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Vegetables and social relations in Norway and the Netherlands: a comparative analysis of urban allotment gardeners

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Biographical data

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1 **Vegetables and social relations in Norway and the Netherlands: a comparative analysis**
2 **of urban allotment gardeners**

3

4 **Abstract**

5 This study aims to explore differences in motivation for and actual use of allotment gardens.
6 Results from questionnaire surveys and semi-structured interviews in two Norwegian and one
7 Dutch garden show that growing vegetables and consuming the harvest is a fundamental part
8 of gardening. The same is true for the social element – meeting and talking to other gardeners,
9 and feeling as part of a community. Although gardeners with different socioeconomic
10 backgrounds experience gardening to some extent similarly, access to an allotment seems more
11 important for gardeners with disadvantaged personal backgrounds: both their diets and their
12 social networks rely more on, and benefit more from, their allotments. This underlines the
13 importance of providing easy access to gardening opportunities for *all* urban residents, and
14 disadvantaged groups in particular. Public officers and policy makers should consider this when
15 deciding upon new gardening sites or public investments in urban food gardens.

16

17 **Keywords:** Almere, diets, inclusiveness, interest-based gardens, motivations, Oslo

18

19 Introduction

20 Allotment gardens can be found in many cities in the industrialized west. Allotments are
21 associated with several benefits, one of which is improved diets; gardens are thought to
22 provide gardeners with fresh fruits and vegetables, increasing their access to these products
23 (Veen et al. 2014). A second main benefit of gardens concerns the social relations that
24 gardeners build, which are thought to transgress boundaries between socially and ethnically
25 diverse groups. Gardens can act as spaces of encounter and common activity – as semi-public
26 spaces bonding gardeners together (Moulin-Doos 2014). In that way, allotments can function
27 as social levelers, since gardeners “eschew divisions based on class and status, and insist that
28 social categorizations are left at the gate” (Corcoran and Kettle 2015: 1223).

29 Esther Veen et al. (2015) divide urban gardens into place-based and interest-based gardens.
30 *Place-based gardens* are those in which gardeners primarily engage with the aim to embark
31 on a communal project, increasing bonds in their neighborhood: food growing is used as a
32 means towards that aim. Gardeners in *interest-based gardens* are mostly motivated by the
33 activity of gardening itself, as well as the resulting harvest: social interaction is merely a by-
34 product of that activity. This characterization shows that urban gardens have different goals,
35 leading not only to different organizational designs (for example, individual versus communal
36 plots), but also to different effects. It is important to stress that gardeners in both types of
37 gardens take pleasure in food growing, and that gardeners in both types of gardens enjoy the
38 social effects of gardening. Therefore, the distinction between the gardens concerns most
39 important, but not exclusive, motivations of gardeners.

40 Allotment gardens can be defined as *interest-based*, since they are generally not started as
41 communal neighborhood projects, but rather as places where hobby gardeners spend leisure
42 time cultivating individual plots of land. In this paper we compare allotment gardening in two
43 countries; two allotment gardens in Oslo, Norway, and one garden in Almere, the

44 Netherlands. We study gardeners' main motivations, and by comparing the effects gardens
45 have on people's diets and their social relations, we analyze how these two types of benefits
46 interrelate.

47 **Diets and Social Relations**

48 Urban gardens are associated with various functions and benefits: social, economic and
49 environmental (see, e.g. Santo et al. 2016 on urban agriculture in general). However, the
50 functions assigned to a garden and the weight of these functions depend on the acting
51 individual or body; while city councils may mention food security or budget savings,
52 gardeners in industrialized countries are usually interested in producing quality food or
53 getting into closer contact with nature (Pourias et al. 2016). We focus on dietary and social
54 impacts of gardens, as these have been found to be the two most important functions of urban
55 gardens (Pourias et al. 2016). Sections 2.1 and 2.2 deal with garden impacts in industrialized
56 cities, therefore mainly concern rather well-off gardeners who do not depend on their
57 allotment economically. Section 2.3 focuses on gardeners in less privileged situations.

58 ***Fresh and healthy food – easily available***

59 When people grow food, they increase their access to fresh fruit and vegetables. Having the
60 responsibility for a garden generally results in people visiting it regularly, and as harvesting is
61 a fundamental part of maintaining an allotment, gardeners have an immediate and almost
62 “compulsory” access to the harvest (Veen et al. 2014). Hence, several authors found that
63 gardening leads to diets of higher nutritional value (Alaimo et al. 2008; Blair et al. 1991;
64 Kortright and Wakefield 2011). Gardens can therefore serve as an alternative and a
65 supplement to diets, filling gaps in times of scarcity (Kortright and Wakefield 2011).
66 Moreover, gardening can result in more healthy eating behavior (Blair et al. 1991). These

67 positive effects may actually apply to gardeners' families or other household members, too
68 (Blair et al. 1991; Kortright and Wakefield 2011).

69 Allotment gardening can also increase access to higher quality food. While this is particularly
70 important for the urban poor (Müller 2007), many gardeners enjoy the specific quality of the
71 produce they grow (Pourias et al. 2016). Christa Müller (2007) argues that subsistence
72 activities are becoming a lifestyle issue, particularly for younger urban residents who aspire to
73 exercise material autonomy. Also Robin Kortright and Sarah Wakefield (2011) found that
74 home food gardeners enjoyed growing vegetables and wanted to control what goes into the
75 food they eat; generally they did not grow food out of financial necessity. Hence, gardens are
76 often more about growing organic food than about subsistence, although the latter function
77 may be regained in case of a crisis (Moulin-Doos 2014).

78 To conclude, even though most allotment gardeners in industrialized NW-European cities
79 probably do not lack access to fresh fruits and vegetables, the gardens give them and others
80 near to them immediate access to such products, which most probably is reflected in their
81 diets.

82 *Meeting places, third spaces and civil interfaces*

83 It is important not to assume too easily that urban gardens lead to social cohesion or improved
84 neighborhood relations – for example because they may be sites of exclusion as well (Glover
85 2004; Schmelzkopf 1995; Thomas 2012). Nevertheless, to a certain extent and under certain
86 conditions urban gardens, such as allotments, may indeed lead to social bonding or social
87 relations. Gardens can be seen as 'third spaces' (Firth et al. 2011), defined as settings beyond
88 home and work in which people relax in good company on a regular basis (Oldenburg 2001).
89 In other words, gardens may invite people to make use of public space, where they meet
90 others to which they may bond over time (Flap and Völker 2004; Leyden 2003). Mary
91 Corcoran and Patricia Kettle (2015: 1228) see allotments as (potential) "civil interfaces";

92 places where “barriers are dismantled, knowledge is exchanged, stereotypes are challenged,
93 empathies are generated and where people get on with the business of simply getting on with
94 their lives”. Allotments provide an arena for socializing, enabling individual and collective
95 cultivation, exchange and dissemination of knowledge, and therefore they are, “spaces that are
96 conducive to lingering, and allow for plot holders to be individually busy and active, *and* to
97 interact with one another” (Corcoran and Kettle 2015: 1222, emphasis in original). Therefore,
98 allotments have the potential to cross boundaries between groups who otherwise might be
99 segregated – both socially and in public space. Indeed, once on site, gardeners from Dublin
100 and Belfast showed a willingness to disregard social and ethno-political categorizations
101 (Corcoran and Kettle 2015).

