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Contents

THE EFFECTIVENESS DETERMINANTS OF THE PROCESS OF ORGANIC FARM CERTIFICATION IN POLAND

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Abstract: The process of organic farm certification in Poland is conducted by certification bodies authorized to control, issue and revoke certificates within the scope of organic agriculture. The aim of the process is to verify whether the realized production process complies with the requirements of organic farming. The fact of issuing an organic certificate confirms fulfilling legal requirements within the scope of organic agriculture during the whole food production process.

The paper aims at identifying and determining the importance of effectiveness determinants in reference to organic farm certification in Poland. Its realization consisted in research carried out with the use of the Delphi method, in which 11 organic farming experts participated. The paramount task of the experts was to assess the significance of the factors identified within the research by attaching values on the scale ranging from 1 to 5. The factors were divided into 4 groups: organizational factors, system documentation of a certification body, resources for assessment and clients. During the research 29 factors were identified as the most important in reference to the proper organization and course of the certification process. A clear and uniform way of documenting control results (including a uniform template for the minutes of control developed by the certification body) was considered the key factor.

The research results allow for defining the areas of operation for certification bodies, the component elements of system documentation, as well as means and tools applied by certification bodies during the certification process, which significantly affect the effectiveness of organic farm certification. A clear and uniform way of documenting the control results was deemed to be decisive, as it allows for stating the necessity for taking further research in control procedures applied by relevant certification bodies.

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Introduction

Certification is a procedure for verifying if a product is in compliance with a given norm or standard [Jakobsen 2002]. Farms, which decide on organic production (similarly to organic producers), are subjected to the organic farming control system. It guarantees that organic products on sale have been made in accordance with the organic farming principles. Organic farming control does not embrace the features of a food product, but the way it is produced. Issuing an organic farming certificate confirms that all relevant legal requirements have been met [Sobczyk 2013].

The term *certification* has been defined in PN-EN ISO/IEC 17000:2006 Conformity assessment – Vocabulary and general principles. According to it *certification* is an issue of a statement, based on a decision following review that fulfillment of specified requirements (in relation to products, processes, systems or persons) has been demonstrated [ISO 2006]. On the other hand, in compliance with the PN-EN ISO 9000:2015-10 standard *effectiveness* is the relationship between the result achieved and the resources used [ISO 2015].

In the case of organic food, the certification process includes the verification whether organic products are produced in conformity with organic production requirements. Certification may be divided into two main parts: inspection (control), which aims at verifying whether the production process is conducted in accordance with relevant principles, as well as certification, which confirms this compliance. Certification procedures should assure the traceability of a given organic product at all stages of its processing and the delivery to the final consumer ("from farm to table"). Certification is not a one-time action and does not end with issuing the compliance certificate – it lasts also during the supervision period of the issued certificate and consists in constant monitoring and inspection of the producer embraced within the monitoring system [Jacobsen 2002]. If the actions realized within the certification process lead to achieving the planned objectives, they may be considered effective [Kowal 2013]. The aim of the organic farm certification is not to issue the certificate, but to verify whether the conducted production process complies with organic farming principles. Therefore, the appropriate organization and course of certification actions are important for assuring the effectiveness of the certification process.

In compliance with the regulations of the Act of 25th June 2009 on organic farming the control of organic producers is conducted by entities authorized by the Minister of Agriculture and Rural Development as certification bodies.

