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4 ***Exploring the contribution of alternative food networks to food security. A***  
5 ***comparative analysis***

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47 1. Introduction

48 Food security has featured prominently in the political and academic agenda since the 2007-08  
49 food and financial crisis. Food (in)security has become a challenge not only for developing  
50 economies but also for High Income Countries as a consequence of rising levels of food poverty,  
51 inequalities and state retrenchment from social security and welfare services provision (Arcuri et  
52 al. 2016; Moragues-Faus and Marsden, 2017). In the case of Europe, Loopstra et al (2016) found  
53 economic hardship - i.e., rising unemployment and falling wages - strongly associated with  
54 greater food insecurity. Morgan and Sonnino (2010, 209) summarise these new and highly  
55 complex trends under the concept of the *New Food Equation*, a “response to burgeoning prices  
56 for basic foodstuffs and growing concerns about the security and sustainability of the agri-food  
57 system”.

58 In parallel, food scholars have actively investigated drivers, initiatives and policies supporting the  
59 development of alternatives to the dominant industrialised food system and its detrimental  
60 environmental and socio-economic impacts (see compilations Goodman et al., 2012; Tregear,  
61 2011). An important part of this work has been developed under the term Alternative Food  
62 Networks (AFNs). Although AFNs resist a consensual definition, they are generally characterised  
63 by: (1) short distances between producers and consumers; (2) small farm size and scale and  
64 organic or holistic farming methods; (3) the existence of food purchasing avenues such as food  
65 cooperatives, farmers markets and community supported agriculture; and (4) a commitment to  
66 the social, economic and environmental dimensions of sustainable food production, distribution  
67 and consumption (Jarosz, 2007). However, critical scholars have warned about an idealization of  
68 AFNs, since in many cases they can mask potential environmental impacts and reproduce social  
69 inequalities (Moragues-Faus & Marsden 2017), for example by creating exclusive landscapes for  
70 highly educated and well-off consumers, or concealing exploitative labour conditions (Goodman,  
71 2004; Guthman, 2004; Moragues-Faus, 2017a). Since the 2008-2009 financial and food crisis,  
72 scholars have progressively moved from a celebratory analysis of AFNs - in terms of their  
73 environmental, social and economic contribution to sustainable development goals – to develop  
74 more critical accounts of these initiatives (Moragues-Faus and Marsden, 2017). However, to date,  
75 few studies have directly addressed the contribution of AFNs to food security in the Global North,  
76 that is, how these alternatives contribute to delivering healthy, culturally appropriate food for all  
77 in discursive, political and material terms (Goodman et al., 2013).

78 This paper aims to establish new linkages between food security debates and critical AFNs  
79 literature. For this we rely on new food security conceptualizations by mobilising a place-based  
80 approach to food security (Sonnino et al., 2016), which provides a useful starting point to assess  
81 AFNs’ links with food security outcomes. The place-based approach to food security strives to  
82 overcome the limitations of former conceptual frameworks which “tend to be locked into fixed  
83 levels of scale and generalised as well as oppositional assumptions” (p. 477) by proposing a more  
84 integrated and multidimensional approach. However, this novel approach remains in the realm of  
85 the theoretical and therefore it is paramount to contrast its theoretical premises with empirical  
86 data. For that purpose, we conduct a comparative place-based analysis of initiatives of three  
87 different European contexts –Cardiff city-region (UK), the Flemish Region (Belgium) and the  
88 peri-urban area of the city of Valencia (Spain) - to identify and characterise the ways in which  
89 AFNs contribute to delivering food security.

90 The remainder of the paper is organised as follows. Section two describes the conceptual  
91 framework, which establishes links between recent food security debates and the AFN  
92 scholarship. Section three describes the methodological design. Section four introduces three case

93 studies. We then conduct a cross-country analysis of the three cases in order to identify how  
94 different AFNs contribute or hinder food security outcomes. For that purpose, section four is  
95 organised into the four major components of food security: availability, access, utilization and  
96 stability. Section five links the main results of the analysis with novel food security frameworks,  
97 highlighting three key aspects that emerge from the analysis of the cases: i) how AFNs weave a  
98 more localised socio-economic fabric that creates new relationships between food security  
99 outcomes and specific territories, ii) hybridization processes within alternative but also  
100 conventional systems and iii) the role of advocacy and collective action at different levels. The  
101 final section of the paper contains the concluding remarks.

102

## 103 2. Understanding the capacity of AFNs to deliver food security outcomes

104 The concept of food security has “evolved, developed, multiplied and diversified” (Maxwell,  
105 1996, 155) since the first World Food Conference in 1974, where it was originally defined solely  
106 in terms of food supply. Although for a long time food security was equated to the availability of  
107 enough calories to feed an increasing population, today it is generally recognised as a  
108 multidimensional phenomenon (Clay, 2002). The Food and Agricultural Organization of the  
109 United Nations coined in 1996 the most widely used definition of the concept today, stating that  
110 *“food security [is] a situation that exists when all people, at all times, have physical, social and*  
111 *economic access to sufficient, safe and nutritious food that meets their dietary needs and food*  
112 *preferences for an active and healthy life”* (FAO, 2001). This definition was operationalised by  
113 identifying four major components that need to be fulfilled simultaneously in order to deliver food  
114 security:

- 115 - Availability: the physical existence of sufficient quality food, determined by domestic  
116 food production, domestic stocks, food imports, and/or food aid.
- 117 - Access: resulting from the combination of economic endowments, physical access and  
118 socio-cultural resources that allow the purchase or acquisition of appropriate food  
119 products for a nutritious diet.
- 120 - Food utilization: refers to how the body utilizes various nutrients in foodstuffs as well as  
121 food preparation and hygiene practices, sound eating habits, a diverse diet and proper  
122 intra-household distribution of food.
- 123 - Stability of the other three dimensions over time, stressing the temporal element of food  
124 security.

125 More recently, experts warned that food security necessarily requires nutrition security, that is,  
126 “access to an appropriately nutritious diet, coupled with a sanitary environment, adequate health  
127 services and care to ensure a healthy and active life for all household members” (Radhika &  
128 Hemantha, 2017, p.35). The fundamental connections between the two terms has resulted in the  
129 use of food and nutrition security (FNS), as a concept that emphasizes both the food and health  
130 requirements for populations (Weingärtner, 2005).

131 In academic spheres, the concept of food security has been further explored and also challenged.  
132 Recent contributions have pointed out the use of food security as a consensus frame (Mooney and  
133 Hunt, 2009). Indeed, within the food system, actors deploy the term food security to highlight  
134 different challenges in the food system and, accordingly, propose divergent solutions. For  
135 example, some stakeholders stress low food production as a main concern and therefore the need  
136 to intensify agricultural practices while others point out power imbalances as the generators of  
137 food insecurity, thus seeking food governance changes (see for example Brunori et al., 2013;

138 Kirwan and Maye, 2013; MacMillan and Dowler, 2012). In order to progress this fractured food  
139 security debate, academics have suggested exploring potential bridging concepts such as justice  
140 or governance (Moragues-Faus, 2017b). Of particular interest is the Sonnino et al. (2016) proposal  
141 to develop a relational approach that brings together these different narratives by focusing on  
142 place-based food dynamics. This place-based approach calls for greater attention to three key  
143 parameters (Sonnino et al., 2016): (i) an understanding of the diversity of food security conditions  
144 as constituted by the *flows* of knowledge, materials, capitals and people that take place in and  
145 between food systems; (ii) a focus on *re-localization* processes that contributes to unveiling how  
146 different food initiatives can create (by active horizontal and vertical network and governance  
147 building) a transformative basis for wider changes in food system, and (iii) a progressive sense of  
148 place that integrates *discourses, scales and interdependencies* between geographies as key  
149 elements configuring specific food security dynamics.

150 While this new place-based conceptualization remains overly theoretical, key food security  
151 practitioners are also proposing shifts on current food security definitions. A key example is the  
152 joint initiative launched by OECD, FAO and UNCDF (2016), to adopt a Territorial Approach to  
153 Food Security and Nutrition Policy. The drive for this shift from a national to a territorial  
154 perspective within these organizations emerges from the recognition that disparities in food  
155 security are increasing, both among countries and within countries, and particularly concentrated  
156 in low income inner-city neighbourhoods, large metropolitan regions, and remote rural regions.  
157 FAO officers Cistulli et al., (2014) state that a territorial approach – defined as public intervention  
158 “which builds on local capabilities and promotes innovative ideas through the interaction of local  
159 and general knowledge and of endogenous and exogenous actors” (Barca et al., 2012:149) – leads  
160 to a better understanding of the diversity, cross-sectoral and context-dependent nature of food  
161 security challenges and therefore provides the grounds for more efficient policies and  
162 interventions. Similarly, the Civil Society Mechanism of the Committee on World Food Security  
163 is championing the concept of territorial food markets as a means to recognise the spaces where  
164 small-scale producers trade and their potential to address food insecurity (CSM, 2016).

