



An Exploratory Study on Farmer's Perception about dairy-based Farmer Producer Companies in India

SUNIL KUMAR¹, GOPAL SANKHALA¹, PRIYAJAY KAR^{2*}, P H ROMEN SHARMA²
and DEVENDRA KUMAR MEENA³

ICAR-National Dairy Research Institute, Karnal, Haryana 132 001, India

Received: 31 March 2021; Accepted: 28 December 2021

ABSTRACT

Farmer Producer Company (FPCs) has emerged as a novel collective approach model and is considered to be a very effective tool for improving the overall socio-economic development of small and marginal farmers in India. To authenticate this prerogative, a survey was conducted among 360 dairy farmer members of 12 dairy-based farmer producer companies in three states of India. Most of the farmers expressed that the major objectives of FPCs are to maximize the benefits of members (75.50%), capacity building of its members (76.38%), better accessibility of agricultural services (74.44%) followed by reducing the transport cost of members (72.75%). Furthermore, the study has also investigated the socio-economic variables and their relationship with the individual perception of the farmer about FPCs. Findings aid us to formulate an appropriate strategy that will help to improve the farmers' perception about the FPCs. Enhanced farmers' awareness and knowledge about the beneficial effects of FPCs will encourage fellow farmers to form FPCs and reap its benefits on a larger scale.

Keywords: Awareness, Farmer, FPCs, Perception, Sustainability

Agriculture in India is mostly dominated by small and marginal farmers and around 85% of the operational landholders are having less than one hectare land (Singh 2012). The size of the operational holdings has drastically reduced in the last decade and more worrying is the fact that the top 10% of the farmers are now cultivating almost 50% of India's total agricultural land whereas the bottom 50% are cultivating less than 0.5% of India's agricultural land. The Situation Assessment Survey indicates that monthly per capita consumption expenditure is higher than the monthly per capita income of farmers (Mishra 2008). Strategies need to shift from the two-dimensional lab-to-land approach towards the three-dimensional lab-to-land-to-market approach. The insistent precedence is to shift the agricultural policy from cooperative movement to the producer company movement which combines the structure of the cooperative societies and the efficiency of a private company. The key concept behind this new cooperative model is enhancing the processing, value addition and marketing linkage of farmers. GOI has decided to form

10,000 Farmer Producer Organizations (FPO) in the coming years and it should serve as a viable alternative to revive the cooperative structure at the ground level. The Food and Agriculture Organization (FAO 2014) reports that producer companies are considered to be institutions that have the significant features of private enterprise while incorporating principles of mutual assistance in their mandate similar to cooperatives (Pustovoitova 2011). FPCs are envisioned to collectivize the small farmers for backward linkage for inputs like seeds, fertilizers, credit, insurance, knowledge, and extension services; and forward linkages such as collective marketing processing, and market-led agriculture production (Mondal 2010). Some studies reported that low participation rates and commitment of members may put a serious threat to the success, sustainability and viability of farmer producer companies. Moreover, fund generation and financial support from donor institutions were also a hindrance factor towards their sustainability (Kumar *et al.* 2021). So, the present study investigates the perception of farmers towards the FPCs and the factors associated with them.

MATERIALS AND METHODS

The study was carried out during 2019–20 at ICAR-National Dairy Research Institute, Karnal, Haryana. A list of farmer producer companies was identified based on secondary data available from Small Farmers Agribusiness Consortium (SFAC) website. Based on the data, three states

¹ICAR-National Dairy Research Institute, Karnal, Haryana;

²ICAR-Indian Institute of Maize Research, Ludhiana, Punjab;

³College of Agriculture, Kumher, Bharatpur, Rajasthan.

*Corresponding author email: karpriyajoy@gmail.com

i.e. Uttar Pradesh, Rajasthan and Madhya Pradesh were purposively selected for the study based on the criteria i.e. states which have the highest milk production share in total milk production of India as well as the highest number of dairy-based FPCs. These states were also having the largest consumer base of milk and milk products. The selection of farmer producer companies was done based on three criteria i.e. (i) FPCs should be dairy-based (ii) FPCs should completed three years of establishment during the time of data collection and (iii) FPCs should have a minimum of 100 active members during the time of investigation. Based on these three criteria, 12 FPCs (four from each state) were randomly selected for the study. 25 respondents from each FPCs were selected through proportionate random sampling for the purposed study. Along with shareholders, a maximum number of 60 office-bearers (professional staff) of 12 FPCs were also selected for getting detailed information about FPCs (five from each FPCs). Thus, the total sample size for measuring the perception of farmers toward dairy-based farmer producer companies was 360. The descriptive research design was used to measure the perception of farmers towards dairy-based farmer producer companies. The standard procedure was considered for measuring the perception of dairy farmers towards Farmers Producer Companies which was followed by Kumar *et al.* (2015), Kumar *et al.* (2016), Rai (2017) and Kumar *et al.* (2021).