The supervision over certification bodies and organic production is carried out by the Agricultural and Food Quality Inspection [Ustawa 2009].
All certification bodies must be subjected to the obligatory accreditation by the Polish Accreditation Center in the context of meeting the requirements of PN-EN ISO/IEC 17065:2013 Conformity assessment – Requirements for bodies certifying products, processes and services [ISO 2013], and organic farming inspectors included in the Register of organic agriculture inspectors [Ustawa 2009] carry out the control. Certification bodies vary in authority scopes, ability to certify other food quality systems, and in the number of certified producers. According to the Register on 25th March 2019 12 certification bodies had the authority to perform the control as well as issue and revoke organic agriculture certificates [Minister Rolnictwa i Rozwoju Wsi 2019].
Certification bodies develop the organic agriculture certification programs, which include *inter alia* the scope of the certification program embracing the types of certified products, the obligations of a certification body and a certified producer, the description of a certification body's actions within the certification process, the information about the relevant range of penalties, complaint and appeal procedures as well as about the supervision of the issued certificates [TUV Rheinland 2018].
The obligation to apply the inspection methods and procedures as well as management system documentation within the specific scope stems from the requirements of PN-EN ISO/IEC 17020:2012 Conformity assessment – Requirements for the operation of various types of bodies performing inspection [ISO 2012].
According to Cabała "the condition of performing effective actions is to properly decompose all factors affecting the process of achieving a given goal" [Cabała 2007]. In the context of the proper control of organic producers the required system documentation of certification bodies may include [ISO 2012]:

- methods and procedures for controlling the conformity with organic agriculture requirements,
- guidelines for planning control, techniques of obtaining samples, and control techniques,
- guidelines for performing control in a safe way,
- a template of the minutes of control,
- procedures for choice, trainings, granting formal authority and monitoring the controlling personnel,
- documented competence requirements for the personnel involved in performing control,
- a documented process of receiving and evaluating complaints and appeals.

The aim of the paper is to identify and determine the significance of factors determining the effectiveness of the organic farm certification process in Poland.

Materials and methods

In order to identify and define the significance of factors determining the effectiveness of the organic farm certification process we planned and conducted our research with the use of the Delphi method in cooperation with organic agriculture experts (both researchers and practitioners). The Delphi method, also called the Delphi technique, is a heuristic method consisting in systematical settling experts' opinion on a given topic [Hsu and Sandford 2007].

The study was performed in 4 rounds between July and September 2017 with the use of the previously prepared list of factors.

We invited 11 experts, among whom there were 5 representatives of certification bodies (persons of the top management of certification bodies and organic agriculture inspectors) and 6 representatives of public higher education facilities: Cracow University of Economics, Cracow Agricultural University, Warsaw University of Life Sciences – SGGW, and Gdynia Maritime Academy (4 out of the experts combine their research and practical organic agriculture activity). The majority of the experts have a long, more-than-10-year experience in organic agriculture and are interested in all categories of relevant activity (Table 1).

Table 1. Characteristics of experts participating in the study.

Area of an expert's activity	**Number of people**
World of science (research activity)	2
World of practice (performing organic agriculture control or other active cooperation with certification bodies)	5
Both world of science and world of practice	4
An expert's experience in organic agriculture	**Number of people**
up to 3 years	1
3-6 years	3
7-10 years	1
over 10 years	6
Main categories of organic agriculture activity in relation to an expert's interests and work	**Number of people**
cultivation of organic plants and keeping animals (plant production, animal production, the production of vegetative propagating material and/or organic seeds for growing)	3
remaining categories of activity (harvesting from the state of natural environment, beekeeping, aquaculture products and algae, organic	2

product processing and animal feed or yeast production, introducing organic products onto the market, including the products imported from third-party countries)	
all categories of activity	6

Source: author's own study

During the four rounds the factors determining the effectiveness of organic farm certification in Poland were identified. They had been previously defined on the basis of professional literature [Zapłata 2010], legislation [Rada WE 2007, Komisja WE 2008] and standardization documents [ISO 2012, ISO 2013]. Experts were asked to determine the significance of each of them on the scale ranging from 1 to 5, within which 1 means that a given factor is not significant and 5 means that it is crucial for the analyzed process. Next, an average value for each of them was calculated, which led to the selection of the group of experts' most important factors for the proper course of the certification process.

Results and discussion

During the research the identified determinants of the effectiveness of the organic farm certification process were divided into four groups:

- organizational factors,
- system documentation of a certification body (procedures and guidelines),
- resources for assessment,
- clients.

