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THE PERCEPTION OF IMPORTANCE AND PERFORMANCE OF PRIVATE AND PUBLIC FUNCTIONS DELIVERED BY A FARMING SYSTEM – THE CASE STUDY OF HORTICULTURE SECTOR IN POLAND

Key words: private functions, public functions, farming system, horticulture, Poland, SURE-Farm, Horizon 2020

ABSTRACT. The aim of the article is to present the method and results obtained by the SURE-Farm project in the process of evaluating the Polish horticulture farming system through the prism of the importance and performance of private and public functions delivered by it. Based on the FoPIA-SURE-Farm method, analysis proceeds with an evaluation of the importance and performance of functions delivered by the farming system. According to the method, four private and four public functions were assessed, while respondents included farmers, state and local authorities, as well as other actors relevant for the development of agriculture. Stakeholder opinions reveal price levels and income as being the most important indicators for the assessment of private functions delivered by the horticulture farming system in Poland, yet assess their performance as lower than average, with a tendency for being poor. Public functions of the farming system, on the contrary, are perceived by stakeholders as less important, yet satisfaction from their delivery is greater compared to private functions.

INTRODUCTION

The concept of an agricultural system includes both of the following: activities directly related to agricultural production as well as multifunctional activities undertaken by farms leading to the delivery of private and public goods [Bijttebier et al. 2018]. The horticulture farming system in Poland serves an important role in delivering foodstuffs to local, national and global markets, while allowing to generate local income, and simultaneously deliver other numerous economic, social and environmental goods.

Challenges faced by rural communities, due to the development of farming systems in which they are involved, intensify the need to estimate the communities' perception of the importance of their functions and analyze the performance for each such function. This article provides the results of research concerning these aspects with regard to the horticulture farming system in Poland that was carried out in the framework of its complex resilience evaluation in an international SURE-Farm project. Due to project limitations, the quoted data only apply to a section of the Polish horticulture sector and, as such, should not be treated as representative of the national agricultural sector.

MATERIALS AND METHODS OF RESEARCH

Approach to data collection and its analysis presented in the article are based on the FoPIA-SURE-Farm method developed in the framework of the SURE-Farm[1] Horizon 2020 project [Meuwissen et al. 2019], which is overall aimed to analyze, assess and improve the resilience and sustainability of farms and farming systems in the EU (elaborated in [Krupin, Bańkowska 2017]).

The FoPIA-SURE-Farm (Framework for Participatory Impact Assessment adapted for the SURE-Farm project) method has been constructed to [Reidsma et al. 2019]: 1) assess the current resilience and delivery of private and public goods for selected farming systems across the EU; 2) assess the impact of future challenges, and 3) assess the expected impact of resilience-enhancing strategies (and combinations of resilience-enhancing strategies) on selected farming systems[2].

While the FoPIA-SURE-Farm method covers a wide range of analyzed issues stated above, this article is based on part of the method only covering the evaluation of the importance and performance of functions delivered by the farming system.

The FoPIA-SURE-Farm method outlines 8 functions divided into two groups – private and public [Herrera et al. 2018, Reidsma et al. 2019]. The private functions include:

1. Food production: the delivery of healthy and affordable food products.
2. Bio-based resources: the delivery of other bio-based resources for the processing sector, including fuels and fibres.
3. Economic viability: ensuring the profitability of agricultural production as viable farms contribute to balanced territorial development.
4. Quality of life: improving quality of life in rural areas by providing employment, ensuring income parity and offering decent working conditions.

Public functions considered in the project are split into:

1. Natural resources: maintaining natural resources in good condition (water, soil, air).
2. Biodiversity & habitat: protecting biodiversity of habitats, genes, and species.
3. Attractiveness of the area: ensuring that rural areas are attractive places for residence and tourism (countryside, social structures).
4. Animal health & welfare: ensuring animal health & welfare.