RESULTS AND DISCUSSION

Distribution of respondents according to their perception toward farmer producer companies: Most of the member farmers (77.5% strongly agree and 18.05% agreed) perceived that The main objective of FPCs is to maximize benefits of members and they have assigned the first rank to it with a weighted mean score of 112.86. It implies that most of the farmers were aware of the objective of the formation of FPCs in rural areas. Maximum involvement of the farmer in the product value chain can ensure better marketing and helps fetch a better price for the produce (Venkattakumar and Sontakki 2012, Bikkina 2015, Kaaria 2016). FPCs also enhance the benefit of farmers through direct marketing, the high price of products and reduce the cost of cultivation. The majority (76.38%) of the dairy farmers strongly agreed (SA) that FPCs help in capacity building of its member 'followed by 19.16% (Agreed). However, 2.22% of the dairy farmers' responses were undecided (UD), 1.38% have disagreed (DA) and 0.8% were strongly disagreed (SDA) with the fact. The weighted mean score was 112.53. In order of importance, it was assigned the second rank by the respondents. One of the important aspects of FPCs is to build the capacity of its members in different business prospective agricultural arenas. Training and capacity development of the member farmers continues to be a striving force behind its sustainability and profit maximization (DSC 2007, ASA 2009, Venkattakumar and Sontakki 2012, Bikkina 2015, Mukherjee 2018). More than half (74.44%) of the member farmers responded that Members of FPCs have better accessibility of agricultural

services. It was ranked third in order of importance with a weighted mean score of 111.53. Generally, FPCs have strong backward and forward linkages with various stakeholders. This helps in better accessibility of agricultural services to their members (Trebin 2014, Mukherjee 2019, Nikam 2019). Most (73.61%) of the members perceived that Membership of FPCs help to enhance knowledge about good agricultural practices and they have assigned the fourth rank to it with a weighted mean score of 111.33. The findings suggest that the members of FPCs realize that their knowledge was enhanced after joining FPCs. This might be due to the reason that FPCs usually conducts various training programs, exposure visits, demonstration and lectures to enhance their knowledge about scientific dairy farming practices. Exposure visits to different farms and technology demonstrations add to their existing knowledge and help to make it more rational (Bachke 2009, Asante 2009, Nikam 2019, Mukherjee 2019). The dairy farmers responded positively that 'FPCs help in reducing transport cost of members' with a weighted mean score was 111.13. FPCs are based on collective action approach, so due to collectivization, the cost of transportation of individual farmers was reduced (Bernard and Spielman 2009, Herck 2014, Latynskiy and Thomas 2016). About 71.66% of the dairy farmers strongly agree that FPCs help in eliminating middlemen from the value chain. It was due to the reason that FPCs enhanced the participation of farmers in the value chain beyond the production like processing and marketing of products. Farmers usually start their processing and marketing activity collectively through FPCs and it helps to eliminate middlemen from the value chain (Venkattakumar and Sontakki 2012, Trebin 2016, Mukherjee 2018, Murray 2019). The maximum number (99.44%) of the member farmers perceived that Membership of FPCs enhances individual bargaining power and they have assigned the seventh rank to it with a weighted mean score of 109.73. This implies that the collective action approach enhanced the bargaining power of individual farmers and it was possible due to the membership of FPCs (Salifu 2010, Venkatta Kumar 2012, Herck 2014, Murray 2019). More than half (66.11%) of the member farmers were strongly agreeing that FPCs have quick, digital and transparent payment systems. Nowadays with technological advancement most of the FPCs have a digital, quick and transparent payment system and provide timely payments to their members of their agricultural produces (Paty B K 2018, Venkatesan 2020). The majority (66.94%) of the member farmers were strongly agreeing that FPCs enhance farmer's backward and forward linkage. It was ranked 9th in order of importance with a weighted mean score of 109.26. Linkages are vital for FPCs for ensuring better marketing and trade facilitation of the produce (Trebin 2014, Swati 2019, Jose 2019). About 65.27% of the member farmers were strongly agreed with the fact and perceived that FPCs help in increasing self-confidence, change the attitude and behavior of members toward dairy farming. This was ranked 10th with a weighted mean score of 108.93. This implies that FPCs conducted various capacity-building