165 Territorial and place-based approaches to food security build partially on the contribution of  
166 alternative food networks (AFNs) studies to the development of more sustainable and just food  
167 systems. Indeed, according to Marsden et al. (2000), Whatmore et al. (2003) and Moragues-Faus  
168 (2017a), alternative food networks are an attempt to re-socialise or re-spatialize food by  
169 establishing new and shorter relationships between producers and consumers based on trust, the  
170 redistribution of value in the food chain, as well as the establishment of new forms of political  
171 association . These AFN have been considered as a place of resistance to the placeless,  
172 unsustainable, and unjust industrialised food system (Murdoch et al., 2000; Murdoch and Miele,  
173 1999). AFNs have also been considered instrumental to provide fairer returns for producers,  
174 develop high quality products, minimise environmental impact of food production through  
175 organics and low chemical input agricultural practices, and embed territorially food production  
176 and consumption by reconnecting actors with specific territories (Ilbery and Maye, 2005;  
177 Moragues-Faus and Sonnino, 2012; Renting et al., 2003; Sage, 2003).

178 AFNs research has enjoyed a privileged position at the forefront of food studies in the last  
179 decades, with an ever increasing number of case studies conducted across geographies (see  
180 Tregear (2011) and Goodman et al., (2012) for recent reviews). However, much of the research  
181 on AFNs has concentrated on the Global North and in many cases has provided a celebratory  
182 analysis of these initiatives in terms of their environmental, social and economic contribution to  
183 sustainable development goals (Moragues-Faus and Marsden, 2017). For example, some AFNs  
184 studies have uncritically associated ‘local’ food to sustainable development outcomes (Brown and

185 Purcell, 2005). Similarly, an excessive focus on relocalization processes has obscured key  
186 interdependencies at play in agri-food systems (Lamine, 2015). Critical scholars have argued that  
187 together with the ‘local’, other attributes of AFNs such as fair trade schemes or environmentally  
188 friendly certifications could in fact contribute to capitalist development, exclusion of vulnerable  
189 farmers and low-income consumers, and labour exploitation (Goodman, 2004; Guthman, 2004;  
190 Ortiz-Miranda and Moragues-Faus, 2014). Furthermore, “in many cases these ‘ethical’ and  
191 ‘sustainable’ initiatives not only conceal potential environmental impacts and reproduce social  
192 inequalities, but may also be fostering an infertile consumer politics by deepening individualist  
193 practices and reproducing neoliberal configurations that hinder social change” (Moragues-Faus,  
194 2017a, p. 456).

195 Despite the breadth of the AFN analyses, few studies have actually assessed their contribution to  
196 food security in discursive, political and material terms (Goodman et al., 2013). A notable  
197 exception is the work done by Dixon and Richards (2016), who conducted a macro analysis of  
198 the Australian AFNs’ contribution to food security based on previous studies on these alternatives.  
199 They conclude that, in a governance context oriented to deliver cheap food, domestic food  
200 security (FS) will not be addressed through the spread of AFN due to their relatively small scale  
201 and their socio-cultural dynamics (that include attracting the more wealthy groups). While this  
202 meta-analysis focuses on the price affordability and production of foodstuffs, we argue that a  
203 holistic analysis of the AFNs’ contribution to food security needs to address simultaneously all  
204 four dimensions (availability, access, utilization and stability). Furthermore, given the multiplicity  
205 and hybridity of these initiatives (Sonnino and Marsden, 2006; Venn et al., 2006), it is important  
206 to populate the debate on AFNs and food security with new empirical case studies that can provide  
207 evidence to reshape exiting initiatives as well as informed food security policies, from the local  
208 to the international level. In this paper, we explore how three AFNs support or hinder the delivery  
209 of food security outcomes by analysing their contribution to these four dimensions. This analysis  
210 allows to identify key elements in which food security debates hinge and provide new insights to  
211 ground conceptual discussions on territorial and place-based food security approaches.

212

### 213 3. Methodology

214 Research design was driven by the need to go deeper into a topic (the contribution of these AFN  
215 to food security) that has not been tackled in previous studies. The methodology was therefore  
216 based on a two-step data collection process. Firstly, we collected and analysed secondary data  
217 from the three initiatives. These data were instrumental in understanding the nature of the AFNs,  
218 their contexts and backgrounds. Secondly, fieldwork was carried out –between April 2015 and  
219 May 2016- combining three complementary approaches: semi-structured in-depth interviews,  
220 participatory observation and participatory workshops. The methodological steps in each case  
221 study are described below.

222 In the Cardiff case study, secondary sources comprised the available data on food cooperatives  
223 operating in the area. Documents examined included: The Rural Regeneration Unit’s website,  
224 RRU Programme Overview 2012 – 2015, and Interim Reports: Cox 2015, Jones 2012, Elliot,  
225 Parry & Ashdown-Lambert 2004. The Flemish case study reviewed the existing literature on  
226 *Voedselteams* (Bauler et al., 2011; Crivits & Paredis, 2013; van Gameren et al., 2015).  
227 Additionally, Voedselteams provided secondary data related to the growth of the organization  
228 since its foundation in 1996. Secondary data for the Valencia case study included Regional  
229 Government policy (GV 2016); the Valencia City Council action plan for agriculture; internal  
230 documents: *Plataforma per la Sobirania Alimentària del País Valencià*; Fem L’horta Possible

231 inventory of initiatives (in the last 5 years); a participatory action research on food buying groups  
232 (Utópika & ISF 2013); and publications that contribute to understanding the socio-economic  
233 dynamics of the study area, such as Romero & Francés (2012).

234 The research was grounded on primary data collected through several common techniques of  
235 qualitative social research. Semi-structured in-depth interviews were conducted in all three case  
236 studies. To select the interviewees, a mix of snowball sampling and expert sampling was used. In  
237 Cardiff, interviews were conducted in eight cooperatives with the lead volunteer, other volunteers  
238 and customers. Two area coordinators, the general project manager and one local wholesaler  
239 supplying over 70 co-ops were also interviewed. In Flanders, 34 structured interviews were  
240 conducted with team coordinators. An additional set of semi-structured interviews were later  
241 conducted with eight key actors (coordinators, logistical planner, farmer and external experts). In  
242 Valencia, 22 interviews were conducted with key actors including: local producers, local and  
243 regional policy makers, consumers (such as local buying groups and promoters of local food in  
244 school canteens), civil society organizations and local experts. A focus group was also organised  
245 in Valencia with members of a buying group.

246 Participant observation was also used for data collection, including attendance at the  
247 Voedselteams' general assembly to present and discuss the preliminary research results;  
248 participation in Cardiff's Food Policy Council and associated activities; attendance at two local  
249 farmers' markets and several local food products promotional street markets in Valencia and  
250 participation in the working group promoted by the Valencia Council to set up a local Food  
251 Council. Researchers have also been engaged as users in some of the analysed initiatives.

252 Finally, a two-session participatory scenario workshop (following Vervoort's guidelines, 2014)  
253 was organised in the three case studies. The methodology combined backcasting and the  
254 construction of scenario narratives. Between 15 and 25 people with different profiles (e.g.  
255 members of the AFNs, researchers, policy makers, other stakeholders) attended the workshops.

256 The selected initiatives share their ambition to improve food security at the local or regional level  
257 and they are all shaped by regional conditions. A comparison of the initiatives will help to  
258 identifying the key indicators for the success of such small-scaled initiatives in contributing to  
259 FS. Furthermore, the role of the various stakeholders - including consumers, bridging  
260 organizations, policy makers, and producers – differs across the initiatives. A comparison shows  
261 the added value of the involvement of these actors in the success of the initiative, identifies  
262 common bottlenecks in the initiatives and formulates policy recommendations which could  
263 enhance the contribution of the initiatives in terms of delivering food security.