102 *Disadvantaged gardeners in well-off environments*

103 While many gardeners in our Western European context may be interested in gardening as a
104 choice for a more healthy, tasty or enjoyable diet, a hobby or a social excursion, gardeners
105 with a lower income living in more disadvantaged neighborhoods are likely to be specifically
106 interested in getting food on their table. The food-producing function of gardening is then
107 having a different meaning. However, also the social function of gardens may differ among
108 groups with different socioeconomic backgrounds. Socially, gardens are specifically valuable
109 for immigrants, because they are, for example, “by definition, in need of a new space of life in
110 the new residence. They may be blessed with a house or an apartment, but they are still in
111 need of spaces of interaction outside of the workplace” (Moulin-Doos 2014: 197).

112 Intercultural gardens as a movement started in the German city of Göttingen in the 1990s
113 (Müller 2007) but have become an international phenomenon since. They bring local
114 inhabitants and immigrants from different countries, often refugees, together around
115 gardening. The gardens serve recreational purposes, supply organically grown fruits and
116 vegetables, and facilitate communication and integration. Hence, while gardeners have private

117 plots, there are also large common areas for eating and drinking together, and gardeners share
118 experiences around gardening and related activities (Moulin-Doos 2014; Müller 2007). Urban
119 gardens are therefore believed to produce “third spaces” (Milbourne 2012); it is specifically
120 this “third space” or “civil interface” function of gardens which makes them so valuable for
121 immigrants. As explained by Claire Moulin-Doos (2014), Western societies are characterized
122 by a clear division between private and public spheres, which is incongruous with the habits
123 of many non-Western societies. Intercultural gardens link the private and the public,
124 conveying to migrants a feeling and experience of participation (Moulin-Doos 2014). In this
125 way the gardens promote integration, as their “focus is not on keeping people in the “safe
126 custody” of multicultural tearooms or “discussing the problems” of everyday life but rather on
127 engaging in everyday activities and giving shape to the immediate environs” (Müller 2007: 7).
128 Hence, by bringing people together in a shared life-experience, people construct an otherwise
129 missing social capital (Moulin-Doos 2014), negotiate their reality with others, and appropriate
130 the new situations that arise in the process (Müller 2007).

131 Furthermore, gardens are used as a strategy to tackle injustice or inequality. Paul Milbourne
132 (2012: 953–954) shows that community gardening projects in disadvantaged neighborhoods
133 can produce new socio-ecological spaces, in which “horticultural and environmental practice
134 [is] being translated into new forms of sociality, public participation, sustainability and
135 justice”. While the projects he studied differ largely, all of them try to address existing social
136 or environmental injustices by using gardening as a way to (re)create urban space (Milbourne
137 2012).

138 However, it is important to keep in mind that there is a distinction between alleviating
139 symptoms of injustice – such as unequal access to food – and disrupting the social structures
140 that underlie injustice and inequality (Reynolds 2015). In fact, race- and class-based

141 disparities existing in broader social systems were found to be replicated in New York’s urban
142 agriculture system (Reynolds 2015).

143 **Methods**

144 *Case studies: Geitmyra, Nedre Stovner and Windhoek*

145 We studied three allotment gardens; two in Norway and one in the Netherlands (Tables 1 and
146 2). Both countries enjoy the lowest percentage of people at risk of poverty or social exclusion
147 in Europe (Eurostat 2016). This makes the cities well comparable among one another;
148 however, they both cover the situation in one particular part of the world.

149 All three gardens can be seen as “typical” allotments, according to local standards. Also, for
150 all cases we found that most members live in their near proximity, generally not more than
151 three kilometers away. At the time of research, all three gardens had a waiting list for
152 acquiring an allotment.

153 Oslo’s population is settled rather segregated according to socioeconomic backgrounds.
154 Therefore we covered the breadth of Oslo gardeners by combining samples from two gardens
155 with divergent characteristics. We selected one garden in a gentrifying neighborhood in
156 Western Oslo, predominantly inhabited by highly educated young families – Geitmyra
157 *parsellhage* (hereafter, Geitmyra) – and one garden in an Eastern Oslo neighborhood,
158 dominated by non-European immigrants and with a relatively high level of unemployment –
159 Nedre Stovner *gård parsellhage* (hereafter, Nedre Stovner). We compare these gardens with
160 *Nutstuinvereniging de Windhoek* (hereafter, Windhoek), an allotment garden in the Dutch city
161 of Almere. Windhoek is located at the edge of town, close to a working class neighborhood. It
162 is considered representative for allotment gardening in Almere. Table 1 compares the general
163 characteristics of our case studies, and gives insights in the methods used to study each case.

164

165 *Table 1. General characteristics of the three case studies, and amount of data collected*

166 [Table 1 here]

167

168 *Geitmyra*

169 Geitmyra (“the goat mire”) is located circa three and a half kilometers from the city center of
170 Oslo. It has been a school garden since 1909 and is considered the oldest still existing, the
171 biggest and the most important school garden in town. In summer 2014, sixteen schools and
172 nine kindergartens had their own plots at Geitmyra. The renting out of allotments (starting
173 very gradually from circa 1990 on) was initially a strategy to combat problems of vandalism
174 at a time when large parts of the school garden were not in use due to a lack of funding.

175 Geitmyra consists of two types of allotments; those that are ploughed every autumn, and those
176 that are not. Gardeners start on a plot that is ploughed annually and may later be offered a
177 “permanent” plot. The allotment rules do not allow use of pesticides or herbicides, and most
178 interviewees do not use chemical fertilizer either. Volunteers organize an annual Geitmyra
179 family day, as well as a Geitmyra festival. The garden is fenced off and the gate is locked at
180 night; all gardeners can get a key (against a deposit of 300 NOK (32€)).