Table 1 Individual-level of farmer's perception toward farmer producer companies

Statement	SA	A	N	DA	SDA	Weighted mean	Rank
FPCs enhance farmers' backward and forward linkage	241 (66.94)	81 (22.5)	35 (9.7)	2 (0.5)	1 (0.2)	109.26	9
Members of FPCs have better accessibility to agricultural services	268 (74.44)	70 (19.44)	11 (3.05)	9 (2.5)	2 (0.5)	111.53	3
Membership of FPCs helps to enhance knowledge about good agricultural practices	265 (73.61)	73 (20.27)	11 (30.5)	9 (2.5)	2 (0.5)	111.33	4
Membership of FPCs enhances individual bargaining power	255 (70.83)	70 (19.44)	25 (6.94)	6 (1.6)	4 (1.1)	109.73	7
FPCs help in reducing the transport costs of members	261 (72.5)	76 (21.11)	15 (4.1)	5 (1.38)	3 (0.8)	111.13	5
FPCs have their own processing facilities	135 (37.5)	176 (48.88)	40 (11.1)	4 (1.11)	5 (1.3)	100.8	23
FPCs help in eliminating middlemen from the value chain	258 (71.66)	74 (20.55)	20 (5.55)	3 (0.83)	5 (1.3)	110.46	6
FPC provides ensured price and a suitable market for produce to farmers	228 (63.33)	89 (24.72)	41 (11.3)	2 (0.5)	0 (0)	108.2	13
Quick, digital, and transparent payment system	238 (66.11)	85 (23.61)	36 (8.61)	1 (0.27)	0 (0)	109.33	8
Very little or no role of members in the decision-making activities of FPCs (-)*	20 (5.5)	32 (8.8)	53 (14.72)	145 (40.2)	110 (30.5)	91.53	33
The main objective of FPCs is to maximize the benefits of members	279 (77.5)	65 (18.05)	9 (2.5)	4 (1.11)	3 (0.8)	112.86	1
FPCs help in the capacity building of its members	275 (76.38)	69 (19.16)	8 (2.22)	5 (1.38)	3 (0.8)	112.53	2
FPCs enhance employment opportunities in rural areas	230 (63.88)	90 (25.00)	32 (8.8)	6 (1.66)	2 (0.5)	108	14
Due to a lack of awareness among members, only a few people take benefit from FPC	211 (58.61)	100 (27.27)	36 (10)	9 (2.5)	4 (1.11)	105.66	19
FPCs enhance the societal status of individual	219 (60.83)	96 (26.66)	38 (10.5)	5 (1.38)	2 (0.5)	107	17
FPCs help in increasing self-confidence, change the attitude and behavior of members toward dairy farming	235 (65.27)	87 (24.16)	36 (10)	1 (0.27)	1 (0.27)	108.93	10
FPCs encourage group cohesion among the farmers	226 (62.77)	91 (25.27)	38 (10.55)	5 (1.38)	0 (0)	107.86	15
FPC creates a lot of conflict among farmers (-)	4 (1.11)	4 (1.11)	11 (3.88)	123 (34.1)	218 (60.5)	108.46	12
FPCs are the ideal platform to bridge the gap between extension personnel and farmers	233 (64.72)	89 (24.72)	36 (10)	1 (0.27)	1 (0.27)	108.8	11
FPCs enhance the buying capacity of the farmer	225 (62.5)	41 (11.38)	92 (25.55)	2 (0.5)	0 (0)	104.6	20
FPCs is a latent tool for women's empowerment	221 (61.38)	35 (9.7)	93 (25.83)	6 (1.66)	5 (1.38)	102.73	22
FPCs are not able to supply needed input to farmers at right time at a competitive price (-)	12 (3.3)	28 (7.7)	10 (2.7)	100 (27.77)	210 (58.33)	103.2	21
Rule and regulation of FPC are very difficult (-)	32 (8.8)	81 (22.5)	43 (11.9)	72 (20)	132 (36.66)	84.73	35

Contd.

