

The new urban agricultural geography of Shanghai

Abstract: Agricultural geography has remained largely trapped in a neoclassical economic paradigm in which farm types have been understood to be predominantly products of location and global markets. This paper attempts to subvert this approach by reflecting on the emerging culture of small scale ecological farming in Shanghai. Such farms have been growing in number since 2000, driven largely by the availability of land and an increasing demand for safe and healthy food. While being a rational productivist response to a market opportunity, however, these farms reflect a break with conventional farming, in terms of their size, location and new farmer identities, as well as their socio-cultural relationships with customers and local communities. Using a survey of 45 such farms, the paper illustrates how and where new forms of farming, and the alternative food networks that they support, are colonizing the city. While being redolent of the growth in urban farming in many western cities, farming in Shanghai is driven by private individuals with personal and family, as well as broader community, motives. This suggests that while Shanghai may be experiencing the growth of alternative forms of what might be understood as civic agriculture, those involved are not primarily interested in the civilizing mission ascribed to many such movements. Rather, the new farms are hybrid service businesses in which the sales and marketing skills of the new farmers have allowed them to transform individual customers into members of food networks who form mutual co-dependent trust relationships that underpin the survival of the farms. Perhaps as a result of this, and despite strong demand for organic food, these new farms face a marginal existence in which business development is constrained as much by the strength and continuity of their food networks as it is by the quality and quantity of food that they can grow.

Keywords: Small Scale Organic Farming; Geographic Map; New Farmer; Shanghai

Introduction

It is now well over a decade since Morris and Evans (2004, p.96) observed that agricultural geography was something of an 'awkward' case in terms of the broader cultural turn in geographical analysis. While going on to observe that it had not entirely been bypassed by culturally-informed research, they did call for new work in agricultural geography that is concerned with both academic and policy questions about the future of agriculture and the food system. While this call has been partially addressed by a range of studies over the intervening years, particularly Lobley and Potter (2004) and Burton and Wilson (2006) on farmer identities, Ilbery, et al (2010) on property relations, Scott, et al (2015) and Schumilas and Scott (2016) on alternative food networks, and Poulsen (2017) on civic agriculture, there have been few studies that have considered how the geography of agriculture is changing in the ways identified by Morris and Evans (2004).

39

40 This paper seeks to address this gap in knowledge through an analysis of the changing
41 spatial and cultural geography of 45 small, broadly ecological, farms¹ in the greater Shanghai
42 area. In particular, in recognizing recent work on alternative food networks (AFNs) in China
43 (Schumilas and Scott, 2016), the paper examines the links between the new agricultural forms
44 typified by AFNs and their location within city regions. This is, therefore, not so much a paper
45 about the forced relocation of traditional small Chinese farms (Day, 2008), but one that
46 examines the emerging phenomenon of new farms locating in new spaces with new socio-
47 cultural relationships between the producers and consumers of food of trusted provenance. It
48 is also about the extent to which cities like Shanghai are witnessing the growth of a hybrid civic
49 agriculture that is helping to redefine post-productivism and multifunctionality in farming
50 (Wilson, 2009) as part of a new – or alternative - food movement that places considerable
51 emphasis on the spatial and cultural connectedness of the producers and consumers.

52

53 The paper therefore seeks to contribute to a number of current debates, about the role
54 and nature of civic agriculture (Poulsen, 2017; Spilkova, 2017), about nature-society relations,
55 in terms of the multiple ecosystem services derived from organic agriculture (Stapleton, et al,
56 2014), and about the geography of an encultured alternative food network (AFN) in which
57 location near to markets is less significant in terms of logistics than it is in terms of overcoming
58 the cultural distance that has grown up between consumers and conventional farming
59 practices (Sanders, 2006; Carolan, 2011; Wang, et al, 2015; Schumilas and Scott, 2016; Spilkova,
60 2017). The paper commences with a review of literature that seeks to place the work within
61 the context of an emerging geography of urban farming. This is then illustrated through the
62 empirical research on which the paper is based, which reports on the key characteristics of a
63 number of small ecological farms in Shanghai. The discussion section draws out the main
64 findings of the work, to illustrate in particular how new farmer identities are emerging and the
65 impact that this has had on the location and organization of the farms. The final section of the
66 paper draws out the significance of the work, in terms of addressing and advancing the agenda
67 first set out by Morris and Evans (2004).

68

69 **Literature review: development of small-scale organic farms in urban China**

70 There is current interest in urban agriculture across much of the World (Zhang, et al, 2005;
71 Viljoen and Bohn, 2014; McIver and Hale, 2015; Poulsen, 2017), particularly in terms of the

¹ By this we mean farms that use no inorganic or synthetic chemicals and self-identify as organic ecological, regardless of whether or not they are formally certified as such.

72 contribution that it can make to urban greening and food supply, as well as to local forms of
73 community-building and food activism (Si, et al, 2014; Schumilas and Scott, 2016; Spilkova, 2017).
74 While elements of this wider context are found in China (Shi, 2002), the growth there of small
75 scale ecological farming and alternative food networks has mainly been driven by concerns
76 about food safety and the failure of large scale (organic and conventional) agriculture to
77 address these concerns (Paull, 2007; Klein, 2009; Liu, et al, 2013; Holdaway and Hussain, 2014;
78 Yu, et al, 2014). Informed by demand from China's expanding and highly educated middle class,
79 small scale ecological farming has grown in popularity, both as a source of safe food and as a
80 site for '...nascent activists deploying grassroots community organizing strategies' (Schumilas and
81 Scott, 2016: p.302). While Shi & Cheng (2010) claim that the first such farm and associated
82 network was Little Donkey, a Community Supported Agriculture (CSA) initiative started in
83 Beijing in 2009, fieldwork in Shanghai indicates that similar – if less high profile - approaches
84 to ecological farming and food networks had started several years before this, at Muyu Farm
85 and Biofarm. Notwithstanding these and quite possibly other small scale initiatives, it is clear
86 that the establishment of Little Donkey increased the visibility of CSA and organic farming in
87 China (Shi, et, al, 2011), introduced the idea that farming could be an occupation of choice
88 instead of inheritance, and led to many new membership-based ventures being started over
89 the last five years. For example, Shared Harvest Farm in Beijing, which now covers an area of
90 over 300 mu (20 ha) and supplies more than 500 families; Letu Citizen Farm in Dalian, which
91 covers 200 mu (13 ha) and also supplies over 500 members; and Zhuhai Green Finger Citizen
92 Farm, which covers an area of 300 mu (20 ha) and has a membership of more than 300 families
93 (see Hao, et al, 2004; Jiang, 2013; Chen, 2014).