181 *Nedre Stovner*

182 Nedre Stovner (named after the neighborhood – previously a farm) is located on the East side
183 of Oslo, more than ten kilometers outside the city center. The allotment was established in
184 2008, when “green belt funding” was available. Nedre Stovner is located on a derelict school
185 garden that was revitalized by residents who introduced the allotment structure. Adjacent to
186 this garden a second allotment site was started on former farmland. Nedre Stovner therefore
187 consists of two separate areas; the so-called old and new garden. Gardeners in the old garden
188 usually garden more “professionally”: they grow more food, have larger harvests and have

189 more gardening knowledge. Gardeners generally get an allotment in the new garden first; they
190 may transfer to the old garden later on. Members work twice a year during common voluntary
191 work days (Norwegian: *dugnad*). There is a large ethnic diversity amongst the gardeners at
192 Nedre Stovner, Norwegians are a minority. While it is common to use chemical fertilizers,
193 pesticides are not much used. The garden is surrounded by a fence; however gates are usually
194 unlocked.

195 *Windhoek*

196 Windhoek (“windy corner”) was started in 1980, on land rented from the municipality. The
197 allotment is managed by a board, consisting of members who take up this task voluntarily.
198 The board is supported by volunteers who organize various social activities – Easter brunch,
199 open day, harvest festival, and barbeque. Volunteers also run the allotment shop (where
200 members can buy seeds, seedlings and tools), the bar, the canteen and the “allotment
201 magazine”. Similar to the Norwegian gardens, members are requested to spend three
202 mornings per year on common maintenance work such as keeping tiled areas free of weeds.
203 While there is currently a waiting list, for many years it was hard to find new allotment
204 members. Several gardeners still cultivate more than one plot; and plots are much larger than
205 in the Norwegian gardens (Table 1). Organic farming is not obligatory, but farming without
206 chemicals is encouraged. There is a fence around the garden but the premises can be entered
207 freely.

208

209 Table 2 gives insights into the personal background of our respondents. Moreover, the
210 samples of respondents from Geitmyra and Nedre Stovner reflect the differences between the
211 neighbourhoods in which the gardens are situated. For example, whereas 92% of the Geitmyra
212 respondents have fulfilled university education (BSc, MSc or PhD level), 67% of the Nedre
213 Stovner respondents have finished their education at primary or high school level. Also, all

214 Geitmyra respondents, apart from one from the Middle East, are European or North American
215 (79% Norwegian). In contrast, more than half of the respondents from Nedre Stovner come
216 from several parts of Asia, such as Kurdistan or Afghanistan (40% Norwegian).

217

218 *Table 2. Age and household composition of questionnaire respondents, and number of years*
219 *they have been gardening*

220 [Table 2 here]

221

222 ***Questionnaires and semi-structured interviews***

223 Fieldwork in Oslo was carried out in summer 2014; in Almere between fall 2010 and summer
224 2012. Two main survey techniques were used; questionnaires and semi-structured interviews.
225 Moreover, the gardens were visited several times in order to gain insights into physical
226 appearance and social functioning. This was more extensive in the Almere case, where the
227 fieldwork period was longer. Therefore we made use of key informants in Oslo, who provided
228 us with information about the general functioning of the gardens. These key informants were
229 the gardens' contact persons and either currently or in the past involved in the management
230 boards of the gardens. We used questionnaires to generate quantitative data, on gardeners'
231 characteristics, but also concerning their reasons for gardening, the influence of the harvest on
232 their diets and their relationships with other gardeners. Semi-structured interviews provided
233 qualitative data, going deeper into roughly the same topics as the questionnaires: general
234 involvement in the garden, contacts and help at the garden, and food patterns. The interviews
235 allowed for probing of views and opinions, as respondents could further elaborate their
236 answers. Our analysis is primarily based on the questionnaire data; interview data are used to
237 illustrate findings from the questionnaires.

238 *Questionnaires* were similar for all three gardens, but were in Norwegian in Oslo and in
239 Dutch in Almere. In Oslo our key informants distributed the questionnaires. Gardeners at
240 Geitmyra received an e-mail from our key informant with the request to fill in the
241 questionnaire online. Gardeners at Nedre Stovner received a similar e-mail from our key
242 informant, but due to their rather low use of e-mail, response was too limited. Our key
243 informant therefore also distributed forty paper copies of the questionnaire, collected the
244 filled-in questionnaires and returned them to the researchers. Gardeners in Windhoek received
245 the questionnaire on paper, by general mail, including a stamped return envelope. Different
246 distribution techniques might have influenced both the response rates and the type of
247 respondent. However, in every garden we used the technique that seemed most fitting to the
248 gardening population – after consulting with key informants – in order to get as high a
249 response rate as possible. The very high response rate in Windhoek can be explained by the
250 fact that the researcher had visited the garden several times in advance, so that many
251 gardeners were familiar with her.

252 *Semi-structured interviews* were also quite similar across the gardens, although we slightly
253 adjusted them according to garden-specific situations, for example regarding activities
254 organized. The duration of each interview varied between thirty minutes and one hour. Again,
255 the different garden populations required different approaches. At Geitmyra interviewees
256 were found through the questionnaire – one of the questions was whether the respondent
257 would be available for an interview. As more gardeners replied positively than interviewees
258 were needed, respondents were selected to provide a certain breadth in terms of characteristics
259 like age and number of years gardening. At Nedre Stovner the technique of finding
260 respondents through the questionnaire was unsuccessful. During a garden visit the
261 interviewing researcher helped two respondents to fill in the questionnaire, which gave her the
262 opportunity to interview them at the same time. Other interviewees were found through our

263 key informant. Respondents in Windhoek were found by volunteering to write gardener
264 “portraits” for the allotment magazine; the editor of the magazine recruited the interviewees.
265 In Oslo interviews were basically conducted in English, in two cases they were translated into
266 Norwegian, and in one instance it was partly translated further from Norwegian to Farsi
267 (Persian). Interview notes were taken as literally as possible; quotations in this article are
268 taken from these notes. Interviews in Almere were conducted in Dutch. They were recorded
269 and transcribed; quotations in this article are author’s translations.

270 **Results**

271 *Gardening and the harvest*

272 Our findings suggest that the harvest and the activity of gardening are fundamental elements
273 of the gardening experience for all our respondents. Figure 1 shows questionnaire
274 respondents’ main motivations for getting involved in gardening. Most gardeners are
275 motivated by reasons relating to the vegetables that gardening results in, as well as by the
276 gardening activity itself. This is in line with the findings of Jeanne Pourias et al. (2016), who
277 found that the possibility of producing food is the most common motivation for gardeners to
278 get involved in urban gardens.