Table 1 (Concluded)

Statement	SA	A	N	DA	SDA	Weighted mean	Rank
FPCs have political interference (-)	43 (11.9)	65 (18.05)	37 (10.27)	125 (34.72)	90 (25)	82.26	36
Only large farmers benefited through FPCs (-)	35 (9.7)	55 (15.27)	49 (13.61)	112 (31.11)	109 (30.27)	85.66	34
FPC help members overcome from production and marketing risk of dairy farming	208 (57.77)	105 (29.16)	40 (11.11)	4 (1.11)	3 (0.8)	106.06	18
Leadership quality is the major factor in the successful running of FPCs	119 (33.05)	191 (53.05)	43 (11.94)	5 (1.38)	2 (0.5)	100	27
All members have equal power and right in FPCs on resources and decision making	115 (31.94)	195 (54.16)	50 (13.88)	0 (0)	0 (0)	100.33	24
Membership of FPCs is not beneficial to farmers (-)	3 (0.83)	10 (2.77)	65 (18.05)	170 (47.22)	112 (31.11)	97.2	30
FPCs is creating discrimination among members (-)	15 (4.1)	30 (8.33)	64 (17.77)	135 (37.5)	116 (32.22)	92.46	32
Farmers feel empowered after joining FPCs	107 (29.72)	203 (56.38)	45 (12.5)	5 (1.38)	0 (0)	99.46	28
FPC developed entrepreneurship ability and habits among the members	110 (30.55)	198 (55)	46 (12.77)	3 (0.83)	3 (0.83)	99.26	29
The input provided by FPC has good quality and competitive price than other similar seller of this product in the market	125 (35.27)	183 (50.83)	45 (12.5)	5 (1.38)	2 (0.55)	100.26	25
Practically, FPC is not easy to register and run successfully (-)	12 (3.33)	33 (9.16)	63 (17.5)	107 (29.7)	145 (40.27)	94.66	31
FPCs help enhance the producer's share in consumer rupees	123 (34.61)	187 (51.94)	42 (11.3)	4 (1.38)	4 (1.11)	100.06	26
Finally, FPC enhances the socio-economic status of members and helps in providing livelihood security to farmers	223 (61.94)	95 (26.38)	38 (10.5)	2 (0.55)	2 (0.55)	107.66	16

Frequency and percentage in parenthesis; * minus sign (-) indicates negative statements.

and training programs for their members. These programs helped in increasing self-confidence, change the attitude and behavior of members toward dairy farming in study areas (ASA 2009, Venkattakumar and Sontakki 2012, Bikkina 2015, Mukherjee 2019). Apart from that, factors like the role of FPCs in bridging the gap between lab to land through strengthening linkages (GFRAS 2015, NABARD 2015), enhancing social cohesion, developing specific skills (Wilson 2009), ensuring a proper market place and better price realization, etc (Table 1) were perceived significant by the farmers towards the FPCs.

Relationship between perception and socio-economic characteristics of member farmers: The correlation between the selected characteristics of member dairy farmers with perception is presented in Table 2. Results revealed that the socio-economic characteristics such as age, education, occupation, landholding, herd size, experience in dairying, membership experience, milk production, milk consumption, total annual income, mass media exposure and extension contact were found to be highly significant and positively associated with their perception about dairy-based farmer

producer companies of member dairy farmers. The other variables of members, viz. gender and family size showed a positive but non-significant association with the perception of dairy-based farmer producer companies. Distances from market/FPCs were found to be highly significant and positively associated with their perception of dairy-based farmer producer companies of member dairy farmers.