264

#### 265 4. Alternative food provision initiatives in three European cities

266 In this section we analyse different AFNs in three case studies: Cardiff in the United Kingdom,  
267 the Flemish region of Belgium, and the peri-urban area of the city of Valencia in Spain. These  
268 AFNs present differences in terms of their origin and the objectives pursued, the role of the public  
269 sector, their degree of organization and the scope of their territorial action, as outlined below.

##### 270 Cardiff food cooperatives

271 The Cardiff case study revolves around community food cooperatives (co-ops from now on).  
272 Despite the name, co-ops are not co-operatives per se, in a sense that they are not autonomous  
273 enterprises democratically governed and owned by its members. Food co-ops actually operate as  
274 buying groups, created at the initiative of the Welsh government with the goal of offering healthy



275 and affordable fresh produce to all –in particular more vulnerable groups-, while fostering local  
276 businesses and increasing the resilience of local supply chains. The project was established as a  
277 pilot programme in North and South-East Wales in 2004. Funded by the Welsh Government, it  
278 has been run by the Rural Regeneration Unit (RRU), a social enterprise with previous experience  
279 in running food co-ops in Cumbria, England. In the beginning, the project targeted socially  
280 deprived areas included in the Community First programme,<sup>2</sup> in order to fulfil in part the  
281 governmental commitment to tackling inequalities in health (Elliot et al 2004) as a report  
282 published earlier in 2004 revealed that only 41% of the Welsh population eat the recommended 5  
283 portions of fruit and veg a day (Bourne 2012). Focusing on enabling access to, and encouraging  
284 consumption of, fresh produce, it also aimed at supporting local producers and wholesalers both  
285 in rural and urban areas of Wales. During the years, the focus has widened beyond socially  
286 deprived areas and until now, the RRU has helped to establish and support over 300 co-ops across  
287 Wales. At present the RRU does not establish new co-ops and instead works with a main group  
288 of 140 co-ops with the aim of improving their sustainability (Moragues-Faus, 2016).

289 Currently, we can distinguish between two types of food co-ops, community food co-ops and  
290 school food co-ops. They both run on the same basis, with two main differences: the food co-ops  
291 in schools are innovatively run by the pupils themselves, with an adult as a lead volunteer. They  
292 are also usually closed during school holidays, which affects the availability of fresh food and  
293 related temporal sustainability of the initiative. The community food co-ops work by linking  
294 volunteers in running the co-op, in most cases affiliated with an already existing community  
295 initiative such as churches, community programmes or housing associations, to local suppliers  
296 who may be either producers or wholesalers. Customers select their veg and fruit bag from among  
297 several options and pay in advance for the order made, which is collected from a stall open for a  
298 couple of hours on a designated day the following week. In 2012 food co-ops also started to offer  
299 ‘Additional Welsh Produce’, linking consumers to local producers of milk, eggs, meat or bread.

300 Food co-ops represent an alternative food network dedicated to deliver affordable healthy food  
301 for low income families. Despite being promoted by a public programme, food co-ops have  
302 progressively evolved and differ significantly from one another, with community groups taking  
303 the lead in organising the meetings and procuring the food. Funding from Welsh government for  
304 core support stopped in 2016 and therefore, just the more resilient co-ops - with dedicated  
305 volunteers and embedded in community services and activities such as churches or social services  
306 programmes – will continue their activities. Nevertheless, austerity measures have resulted in cuts  
307 in social services programmes, weakening these supporting organizations and therefore the social  
308 infrastructure that allows the co-ops to function. Overall, the provision of affordable fresh fruit  
309 and vegetables constitutes an ongoing key challenge in the UK, where there are increasing pockets  
310 of food poverty and health inequality (Oxfam and Church Action, 2013). However, the expansion  
311 of discounters such as Lidl puts additional pressure on community initiatives by offering  
312 convenient cheap food, as reported by co-ops losing members in Cardiff.

### 313 Food teams in Flanders

314 Voedselteams (in English, food teams) were set up in 1996 in Leuven, by a group of individuals  
315 working for three non-profit organizations (Zwart et al., 2016): an educational organization  
316 (Elcker-Ick), an NGO focusing on food security (Wervel) and an NGO that was concerned with  
317 sustainable agriculture in the Global South (Vredeseilanden). Voedselteams were inspired by

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<sup>2</sup> Communities First is a regeneration programme funded by the Welsh Government operated in the most deprived communities in Wales, according to the Welsh Multiple Deprivation Index.

318 Japanese Seikatsu, which consist of consumer teams that organize food purchase and storage.  
319 Voedselteams was thus started based on a perceived ideological need to change unsustainable  
320 mainstream agro-food practices and the effects of globalization on agriculture (Hubeau et al.  
321 2015). The initiative was not meant to oppose the mainstream system through lobbying or  
322 protesting, but rather by making ‘sustainable’ alternatives available.

323 The first Voedselteams pilot plan ran for a year, during which consumers made contact with local  
324 farmers and spaces to set up depots to deliver the produce to each team. The pilot turned out to  
325 be a success. In the process of expansion, the Belgian food safety crises in 1999 and 2003 resulted  
326 in an increased participation. In 2015, the organization consisted of around 175 teams and 2.900  
327 members over five regions. A team is generally made up of between 12 and 30 households. Food  
328 purchase and delivery is jointly organized by the food teams. Although Voedselteams share  
329 common values, each group has a specific way of functioning and tasks are usually performed by  
330 volunteers. There is a general coordinator, a depot coordinator and a financial coordinator in each  
331 food team. Members order food according to their particular needs (Crivits & Paredis, 2013;  
332 Voedselteams, 2015).

333 The organization formalized in 2001 as a Not for Profit Organization (NPO). The NPO employs  
334 five full-time staff. There is at least one regional coordinator in each of the five Flemish provinces.  
335 Funding comes from public funds. Employees are mainly paid by subsidies received, thanks to  
336 Voedselteams’ official status as a socio-cultural movement since 2005. This implies that  
337 Voedselteams is now also deemed to reach a larger diversity of people and to increase awareness  
338 of agricultural and short food supply chain (SFSC) issues. Over time, Voedselteams has grown,  
339 matured and attracted an increasing amount of consumers. Besides the first pioneers, the initiative  
340 now also includes consumers with more ‘conventional’ expectations. Some of the more recent  
341 consumers are not willing to give up as much convenience and dedicate as much time and energy  
342 to the practices as the first AFN pioneers. Instead, these newer consumers also value efficiency,  
343 professionalism and convenience. Hence, there have been incremental changes towards a re-  
344 incorporation of professionalization, specialization, efficiency and convenience. The Flemish  
345 foodscape has recently strongly started to change, with many similar initiatives emerging such as  
346 online platforms selling food baskets. Similarly, mainstream actors are also responding to the  
347 increasing demand for SFSC offering more local, fresh and seasonal produce.

#### 348 AFN and peri-urban agriculture in Valencia

349 The Valencia case study was made up of a diversity of AFNs that connect peri-urban farmers  
350 producing mainly fruit and vegetables to urban consumers. They can be grouped as: (i) direct  
351 selling of seasonal fruits and vegetable boxes by farmer to consumer –this is the main option of  
352 newly initiated projects; (ii) Responsible Consumption Groups or buying groups, where long-  
353 term arrangements are established between consumers and farmers providing fruit and veg  
354 (sometimes also in the form of boxes); (iii) local online food platforms to fulfil a growing demand  
355 for organic food – both certified or not, and not necessarily from local producers; (iv) direct selling  
356 through municipal markets (17) in the city and seasonal farmers’ markets, both organic and non-  
357 organic farmers participate in these events which often aim to raise public awareness, and (v)  
358 specialised food shops and restaurants that have direct arrangements with local producers.

359 Despite the diversity of initiatives and actors, there are three main aspects that link these AFNs  
360 as a single case study. Firstly, most of these initiatives originate from new and old producers who

361 aim to maintain both traditional and agro-ecological farming practices in the Huerta of Valencia<sup>3</sup>,  
362 including an active struggle to protect this high-value farmland (Dobris Assessment) from threats  
363 and pressures such as urbanization. Secondly, most of these AFNs are closely connected to each  
364 other, with producers and other actors simultaneously involved in several initiatives. Thirdly,  
365 these AFNs participate in a broader socio-political movement to protect the outstanding values  
366 (productive, environmental, scenic, and cultural) of the Huerta and its transition towards an  
367 economically viable agro-ecological space. In this regard, they advocate the promotion of  
368 institutional and political frameworks that enable the multiplication and expansion of these AFNs  
369 (e.g. the development of a Participatory Guarantee System<sup>4</sup>, or the incorporation of la Huerta  
370 produce in public procurement schemes).