The SURE-Farm Polish case study targets two NUTS2 regions: PL81 (Lubelskie) and PL92 (Mazowieckie) both being a part of the EU FADN region 795 of "Mazowsze i Podlasie". Based on the SURE-Farm report [Bijttebier et al. 2018] five typical farm types (TFT) were defined for the case study area, among which TFT4 was chosen for analysis: small farms (<10 ha) + Family farms + horticulture (fruits or/and vegetables). Horticulture production was selected as the targeted type of researched agricultural activity.

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[1] SURE-Farm: Towards SUstainable and REsilient EU FARMing systems, www.surefarmproject.eu. This project has received funds from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 727520.

[2] Full reports covering all aspects analyzed in the framework of the FoPIA-SURE-Farm method, including all collected and analyzed data for Poland [Krupin et al. 2019] and other SURE-Farm project case study countries (Belgium, Bulgaria, France, Germany, Italy, Romania, Spain, Sweden, the Netherlands and the United Kingdom), as well as a joint cross-country report, are available at the project's website: https://surefarmproject.eu/deliverables/publications) as parts of "D5.2 Report on participatory impact assessments in case study regions" [Paas et al. 2019].

In order to analyze local resilience issues, the partners of the international SURE-Farm project in 2019 carried out discussion workshops in 11 EU regions targeting chosen typical farming systems for the area. It is important to note the assumption of the SURE-Farm method, which is the application of an identical research scheme across all case study areas, and one of the guidelines assumed a comparable number of participants (20-30 people). In Poland, the discussion workshop based on the FoPIA method was carried out in the Lubelskie voivodeship with stakeholders coming from the border areas of two voivodships – Mazowieckie and Lubelskie. The identification of participating stakeholders allowed to define three analyzed groups: Farmer (10 participants), Government representative/Government (4 participants) and Other (6 participants). The Other group included stakeholders being members of the Farmers Union of Poland, one person being involved in agricultural economics research, an NGO representative and one person representing the State Veterinary Inspection. Some of the stakeholders had multiple backgrounds due to simultaneously holding positions in state or local authorities, and being actively engaged in farming practices. In some workshop exercises less participants took part than intended, therefore the number of observations is indicated for each of the analysis results. The authors of this study are aware that due to the small number of observations, the research results described below may not be representative for all horticultural farms in Poland, nevertheless the preparation of this article was carried out with the conviction that the described results of the qualitative research may contribute to the scientific discussion on the future of farming systems and their resilience.

RESEARCH RESULTS

The fruit market in Poland is poorly organized due to a lack of horizontal interactions and vertical integration connections in particular. Although there is a growing need and interest in cooperation and creating producer groups (e.g. for joint investments in agricultural crop storage facilities) between fruit and vegetable farms, the current network of horizontal integration connections in agriculture is generally underdeveloped, with the exception of some fruits (e.g. apples). In this market, there are often distortions, manifested in falling purchase prices, in some cases reaching levels below costs (e.g. in the case of apples and black currants). Farms are also struggling with a lack of seasonal workers [Bijttebier et al. 2018].

The border areas between the Mazowieckie and Lubelskie Provinces were chosen as the target research area. The characteristic features of this region were: a high diversity of crops, a lack of effective cooperation (both horizontal and vertical) and a labor deficit [Krasowicz 2004, Bański 2019]. Depending on the particular area, the key hard fruits are apples, pears, plums, cherries, sweet cherries, to a less extent peaches and apricots; among soft fruits: strawberries, raspberries, currants (black and red), and gooseberries. Most popular vegetables chosen for cultivation by farmers are onions, carrots, cabbages, cucumbers, tomatoes, and among field crops – sugar beets.

Based on stakeholder statements, an opinion was obtained on existing relationships within the horticultural farming system in Poland. The agricultural system itself not only includes horticultural farms and their closest partners (e.g. employees and local buyers),

but also entities that affect the faming system and which are not influenced by farmers themselves (an example of which can be large processors, producers of production inputs or local authorities). The discussion also helped reveal the existence of entities having an indirect but relatively strong impact on the farming system (e.g. export markets, international legislation, affluence of society, etc.). According to the participants of the workshop, these connections can significantly affect the fulfillment of the farming system's individual functions. It should be noted, however, that the opinions obtained came from a small group of respondents and, as such, only relate to the case study being examined. To conclude on the entire horticultural farming system in Poland, it would be necessary to carry out similar studies throughout the country or expand the respondent base.