In today's scenario, farming has become a deficit deal and it is difficult to continue agriculture as a profitable enterprise. The government and policymakers are trying to address the problem with a number of schemes and other innovative initiatives for agriculture development and the socio-economic welfare of the farmers. The formation of farmer producer companies (FPCs) is one such initiative that is trying to address farmers' problems by bringing them to a new generation collective forum. The Farmer Producer Company model is an effective pathway for the overall socio-economic development of farmers but still many of the farmers are not aware of the FPCs, their benefits, and their functional activities. The purpose of the present study was to examine the perceived beneficial effects of

Table 2 Relationship between perception and characteristics of respondents

Characteristic	Correlation coefficient (r)
Age	0.323*
Education	0.301*
Gender	0.131
Family size	0.111
Occupation	0.316**
Experience in dairying	0.327**
Membership experience	0.429**
Landholding	0.282**
Hard size	0.401**
Milk production	0.375**
Milk consumption	0.277**
Total income	0.248**
Distances from market/FPCs	-0.287**
Mass media exposure	0.316*
Extension contacts	0.287*

** Significant at 0.01 level of probability; *Significant at 0.05 level of probability.

dairy-based farmer producer companies by its members and create awareness among others about FPCs. The study revealed that the FPCs help in maximizing the benefits of its members, aids in capacity building of its members, provide better accessibility of agricultural services, enhance knowledge-level about good agricultural practices, support in reducing transport cost of members and augment the bargaining power of the member farmers. Perceptions of the farmers towards the performance, sustainability and viability of the FPCs were largely affected by their socio-economical characteristics. Findings will help policy makers to formulate an appropriate strategy for ensuring effective farmer participation and broader scaling up of the FPCs.

ACKNOWLEDGMENT

The authors are grateful to Director, ICAR-NDRI, Karnal for providing providing financial support to conduct research.

REFERENCES

- A S A. 2009. Manual for producer companies-Volume-I and II. Action for Social Advancement (ASA). Prepared for district poverty initiatives program (DPIP), Madhya Pradesh.
- Asante B O, Afari-Sefa V and Sarpong D B. 2011. Determinants of small-scale farmer's decision to join farmer-based organizations in Ghana. *African Journal of Agricultural Research* 6(10): 2273–79.
- Bachke M E. 2009. Are farmers' organizations a good tool to improve small-scale farmers' welfare? Paper presented at the II Conferencia do IESE "Dinamicas da Pobreza e Padroes de Acumulacao em Moçambique", Maputo, 22–23 April. Available online at http://www.iese.ac.mz/lib/publication/II_conf/
- Bernard T and Spielman D J. 2009. Reaching the rural poor through rural producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food Policy* 34: 60–69.
- Bikkina N, Turaga R M R and Bhamoriya V. 2018. Farmer producer companies s as Farmer Collectives: A Case Study from India. *Development Policy Review* 36(6): 669–87.
- Dev S M. 2005. Agriculture and rural employment in the budget. *Economic and Political Weekly* 40(14): 1410–13.
- D S C. 2007. Development Support Centres' Experience. Dhari Krushak Vikas Producer Company Ltd. PRADHAN'S Workshop on Producer Companies.
- FAO-ILO. 2014. Cooperatives & Producers' Organizations: Food, Agriculture & Decent Work: ILO & FAO working together, <http://www.fao-ilo.org/fao-ilo-coop/>
- GFRAS. 2015. Producer organizations in rural advisory services: Evidence and experiences. Position Paper. Lindau: Global Forum for Rural Advisory Services.
- Herck K V. 2014. *Assessing efficiencies generated by agricultural Producer Organisations*. Report by European Commission, B-1049, Brussels.
- Jose E and Meena H R. 2019. Profile of Farmer Producer Company (Dairy-based) Members in Kerala. *Indian Journal of Extension Education* 55(2): 47–51.
- Jose E, Meena H R and Verma A P. 2019. Case Studies of Dairy-Based Farmer Producer Companies in Kerala. *International Journal of Current Microbiology and Applied Sciences* 8(1): 501–05.
- Kaaria S, M Osorio, S Wagner and A Gallina. 2016. Rural Women's Participation in Producer Organizations: An Analysis of the Barriers That Women Face and Strategies to Foster Equitable and Effective Participation. *Journal of Gender, Agriculture and Food Security (Agri-Gender)* 1(2): 148–67.
- Kumar R, Slathia P S, Peshin R and Nain M S. 2015. Development of scale to measure the attitude of farmers towards rapeseed mustard crop. *Journal of Community Mobilization and Sustainable Development* 10(2): 221–24.
- Kumar R, Slathia P S, Peshin R, Gupta S K and Nain M S. 2016. A test to measure the knowledge of farmers about rapeseed mustard cultivation. *Indian Journal of Extension Education* 52(3&4): 157–59.
- Kumar S, Sankhala G and Kar P. 2021. Development of tool to measure the Farmers' Perception towards Dairy-Based Farmer Producer Companies. *Indian Journal of Extension Education* 57(4): 134–38.
- Kumar S, Sankhala G, Kar P and Sharma Ph R. 2021. An Appraisal of Financial Sustainability of Dairy-Based Farmer Producer Companies in India. *Indian Journal of Extension Education* 57(4): 115–19.
- Latynskiy E and Thomas B. 2016. Networks of Rural Producer Organizations in Uganda: What can be done to Make Them Work Better? *World Development* 78: 572–86.
- Mishra A K, Tegegne F and Sandretto C I. 2010. The impact of Participation in Cooperatives on the Success of Small Farms. *Journal of Agribusiness* 22(1): 31–48.
- Mondal A. 2010. Farmer's producer company (FPC): concept, practice and learning- A case from Action for social Advancement. *Financing Agriculture* 42(7): 29–33
- Mukherjee A, Singh P, Rakshit S, Priya S, Burman R R, Shubha K, Sinha K and Nikam V. 2019. Effectiveness of Poultry-Based Farmers' Producer Organization and its Impact on Livelihood Enhancement of Rural Women. *Indian Journal of Animal Sciences* 89(10): 1152–60.
- Mukherjee A, Singh P, Ray M, Satyapriya and Burman R R.