94

95 Consistent with Schumilas and Scott's (2016) findings, the business models for these
96 farms consist of a sustained market demand for safe (often organic) produce allied to a
97 complex web of non-market social relations with a network of consumer-activists. For
98 Johnston (2008), this is about collectivizing consumption, while Levkoe (2011) refers to
99 collectivizing subjectivities around food and Miralles, et al, (2017) refer to the sharing economy. As
100 Schumilas and Scott (2016: p. 305) observe, the collective nexus between producers and
101 consumers found in relation to these farms suggests the emergence of '... hybrid market-civil
102 society networks (that) identify and work towards common interests and reframe analysis towards
103 collective and away from individualist responses to food system challenges.' Yet, while these
104 hybridities may represent a new level of collective consciousness and action around food, there is
105 no doubt that many of the farms involved in these networks remain at the margins of viability, as
106 they do in many parts of the World (Groh and McFadden, 1997; Shi, et al, 2011; Rioufol and

107 Ravenscroft, 2012; Liu and Ravenscroft, 2015). While there are many contributing factors to the
108 marginal viability of small farms, a dominant narrative in China is that relatively few farms have
109 been able to secure their food networks in ways that provide them with a consistent market
110 for their produce at a price at which they can afford to produce their food (Chen, 2013a, 2013b,
111 2013c). This is exacerbated by the highly individualized environment in which they operate,
112 where some farms are able to subsidize their production costs, through philanthropy or the
113 exploitation of family, volunteer and peasant labor. Indeed, anecdotal evidence suggests that
114 many successful small farms are funded by people who pursue healthy living and have a
115 commitment to improving the environment, but who leave the farming to others – who may
116 or may not share their values (Schneider and Shumilas, 2014).

117

118 What this suggests is that there is a number of factors influencing the growth of small
119 scale farms in urban China, some of which replicate more traditional farming, and some of
120 which are new. Of these factors, the two key influences are that these new urban farms are
121 dominated by farmers who choose to farm rather than simply inheriting from their parents;
122 and that these farmers have a new hybrid approach to farming that remains committed to the
123 production of food, but within a network in which customers are constructed as insiders, or
124 members, who share a certain sensitivity to the ways in which food is produced (Liu and
125 Ravenscroft, 2015). While commitment to organic and ecological farming is undoubted, these
126 farms hardly associate with conventional approaches to certification and food standards.
127 Indeed, they position themselves very much as the antithesis of the dysfunctional organic
128 certification programs in China (Qiao, 2011), which are associated with big industrialized farms.
129 This separation between the large and conventional certified organic farms and the smaller
130 ‘ecological’ farms extends also to geography, with the large farms increasingly dominating
131 remote rural areas where they can amass large land holdings, and the small farms locating in
132 the city, as a means of connecting with educated and affluent urban populations (Shi, et al,
133 2011). Yet, despite this commitment to inclusivity within alternative food networks, there is
134 evidence that this form of inclusion may not extend far beyond these populations:

135

136 China’s AFNs privilege connecting to land and to the urban entrepreneurs who operate
137 farms over the peasants who grow the food and labor on these farms. However, it is not
138 only the consumers in these networks who display a distrust of peasant farmers. Indeed,
139 AFN organizers and CSA entrepreneurs at times also seem to contribute to the
140 marginalization of peasants. For some of the CSA operators in these networks, peasant
141 farmers are simply labor, and there is no attempt to integrate them into the decision-

142 making on the farms. (Schumilas and Scott, 2016: p.306)

143

144 Empirically, therefore, it appears that small scale farms and food networks in urban China
145 are following a developmental path that is unique – in terms of the emphasis on food activism
146 – while also replicating the privilege and power structures found in AFNs elsewhere (Schneider
147 and Schumilas, 2014; Schumilas and Scott, 2016). This developmental path is clearly
148 influenced by the growth of AFNs elsewhere, particularly in developing membership-based
149 CSA, where the need for certification is replaced by trust relationships between producers and
150 consumers (Shi, et al, 2011). From this, Chen (2013a) has found that the perceived value of
151 CSA membership to Chinese people is little different to the value perceived by CSA members
152 in other countries, leading him to conclude that the idea of caring for others, openness and
153 transparency of production, frequent interaction with consumers, and the high quality of the
154 products, has contributed to the construction of a new consumer trust in Chinese food,
155 certainly for those involved in AFNs (Chen, 2013c, 2014). Schumilas and Scott (2016) take this
156 further, by suggesting that the Chinese approach to food networks has fostered a new type of
157 reflexive practice in which individuals can engage in relatively safe forms of activism that offer
158 greater control over the food that they eat. In so doing, this level of engagement has enhanced
159 consumers' understanding of the quality of the produce that they consume, which has led to
160 increasing trust between farmers and consumers (Chen, 2015). This has allowed Jiang (2013),
161 based on his own practices in Shandong Province, to claim that ecological farming, if properly
162 managed, can offer a new paradigm of sustainable food production. It is this level of
163 engagement and reflexivity that speaks to Morris and Evans' (2004) work, in confronting not
164 only the former dominance of industrial economy within agricultural geography, but also the
165 traditional spatial relationships between farmers and people that dominated our
166 understandings of agricultural geography. Where once China's farms were perceived to be at
167 a physical, cultural and social distance from consumers, there are signs that the urban
168 ecological farming movement has begun to turn this around, to create a new geography of
169 agriculture in which alternative food networks are increasingly part of a complex process of
170 producing both food and community. Evidence is required, however, to assess the extent to
171 which this is a phenomenon of a few well known and publicized farms and their privileged
172 consumer networks, or whether these farms are emblematic of a broader transformation in
173 China's agricultural geography.

174

175 **Data generation and analysis**

176 The emerging agricultural geography of Shanghai – in common with Beijing and many

177 other Chinese cities (Hao, et al, 2004) – is taking shape within an official green policy paradigm
178 termed ecological civilization (Ravenscroft and Liu, 2017). While there is contestation around
179 the precise meaning of ecological civilization (Huan, 2016), it is accepted that it is constituted
180 as a set of policies designed to constrain certain types of development activity as a
181 contribution to restoring ecological order, balance and diversity (Geall and Ely, 2015; Weng, et
182 al, 2015; Parr and Henry, 2016; UNEP, 2016; Guan and Delman, 2017). While not related to
183 farming per se, ecological civilization has favored the growth of small urban organic farms, on
184 both derelict land and land of ecological significance (Paull, 2007; Liu and Ravenscroft, 2017;
185 Ravenscroft and Liu, 2017). This means that there is a benign acceptance of agriculture as a
186 legitimate use of urban space in Shanghai, particularly if it contributes to the politics of
187 ecological civilization. This has elided with growing concerns about food safety (Holdaway and
188 Husain, 2014; Chen, 2015; EU SME Centre, 2015) meaning that there is latent demand,
189 particularly from middle class parents, for locally-produced organic food in which they can
190 trust (Gracia & deMagistris, 2008; Shi, et al, 2011; Tuomisto, et al, 2012; Schumilas & Scott,
191 2016). Yet, despite this level of social and political acceptance of the use of urban land for the
192 production of ‘safe’ food, there remains deep skepticism about the practice – and thus
193 practitioners – of this approach to small scale agriculture (Liu and Ravenscroft, 2015), meaning
194 that it remains a largely liminal and, thus, marginal and under-researched activity.