371 Since there is no official census or inventory, a good indicator of the AFNs' evolution in the city  
372 of Valencia and its metropolitan area is the calendar promoted by *Fem L'Horta Possible*, an  
373 assembly of civil society organizations which annually lists and updates existing initiatives,  
374 businesses and projects which support farming activities in the Huerta. The number of initiatives  
375 listed in the calendar has increased from less than 10 in 2010 to more than 50 in 2017.

376 The peri-urban character of the Huerta shapes the development of these AFNs in multiple ways.  
377 For example, in many cases access to land is difficult and results in most of these initiatives  
378 relying on small and usually scattered rented plots. Furthermore, with a growing population of  
379 over 1.5 million surrounding this agricultural space, the Huerta suffers constant pressure of  
380 urbanization processes and development of transport infrastructures. Nevertheless, the high  
381 population pressure also present opportunities to increase their consumer base. At the moment,  
382 these local producer-consumer linkages are still rather weak, with most city dwellers accessing  
383 their daily food without regard to this valuable and highly productive landscape despite its  
384 vicinity. The precariousness and lack of support of most new initiatives makes them very  
385 vulnerable and subject to the local and regional political setting. AFNs are experiencing a more  
386 favourable moment since the political change after the 2015 elections that has placed the food  
387 issue in the local and regional agenda for the first time, facilitating rebuilding links between local  
388 producers in the Huerta and its surrounding area and urban consumers. For example, the  
389 Municipality of Valencia is implementing a plan to protect and revitalise la Huerta by addressing  
390 key challenges such as the generational turnover and the development of new forms of proximity  
391 and direct selling pathways. Other related actions include the promotion of organic food in school  
392 canteens and campaign to raise consumer awareness on the positive impacts of local food.

393 Table 1 below, summarises the main characteristics of the three case studies involving locally-  
394 rooted food initiatives forging direct relationships between consumers and producers. While their  
395 origins, goals and available resources are diverse, they share a commitment to building  
396 sustainable, resilient, diverse and inclusive food systems and weaving more cooperative and  
397 sustainable communities. In this paper we will analyse the mechanisms these initiatives deploy to

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<sup>3</sup> In the 8th century the Moors created a complex network of irrigation ditches (Guinot 2008). Although the Huerta is an agricultural space with high cultural, landscape and environmental values, this landscape is now shrinking fast, and has been reduced to about 12,200 hectares, of which only 5,200 ha would correspond to horticulture surface (Soriano, 2015).

<sup>4</sup> Participatory Guarantee Systems (PGS) represent an alternative to third party certification, especially adapted to local markets and short food supply chains. As defined by the International Federation of Organic Agriculture Movements (IFOAM - Organics International), "*PGS are locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange*". <http://www.ifoam.bio/en/organic-policy-guarantee/participatory-guarantee-systems-pgs> (last accessed September 2017).

398 deliver food security and critically discuss their overall contribution to developing more secure  
399 food systems.

400

Table 1. Summary of case studies

Aspect	Cardiff	Flanders	Valencia
<b>Place-based contingency</b>	<ul style="list-style-type: none"> <li>• Low overall consumption of fruit and vegetables of British public</li> <li>• High prices of fruit and veg, but changing with arrival of discounters</li> <li>• Lack of local fruit and vegetable producers</li> <li>• Support for communities and community activities by governmental programmes diminishing</li> <li>• Need for affordable fruit and veg</li> </ul>	<ul style="list-style-type: none"> <li>• High pressure on prices of raw foods</li> <li>• There is market opportunity, especially around cities, with people willing to pay more for local tasty food</li> <li>• Supermarkets increasing their supply of local, fresh and seasonal produce</li> </ul>	<ul style="list-style-type: none"> <li>• Producers are embedded in a highly productive Huerta, whose viability and existence are compromised. Its defence is a binding element for the different actors involved in the AFN model</li> <li>• The peri-urban character of la Huerta shapes AFNs potential and limitations</li> <li>• The new political setting is now favourable for the development of AFN</li> </ul>
<b>Initiators</b>	Policy and community driven	Consumer driven	Social movements and farmer driven
<b>Primary purpose</b>	Mainly food poverty alleviation and improve health and wellbeing. Also to contribute to local economic development and community cohesion	Accessing local and organic food from small-scale producers	Local food to maintain a viable farming activity and protect peri-urban agricultural heritage (agriculture as a political device, a transformative driving force)
<b>Territorial scale</b>	City-region	Regional	Peri-urban
<b>Type of organization</b>	Independent groups supported by a publicly funded social enterprise	Formalised network (Voedselteams)	Multiple small-scale initiatives with informal linkages
<b>Public support</b>	Coops are supported by a public social enterprise	Subsidies	Weak and recent policy attention
<b>Social engagement</b>	Volunteers	Volunteers	Activists

401 Source: Authors' elaboration.

## 402 5. RESULTS

### 403 Availability

404 The analysis of these three case studies shows that the main contribution of AFNs in terms of  
405 food availability is the revitalization of local food production by linking consumers to local  
406 farmers. Furthermore, these changes in the local food system can have a positive spill-over effect,  
407 for example creating new economic activities alongside the food chain, and social implications  
408 by increasing social construction and trust. A key aspect of these AFNs is the type of foodstuffs

409 that are made available, mainly fruit and vegetables, which constitute an essential element of  
410 healthy diets and therefore contribute to nutritional security aspects.

411 While AFNs literature emphasises the quality aspects of food produce around organic, local,  
412 territorially embedded and seasonal attributes (Moragues-Faus and Sonnino, 2012; Renting et al.,  
413 2003), our case studies develop hybrid food chains to deal with demand requirements. This is  
414 particularly the case around the seasonality and origin of products. For example, in the case of  
415 Voedselteams, local production cannot provide a sufficient supply during the winter, but  
416 consumers also demand foodstuffs from other countries. In this particular case, Voedselteams  
417 members solved these tensions by agreeing that globally traded products (e.g. pineapples,  
418 chocolate or coffee) could be offered provided that they were organic and fairly traded. While  
419 local agri-environmental conditions allow producers in Valencia's peri-urban Huerta up to three  
420 vegetables crops per year, some non-local products are sold in farmers' markets to increase  
421 diversity of the offer. Food co-op users, on the other hand, seek to provide cheap fruit and  
422 vegetables to cater for low income families and therefore their interest in the origin of foodstuffs  
423 is relatively low. Food co-ops rely on a mixture of Welsh, British and international producers. In  
424 this case, this diversity in the origin of produce also responds to the lack of fruit and vegetable  
425 producers in the city-region (and Wales as a whole) and to reduced product availability during  
426 the 'hungry gap' period in spring due to weather conditions.

427 In the case of Valencia and Flanders, these AFNs are promoting particular agricultural practices.  
428 Specifically, the agro-ecologic/ organic producers involve the use of polyculture techniques and  
429 aim to maintain or even recover traditional varieties. Some of the foodstuffs that these producers  
430 sell cannot be found within mainstream channels, remaining in many cases unknown to new  
431 generations of consumers (e.g. some tomatoes varieties in the Valencia region). The preservation  
432 and use of traditional varieties provides additional resilience<sup>5</sup> to food production activities, since  
433 they are adapted to their local environment and foster biodiversity. With 75% of the genetic  
434 diversity of agricultural crops lost in the 20<sup>th</sup> century (FAO, 1998) the role of these AFNs in  
435 preserving and providing open-access to seeds constitutes a key contribution to building resilience  
436 and delivering food security in the long term. In many cases, these varieties also have an  
437 outstanding gastronomic value for their organoleptic quality. However, having a diversified  
438 production poses a challenge for producers and processors, who need to find the balance between  
439 offering an attractive wide range of different products and the higher production costs it entails.  
440 An additional challenge is to introduce new products to consumers who usually feel more  
441 comfortable buying only foodstuffs that they recognize and know how to cook. Furthermore, these  
442 high-quality products are usually more expensive.

443 These AFNs offer raw vegetables and fruits but also transformed products. In Valencia, peri-  
444 urban small-scale processors are transforming local raw produce into jams, vegetable preserves  
445 and non-dairy drinks. For its part, the offer of processed food through Voedselteams includes  
446 dairy and fruit and veg (e.g. soups, quiches and sauces) from local but also globally-sourced  
447 ingredients. In 2012 food co-ops also started to offer "Additional Welsh Produce" linking  
448 consumers to local producers of milk, eggs, meat or bread.

