering the social reality that is manifest in women’s and men’s everyday life, can a
604 fruitful strategy for implementing forest policies across Europe be achieved.

605

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800 **Table 1 Basic data on female forest owners and their forest ownership in selected European**
801 **countries [see following page]**

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Country /region	Individual private forest owners (physical persons)			Owner characteristics – female forest owners compared to male forest owners			Forest ownership		
	Numbers of female owners	Proportion female owners, %	Trend of numbers or proportion of female forest owners	Women Mean age	Women Residence	Women Level of education	Proportion of forest land owned by women, %	Comparative size of female owned estates	Acquisition by purchase
Austria ¹	43 606	31		+ 2 yrs			25	0.69	
Bosnia-Herzegovina ²		3							
Croatia ²		7							
Estonia ²	38 012	44					36	0.70	
Finland ³	240 000	38	Increased from 17% in 1975	+ 2 yrs	More often distant to their forest	More often university education		0.83	FFO less often
France ⁴	285 000	30	No difference since 1999	+ 4 yrs	More distant to their forest	More often university education	27	0.82	FFO less often
Germany, Bavaria only ²	252 000	39							
Germany Thüringen, B-W and NRW ²		Ca 20	Forecast predict that proportion of women will increase						
Ireland ²		Ca 17							
Latvia ⁵	64 022	44	From none to 64 022 since restitution	+ 5 yrs	Less distant to their forest	Less often university degree	38	0.82	FFO less often
Lithuania ²	44 093	52	From none to 44 093 since restitution	+ 5 yrs		Less often university degree		0.76	FFO less often
Macedonia ²		4-8							
Norway ⁶	29 157	25	Increased from 15% in 1989	+ 3 yrs	More distant to their forest	More often univ/college education		Smaller	
Slovenia ²		49					38		FFO less often
Sweden ⁷	124 809	38	Increased from 20% since 1976	+ 2 yrs	More often distant to their forest		34	0.78 if sole ownership/ 0.90 if joint ownership	FFO less often
Switzerland ²		Ca 20							
UK ²		17-27							

¹ Special analysis of Agrarian structure survey by Statistik Austria 2013. The 31% proportion female owners includes joint (family) ownership.

² Extracted from Živojinović et al. 2015, section 4.5 in each country report.

³ Ripatti 1999, Hänninen et al. 2011, Leppänen and Torvelainen 2015, Paaja 2015. 38% proportion female owners includes owning alone or with spouse. If jointly owned forest holdings (by heirs together or private partnerships) are included besides families, the share of female owners is 44%.

⁴ Didot 2015: not published but available from the author, data MAAF 2012 and RESOFOP 2015.

⁵ 2007; stat; surveys 2003 and 2008. For Latvia is possible to maintain that it is possible to talk about single ownership only (and not joint ownership too).

⁶ Number of female forest owners is in fact number of forest estates with female reference owner in the registers. In the registers there is one reference owner each estate. This is also to say that joint ownership (with spouse, siblings or others) is not included. Strupstad 1993, Blekesaune 2005 (a regional study from Trøndelag), Statistics Norway 2005, Steinset in Tomter and Dalen 2014.

⁷ Lidestav 1998, 2010, Lidestav and Berg Lejon 2013, Swedish Forest Agency 2014.

Empty cells = has not been possible to obtain information.

In some countries statistics also include joint owners and in other countries not.

Note that different survey methods have been used in different countries and at different times.