195

196 Traditionally, Chinese family farms have been small enough to require mainly family labor
197 and large enough to feed the family. The new urban forms that are the focus of this study are
198 not founded on either of these principles, but instead need to be at a scale that is sufficient
199 for the purposes of the farmer. This can mean that there are some very small and specialist
200 farms in Shanghai, but also some that are quite large by Chinese standards. For the purpose
201 of this research, therefore, the unit of analysis was selected as an individual farm of not more
202 than 500 mu (approximately 33 ha), located in the Shanghai Administrative Region, where
203 claims have been made by the farmer about the use of ecological production methods. These
204 methods are understood to avoid the use of inorganic and synthetic fertilizers, pesticides and
205 herbicides, but not necessarily to involve the circulation of material and energy that are
206 normally characteristic of ecological approaches to farming (Scott, et al, 2014).

207

208 Data on the existence and location of the farms was generated through personal contacts
209 of the research team, internet searches and attendance at events such as organic farmers’
210 markets. By March 2017, a total of 45 farms had been identified, using a snowball approach
211 to identify additional farms and their associated networks. A further 4 farms were identified

212 that had been in operation at some point before this, but which had recently closed down.
 213 This is not an exhaustive list, nor is it of a known proportion compared to the total population
 214 of such farms. Rather, these 45 farms reflect those that have established networks of
 215 consumers and at least some presence on public media. They should therefore be understood
 216 as offering insights into the more established small scale ecological farming operations in
 217 Shanghai. As Figure 1 indicates, most of the farms have been in operation for around 5 years,
 218 with the majority of them commencing in their current form between 2009 and 2012.
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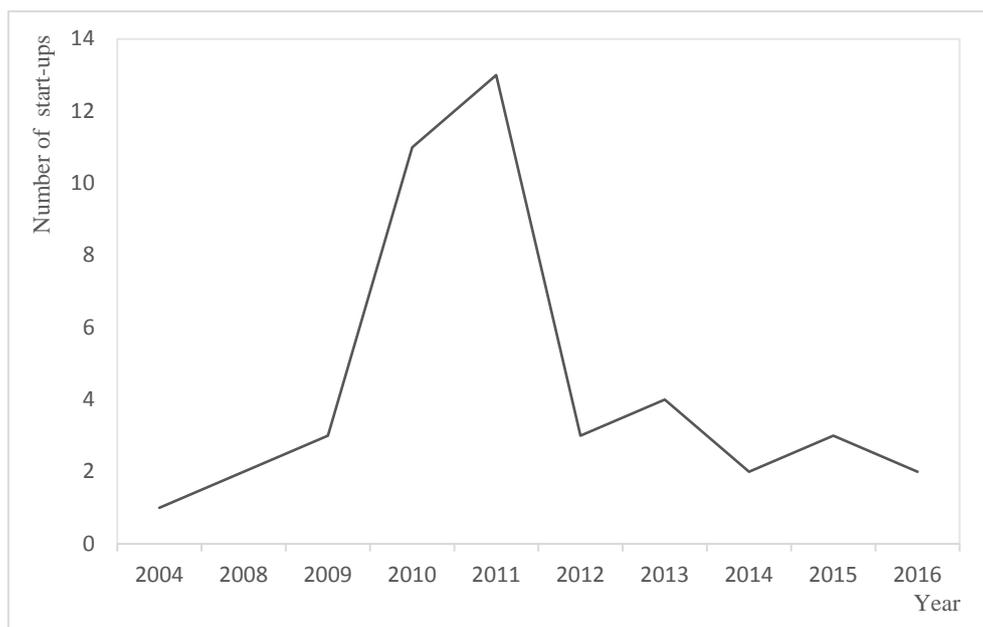


Fig.1. Annual Start-ups of small scale organic farms in Shanghai

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 223 In addition to the start date of each farm, basic information about the size, scale, product
 224 mix, ownership and routes to market was collected for all the farms, using the farms’ websites,
 225 news reports, Taobao (online) stores, farmers’ social media such as Weibo and Wechat, and –
 226 where they existed - consumer evaluations on farm websites. Data of these types were also
 227 available, for 28 farms, from the archives of local Organic Farmers’ Markets and their
 228 conference transcripts. Field visits were made to 19 farms where there was extensive
 229 secondary information available, with farm operators, local farmers and village cadres
 230 interviewed. Interviews or conversations with the remaining farmers, or members of their
 231 networks, were conducted by telephone, email and social media (see Table 1 for details).

Table 1. Data-collection of small scale organic farms in Shanghai

Sources	Number of farms
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Internet search		45
conference archives of local organic farmers market meeting		28
Interview by	On-site field survey and interview with farm operators, local farmers or village cadres	14
	Off-site interview with farm operators (mainly at the organic farmers' market)	5
	Telephone	22
	WeChat	12
	E-mail	4

234

235 **Spatial distribution and size of small-scale organic farms in Shanghai**

236 The farms in our survey are mainly distributed in the suburbs of Shanghai, in areas
 237 including Chongming Island, Qingpu, Songjiang and Fengxian (Figure 2). Indeed, Chongming
 238 Island accounts for almost half of total number of farms (21/45), including the majority of the
 239 larger farms (Table 2). The reasons behind this distribution are fairly clear: there is less
 240 development and more land available in the suburbs, and both Chongming Island and Qingpu
 241 District are areas of ecological protection. While close to the downtown area of Shanghai,
 242 Chongming Island is highly ecologically significant as a feeding ground for migratory birds. Its
 243 high quality land, water and air, allied to strict development control, make it well suited to
 244 ecological farming. Similarly, Qingpu District is ecologically significant, as part of the Water
 245 Resources Reservation Area in the Upper Region of the Huangpu River. Since this designation
 246 was imposed as early as the middle 1980s, Qingpu has become a favored location for
 247 ecological farming and for middle class families seeking to relocate from the city center.