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<sup>5</sup> Resilience is the "ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration or improvement of its essential basic structures and functions" (IPCC, 2012) [https://www.ipcc.ch/pdf/special-reports/srex/SREX-Annex\\_Glossary.pdf](https://www.ipcc.ch/pdf/special-reports/srex/SREX-Annex_Glossary.pdf)

449 Access

450 In order to understand how these initiatives provide access to healthy food we need to consider  
451 economic barriers, socio-cultural resources and physical access. First, the economic dimension of  
452 accessibility mainly revolves around prices. High prices have been identified as the main barrier  
453 for not buying organic food (Padel and Foster, 2005) and therefore excluding a significant sector  
454 of the population from participating in many AFNs. While some “organic” and specialized stores  
455 or supermarkets target those with high purchasing power, there is an increasing number of AFNs  
456 working to provide quality foodstuffs at affordable prices.

457 Food co-ops especially improve this economic access dimension of food security by providing  
458 affordable fresh fruit and vegetables for less-favoured communities. On the other hand,  
459 Voedselteams members are willing to pay higher prices than in conventional channels to gain  
460 access to healthy local food. Higher prices, inherent in the fact that Voedselteams rely on organic  
461 products, prevent those with lower budgets from entering the food teams, resulting in  
462 Voedselteams failing to include lower income households up to now.

463 Similarly, in the case of Valencia, conventional market channels usually offer cheaper produce  
464 than agro-ecological peri-urban initiatives<sup>6</sup>. However, specific foodstuffs sometimes are cheaper  
465 and there are often big price differences between conventional supermarkets. In the Valencia case,  
466 the change from official organic certification to a participatory guarantee system is contributing  
467 to lower prices, together with direct selling mechanisms.

468 Second, socio-cultural resources also play an important role in providing access to healthy food.  
469 In the case of food co-ops, they integrate the preference and needs of different ethnic groups, as  
470 long as the produce has an affordable price. However, ethnic minorities, especially immigrant  
471 groups, seldom participate in Voedselteams. Conscious efforts are required by these initiatives to  
472 expand the current offer to include diverse styles of eating patterns, not least by changing  
473 traditional local produce to include new crops demanded by different cultural backgrounds.

474 Finally, the physical dimension of accessibility is addressed differently by the three initiatives. For  
475 example, in rural areas where shopping options are more limited the infrastructure created by food  
476 co-ops is particularly important. As a new sourcing outlet, it potentially gives the community a  
477 choice of the food they eat. In the case of Flemish Voedselteams and AFNs in Valencia,  
478 consumers are granted access to certain foodstuffs which are seldom available in mainstream  
479 channels, increasing the diversity of their food options. Nevertheless, buying through food co-  
480 ops, Voedselteams or food baskets and responsible consumer groups’ initiatives such as the ones  
481 in Valencia generally requires investing more time and planning to participate in these AFNs. For  
482 example, participants wait days between placing the order and receiving delivery. Moreover, the  
483 collection of the produce usually happens at a designated day, time and place which may represent  
484 a constraint for those consumers with tighter agendas.

485 The analysis of the three cases reveals that some of the main challenges faced by AFNs regarding  
486 accessibility is related to logistics. The AFNs analysed show problems of inefficiency and high  
487 logistic costs, mainly due to managing relatively small volumes and dispersed distribution.  
488 Farmers’ strategies to cope with these distribution challenges are diverse. Some producers set up  
489 their individual infrastructure, which involves some difficulties, mainly investing time that could  
490 be dedicated to farming activities, and the need for a refrigerated van. Others have addressed the

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<sup>6</sup> A rough non-exhaustive price comparison was made for a common list of fresh vegetables. Web sites of large distribution groups operating in Valencia were examined and prices were compared with those on the web sites of local producers and with those in the recommended price list of a farmers’ market.

491 problem through collaboration, grouping their respective orders and placing them in the same  
492 delivery route. Another alternative includes outsourced transportation to an external firm. This is  
493 the case of Voedselteams, where a transport company manages all the orders in the region, collects  
494 them from the farmers, and delivers the produce to each team. Ensuring suitable food collection  
495 points constitutes another challenge. For example, food depots generally require complying with  
496 food safety regulations which result in expensive rents or administrative processes (see below).  
497 In many cases such as the case of buying groups, AFNs operate in an *alegal* form, constituting a  
498 category of activity that has not yet been regulated, and therefore have a high degree of flexibility  
499 (Moragues-Faus, 2017a).

## 500 Utilization

501 The AFNs studied shape the utilization dimension of food security by affecting consumers' eating  
502 habits and the diversity of their diets. Of particular interest are Cardiff's food co-ops which  
503 emphasize the importance of changing food habits and provide affordable and healthful  
504 foodstuffs. Nonetheless, the three cases analysed provide a specific selection of foodstuffs, mainly  
505 fresh fruit and vegetables, which shape participants habits and provide a more nutritional diet. In  
506 the cases of Valencia and Cardiff, veg boxes and buying groups establish a predefined and pre-  
507 selected offer of products (local and seasonal) and its quantity. This has several implications  
508 regarding food utilization.

509 Consumers' inability to modulate the amount or type of products they wish to receive is linked to  
510 food waste in different ways. Some consumers interviewed consider this an opportunity to try  
511 new products and recipes; indeed, the limited and seasonal range of available products is argued  
512 to be an advantage as it, for example, encourages innovation and creativity in cooking practices  
513 (Crivits & Paredis, 2013). For others, standard veg boxes create several disadvantages; on the one  
514 hand, consumers may need to keep buying the same products through other channels to adapt the  
515 quantity to their household needs. On the other hand, there is also a need to adapt some everyday  
516 practices: vegetables need to be prepared, cleaned and eventually precooked to preserve them.

517 Indeed, different types of knowledge play a key part in assuring that the utilization dimension of  
518 food security is fulfilled. Our research shows the close relationship between using food efficiently  
519 -i.e. reducing food waste- and the knowledge of participants on different produce and cooking  
520 options (e.g. brining, canning, and use of non-eatable parts of the vegetables, i.e. to prepare  
521 seasonings). AFNs studied work as a site for learning but at the same time certain types of  
522 knowledge are required to participate. For example, consumers are sometimes faced with  
523 unfamiliar products which pose challenges in terms of taste and preparation. This challenge is  
524 also an opportunity to learn about local and seasonal produce and create stronger links between  
525 participants. Interviewees from the three initiatives highlighted different forms of knowledge  
526 sharing, for example, by providing recipes in the food basket, giving cookery classes or having  
527 direct contact with the producer in the farmers' market. Dissemination and expansion of food  
528 knowledge can also occur through other means and spaces. As was noted in Welsh food co-ops,  
529 they have progressively invested fewer resources in raising awareness of cooking and healthy  
530 eating since there is an increasing amount of food-related information in the UK media.  
531 Furthermore, stakeholders such as the public sector and civil society organizations are running  
532 campaigns.

533 Food safety constitutes another key aspect of food security that requires consideration and that  
534 poses several challenges to the AFNs studied. While aiming to ensure safe diets and an adequate  
535 utilization of food, the current European hygiene assurance standards also act as a major constraint  
536 to some small producers and processors. Indeed, in some countries, AFNs have the same legal

537 requirements as bigger food enterprises and consequently bear high costs for small operations.  
538 The European hygiene regulations allow certain flexibility in their application to small-scale  
539 structures and short food supply networks. However, countries interpret the European regulations  
540 differently. For instance, a frequent complaint of AFNs in Valencia revolves around the lack of  
541 adaptation of the hygiene regulations to small-scale initiatives. In the same line, food safety is an  
542 issue for Voedselteams' food depots. If these teams were forced to register at the official food  
543 safety body, operational costs both for food teams and supplying farmers would increase and the  
544 latter would also be required to comply with stricter rules and regulations that might threaten their  
545 existence.

#### 546 Stability

547 The temporal element of food security, that is, the delivery of the other three dimensions over  
548 time presents specific challenges for AFNs.