One of the key stages of the workshop was the evaluation of eight previously described functions (private and public) delivered by the farming system in terms of their importance and performance (Figure 1). While the importance of all functions was assessed with a maximum 100 points to be shared between them, the performance (treated as the level of satisfaction from the effects of a particular function) was evaluated on a scale from 1 to 5: 1) very poorly performing, 2) poorly performing, 3) not good not bad, 4) well performing, 5) performing perfectly.

Based on collected data analysis, the most important functions delivered by the farming system are several private functions, including "Economic viability" and "Food production". Income and costs are key factors in the farming system and have the strongest influence upon its actors. "Quality of life" ranked third and is tightly connected to the previous two functions. Other functions were rated as having lower importance, such as "Attractiveness of the area", "Bio-based resources" and "Animal health & welfare" (sharing same score), with the lowest scored function being "Biodiversity & habitat".

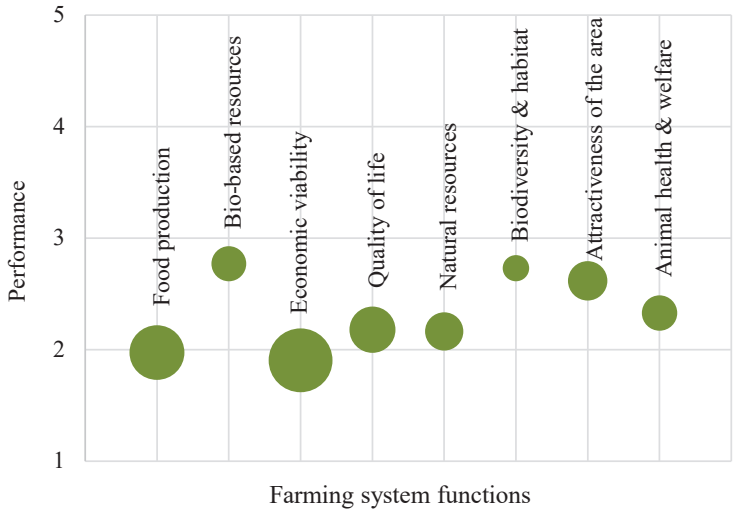

Figure 1. Averaged scores on the performance of functions (from 1 to 5) with an indication of their relative importance (size of the bubbles) on a scale of 1-100 (n = 19)

Source: own aggregation based on research results

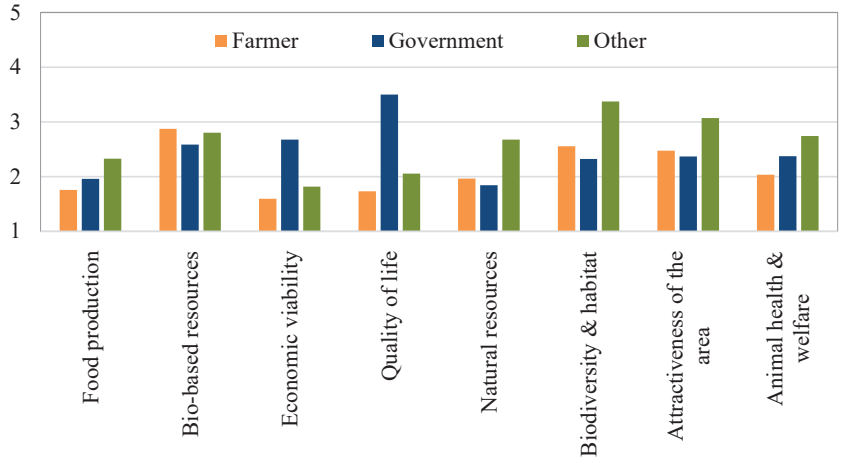

Figure 2. Average scoring per function by stakeholder group (100 points were to be divided over 8 functions) (n = 19)