279

280 [Figure 1 here]

281 *Figure 1. Motivations for having a garden (maximum three options possible). N=128.*

282 *Reasons related to vegetables: black. Reasons related to the activity of gardening: dark grey.*

283 *Social reasons: light grey.*

284

285 Also many interview respondents indicated that growing vegetables was an important reason
286 for starting to garden. Several gardeners indicated that they would not grow flowers only.
287 Some interviewees particularly mentioned the fact that the vegetables they grow are more
288 natural or tastier than the ones from the supermarket, and that it is nice to experiment with
289 different crops, to be aware about what is in season and to understand what is needed to grow
290 vegetables. For many gardeners especially the idea of “making something from nothing” is
291 attractive. People often referred to the pleasure of making things grow and the joy of eating
292 self-grown vegetables: *“Growing vegetables was an important reason. I have an interest in*
293 *vegetables and I like to experiment with growing” (#1).*

294 Hence, the gardening activity is important to people, as it is – literally – about harvesting the
295 fruits of one’s work. These findings are consistent with those of Kortright and Wakefield
296 (2011), who found that home gardeners value being in touch with the earth, find satisfaction
297 in nurturing plants to harvest, and show a desire to control what goes into the food they eat.
298 Similarly, Pourias et al. (2016) found that gardeners appreciate the better quality of self-
299 grown food. However, our findings suggest that it is also the actual activity of gardening –
300 getting your hands dirty, being outside – that people value, as well as the fact that gardening is
301 experienced as a healthy way of spending leisure time. These reasons – all related but slightly
302 different (gardening as a healthy activity, as a satisfying activity, as a way to be outside, et
303 cetera) – were often mentioned in combination:

304 *“I want to grub the earth. And I don’t want to be in my wife’s way all day. And my*
305 *wife doesn’t want that either. (...) And I also think that the taste of vegetables of your*
306 *own garden, that’s different. (...) But also being busy, working in nature, being*
307 *outside. (...) I enjoy seeing plants grow from such a very small seed... to something.”*

308 #12

309 Nevertheless, the degree to which people actually eat from their gardens differs substantially
310 between gardeners (Table 3). We asked respondents how much they buy of the vegetables
311 they eat, assuming that when they do not buy vegetables, they eat their harvest. While some
312 gardeners buy just a small part of the vegetables they eat, others buy most of their vegetables,
313 because either they do not grow enough for their consumption, or they give away or sell part
314 of their production. Especially respondents from Nedre Stovner and Windhoek eat from their
315 gardens substantially.

316

317 *Table 3. Answers to the question “what part of the vegetables you eat, do you buy?” N=129*

318 [Table 3 here]

319

320 In sum, although all gardeners consider the gardening activity an essential element of having a
321 garden, as they do the harvest, the degree to which gardeners eat from their gardens differs
322 substantially.

323 ***Social relations***

324 For most gardeners social contacts are not an important motivation for getting involved in
325 gardening (Figure 1). However, social relations do play a role in *practice*. All respondents
326 know other gardeners – mostly between five and nine – and gardeners often chat to others
327 when working at their gardens (Tables 4 and 5).

328

329 *Table 4. Number of other gardeners respondents know at their allotment. N=128.*

330 [Table 4 here]

331

332 *Table 5. Degree to which respondents chat with other gardeners at the allotment. N=129.*

333 [Table 5 here]

334

335 This suggests that even if social contacts are not a main motivation to start gardening, they
336 “happen”. Spending time together in a shared space leads to interaction. Moreover, gardeners
337 generally share produceⁱ (also see Kortright and Wakefield 2011, and Pourias et al. 2016), so
338 that the produce itself becomes “one of the vectors of the social relations at the garden”
339 (Pourias et al. 2016: 266). Such non-monetized exchange and the resulting reciprocity leads to
340 cultural and social capital (Miller 2015), which is why Kortright and Wakefield (2011) argue
341 that many gardeners value the produce they grow as much as, or even more, for its social
342 value than for its contribution to their own and their families’ subsistence.

343 However, the degree to which “accidental contacts” are appreciated by respondents varies
344 (Table 6).

345

346 *Table 6. Statements on social aspects. N=128 (respondents could indicate agreement with*
347 *multiple statements)*

348 [Table 6 here]

349

350 The table illustrates that while people enjoy meeting and knowing others at the allotments,
351 many of them consider these aspects as not or not very important. Indeed, Wendy Miller
352 (2015) found that some gardeners value their allotment as a place to get away from
353 “everything”, including other people. For most gardeners in our study, the social relations at

354 the gardens seem merely a “by-product”. To illustrate this, some gardeners explained that
355 contacts mainly “stay at the garden”, meaning that they do not meet gardeners outside the
356 garden. In the words of Corcoran and Kettle (2015: 1224, emphasis in original), the
357 encounters with other gardeners are “primarily about *civil interfacing*, rather than creating
358 lasting or deep attachments”.

359 However, that in itself does not mean that the contacts are not valued: some interviewees
360 expressed that it is nice to have superficial contacts, especially as these make people feel at
361 home as well:

362 *“I like to know a few people. It is nice to talk and exchange harvest. It is nice to be*
363 *able to help each other. I feel being part of the community.” #2*

364 *“They give good advice, we learn together, they teach me. It is easier to come here. It*
365 *means something to know someone. It is more inspiring. It is nice when there is*
366 *someone here”. #6*

367 *“I think it is very important, because when you are here at your garden and there is*
368 *no contact, well, that wouldn’t feel comfortable for me, then I wouldn’t feel at home. It*
369 *is just nice when you come here and the people greet you.” #20*

370 Hence, despite the fact that for many gardeners social relations are not the *main* benefit, and
371 despite the importance of the harvest, we agree with Pourias et al. (2016: 269) that urban
372 gardens are far more than a place of production, but have several other functions – one of
373 these being the social function: “the gardeners mentioned the garden as a place to meet and
374 interact with people, which enabled some of them to nurture a feeling of belonging to
375 community” (Pourias et al. 2016: 266). Even though for most of our respondents social
376 relations were not a primary motivation to start allotment gardening, these relations do make
377 gardening more enjoyable and valuable for them. In that sense social relations are an essential

378 element of the allotment gardening experience, even if individual contacts may be
379 replaceable.

380 However, not all respondents perceive social gardening contacts as replaceable. For some
381 respondents – mostly gardeners at Nedre Stovner and Windhoek – the garden contacts are
382 particularly important. These gardeners often spend large amounts of time at their gardens –
383 sometimes for decades – and therefore know other gardeners very well. In some cases they
384 become friends, and people expect these contacts to last even when they no longer have the
385 garden:

386 *“This hut was built with John and Will. They helped me, we really worked hard on it*
387 *for two and a half weeks. (...) With a small group we sometimes go to the harbor –*
388 *very rarely. And we went to Denmark, fishing for a week. (...) But mostly it is nice*
389 *here in the evenings, when we’re in the canteen, we’re all together, we play cards and*
390 *we talk, but we also exchange experiences. Like “how do you do this”, or “when do*
391 *you do that”. (...) “Do you have this for me, I’ll get you that.” And yes, regularly a*
392 *group comes here, just nicely, drinking beer.” #14*

393 As people spend so much time at the allotment, the garden becomes “an extension of the
394 home” (Pourias et al. 2016: 266):

395 *“The garden is a recreational space for us. We have the tent, so we can even sit here*
396 *when it rains. We have no money to travel, so we stay here. We have friends at the*
397 *allotment and we also invite friends whom we know from outside.” #8*

398 Hence, as argued by Moulin-Doos (2014), the garden extends the private space and offers an
399 entrance into the public space at the same time. Importantly, another group of gardeners uses
400 the garden as an extension of the home as well, but rather than spending time with other

401 gardeners, they invite friends and family from outside the allotment. The semi-public space of
402 an allotment is then used semi-privately:

403 *“I share the allotment with a friend. When we are here together we talk, have a*
404 *coffee. Sometimes the children of my friend come with their children. Sometimes they*
405 *all come, the children climb the trees, we all sit around.” #4*

406 Concluding, social contacts are an essential element of the gardening activity – practically all
407 gardeners meet and talk to others. However, while these contacts are to some degree
408 appreciated by most gardeners, they are far more important in some gardeners’ lives than in
409 others.