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Table 2. Sizes of small scale organic farms in Shanghai

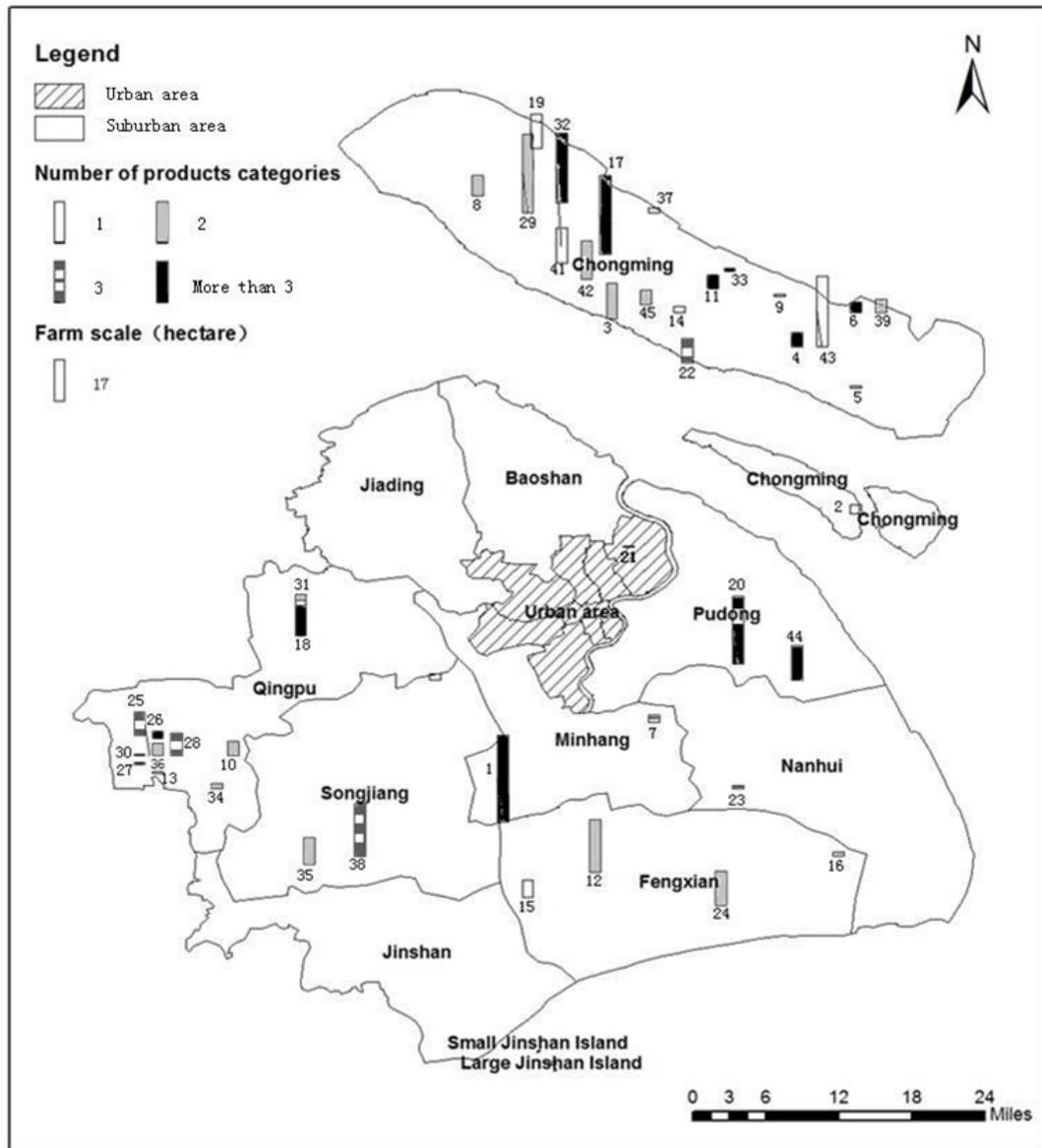
Scale /ha	Farm Quantity	Percentage	Locations		
			Chongming Island	Western Suburbs ¹	Other-Suburbs and Inner city
≤5	21	47%	38%	43%	19%

5-10	9	20%	45%	45%	10%
10-20	8	18%	50%	12%	38%
20-40	7	16%	42%	29%	29%
Total	45	100%	47%	33%	20%

254 Note: ¹ the western suburbs of Shanghai include Qingpu, Songjiang, Jinshan and Jiading.

255

256 However, it needs to be understood that Shanghai is a large and congested city, meaning
257 that travel times from the center to both Chongming Island and Qingpu District can be long (1-
258 2hours by car), meaning that the farms located in these districts do not have particularly good
259 access to markets all across the city. As a result, some farms have chosen to locate closer to
260 the central city and residential areas. While access to land can be more difficult – the smaller
261 farms are generally located closer to the city center - better infrastructure and good access to
262 markets compensates somewhat, with very small specialist producers being able to benefit
263 from small parcels of undeveloped ground (Chuangzhi Farm, in the city center is little more
264 than an allotment garden of only 1.5 mu, for example).



- | | | |
|----------------------------------|-------------------------------|---|
| 1、Jin Garden | 16、Vedura Farm | 31、Mile Farm |
| 2、Mengtian Farm | 17、500 families Farm | 32、Yiyi Farm |
| 3、Xiyuan Farm | 18、Lvyan Organic Farm | 33、DESIGNHarvests Farm |
| 4、Rose Farm | 19、Liefan Farm | 34、 <u>Chinese Palace Yellow Chicken Farm</u> |
| 5、Pu&Su Farm | 20、Sunqiaohuilv Organic Farm | 35、Shanghai Guiyuantianju Organic Farm |
| 6、Tian'ai Farm | 21、Chuangzhi Farm | 36、 <u>Sheng'qeng Farm</u> |
| 7、Yude Farm | 22、Xile Farm | 37、 <u>Chongming Meiwang Farm</u> |
| 8、Xin'geng Farm | 23、Sunflower Farm | 38、Shanghai Huamailu Eco Farm |
| 9、Shanghai Kangyuandadi Eco Farm | 24、Xifenyuan Farm | 39、Mengtian Eco IFarm |
| 10、Zhengrong Farm | 25、Cen'gu Eco Farm | 40、Smile Farm |
| 11、Sanfendi Farm | 26、Xin'geng Eco Farm | 41、Nongyu Eco Farm |
| 12、Mengxi Farm | 27、Bi'geng Farm | 42、Sijhaohua Eco Farm |
| 13、Muir Eco Farm | 28、 <u>Yingxiang Eco Farm</u> | 43、Happy Farm |
| 14、Xinbei Organic Farm | 29、Tianshelang Farm | 44、Biofarm Organic Eco Farm |
| 15、Letian Family Farm | 30、 <u>Gump Farm</u> | 45、Junheyuan Farm |

265
266 **Fig.2. Geographical distribution of small organic farms in Shanghai**

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268 **The 'New Farmers' of Shanghai**

269 About two-thirds of the farms were described as being operated by individuals or families.
270 Other business forms included partnerships, corporations, cooperatives and NPO/NGOs (see
271 Table 3). It is not clear how far these descriptions actually differentiate between business