Source: own aggregation based on research results

The perception of these functions differs according to stakeholder groups (Figure 2). While all groups are homogenous concerning the high importance of "Economic viability" and "Food production" functions, the Farmer group is the one focused on "Economic viability", while "Food production" was chosen by such groups as Other and Government. The Other and Government groups are also more willing to define the higher importance of public functions, including environmental protection. Therefore, stakeholders representing these two groups emphasize the role of "Natural resources", "Biodiversity & habitat", "Animal health & welfare" compared to farmers. The Government group is the one that outlines the importance of "Bio-based resources" and "Attractiveness of the area" more than the other two groups.

Following is aggregated data with a synthesis of both the importance and performance of selected functions defined according to stakeholder groups (Figure 3).

Analysis shows that even the functions receiving the highest scores are still in the range from 2 (poorly performing) to 3 (not good not bad). The delivery of private goods in total was scored with an average of 2.1, while the performance of public functions was assessed at 2.46.

The most diverse depending on stakeholder groups is the perception of the two functions "Quality of life" and "Economic viability". Representatives of Government assess the delivery of these functions much higher than farmers. In particular, if the horticultural farming system fulfills a function related to quality of life, according to representatives of authorities, it deserves to be rated close to good, while according to farmers themselves, the result of this function was assessed as bad.

Farmers are the most pessimistic in assessing the function "Economic viability" (assess its fulfillment below the level of poor), while according to authorities it deserves a rating close to neutral (not good not bad).

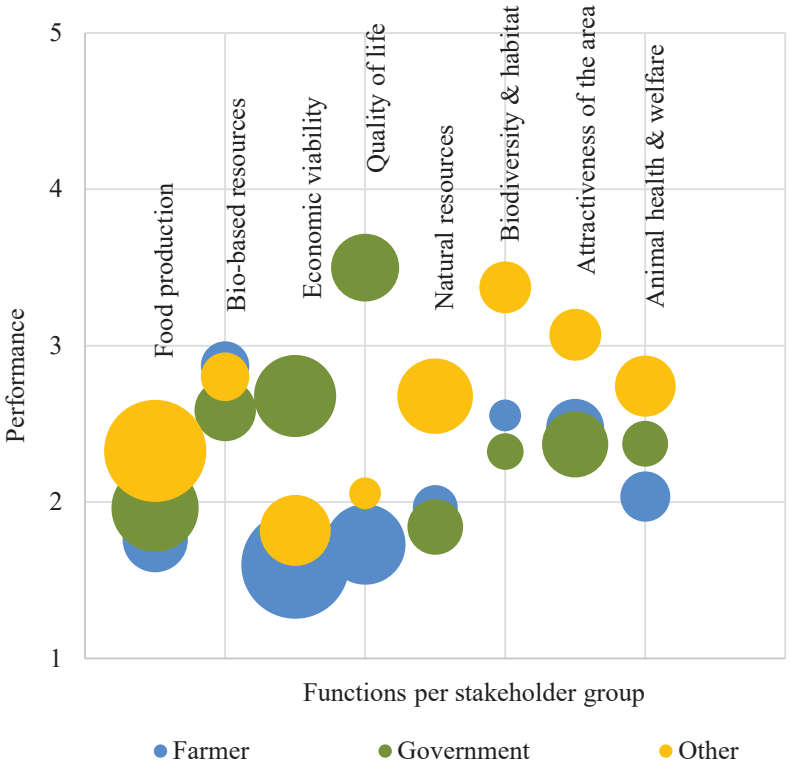

Figure 3. Averaged scores on the performance of functions (from 1 to 5) by stakeholder group with an indication of their relative importance (size of bubbles) (n = 19)

Source: own aggregation based on research results

Overall stakeholders rather see good trends in the changes of environmental protection and rural development in terms of ecological conditions. The groups of respondents emphasizing these indicators are mostly Government and Other, while the Farmer group has supported these statements as well, contributing to total positive scores of most environmental functions.