410 **Analysis**

411 *Diets versus relations?*

412 As shown, the harvest and social relations play a role in all gardening experiences, although to
413 different extents. In order to understand whether and to what degree these two benefits of
414 gardening are interrelated – or exclude each other – we scored each questionnaire respondent
415 on a “gardening and harvest axis” and on a “social axis”, creating a two-dimensional matrix.

416 We scored each questionnaire respondent’s motivation for and practical experience of the
417 (individual) hobby aspect of gardening and the harvest, and of the social aspect of gardening.

418 The gardening and harvest axis was scored as follows:

- 419 - *Motivations:* Respondents received 0-3 points for the number of motivations for
420 becoming a member of the garden that relate to the harvest (“I want to grow my own
421 vegetables because...”) or relate to the activity of gardening (for example, “I like
422 gardening”).ⁱⁱ

423 - *Practice*: Respondents received 0-4 points for how much they eat from their gardens.

424 - The two scores were added, leading to a range of 0-7 points on the vegetables axis.

425 The social axis was scored in the following way:

426 - *Motivations*: Respondents received 0-2 points for the number of “social motivations”
427 they ticked for becoming a member of the garden (for example “I knew people
428 here”)ⁱⁱⁱ, and 0-2 points for whether or not they ticked two social statements.^{iv}

429 - *Practice*: Respondents received 0-4 points for the number of people they know at the
430 garden. They also received 0-2 points for whether or not, and how often they chat to
431 other gardeners.

432 - The four sub-scores were added, leading to a range of 0-10 points on the social
433 relations axis.

434 We visualized the data by plotting scores of each individual respondent, including the garden
435 affiliation (Figure 2).

436

437 [Figure 2 here]

438 *Figure 2. Gardeners’ scores on the importance of vegetables and social relations for*
439 *gardening. Only questionnaires answering both components are included (n = 122; GM: 35,*
440 *NS: 9, WH: 78). Noise added to make all individual data points visible. Polygons: Range of*
441 *scores within garden. Data points with large icons: Average scores. NB: This is a qualitative*
442 *analysis or visualization, and comparisons among countries and gardens are legitimate only*
443 *along one axis at a time.*

444

445 All gardens show a wide range of answers (GM_veg 0-6, NS_veg 1-5, WH_veg 2-7; GM_soc
446 2-9, NS_soc 3-9, WH_soc 2-8). This means that the value of gardening differs: for some
447 gardeners the gardens are more important than for others, both with respect to gardening and
448 vegetables, and with respect to social relations. The polygon of Nedre Stovner falls within the
449 one of Geitmyra. As such, Geitmyra ranges comprise all results obtained in Oslo/Norway.
450 The polygons also show that, compared to the Dutch garden, both Norwegian gardens – and
451 therefore Norway as a whole – demonstrate the highest scores on the social relations axis, and
452 the lowest scores on the vegetables axis. The Dutch garden, on the other hand, shows the
453 highest scores on the vegetables axis. This last point might be explained by the fact that
454 Norway has a shorter growing season and less advantageous climatic growing conditions in
455 general, and in addition that the individual gardening plots in the Netherlands are much larger.
456 Average scores suggest that the relative importance of both social relations and vegetables is
457 lowest for Geitmyra gardeners. Nedre Stovner gardeners score highest on the importance of
458 social relations, while Windhoek gardeners score highest on the importance of vegetables. We
459 hypothesize that gardeners in Nedre Stovner rely more strongly on the social aspect of
460 gardening, as they probably have fewer other possibilities for social contacts in their daily
461 lives. The larger importance of vegetables for Windhoek gardeners is already explained
462 above, it does most probably not relate to a lack of other ways to acquire food.
463 As mentioned, the average scores show that Geitmyra gardeners seem to perceive the lowest
464 importance on their gardens, both with respect to social contacts and with respect to
465 vegetables. Indeed, the only gardener in our sample who seems not interested in gardening
466 and the harvest at all (0 points on the vegetable axis) gardens at Geitmyra. Their relatively
467 limited interest in social relations can be further underlined by responses to statements on
468 appreciation and experience of the social aspect of gardening (cf. also Table 6). Geitmyra
469 respondents stated more often than other gardeners that the social aspect is not or hardly

470 important to them (11% of respondents, versus 8% in Nedre Stovner and 6% in Windhoek),
471 and none of the Geitmyra respondents stated that their social network is largely at the garden
472 (versus 18% of Nedre Stovner and 14% of Windhoek).

473 This leads us to the conclusion that gardens are of more value to some than to other gardeners
474 – on both accounts. The differences between gardeners, especially concerning Geitmyra and
475 Nedre Stovner, most probably reflect their backgrounds in gentrifying or disadvantaged
476 neighborhoods, respectively (see section 3.1).

477 Hence, whereas gardeners with different backgrounds experience gardening to some extent in
478 the same way, differences reflect their socioeconomic situations. Having access to an
479 allotment is of more importance to gardeners in the disadvantaged neighborhood: both their
480 diets and their social networks rely stronger on, and benefit more from their allotments.
481 Moreover, besides the improved diets and social cohesion, participation in a garden may also
482 have therapeutic benefits for gardeners (Bellows et al. 2004). Consider for example the story
483 of one of the gardeners of Nedre Stovner, a refugee who had been arrested and maltreated in a
484 Taliban prison:

485 *“Before I got here, I had problems with my head, head pains. Two or three years ago,*
486 *when I came here, there was some good sun, and fresh air. That helps a lot. I eat a lot*
487 *of fresh vegetables. That is also a good help. I use several plants for the pain in my*
488 *limbs and joints. (...) I manage to deal with my problems by having this garden”.* #7

489 Or the story of a garden fellow:

490 *“My wife found our nephew lying in the street in front of our building. He was*
491 *bleeding a lot and was almost dead. My wife now has anxiety attacks. We therefore*
492 *bring her here.”* #8

493 It is not our intention to downplay the benefits of gardens for people in more fortunate
494 situations, as they benefit from their gardens as well, and may similarly deal with problems by
495 going to their gardens. However, the importance of allotments in people's lives varies
496 considerably.