272 forms, with Chen (2013c) suggesting in other work that there is little practical difference in
 273 China between partnerships and corporations, while many of the ‘cooperatives’ were actually
 274 run by individuals or families, but often with some volunteer labor from the local community
 275 and some form of membership-based market (hence the cooperative descriptor). Thus, while
 276 appearing to reflect a variety of business forms beyond the traditional family model, the
 277 actuality is that as many as 75% of the farms are broadly family-operated and entrepreneurial.
 278

279 **Table 3. The organization structure of small scale organic farms in Shanghai**

Organization structure	Farm Quantity	Percentage
Individual / family	27	60%
Partnership	5	11%
Corporations	6	13%
Cooperatives	5	11%
Non-profit organization	2	5%
Total	45	100%

280
 281 However, the dominance of familiar business forms should not be confused with
 282 traditional family farming. Indeed, only 8 of the 45 farmers were from local farming families,
 283 with the remainder being outsiders, often foreigners. These new outsider farmers are
 284 predominantly young (half of them being under 40 years old), highly educated, urban
 285 professionals, many with young families. None of them had been farmers before entering
 286 organic farming, so none of them have more than operational rights to the farmland. Similarly,
 287 few of the new farmers who are from other parts of China have any background in
 288 agriculture. Although some of them were born into farming families, they left the countryside
 289 at an early age, with little background knowledge and operational experience in agriculture.
 290 For example, Feng and Yang, who run Mengxi Farm, have backgrounds in IT and Oriental
 291 education, while others are finance directors, bankers and company directors. As Table 4
 292 illustrates, those from a business and executive background tend to operate the larger farms,
 293 while ‘blue collar’ waged labor (technicians and clerks) tend to operate the smaller farms.
 294 While these farmers are all individuals with varying backgrounds, therefore, they are all largely
 295 ‘new’ to this type of farming and collective food networks and can, as a result, be described
 296 as Shanghai’s ‘new farmers.’
 297

298 This is a highly unusual, if not unique, situation in China, given the dominance of local
 299 domicile in determining agricultural succession and access to farmland (Liu, et al, 2016).

300 However, while not necessarily being from farming families and having little farming
 301 experience, many of the new farmers without local connections – particularly those from
 302 outside China - have developed a range of skills associated with ecological agriculture and local
 303 activism. For example, Tian, the Taiwanese American founder of Biofarm, lectures for the
 304 International Federation of Organic Agriculture Movements (IFOAM) and is an acknowledged
 305 expert on organic soybeans. Similarly, Zhou, Manager of Jin Garden Farm, is an organic farming
 306 expert from Taiwan, while Bayat (from Switzerland) and Huang (from Singapore), who run
 307 Verdura Farm, are activists who specialize in microgreens for the catering trade. Zhu (from
 308 Singapore) established Xin'geng Ecological Farm as a Non-Profit Organization (NPO) to help
 309 traditional farmers improve the ecological diversity and productivity of their farms. These
 310 foreign farmers first got established because they understood that there was a demand for
 311 good food from expatriate workers living in Shanghai. This meant that they were adept at
 312 supplying what was required, with the right certification and routes to market.

313

314

Table 4. Careers of new farmers before organic agriculture

Careers of new farmers before organic agriculture	Farm Quantity	Farm Scale (mu)							
		≤50		50-100		100-300		300-500	
		Quantity	%	Quantity	%	Quantity	%	Quantity	%
In business – self- employed and executives of corporations	15	4	27	3	20	4	27	4	27
Technician or clerk	20	12	60	4	20	2	10	2	10
Educators/NPO/NGO	10	3	30	4	40	2	20	1	10
Total	45	19	42	11	24	8	18	7	16

315

316 Due to China's collective land ownership system, the new farmers who do not enjoy
 317 local domicile have had to rent farmland from the collective, or from local farmers. These are
 318 predominantly cash rents with limited security of tenure because there is no established land
 319 transaction platform for those without domicile, even in Shanghai. Just four of the 45 farms
 320 are run by people with local domicile who are able to use their family land in addition to land
 321 rented from their neighbors and village groups. The other 40 farms comprise only rented
 322 land, with the rentals often being from friends or friends of friends. Not surprisingly, all the
 323 farms that have ceased operation have been in the latter category, of 'unofficial' rentals.
 324 While there is no independent information on why these farms failed, anecdotal evidence
 325 indicates that in at least one case it was because the village committee 'reallocated' the land
 326 to a neighboring conventional farmer.

327

328 **Farmer Motivations**

329 The motivations behind the development of these farms can be categorized into three
330 broad types: food safety; entrepreneurialism; and care for the environment. For some of
331 those involved, the first two of these motivations are linked: they want secure access to safe
332 and nutritious food, often for their children, and they can see that there is a business
333 opportunity in this because many other parents feel the same. This has been fueled by the
334 growing wealth of middle class Shanghai, itself bolstered by increasing numbers of incoming
335 executives who have money and expect to be able to buy good, often organic, food. Thus,
336 the initiative for these farmers has been first to satisfy their own needs and, second, to
337 expand this to satisfy the needs of others as well. At the smaller end this has sometimes
338 been categorized as cooperative farming, and is often associated with CSA and other forms
339 of direct marketing.

340

341 For some farmers, the prime motivation is to achieve an economic return and develop a
342 new business opportunity. Many of these people have not quit their main jobs and careers to
343 enter farming but, rather, have used their capital and networks to find land and hire labor
344 (sometimes from their families or the families of the previous farmer) to undertake all or part
345 of the farming for them. As a result, these farms tend to be larger and more commercial than
346 most of the farms in the study. For example, Sunqiaohuilv Organic Farm is nearly 400 mu (27
347 ha) and Huamaliu Ecological Farm is over 300 mu (20 ha). To some extent, these farmers
348 tend to mirror conventional 'dragon head' businesses that rent land from farmers and then
349 hire the farmers as waged labor, thereby inverting the previous distribution of power (Zhan
350 and Andreas, 2015). They thus underpin the established pattern of many AFNs, in privileging
351 elite and entrepreneurial power over that of the peasant farmers who grow the crops
352 (Schumilas and Scott, 2016).

353

354 The third motivation, care for the environment, is shared by all the farmers but, for some,
355 it is their primary motivation. These farmers have tended to locate in the special ecological
356 zones. Some farmers argued that organic farming is a good way of treating non-point source
357 pollution as it reduces the intensified input of chemical fertilizers and pesticides. The Cen'gu
358 Eco Farm, based on a local NGO and run by its social enterprise, for example, has been
359 dedicated to identifying an economic and ecological 'win-win' approach that allows them to
360 evidence environmental improvement alongside economic viability. Similarly, Kang, the
361 founder of Muir Ecological Farm, who has a background in ecology, has sought to improve the
362 local environment by working with her neighboring villagers to create habitat suitable to

363 support the return of the firefly.