2018. Enhancing farmers' income through farmers' producers' companies in India: Status and roadmap. *Indian Journal of Agricultural Sciences* **88**(8): 1151–61.
- Murray E V. 2019. Producer Company Model- Current Status and Future Outlook: Opportunities for Bank Finance. Knowledge Bank, College of Agricultural Banking, Pune, Maharashtra, India, p 13.
- NABARD. 2015. Farmer Producers' Organizations (FPCs): Status, Issues & Suggested Policy Reforms. National Level Paper, Potential Linked Plans (PLP) 2019–20.
- P Venkatesan, Sontakki S, Shenoy N S, Sivaramane N and Sivakumar P S. 2020. Impact of Farmer producer companies s in Fostering Community Entrepreneurship. *Indian Journal of Extension Education* **56**(2): 111–17.
- Paty B K. 2018. Farmer Producer Companies—Issues and Challenges. *Extension Digest*. National Institute of Agricultural Extension Management (MANAGE).
- Pustovoitova N. 2011. Producer Company as an Institutional Option for Small Farmers in India', Lunds Universitet.
- Rai C K, Singh K and Bhakat M. 2018. Approach to quantify tribal dairy farmer's awareness towards climate change: A study of Himachal Pradesh. *Research Journal of Agricultural Sciences* **9**(Special): 130–35.
- Salifu A, Francesconi G and Kolavalli S. 2010. A Review of Collective Action in Rural Ghana, IFPRI Discussion Paper 00998. Available at: www.ifpri.org/sites/default/files/publications/ifpridp00998.pdf
- Singh P, Dabas J P S and Mukherjee A. 2012. Agricultural cooperatives for the empowerment of farmers. *Indian Farming* **62**(7): 17–24.
- Swati K, Shaik M S and Dedun V S. 2019. Backward and Forward Linkages Developed by Farmer Producer Organisations in Western Maharashtra. *Journal of Krishi Vigyan* **7**(2): 28–31.
- Trebbin A and Hassler M. 2012. Farmers' producer companies in India: a new concept for collective action? *Environment and Planning* **44**: 411–27
- Trebbin A. 2014. Linking small farmers to modern retail through producer organizations—experiences with producer companies in India. *Food Policy* **45**: 35–44.
- Trebbin A. 2016. Producer companies and modern retail in India—Current state and future potentials of interaction. *Organized Retailing and Agri-Business, India Studies in Business and economics*, pp 277–88.
- Venkattakumar R and Sontakki B S. 2012. Producer companies in India- Experiences and Implications. *Indian Research Journal of Extension Education*. Special issue **1**: 154–60.
- Vinayak Nikam, Premlata Singh, Arthay Ashok and Shiv kumar. 2019. Farmer producer companies s: Innovative institutions for the upliftment of small farmers. *Indian Journal of Agricultural Sciences* **89**(9): 1383–92.
- Wilson G A. 2009. The spatiality of multifunctional agriculture: A human geography perspective. *Geoforum* **40**: 69–80.