SUMMARY

The case study analysis shows the current horticulture farming system is perceived primarily through a prism of private functions such as "Economic viability" and "Food production", outlined as having the highest importance. Therefore, it is possible to conclude that the issues of income and profitability are most significant for farming system actors.

According to the key functions defined by respondents, the horticulture farming system is currently performing poorly. The best performing functions, although still performing at

a level of below 3 out of 5 (defined as "not good not bad") are "Bio-based resources" and "Biodiversity" of public functions, while "Economic viability" and "Food production" of private functions are scored at a level of 2 out of 5 (defined as "bad").

Although the research results described above only apply to the selected case study, the information obtained can be a starting point for in-depth research on the perception of the importance of public and private functions of horticulture in Poland.

Agricultural activity is a constant struggle to generate income adequate for a dignified standard of living, and because the survey participants feel that the level of income of urban residents has a growing trend, rural residents expect the same. In the participants' conviction, the income of rural residents is insufficient or at least unsatisfactory to ensure the sustainable functioning of the farming system.

These findings can be confirmed by sources in literature. The perception of rural citizens in Poland still has a post-socialist trail, in which the rural resident was to some extent a lower class citizen (from the perspective of both rural and urban residents), with lesser average income, fewer possibilities and a key urge to move to urban areas [GUS 2012, Sączewska-Piotrowska 2016, Bieńkuńska, Góralczyk 2018]. In reality the differences are not as drastic anymore, the gap between the income of urban and rural inhabitants have gradually been decreasing in Poland, infrastructure has also been developing and, with the Common Agricultural Policy's support, conditions in rural areas, especially for farmers, have been improving [Wilkin, Nurzyńska 2018].

Declining profitability trends of Polish horticulture farms are confirmed by research [Jabłońska et al. 2017], thus indicating a faster increase in production costs compared to the value of production. As the authors also point out, Polish horticulture farms have lower land, capital and labor force productivity. At the same time [Ziętara, Sobierajewska, 2013] emphasize that Polish agriculture has great potential in the field of horticulture production, which is not fully used, despite high competitiveness.

To summarize, despite changes in social perception, issues of decent farmer income remain important and discrepancies in the assessment of satisfaction with the fulfillment of these functions by the farming system between farmers themselves and representatives of authorities still remain large.

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POSTRZEGANIE ZNACZENIA I REALIZACJI PRYWATNYCH I PUBLICZNYCH FUNKCJI DOSTARCZANYCH PRZEZ SYSTEM ROLNICZY – STUDIUM PRZYPADKU ROLNICTWA OGRODNICZEGO W POLSCE

Słowa kluczowe: funkcje prywatne, funkcje publiczne, system rolniczy, ogrodnictwo, Polska, SURE-Farm, Horyzont 2020

ABSTRAKT

Celem artykułu jest przedstawienie metody i wyników uzyskanych w ramach projektu SURE-Farm w procesie oceny polskiego systemu ogrodnictwa, przez pryzmat znaczenia i realizacji pełnionych przez niego funkcji dostarczania dóbr prywatnych i publicznych. Wykorzystując metodę FoPIA-SURE-Farm dokonano oceny znaczenia funkcji realizowanych przez system rolniczy oraz próbę oceny efektów wypełnianych funkcji. Zgodnie z metodą oceniono cztery prywatne i cztery publiczne funkcje, a wśród respondentów znaleźli się rolnicy, przedstawiciele władz państwowych i lokalnych, a także inne osoby odgrywające pewne role w rozwoju rolnictwa. Badania opinii interesariuszy ujawniły, że poziom cen i dochody postrzegane są jako najważniejsze wyznaczniki w dostarczaniu dóbr prywatnych przez system rolnictwa ogrodniczego w Polsce. Równocześnie interesariusze oceniali realizację funkcji przez polski system, jako niższą niż przeciętna, z tendencją do oceny niskiej. Należy zaznaczyć, że funkcje publiczne systemu rolniczego było postrzegane przez interesariuszy jako mniej istotne, lecz zadowolenie z uzyskiwanych efektów z ich realizacji było wyższe niż w przypadku funkcji prywatnych.

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