364

365 Whatever their motivation, most of the farms in Shanghai depend on hired labor to
366 undertake the physical tasks, with many of the farmers doing very little of the actual labor.
367 The most common approach is to use family labor supplemented by some additional local –
368 often elderly and semi-retired – laborers and some casual labor for busy periods. For
369 example, the day-to-day farming at Mengtian Farm is undertaken mainly by the owner’s
370 parents and nine local laborers, most of whom are women over 60 years old. By farming
371 standards, the laborers are well paid, reflecting both the local labor market and the fact that
372 farm laboring on an organic farm is hard physical work that few people want to do (Liu, et al,
373 2016). Some farms, such as Rose Farm, have to hire all their labor and, as with Mengtian
374 Farm, rely heavily on older laborers who have previously worked on conventional farms. Wu,
375 the owner of Rose Farm, reported that it took her a long time to convince her staff that
376 organic farming is a respectable occupation from which it is possible to earn a decent wage.
377 She now has eight permanent staff on the farm, all of whom are ex-peasant farmers.

378

379 Some farms also recruit volunteers in addition to hiring local labor. Usually the farmers
380 offer free lodging and meals for volunteers, often with some free training but usually no cash
381 payment. In these cases the volunteers are expected to work alongside the hired labor,
382 getting involved with all kinds of farming. While the recruitment of volunteers tends to
383 reduce labor costs, it is recognized that there are obvious disadvantages as well. For
384 example, few volunteers stay for longer than a few months, which means that they are
385 leaving almost as soon as they have been trained to contribute to the farm. Some volunteers
386 are also selective about the types of farm work that they will do, especially where this
387 involves heavy and dirty work. In addresses the costs and benefits of volunteers, Mengtian
388 Farm recently decided to close down its volunteering program in favor of hiring short term
389 labor when required.

390

391 A few of the larger commercialized farms are run by hired professional managers who
392 oversee the operation of the farms and the deployment of labor. This tends to result in a larger
393 proportion of permanent staff. For example, Biofarm has about 70 permanent laborers, with
394 an additional 30 casual staff at peak times. Many of the permanent staff are from the villages
395 where the land is rented; they thus have a long term connection to the land. There is relatively
396 little evidence about the extent to which the hiring of peasant labor is a fundamental part of
397 the business model of most of the farms, as opposed to an externality caused by the approach.

398 However, using labor that is skilled and cheap (by the standards of those who belong to the
399 AFN) is consistent with many forms of CSA, worldwide, in which poor and peasant farmers
400 subsidize the middle class elites who purchase and consume the food (see Groh and McFadden,
401 1977; Guthman, 2008; Rioufol and Ravenscroft, 2012).

402

403 **Farm Type**

404 A wide range of products is available from many of the farms (Table 5), including
405 vegetables, grains, meat (mainly livestock and poultry), eggs and fruits. In most cases, however,
406 individual farms produce one or two products, which invariably include vegetables (84% of
407 farms). The staple vegetable is rice, although many farms also grow green vegetables and salad
408 crops. Although over 70% of farms produce meat and eggs, this is usually on a small scale and
409 mainly for domestic consumption or as a by-product of their overall farming system. Nearly
410 one-third of the farms grow some fruit. However, on most farms fruits are a small part of the
411 produce, and are managed as part of the vegetable rotation. Due to farm size and complex
412 management requirements, few farms grow top fruits such as apples and pears. Nearly a
413 quarter of the farms offer value-added products such as flowers and herbs, in addition to their
414 staples. These include handmade tofu (Mengxi Farm), strawberry jam (DESIGNHarvest Farm),
415 strawberry seedlings (Lvyang Organic Farm) handicrafts (Xing'eng Eco Farm) and medicinal
416 materials (Biofarm). Chongming Sanfendi Farm is the only farm to produce aquatic products,
417 including soft shelled turtle, crayfish and snails. None of the farms has a license to produce
418 and sell processed foods.

419

420 Just three of the farms (Shanghai Kangyuandadi Eco Farm, Xifengyuan Eco Farm and Chinese
421 Palace Yellow Chicken Farm) are certified organic. However, all the other farms claim to
422 use organic, ecological or low-input approaches to farming, although it is unclear to what extent
423 these claims can be substantiated. In general, the claims relating to ecological farming were
424 mainly based on using organic rather than synthetic fertilizers, using natural means of pest
425 control rather than inorganic pesticides and using human labor rather than herbicides for
426 weed control. Many of the farmers went beyond this, by combining these actions into the on-
427 farm circulation of material and energy. For example, on Mengtian Farm there are goats and
428 chickens that feed on excess vegetables, with their manures composted to fertilize the land.
429 In addition, the farm uses biogas slurry from a local biogas plant for irrigating the rice and
430 vegetable fields. This is a low cost approach to applying nutrients that also reduces biogas
431 pollution. The use of plants to address pollution is taken further at Cengu Farm, which is run
432 mainly as an experimental farm for improving organic farming methods. Thus, following Scott,
433 et al (2015), it is not clear quite how far any of these farms is really 'ecological', to the extent
434 that on-farm circulation of material and energy is integral to the method of production, but it is
435 certainly the case that most, if not all, of the farms are making attempts to cut their reliance on
436 inorganic and synthetic inputs.

437

438

Table 5. Product categories of small organic farms in Shanghai

Product Types	Product Details	Farm Quantity	Percentage
Single	Vegetables	10	24%
	Meat	1	2%
	Total	11	26%
Two	Vegetables, Grains	7	17%
	Vegetables, Fruits	2	4%
	Meat, Egg	2	4%
	Vegetables, Meat	1	2%
	Vegetables, Others	1	2%
	Fruits, Meat	1	2%
	Grains, Meat	1	2%
	Grains, Others	1	2%
Total	16	35%	
Three	Vegetables, Grains, Egg	3	7%
	Vegetables, Fruits, Meat	1	2%
	Vegetables, Grains, Meat	1	2%
	Fruits, Grains, Others	1	2%
	Total	6	13%
Four	Vegetables, Fruits, Grains, Others	3	7%
	Vegetables, Fruits, Meat, Egg	2	4%
	Vegetables, Grains, Meat, Egg	1	2%
	Total	6	13%
Five	Vegetables, Fruits, Grains, Meat, Egg	2	4%
	Vegetables, Fruits, Meat, Egg, Others	1	2%
	Vegetables, Grains, Meat, Egg, Others	1	2%
	Total	4	9%
Six and above	Vegetables, Fruits, Grains, Meat, Aquatic products, Egg	1	2%
	Vegetables, Fruits, Grains, Meat, Egg, Others	1	2%
	Total	2	4%

439

*Others (Including processing products, horticultural crops and so on)

440

441

Markets and Sales

442

443

444

445

446

Virtually all of the farms in this survey use direct sales, mainly via membership-based distribution networks (Table 6). The membership systems found in Shanghai can be divided into two categories: a distribution share system; and a labor share system. In common with the CSA model found elsewhere, distribution share systems are based on consumers prepaying for produce (becoming scheme members) and receiving deliveries one or two times per week.