549 First, some of the initiatives studied depend on voluntary work. Volunteers are vital to the  
550 functioning of food co-ops and Voedselteams. While this can be considered a positive aspect that  
551 allows to reduce operating costs, there is an inherent risk related to volunteers' burnout or drop-  
552 out that raises important questions around the viability of these initiatives. For example, data  
553 collected from Voedselteams shows that voluntary engagement is a major problem. Some  
554 interviewees argued for a different system including compensations -free goods or services- to  
555 volunteers in exchange for their work. However, as previously recognised in the food movement  
556 around the value of non-waged labour (Ekers et al., 2015), reliance on voluntary work can also  
557 contribute to community strengthening and social movement building which can conversely have  
558 a positive impact on building resilience.

559 The comparative analysis of the three cases also revealed how over-reliance on public subsidies  
560 and on other organizations can compromise the financial sustainability of AFNs and their food  
561 security outcomes. In this sense, the food co-ops and Voedselteams, the two more "formalised"  
562 cases, are more dependent and potentially vulnerable. For example, at the moment the  
563 Voedselteams model is financially unsustainable without external support. The initiative receives  
564 subsidies due to its status as a socio-cultural organization. In the case of food co-ops, they rely on  
565 one hand on the support of the RRU which is publicly funded by Welsh government; and on the  
566 other hand, they benefit from other organizations' resources such as free venues and lower  
567 running costs. The co-ops dynamics show that their success and sustainability are largely  
568 dependent on their embeddedness in other local initiatives and the extent to which they are  
569 networked. In contrast, the Valencian AFNs initiatives depend entirely on their own capacity to  
570 remain economically sustainable which, among other factors, has resulted in a relatively high rate  
571 of appearance and disappearance of initiatives. These AFNs seem to be more vulnerable to  
572 changes in consumer habits and therefore, stable customers' engagement is a critical element.  
573 According to the interviewees, it is equally important for the sustainability of these networks to  
574 improve the effectiveness of their operations such as increase in size and work in grouped farms.  
575 A local expert forecasts a horizon of farm expansion coupled with "casualties along the way" for  
576 the organic/agro-ecological agriculture within the area. Farmers' mutual assistance groups play a  
577 relevant role in increasing their sustainability. In this line, efforts to strengthen collective action  
578 among agro-ecological farmers in Valencia initially gave rise to the *Ecollaures*<sup>7</sup> association,

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<sup>7</sup> Small-scale farmers' networks in the Huerta area originally were created to give mutual support to their members and coordinate common objectives, such as the defence of agricultural territory, the promotion of agro-ecological farming and local consumption, and fostering producer-consumer relations based on social



579 which quickly evolved towards *SPGEcollaures*, founded in 2012 as the first Participatory  
580 Guarantee System operating in the Region. Similarly, since 2014 Voedselteams co-organize the  
581 annual Farmers' Forum (*Boerenforum*)<sup>8</sup>, a space that helps to build resilience among farmers by  
582 increasing trust, knowledge-sharing and social cohesion. Since 2015, Voedselteams have also put  
583 in place a PGS for all regions. This participatory certification system constitutes a mechanism to  
584 assess producers' practices, promote and refine sustainability measures and select new entrant  
585 producers.

586 Finally, the interviewees highlighted the motivations of AFN participants as a key aspect of their  
587 stability. For example, participants in Valencia's buying groups show a commitment to promote  
588 social change through the act of buying food. A Participatory Action Research 2012-2013 study  
589 (Utópika & ISF, internal report) concluded that buying groups in the city of Valencia had a  
590 common socio-political project that coalesced around the struggle for food sovereignty (see  
591 Moragues-Faus, 2017a). This broader political project also included specific criteria to select  
592 products and producers, such as organic, local and seasonal. Other criteria not necessarily shared  
593 by all groups include: agro-ecological products; foodstuffs from small-scale producers; direct  
594 contact with the producer; fair prices for both farmers and consumers; being a cooperative  
595 organization with fair working conditions; from producers involved in projects such as the  
596 defence of the Huerta or protection of heritage varieties. These supporting practices are also  
597 observed in Voedselteams. Although the most important aim of joining a food team is to gain  
598 access to healthy and local food, the importance of social aspects was also emphasized during the  
599 interviews. Reasons often mentioned to enter a food team were the setting up of direct ties  
600 between consumers and producers and the creation of social cohesion; the support of local  
601 farmers; the increase of transparency along the food chain; and the improved access to healthy,  
602 local and fair food<sup>9</sup>. In the case of Cardiff food co-ops, over and above their function of providing  
603 affordable, fresh, and local produce, supporting the local community was also mentioned as an  
604 important motivation for getting involved.

605 Table 2 summarises the main characteristics of the contribution of the AFN to FS in the three case  
606 studies.

607

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justice. In 2012 it became *SPGEcollaures*, a Participatory Guarantee System, whose main purpose is social transformation.

<sup>8</sup> The *Boerenforum* has been organized annually since 2014 by Voedselteams together with Wervel, a Belgian organization that focuses on the right to healthy and fair agriculture and food. The forum provides a voice to those alternative farmers who are not members of any of the mainstream farmers' unions.

<sup>9</sup> There are however, substantial differences between teams and regions in the importance placed to each of these aspects. In East-Flanders, for example, Voedselteams members are quite strict about their values compared to the other regions. The stronger engagement in this region is explained by a significant development of SFSC and sustainability initiatives which provided Voedselteams with a network to build on.

Table 2. Summary of the contribution of the analysed AFN on the FS dimensions

	<i>Availability</i>	<i>Access</i>	<i>Utilization</i>	<i>Stability</i>
Cardiff	<ul style="list-style-type: none"> <li>Engages partially with local growers and enterprises key in the supply chain</li> <li>Local is not highly regarded</li> <li>Need to open the food source from other regions and countries to counterbalance scarce number of local producers and climate conditions</li> <li>Raw fruit and veg plus regional produces: eggs, meat or bread</li> </ul>	<ul style="list-style-type: none"> <li>Affordable fresh fruit and veg for less favoured communities</li> <li>Integrate the preferences and needs of different ethnic groups</li> <li>Provide healthy food within the community and linked to community activities as spaces</li> <li>Important in rural areas where shopping options are limited</li> </ul>	<ul style="list-style-type: none"> <li>Preselected offer of products requires cooking skills and product knowledge and to adapt some everyday practices</li> <li>Set bags, potential to generate more food waste. In order to avoid this, food co-ops started cookery classes and recipes to avoid waste</li> </ul>	<ul style="list-style-type: none"> <li>Reliance on public subsidies and other organizations' resources and dependence on volunteers</li> <li>Not for profit venture. Dependence on offering low price food to maintain number of participants</li> <li>Importance of the social aspect (building communities and social networks)</li> </ul>
Leuven	<ul style="list-style-type: none"> <li>Focus on local organic vegetables, though also offers dairy, meat and fish and processed foods</li> <li>Since local production is insufficient to provide sufficient supply during winter and consumers demand other products, food is also sourced from other latitudes</li> </ul>	<ul style="list-style-type: none"> <li>Prices of products (organic) are higher than in conventional channels</li> <li>Ethnic minorities seldom participate due to higher prices and not integrating their eating patterns</li> <li>Professionalization of online order system and of the delivery system, though there is room for much improvement</li> </ul>	<ul style="list-style-type: none"> <li>Hygiene assurance normative for producers and local depots is under pressure of food safety control</li> <li>Cooking skills are needed. Preparing unprocessed food might lead to healthier food patterns</li> <li>Waste reduction schedule for summer / holiday periods</li> </ul>	<ul style="list-style-type: none"> <li>It is not financially sustainable. It depends on government subsidies and relies on voluntary work</li> <li>Competition with growing organic supermarkets and online food shops</li> </ul>
Valencia	<ul style="list-style-type: none"> <li>Agronomic conditions allow up to 3 annual harvests of fruit and veg</li> <li>Recent rapid spread of this type of initiative</li> <li>Need to find the balance between a wide-range attractive offer and production costs</li> <li>Some processed products are available and non-local products can be incorporated to increase the offer</li> </ul>	<ul style="list-style-type: none"> <li>Prices are usually higher than in conventional channels</li> <li>AFN provide access mechanisms to fresh local, organic and seasonal food</li> <li>Consumers are granted access to some foodstuffs not easily accessible through conventional retailers</li> </ul>	<ul style="list-style-type: none"> <li>New food access pathways may affect everyday practices</li> <li>Preselected offer of products requires cooking skills and product-knowledge</li> <li>Health/hygiene assurance standards are a problem for small scale processors</li> </ul>	<ul style="list-style-type: none"> <li>Sustainability is compromised by disappearance of producers, who endure several constraints for their development and viability</li> <li>Importance of building social capital</li> <li>Adoption of regulatory changes at several scales and in several domains need to be considered</li> </ul>

611 6. Discussion

612 The initiatives analysed are strongly rooted in the set of ecological, socio-economic, cultural and  
613 political dynamics linked to their particular place. This is a common aspect shared amongst a  
614 variety of local food projects, that is, the territorial embeddedness of these initiatives shapes their  
615 characteristics and in turn these projects contribute to distinct place-making processes (Moragues-  
616 Faus and Sonnino, 2012). This highlights the importance of taking a territorial and place-based  
617 approach in understanding the contribution of specific initiatives to food security at different  
618 levels. Despite the local specificities, the cross-national comparison has provided us with addition  
619 insights regarding the potential contribution of AFNs to food security outcomes.