497 Trend lines in Figure 2 indicate that in all gardens the more gardeners are motivated by and
498 enjoy the vegetables, the more they are also motivated by and enjoy the social relations. This
499 positive relation among the scores on both axes, indicates that vegetables and social relations
500 do not "compensate" for one another in term of people's interest for gardening. This is
501 especially interesting in terms of Veen et al.'s (2015) distinction between place-based and
502 interest-based gardens. Their distinction seems to imply that gardeners are either motivated by
503 the gardening activity itself, including the harvest (interest-based), or by the social relations
504 associated with gardening (place-based). However, our results show that gardeners
505 motivations vary also *within* interest-based gardens. Therefore, the distinction between place-
506 based and interest-based gardens needs to be nuanced. *Within* groups of gardeners who are
507 assumed to be primarily motivated by gardening and the harvest, we have detected a "both-
508 and" rather than an "either-or" situation in terms of the perceived importance of vegetables
509 and social relations. Gardeners who take more benefit from the gardening activity and its
510 harvest, also seem to enjoy the social benefits of gardening most.

511 ***Inclusive societies?***

512 Corcoran and Kettle (2015: 1218) argue that allotment sites produce "an inclusive and
513 socially cohesive notion of the public", and that gardeners create a shared politics of place, "a
514 commitment to cultivation that is premised on individual labor carried out in a common cause,
515 mutually agreed tacit rules of engagement and tolerance of diversity". Our research shows
516 that allotments are meeting places, where "contacts happen". However, this does not
517 necessarily mean that boundaries between groups are crossed. First of all, the allotment

518 population generally reflects the neighborhood in which it is situated, as most gardeners do
519 not live more than a few kilometers from their garden (see section on case studies) and
520 neighborhoods often do not show large variation in socio-economic backgrounds. In practice,
521 therefore, allotments may often not bring people with different socio-economic backgrounds
522 together.

523 Secondly, our respondents include gardeners in many segments of society – from highly
524 educated young parents to unemployed former refugees, and from retired blue-collar workers
525 to idealistic environmental activists. When segments were too far apart, individuals could not
526 always cross the social distance. Importantly, to a certain extent gardeners enjoyed diversity,
527 as stated by all Windhoek interviewees, and illustrated with the following quote:

528 *“From plumber to civil servant, doesn’t matter, everyone knows how to do something,*
529 *so from time to time you can help each other and that is very nice. That makes it*
530 *broad, socially you hang out with many different people and they do with you.” #14*

531 Sometimes there are practical difficulties in meeting others. At Nedre Stovner, for example,
532 different ethnic groups tend to stick together because of language. This does not necessarily
533 mean that there is hostility between the groups, so there may indeed be a “tolerance of
534 diversity”. Although there are some struggles, for example regarding responsibility for the
535 management of the garden, diversity also seems to have positive effects:

536 *“My mother isn’t used to foreigners, but when she comes here she notices that they*
537 *are nice. (...) It works anti-racism, and also the other way around, because the*
538 *foreigners see that not all Norwegians are racists.” #9*

539 However, at Geitmyra, differences that exist in society remain at the garden, leading to
540 tensions between groups. As the garden is located in a gentrifying neighborhood, gardeners

541 have very different backgrounds. The different ideas about gardening and using the space to
542 which this leads, cannot always be overcome:

543 *“There is quite a variety of people at the allotment. There are many immigrant*
544 *families, many Turkish people. This area used to be a workers’ area. Now there is a*
545 *lot of gentrification. This affects the social life at the garden. (...) There are three*
546 *groups at the garden. 1) Those who have been here for a long time; 2) Immigrants; 3)*
547 *Young families, newcomers. (...) There are different types of people, and that is good.*
548 *But not everyone likes it. (...) It is not exactly racism, but stereotyping and having a*
549 *negative attitude about other groups.” #2*

550 Nevertheless, gardeners try to accept these differences, and tolerate the existence of different
551 groups with different habits:

552 *“There are unemployed people but also architects and doctors. It is not a big family.*
553 *People sense the differences – but they are like a society and they find ways to be*
554 *together.” #1*

555 **Conclusions**

556 Growing vegetables is inextricably linked to the allotment gardening experience. Although
557 the degree to which people eat from their gardens varies, for basically all respondents having
558 an allotment would not be the same without the vegetables. The same can be said for the
559 social relations at the garden. While the value of these relations and the extent to which
560 gardeners make friends vary, all gardeners meet and talk to others, rely on other gardeners for
561 help and advice, and appreciate the fact that they – at least to a certain extent – are part of the
562 allotment community.

563 However, the benefits of gardening are far more important to some than to other gardeners. In
564 general, those gardeners who were most triggered by the gardening activity and the harvest,

565 are most interested in social contacts as well. Hence, the classification of urban gardens in
566 place-based gardens and interest-based gardens (Veen et al. 2015) has limitations. Although
567 Veen et al. (2015) do not neglect that gardeners can be motivated by both vegetables and
568 social relations, they implicitly state that the gardeners of one garden have a similar *main*
569 motivation, which is either vegetables, or social relations. Our study shows that for some
570 gardeners *both* the vegetables *and* the social relations are more important than for other
571 gardeners and that it is, therefore, not an either-or situation.

572 In other words, we can distinguish different groups of gardeners; those gardeners for whom
573 the garden is a nice place to practice their hobbies and grow some vegetables, and those
574 gardeners who are in disadvantaged situations, for whom both the harvest and the social
575 relations are more essential. Residents in disadvantaged neighborhoods may simply have little
576 other options than gardening, and therefore allotment gardens in such areas may be of
577 particular importance to increase residents' quality of life. Hence, we argue that our findings
578 not only indicate the importance of supporting urban gardens, but specifically signify the need
579 to make sure that gardens are easily accessible to all residents, and to the disadvantaged in
580 particular. That gardens can have exclusionary dynamics (cf. section 2.3; Reynolds 2015) is
581 problematic in itself, but this is even more challenging as gardens can be so essential to
582 certain groups of people. We do not have data to detect specific exclusionary principles in our
583 case studies; however, none of our respondents from the Norwegian gardens had lived in the
584 country for less than six years, and even in Nedre Stovner – with its large share of immigrants
585 – 62% of our respondents have lived in Norway for at least fifteen years. Hence, it seems that
586 finding a place to garden may be difficult for relative newcomers to the country and needs
587 quite some degree of “establishment”. However, more research would be needed to
588 understand both actual and potential exclusionary and inclusionary dynamics, and how these

589 may promote social equality, poverty alleviation and community participation (see also
590 Chiara Tornaghi 2014).