447 There are many different prepayment systems, in terms of how connected the members are
448 to the farms, how long in advance payment is required, and to what extent members can vary
449 their orders and choose what they want to be delivered. Labor share schemes are a form of
450 share farming in which consumers (usually known as members) rent the land and ‘allow’ it to
451 be farmed in return for a share of the harvest. Again Labor share schemes vary according to
452 the degree of influence exerted by the members, but all of them involve the regular delivery
453 of produce to members’ homes.

454

455 In addition to membership schemes, many of the farms make use of internet sales, with
456 virtual shops on Taobao (an open sales platform) and Wechat (a social media platform) linked
457 to the distribution systems already in place for member deliveries. While these platforms do
458 attract some new customers, they are mainly used by existing members wanting to vary their
459 orders, or for farms to alert members to events on the farm. Some farms also attend organic
460 farmers’ markets although there is a general consensus that these are not effective routes to
461 market given the lower prices charged by non-organic competitors in traditional food markets.
462 Some of the larger farms supply the catering trade, although this is only felt to be viable where
463 a substantial premium is available for fresh organic food. It is these farms that have gained
464 organic certification. Finally, over half of the farms welcome tourists, to build trust by inviting
465 consumers to see the farm at work, and to encourage sales of value-added items.

466

467 While often not involving the level of member commitment generally associated with
468 CSA, the prepay membership schemes common in Shanghai have many advantages, to farmers
469 and consumers. The farmers benefit from a degree of shared risk and a relatively stable market,
470 with the support provided by long-term members helping the farms maintain production and
471 operation. The consumers benefit by having safe and nutritious food delivered to their door.
472 These relationships foster a level of trust between farmers and members that is unique in
473 China’s food chain. Even organic certification cannot deliver this level of security, meaning that
474 the most successful farmers are those who can develop strong customer relations as well as
475 producing consistently good food. This means that, for many farms, the level of production
476 achieved is more a function of market size than growing conditions, with some farms reporting
477 that they have idle land available should they be able to expand their customer base.

478

479

480

481

482

Table 6. Routes to market

Sales model	Farm Quantity	Percentage	Sales model	Farm Quantity	Percentage
Membership	42	93%	Organic Farmer's market	25	56%
Value added (such as picking, farmhouse diet, educational experience)	29	64%	Supermarkets, restaurants, hotels, etc.	11	24%
Taobao	30	67%	Wholesale	2	4%
Wechat	26	58%			

483

484 Analysis

485 Although there has clearly been rapid development of small scale ecological farms in
 486 Shanghai, the vast majority of these farms remain on the margins of viability. As the data
 487 indicate, the reasons why they struggle are a complex mix of insecurity (constrained access to
 488 lands and markets), social marginality and often a lack of technical farming skills and
 489 knowledge. Added to this is a national agricultural policy that favors subsidy to large scale
 490 commercial farming, whether conventional or certified organic. For most of those involved,
 491 insecurity is at the core of the problems that they face. This is very much the case with access
 492 to land, particularly given that very few of these new farmers have any family land to rely on,
 493 nor domicile claims to village land. Thus, while they have undoubtedly profited from the
 494 availability of small and marginal plots of land that are seemingly unattractive to conventional
 495 farmers, they are equally at the mercy of a land allocation system that is unsuited to outsiders
 496 and to external shocks such as speculation. This means that while new farmers can often get
 497 started, rising demand for land – whether for urban development or from local farmers
 498 wanting to increase their production – allied to short lease terms leaves them vulnerable to
 499 increasing rents or eviction and, thus, makes them unwilling to invest in improving their
 500 businesses. Expansion of their farms, even where they have a ready market for their produce,
 501 is often impossible without family land or moving to a new location.

502

503 Another constraint that many of these farmers face is a lack of knowledge and skills
 504 related to ecological and organic production allied to a scarce labor force that often lacks an
 505 understanding of the markets in which the farms operate. Given that most of the farmers try
 506 to combine the management of the farm with other work, they are overly reliant on others,
 507 particularly family, to do the physical farm work. This is very much the situation at Mengtian

508 Farm and Miller Farm, where the farm work is mainly undertaken by the elderly parents of the
509 farmers, while the farmers themselves are responsible for customer service and financial
510 management. In addition, most farms need to hire laborers, especially in the busy season.
511 While some laborers are available, the relatively low incomes from agriculture, compared to
512 the level of industrial wages locally, mean that fewer and fewer people are engaged in
513 agricultural production, and those that do continue are ageing, or are unable to find work
514 elsewhere. This is a general problem, even for high-profile and certified organic farms such as
515 Biofarm. Indeed, it is such a profound problem that some enterprises, such as Shenggeng Farm,
516 founded by the Green Oasis Commonwealth Organization, have moved away from a primary
517 focus on production towards education as a means of mitigating the risks of not being able to
518 secure sufficient labor.

519

520 In addition to these production-related issues, the most pressing concern for the majority
521 of the farmers is how to establish and maintain a sufficiently large pool of trusting customers.
522 Trust is at the core of this, because few Chinese consumers put much faith in the quality of the
523 produce available to them, even when it has been certified organic (Wang, et al, 2015). A
524 common story to illustrate this is the watermelon incident at T Farm: a Farmers' market in
525 Shanghai had created a market for organic watermelon selling at three times the price of
526 conventional watermelons. Three small organic farms including T Farm agreed to produce the
527 fruit. However, it was uncovered by some consumers and confirmed by its volunteers that T
528 Farm actually purchased conventional watermelons and passed them off as organic. While T
529 Farm was punished and left the farmers market, trust in the market and in other small organic
530 farms was badly damaged.

531

532 Rather than relying on certification, therefore, the majority of Shanghai's small scale
533 farmers concentrate on word of mouth about their integrity and the strict, but uncertified,
534 organic regimes that they follow (see Si, et al, 2014). In many cases these farmers go to
535 considerable lengths through their food networks to build and maintain consumer trust. This
536 is because they understand that they are in a co-dependent relationship with their consumers
537 in which there is assumed knowledge about the food and an understanding that the consumer
538 has a choice about whether or not to purchase and consume the food, just as the farmer has
539 a choice about whether or not to sell to them (Wang, et al, 2014). However, not all of the
540 farmers understand the basis of this co-dependency, particularly in failing adequately to
541 understand the criticality of using formal institutions such as AFNs to transform consumer
542 confidence in their food (Wang, et al, 2015). This is where the development of the AFNs in

543 Shanghai is critical to the future stability of many of the new urban farms – that building trust
544 and the resulting customer loyalty is the best route to ensuring stability of demand in cases
545 where the quality of the food is not automatically visible to the consumer.