620 Firstly, the three case studies represent local food initiatives that promote new ways of producing  
621 consuming and distributing food, building closer relationships between producers, consumers and  
622 other food actors in the vicinity, and therefore creating local food networks. While each of these  
623 initiatives have specific goals and different organization models, they all contribute in different  
624 ways to weaving a more localised socio-economic fabric aimed at establishing new **relationships**  
625 **between food security outcomes and specific territories**. Food is mobilised as a means of  
626 reconnecting people and stimulating new forms of social cohesion and business models. These  
627 AFNs display characteristics of the territorial approach to food security championed by the  
628 OECD/FAO/UNCDF (2016), who recognise the need for a paradigm shift in addressing food  
629 security policies. The inclusion of the regional and context-specific nature of food security is  
630 considered critical to deliver appropriate long-term responses to food insecurity challenges.

631 The three case studies build on their territorial constraints and advantages differently. For  
632 example, Welsh community food co-ops aim to deliver healthy and affordable fresh produce for  
633 all, relying on a mixture of Welsh, British and international products handled by local suppliers.  
634 Although customers and volunteers generally show little interest in local food, the project helps  
635 to build more resilient food chains in the region by a top-down emphasis on engaging local  
636 suppliers, both wholesalers and actual producers. Whereas co-ops in South Wales are supplied by  
637 wholesalers because of the lack of suitable producers nearby, co-ops in North and West Wales  
638 are mostly supplied by growers, who can also be wholesalers, growing veg and buying-in fruit  
639 (and veg out of season). This territorial differentiation shows how the same initiative (food co-  
640 ops) supported equally by governmental programmes can evolve into different networks of actors  
641 and activities - as well as related food security impacts - due to different territorial characteristics.  
642 Flemish Voedselteams aim to support locally-based organic producers and processors through  
643 fairer prices in exchange for healthy local food. For some of these suppliers, Voedselteams means  
644 taking the first step in SFSC initiatives, allowing them to establish direct contact with consumers  
645 and to gain control over prices. Although the weight of farmers' sales to Voedselteams is very  
646 diverse (ranging from 5% to more than 50%), an increasing number of farmers seek to participate  
647 in this new selling channel. This increased interest responds to smaller farms struggle to compete  
648 with larger farmers, which offer lower prices and consequently, many farmers seek for new and  
649 innovative marketing outlets to avoid squeezing further their incomes. For many producers,  
650 Voedselteams is an opportunity to create added value for their products. However, the stagnation  
651 of demand in some locations and its seasonal fluctuations prevent some farmers from abandoning  
652 conventional chains.

653 With regards to the AFNs in Valencia, the proliferation of food-related initiatives in the city shows  
654 both a social revaluation of peri-urban agriculture and the emergence of new food-related business  
655 opportunities. New organic/agro-ecological farmers are trying to reconnect with urban consumers  
656 and forge closer production-consumption relations, while some older farmers are also adopting

657 organic farming and starting to explore SFSC. The implementation of new programmes to protect  
658 and promote agricultural production in the area has also fostered a new regulatory landscape that  
659 among others supports long-term farmers' investments and reduces challenges posed by  
660 urbanization processes. These changes to the policy and governance dimensions of places show  
661 the interdependencies between territorial characteristics and the delivery of food security  
662 outcomes.

663 The second element that emerges from the analysis is the **hybridization of these initiatives**, as  
664 AFNs aim to scale-up, increasing their capacity to deliver food security. Growth and viability  
665 requirements sometimes involve using methods associated with conventional channels. These  
666 hybridization processes relate to Ilbery and Maye's (2005, p. 828) findings, who identify a  
667 "considerable blurring of the boundary between conventional and alternative systems" and  
668 describe how strong economic imperatives drive " 'alternative' producers to regularly 'dip in and  
669 out' of different conventional nodes" (ibid, p.840). This "conventionalization" can be observed in  
670 Valencia and Flanders and translates into several practices. For instance, in order to become more  
671 attractive to consumers, both Voedselteams and Valencia's peri-urban producers incorporate non-  
672 local and out of season produce in their offer. In the same line, to enhance market possibilities,  
673 many agro-ecological producers participating in the local PGS also embrace official third-party  
674 organic certification, despite clashing with their values. Some initiatives in Valencia also reported  
675 a reduction of the range of products offered and a trend towards specialization to increase their  
676 competitiveness. While a very diverse offer could be expected to attract growing number of  
677 consumers, the fact is that most consumers do not feel comfortable buying products that they  
678 cannot recognize and do not know how to cook. Voedselteams, on the contrary, has broadened  
679 their supply over the years in response to consumers' requests. Fish, meat and a variety of dairy  
680 products were added to their supply.

681 Another common hybridization example is the reliance on transport agencies to distribute  
682 foodstuffs. This is particularly important for Voedselteams, where they regularly outsource the  
683 transport of produce. Moreover, as the projects grow and the produced volume increases, these  
684 initiatives expand their markets beyond the local area, which implies higher selling prices. Some  
685 interviewed participants argue for the need to reach bigger and specialized markets -such as  
686 school canteens- to bring economic stability to existing initiatives and to scale the phenomenon  
687 upwards and outwards, for which additional infrastructure such as a purchasing centre and a  
688 distribution platform would be required. For the farmers this might entail losing direct contact  
689 with the consumer and accepting an external crop production schedule.

690 The case studies also revealed a process of "alterization" of the conventional food supply chain  
691 within their territories. Supermarkets seek to take advantage of new consumer demands met by  
692 AFNs and therefore integrate some of these characteristics – local, organic, etc. - within their  
693 market repertoires. The boundaries between alterization and conventionalization are increasingly  
694 blurred. Indeed, from a place-based perspective the three case studies show how AFNs are  
695 conditioned but also modify their context, by reinforcing the creation of new consumer demands  
696 which are progressively met by different actors. These processes of hybridization developing in  
697 multiple directions are highly contextual and therefore benefit from adopting place-based  
698 perspectives that contest dichotomic classifications of alternative/conventional (see also Sage  
699 2003 and Renting et al., 2012) Similarly to Gibson-Graham's (2006) diverse economies approach,  
700 this place-based perspective opens the possibility to account for transformations towards food  
701 security and sustainability that might be invisible under more classic political economy  
702 approaches.

703 Finally, the third key element arising from the analysis revolves around **the advocacy capacity**  
704 of these AFNs, which could encourage a multi-level governance approach that contributes to the  
705 implementation of food security strategies and policies and promotes a bottom-up approach for  
706 scaling AFNs upwards and outwards. This activist dimension is more central to Valencia's AFNs  
707 and to some extent is also present in Voedselteams. Both seek to transform the current food system  
708 by pushing to change policies and consumers' behaviour.

709 Agroecology and food sovereignty are the key political discourses underpinning many of the new  
710 farmers' initiatives in Valencia to change food relationships. The socio-political movements in  
711 which many of these initiatives are embedded are integrated into the regional food sovereignty  
712 platform, *Plataforma Per la Soberania Alimentaria del País Valencià*, which increases the  
713 connectivity between initiatives operating at different scales and gives greater visibility and  
714 advocacy capacity to its members. The movement is undergoing a new momentum with the new  
715 local and regional administrations, which are implementing new measures under the signature of  
716 the Milan Urban Food Policy Pact,<sup>10</sup> such as the creation of a food council that gathers key actors  
717 in the city to guide local food policies.