591 Clearly, it is important that policy makers take into account structural inequalities, that they
592 make extra efforts to meet the needs of people in more disadvantaged situations, and that they
593 support special measures to encourage participation of disadvantaged groups of residents. We
594 support Reynolds' (2015: 254) plea, that policy makers should "support practitioners' work
595 by developing guidelines for public participation in policy making processes, including
596 systems for ensuring fair representation of a city's population". On the importance of
597 representativeness for effective public participation see, e.g., Elizabeth Conrad et al. (2011),
598 for examples of methods promoting representativeness in particular, Sebastian Eiter and
599 Marte Vik (2015).

600 Besides efforts to combat structural inequalities, strategies have been developed or initiatives
601 have been taken to support urban gardening (and agriculture in general) in many cities in
602 industrialized countries: community food resilience and vulnerable groups as part of
603 developing a resilient food plan for Bristol, UK (Carey 2011), a food strategy for Vancouver,
604 CA (City of Vancouver 2013), a program for food growing on public land in Malmö, SE
605 (Malmö stad 2014), a handbook for urban gardeners in Oslo, NO (Gallis 2015), just to
606 mention a few examples of written material. Some cities have employed urban agriculture
607 coordinators such as Côte Saint-Luc, CA, or Tokyo, JP. Which strategies and measures work
608 best depends on local situations. However, it is important that cities develop a "political space
609 of opportunity of trialing collaborative food growing" (Franklin et al. 2016: 15), as well as a
610 flexible attitude towards using land for food growing purposes (Witheridge and Morris 2016).

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ⁱ 96% of the questionnaire respondents from Oslo stated that they share produce. This question was not included in the Windhoek questionnaire, but all Windhoek interviewees indicated that they share produce.

ⁱⁱ Respondents could tick up to three motivations from a list, including five related to the harvest, five related to the activity of gardening, and two related to social relations. Respondents received one point for each motivation ticked that relate to the harvest or the gardening activity.

ⁱⁱⁱ As explained, respondents could tick several motivations, two of which related to social reasons. Respondents received one point for each of those ticked.

^{iv} Respondents received one point if they agreed with the statement “I like chatting to people at the garden, but the social aspect is not really important to me”, and two if they ticked “Because I know people at the garden it is more fun to go there”. Only the highest ranked statement was taken into account.

Table 1. General characteristics of the three case studies, and amount of data collected

| Allotment | Geitmyra | Nedre Stovner | Windhoek |
|--|---|--|--|
| City | Oslo, NO | Oslo, NO | Almere, NL |
| Location | Gentrifying neighbourhood | Neighbourhood with many immigrants and high unemployment rates | At the edge of the city, next to a working class neighbourhood |
| Starting year | Gradually from c.1990 | 2008 | 1980 |
| Number of allotments | c.140 | 97 | 217 (divided among 123 members) |
| Total size | 41,435m ² (incl. school gardens and extensive common areas with fruit trees and lawn) | 9,000m ² | 32,934m ² |
| Parcel size | 20-50m ² | 72m ² (old garden) 42m ² (new garden) | 100-180m ² |
| Organization | A gardening association with management board runs the garden on municipal property: every gardener is a member of the association (since 2006) | A gardening association with an elected management board runs the garden on municipal property (since 2011; before that it was run by the municipal district administration) | An elected management board runs the garden, supported by volunteers |
| Annual rent | 400 NOK (€42*) | 576 NOK (old garden) (€61), 336 NOK (new garden) (€36) (8 NOK/m ² ; 2014) | €57.50-81.50 (542-775 NOK) (€0.30/m ² + €27.50 annual fee) |
| Website | http://www.parselhager.no/index.php/geitmyra-parselhagelag | http://www.parselhager.no/index.php/nedre-stovner-gard | http://www.dewindhoek.com/ |
| No. of questionnaire respondents (response rate) | 36 (28%) | 11 (28% **) | 81 (66%) |
| No. of semi-structured interviews | 6 | 5 | 10 |

* Prices and exchange rates: August 2016

** Based on forty distributed paper copies (if e-mails sent are included, response rate is 11%)

Table 2. Age and household composition of questionnaire respondents, and number of years they have been gardening

| | Geitmyra | Nedre Stovner | Windhoek | Total |
|------------------------------|----------|---------------|----------|--------------|
| Age | | | | |
| 25*-34 | 1 | 1 | 1 | 3 |
| 35-44 | 9 | 2 | 10 | 21 |
| 45-54 | 14 | 6 | 15 | 35 |
| 55-64 | 8 | 3 | 31 | 42 |
| ≥65 | 4 | 1 | 24 | 29 |
| Household composition | | | | |
| Single | 11 | 1 | 8 | 20 |
| With partner | 5 | 2 | 43 | 50 |
| With children | 4 | 1 | 7 | 12 |
| With partner and children | 14 | 9 | 22 | 45 |
| Other | 2 | 0 | 1 | 3 |
| Gardening duration | | | | |
| < 1 year | 6 | 0 | 7 | 13 |
| 2-5 years | 17 | 6 | 18 | 41 |
| 6-10 years | 6 | 2 | 23 | 31 |
| 11-15 years | 3 | 2 | 10 | 15 |
| 16-20 years | 2 | 0 | 3 | 5 |
| > 20 years | 2 | 1 | 20 | 23 |

* No gardeners were below 25 years of age.

Table 3. Answers to the question 'what part of the vegetables you eat, do you buy?' N=129

| What part of the vegetables you eat, do you buy? | Number of respondents |
|--|-----------------------|
| The largest part | 31 (24%) |
| About half | 22 (17%) |
| In winter only | 36 (28%) |
| A small part | 29 (22%) |
| Almost never | 11 (9%) |

Table 4. Number of other gardeners respondents know at their allotment. N=128.