546

547 Another aspect of trust concerns the extent to which the new farmers can get along with
548 local villagers to ensure their support if there are questions in the future about who should
549 occupy the land. Quite apart from the suspicion with which many villagers treat outsiders,
550 there is also the extent to which organic and ecological approaches to agriculture are
551 acceptable. Many of the new farmers have found that they are treated as ‘fools’ or rich urban
552 timewasters for trying to farm without the use of chemical fertilizers and pesticides. Some
553 outsiders have also reported incidences of theft and vandalism, resulting in them hiring
554 additional staff to maintain security. Biosecurity is a particular problem with accusations from
555 some new farmers that their conventional neighbors allow their inorganic fertilizers and
556 pesticides to pollute organic crops, through both air and water borne transmission. In
557 addressing this many of the new farmers have worked hard to cultivate friendships and respect
558 from villagers. This has been via a number of activities, including offering work, paying for
559 advice and offering an exchange of gifts. Some of the more established farmers have found
560 that they have gradually become more accepted in their local communities, although they
561 report that this does not necessarily give them the level of security that is afforded to
562 traditional and conventional neighboring farmers.

563

564 Herein lies the key problem for these farmers: they gain access to marginal land because
565 they farm at a small scale, and they farm at this scale because they lack the market and
566 expertise to risk operating at a larger scale, but yet because they remain small scale they are
567 at the mercy of village committees who do not always recognize the value that they bring to
568 the local community. Of course, as the data indicate, many of the small-scale farmers are
569 driven by individual and family needs, so the enthusiasm for up-scaling is not high. Up-scaling
570 also presents challenges in terms of labor availability – given that there is relatively little scope
571 for mechanization, even at substantially bigger scales. Yet the main constraint remains market
572 access: at their current scale, the farmers can generate the levels of trust needed to maintain
573 sufficient customers. If they expand too rapidly or too much they cannot any longer rely on
574 personal connections, but instead need to build trust through developing brand loyalty. This is
575 particularly tough in a social and cultural environment in which quality indicators such as
576 organic certification are not trusted. As Wang, et al (2015) have observed, institutions such as
577 AFNs can help transform trust in specific foods and their producers, but it remains very much

578 the farmers' responsibility to communicate their activity and values in ways that convince
579 customers that their food is what they claim and is thus worth the price premium over
580 conventional food. In addressing this, several farmers now seek independent third party
581 verification of their food, often through laboratory testing for the presence of chemical
582 residues.

583

584 **Conclusion**

585 We have tried, in this paper, to address the challenge posed by Morris and Evans (2004)
586 to identify a new agricultural geography that reflects the cultural turn that has been witnessed
587 in wider geographical analysis. As we have found in Shanghai, the elements of this new
588 geography are there to be seen: a new spatial location for small, mainly family, farms in the
589 city and its suburbs, allied with the emergence of new farmers with motivations associated
590 with ecological farming and the development of 'activist' networks of customers. At the core
591 of this new geography is an attempt to move beyond the production of healthy food to the
592 production of an active community that is engaged in the social and political processes that
593 underpin alternative food networks. As Schumilas and Scott (2016: p.310) observe, '... these
594 [AFNs] are laboratories where food consumers are becoming 'food citizens' and are centring
595 actions for the public good and decentring their private needs.' We would add that the new
596 farmers are every bit as much 'food citizens' who are also centring their actions on the public
597 good, although often through the use of peasant labor rather than compromising their own
598 private needs.

599

600 In economic terms, this cultural turn in farming has therefore brought farmers and
601 consumers together in a process that produces both food and community. As Wang, et al (2015)
602 have explained, this is very much a process of co-dependency built on developing mutual trust.
603 It is therefore reminiscent of the emergence of bridging social capital (Puttnam, 2000) and is
604 emblematic of a global movement towards what Carolan (2011) has termed 'food from
605 somewhere'. This new geography therefore reflects the fracturing of traditional agricultural
606 forms, as well as the disruption of intergenerational channels through which farming
607 knowledges have been communicated, with the majority of the new farmers having few family
608 connections with agriculture through which to learn their trade (Liu, et al, 2016).

609

610 Thus, what at first sight appears to be a fairly conventional spatial distribution of farms
611 around a large city is, quite possibly, the start of a new agricultural geography that is
612 characterized less by what is produced where, and more by who is doing the producing, and

613 why. And, in this case, the vast majority of those doing the producing are new entrants with
614 little farming experience who market their produce directly to consumers via new food
615 networks characterized by prepayment schemes and web-based communication. While this
616 may not be so unusual in itself, the added layer of complexity is that many of the farmers are
617 essentially consumers who became frustrated by the lack of safe local food and decided to
618 address the problem by creating their own supply. Unlike most agricultural enterprises that
619 maximize production within a wholesale business model, therefore, what we are witnessing
620 in Shanghai is the emergence of a novel form of retail food business in which production is
621 tailored to, and conditioned and constrained by, a bespoke market that is based on mutual
622 trust between producer and consumer and exists only in that time and space.

623

624 This very much reflects a cultural turn in agricultural geography, away from the idea that
625 farms operate at distance from their customers, both spatially and culturally, towards one in
626 which these Shanghai farmers are both producers and consumers operating businesses that
627 bring together contemporary marketing processes with quite traditional ways of farming.
628 These farms are thus productivist in inclination, to the extent that food is the key element of
629 production, and post-productivist in that additional services are offered that very much
630 construct the customers as part of the production process. The farms are thus creative and
631 social businesses that offer services to people who have identified themselves as ‘members’.
632 This service is certainly based on food production; however, it should more fully be understood
633 as an input to people’s sense of security and community with others – one of the steps that
634 they take to create a safe and high quality life (Yan, 2012; Liu, et al, 2017). It is this that moves
635 these farms beyond post-productivism and multifunctionality. They may embody both of
636 these things, but the ambition of the farmers and customer/members is so much more: it is
637 about understanding food as a component of a civic, or civilizing, lifestyle.

638

639 However, while the farmers may understand markets and marketing better than many
640 conventional farmers, the market in which they operate is immature, volatile and highly
641 differentiated (Si, et al, 2014). Indeed, they are not really markets in the conventional sense of
642 the term, but rather associative means of creating sufficient mutual trust to underpin the
643 distribution of food between the points of production and consumption. Through such
644 mechanisms, the farmers seek to build and maintain loyal groups of food activists/food citizens
645 who accept the provenance of the food that they receive, regardless of whether or not it is
646 certified by an external agency. However, if the farmers wish to, or are forced, to move beyond
647 this associative relationship, to find additional customers or income, they face a culture in

648 which claims about food safety, whether or not backed by organic certification, are given little
649 credence. The emerging agricultural geography of Shanghai is thus both emblematic of a new
650 cultural turn in the production and distribution of food, and also of the continuing insecurity
651 faced by small farmers, wherever they are and whatever they produce.

652

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