718 Voedselteams combine both profit and non-profit making activities and has an overall objective  
719 of contributing to societal benefits. Dedeurwaerdere et al. (2015) argue that Voedselteams have  
720 an "ideological" dimension, aiming to also become a social movement transcending the local  
721 scale where they operate. Instead, it functions on a regional or national scale, where it strives to  
722 promote a transition towards sustainable agro-food systems. In this way, Voedselteams might  
723 contribute to wider changes in the food system through combined action at different levels, e.g.,  
724 by offering non-profit services and representing an alternative to mainstream marketing channels  
725 or by seeking synergies with other similar initiatives. Moreover, through advocacy actions (e.g.  
726 Voedselteams inspired the strategic plan on SFSC of the Flemish Government) they can also have  
727 an impact beyond their immediate context. However, the interviewees described political  
728 alliances and collaborations as few and difficult. In addition, the members' engagement in  
729 advocacy action was regarded as weak. Furthermore, Voedselteams' dependence on government  
730 subsidies may compromise its real capacity to challenge the regime, although the interviewees  
731 acknowledged the potential for a stronger engagement within the organization and identified two  
732 main avenues for this purpose: (1) expanding the Farmers' Forum beyond a farmers' network to  
733 increase small-scale farmers' bargaining power and (2) increasing collaboration with other similar  
734 regional organizations, which could strengthen the influence of these organizations in political  
735 spaces and the public debate.

736 Finally, the users of Welsh food co-ops display a lower degree of political engagement, however,  
737 the RRU, co-op facilitators and organizations supporting their activities (such as communities'  
738 first centres) have been active in different policy forums such as the Cardiff Food Policy Council  
739 or the Wales Food Poverty Alliance. These spaces of deliberation actively promote exchanges of  
740 good practice and seek policy reform. However, they do not subscribe to a specific social  
741 movement such as the Valencia participants in their struggle for food sovereignty.

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<sup>10</sup> The Milan Pact is an international protocol concerning food at municipal level. Signatory cities undertake to "work to develop sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimise waste and conserve biodiversity while adapting to and mitigating impacts of climate change" <https://www.milanurbanfoodpolicypact.org/text/> (last accessed January 2018).

## 743 7. Conclusions

744 This paper analyses three European case studies in order to understand how different AFNs  
 745 contribute to deliver food security outcomes. This analysis has allowed us to identify key elements  
 746 where food security debates hinge and provide new insights to ground conceptual discussions on  
 747 territorial and place-based food security approaches. We summarize our contribution to these  
 748 debates following the three key elements championed by place-based approaches (Sonnino et al.,  
 749 2016), mainly, a focus on: re-localization processes; flows of knowledge, materials, capitals and  
 750 people that take place in and between food systems; and a progressive sense of place that  
 751 integrates discourses, scales and interdependencies between geographies.

752 First, when compared to conventional mainstream food players, these AFNs are small both in  
 753 numbers and size, and therefore represent a small share of the food system in quantitative terms,  
 754 as previously warned by Dixon and Richards (2016). However, the role that AFNs play may be  
 755 important when evaluating its capacity to ensure food security and facilitate changes in the  
 756 currently unsustainable food system. Considering that food security dimensions are relevant to all  
 757 levels of human organization, from the global to the individual and household scale, today, AFNs  
 758 can play a significant part when we focus on the micro-level. Of particular importance is the  
 759 example of food co-ops in Wales that have developed a network of community members,  
 760 wholesalers and producers to provide affordable healthy food to low income households. By and  
 761 large, all initiatives contribute to increase availability of produce and utilization dimensions, by  
 762 championing local production and nutritious food and establishing new connections between local  
 763 actors. Consequently, they *contribute to re-localization processes* identified by place-based  
 764 approaches to food security as providing a transformative basis for wider changes in the food  
 765 system. Furthermore, AFNs can also fulfil individual food preferences that are generally  
 766 overlooked in conventional food channels. Preferences in terms not only of types of food (e.g.,  
 767 traditional varieties usually with outstanding gastronomic value) but also in terms of  
 768 “acceptability”, where social and cultural aspects are considered as well as the individual capacity  
 769 to promote change in the food system through a conscious buying. These preferences might,  
 770 however, produce exclusive landscapes for middle classes or focus on particular socio-cultural  
 771 backgrounds that can hinder the delivery of food security outcomes particularly for vulnerable  
 772 groups.

773 Second, the cross-comparative analysis of these three case studies shows active *flows* of material,  
 774 capitals and, particularly, knowledge within AFNs. AFNs play a key a role in disseminating  
 775 information and sharing knowledge, which are both exchanged during market transactions but  
 776 through social relations nurtured through these collective initiatives. Knowledge enables to  
 777 improve capacity-building, e.g. food utilization skills that make a positive impact reducing food  
 778 waste and ameliorating the gastronomic culture. Besides, by re-connecting production and  
 779 consumption AFNs stimulate social re-linking and raising awareness of consumers about food  
 780 system unbalanced relationships and the origin of their food that is a prerequisite leading to  
 781 change in their consumption and shopping habits. These flows of knowledge, capital and materials  
 782 are not only restricted to alternative initiatives but are increasingly activated with conventional  
 783 food players. Our cases show how AFNs undergo different hybridization process mainly with the  
 784 aim to scale up and increase their stability. Furthermore, the AFNs studied showcase new  
 785 relationships between different types of food outlets, such as the transfer of food co-op consumers  
 786 to discounters such as Lidl. While some of these changes might reinforce some of the AFN traits  
 787 linked to food security outcomes – e.g. improve accessibility of healthy food – it might hinder  
 788 others, such as re-localization processes. Nonetheless, the vulnerability that the three cases

789 showcase in terms of economic viability, reliance on public funds and/or voluntary labour and  
790 exposure to changes in the wider context (e.g. cheap prices by competitors), highlights the need  
791 to reflect on current flows and interdependencies within and beyond these AFNs, particularly in  
792 material terms. Key questions include how these flows could be re-engineered to deliver long-  
793 lasting food security outcomes and who are the actors and what are mechanisms that can assist  
794 these changes. A deeper understanding of the place contingent interdependencies of diverse food  
795 initiatives – with conventional outlets, government programmes or productive landscapes - will  
796 contribute to devise effective tools and interventions to deliver food security in particular  
797 contexts.

798 Finally, the analysis of the three cases show how these AFNs are *shaped by particular places*, in  
799 terms of their opportunities but also limitations. The Welsh food co-ops develop initiatives to sell  
800 cheap vegetables in the context of rising levels of food poverty and amidst a placeless foodscape  
801 where local foods are less valued. Contrastingly, the Valencian initiatives focus on their centenary  
802 agricultural activity in a city where access to healthy food is not portrayed as a problem, rather  
803 the focus is on the livelihoods of farmers. These discourses and practices portray particular visions  
804 of places that might exclude other dynamics at play, such as increasing levels of unemployment  
805 and poverty in non-agricultural sectors of Valencia or the capacity to re-connect consumers with  
806 their foodscape in Cardiff. This restricted vision of place prevents to establish more productive  
807 linkages to the multiplicity of *discourses, scales and interdependencies* between geographies that  
808 result in different levels of food insecurity. The advocacy activity displayed by some of these  
809 AFNs shows one mechanism to encourage connections amongst different governance levels to  
810 develop food security strategies and policies. For example, the regional food sovereignty platform  
811 in Valencia and Voedselteams network in Flanders have fostered collaboration across scales and  
812 give greater visibility to its members and activities. These processes have helped to raise the local  
813 policy support required to modified rules and regulations. However, these networking activities  
814 remain restricted and seldom interact with the diverse discourses, needs and multi-sectoral and  
815 scalar interdependencies that hinder food security in particular places.

816 Our cross-comparison has shown the potential of AFNs in delivering food security outcomes, but  
817 also the relatively small impact of individual initiatives and their capacity to fulfil the needs of  
818 only particular social groups –e.g. low income groups in Cardiff or middle class families in  
819 Leuven. Furthermore, current material flows and low integration of discourses and  
820 interdependencies showcased by these initiatives reveals important weaknesses that affect the  
821 viability of AFNs in the context on increasing food security challenges. These limitations call for  
822 *a relational and place-based approach to food security that explores further how food initiatives*  
823 *are connected to each other and what is their collective impact in providing good food for all in*  
824 *specific places*. Developing tools to understand better the disconnections and also synergies  
825 between food networks and how they modify food security outcomes constitutes the necessary  
826 next step. These conceptual tools will be instrumental to ground theoretical territorial and place-  
827 based approaches that inform effective practical and policy recommendations.

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835 **Conflict of Interest**

836 The authors declare that they have no conflict of interest.

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