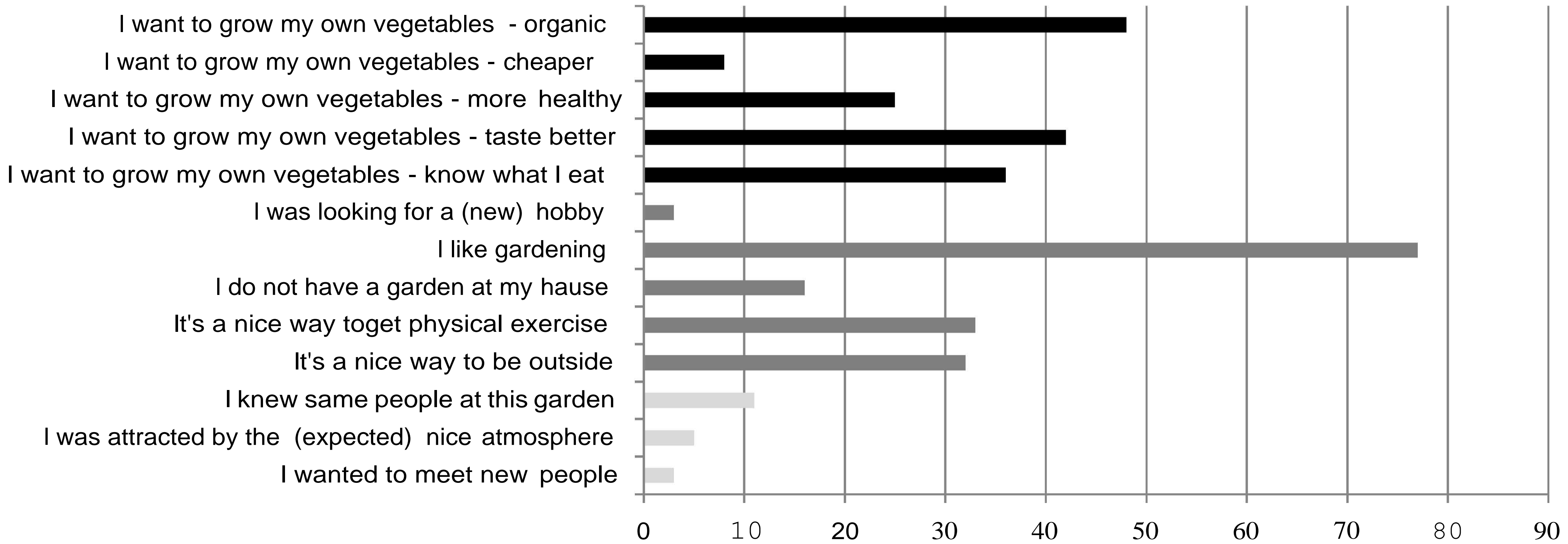
| How many other gardeners do you know? | Number of respondents |
|--|------------------------------|
| None | 0 |
| 1 or 2 | 7 (5%) |
| 3 or 4 | 15 (12%) |
| 5 to 9 | 38 (30%) |
| 10 to 14 | 26 (20%) |
| 15 to 25 | 20 (16%) |
| More than 25 | 22 (17%) |

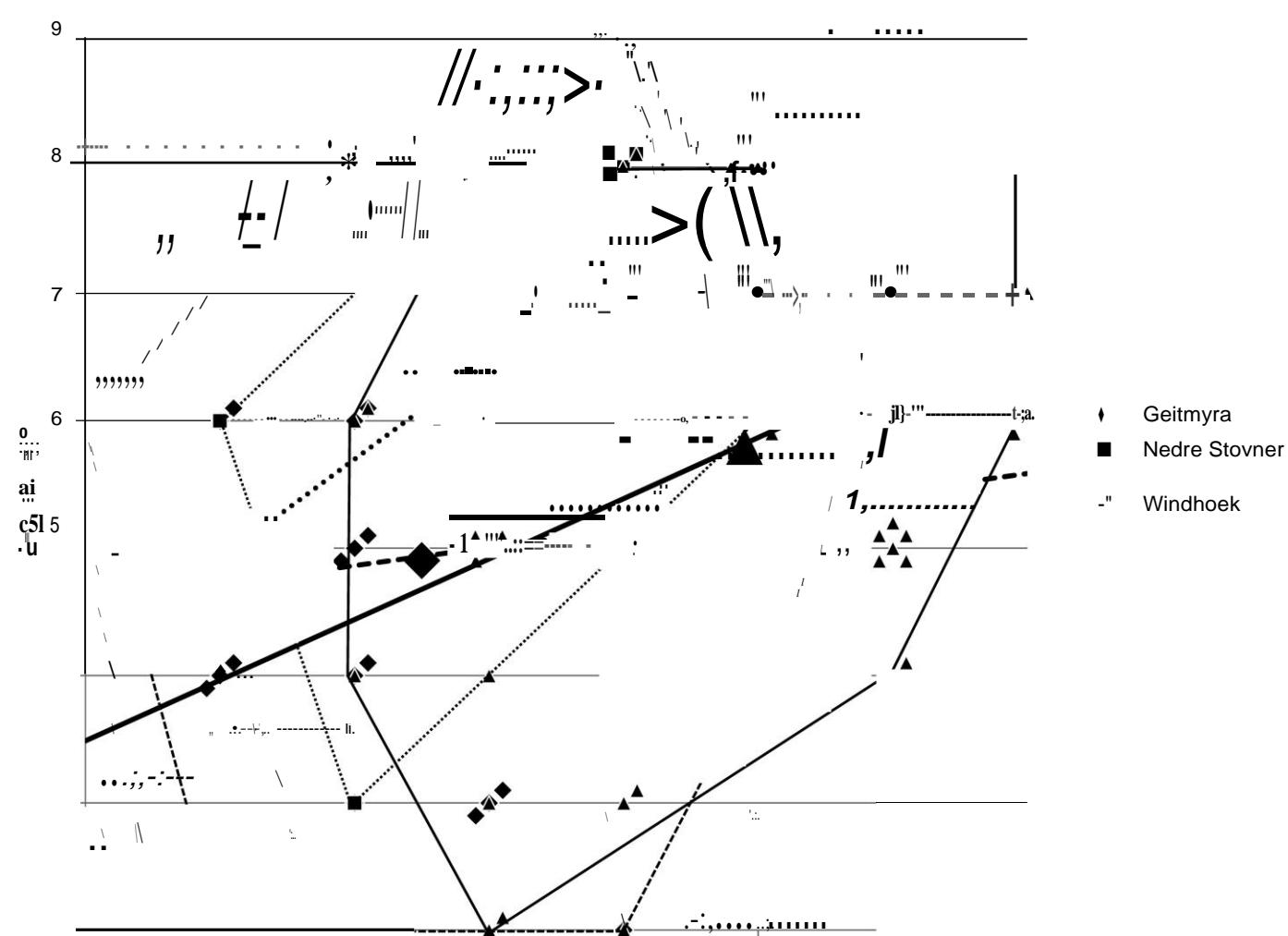
Table 5. Degree to which respondents chat with other gardeners at the allotment. N=129.

| Do you chat to other gardeners? | Number of respondents |
|--|------------------------------|
| Yes, almost always | 85 (66%) |
| Yes, sometimes | 43 (33%) |
| No | 1 (1%) |

Table 6. Statements on social aspects. N=128 (respondents could indicate agreement with multiple statements)

| Statement | Number of respondents who agree |
|---|--|
| My social network is (largely) at the garden | 13 (10%) |
| I like chatting to people at the garden – but the social aspect is not really important to me | 63 (39%) |
| Because I know people at the garden it is more fun to go there | 48 (38%) |
| The social aspect is not or hardly important to me | 10 (8%) |





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