The full list of factors (ordered from the most to the least significant within each of the four categories) has been presented in table 2.

Table 2. Determinants of the effectiveness of organic farm certification process.

No.	Group of factors/factor	Average value	Range
I	**Organizational factors**	**4.0**	**-**
1	Defined authority and competences of employees involved in the certification process	4.9	1
2	Engagement of the top management in the effort made to properly assess organic farms (through updating documentation, granting access to resources necessary for the realization of the process, performing periodical reviews of documentation, direct contact with on-site employees and inspectors etc.)	4.6	2
3	Internal communication e.g. between a certification body and field inspectors	4.6	2

4	External communication between a certification body and external entities e.g. supervision organs, other certification bodies	4.0	3
5	Established quality policy and quality objectives	3.9	4
6	Planning and performing internal audits as well as post-audit actions in the certification body	3.6	4
7	Financial situation of the certification body	3.5	4
8	Documented organizational structure of the certification body	3.4	4
9	Working conditions in the certification body	3.3	3
II	**System documentation of a certification body (procedures and guidelines)**	**4.0**	**-**
1	Clear and uniform way of documenting the control results (including a uniform template for the minutes of control developed by the certification body)	5.0	0
2	Established and implemented principles of the uniform qualification of nonconformity, penalties for producers and validation	4.6	1
3	Established and used uniform forms within the application documentation for producers	4.5	2
4	Diligence in completing the documentation, which is transferred to an inspector within the preparations for organic farm assessment, in particular the complete application documents of a given producer	4.4	1
5	Established and applied criteria for selecting producers for the planned sample obtainment on a farm	4.3	2
6	Established and applied criteria for risk assessment in relation to nonconformity with organic production principles	4.3	3
7	Established and applied criteria for selecting an inspector for performing the assessment (taking account of qualifications, competence and experience of the inspector, the specialization of the assessed farm and the deadline for performing the assessment)	4.2	2
8	Established and applied recommended techniques of conducting the assessment (control and sample obtainment) of organic farms	4.1	2
9	Established and applied principles of planning the organic farm assessment (developing the plan of the assessment)	4.0	4
10	Defined procedure in the case of a producer's failure at delivering the application documents on time, which is necessary to create the control plan	3.8	3
11	Defined guidelines for performing the control of organic farms and obtaining samples for tests	3.8	3
12	Define way and deadline for delivering the post-control documentation to a certified body from an inspector	3.8	4
13	Defined optimal duration and time of control, which takes account of the size and specialization of the assessed farm	3.6	3
14	Established and applied principles and criteria for periodical assessment (evaluation) of an inspector's work	3.6	2

15	Defined way and deadline for filing the request an inspector to perform the organic farm assessment	3.5	4
16	Way of recording mistakes made by inspectors performing the organic farm assessment in a certification body	3.5	2
17	Established and applied principles for delivering the documentation necessary for performing the assessment of the farm to the inspector	3.2	2
18	Way and deadline for reporting the control results by the certification body to other entities (e.g. supervision organs, other certification bodies)	3.2	3
III	**Resources for assessment**	**3.8**	**-**
1	Requiring the participation in a practical field training from an inspectorial candidate	4.7	2
2	Requiring the participation in a theoretical training at the certification body's headquarters from an inspectorial candidate	4.5	1
3	Assuring objectivity and confidentiality of on-site and external employees	4.5	3
4	Supervision of an experienced inspector while performing first independent controls by a newly-employed inspector	4.4	2
5	Lack of mistakes and completeness of control results documentation through creating the post-control documentation in a proper and accurate way	4.4	2
6	Lack of mistakes reflecting the fact that the control was performed by inspectors in a negligent or biased way	4.4	3
7	Lack of mistakes reflecting the fact that the control was performed by inspectors in an incompetent or reckless way	4.4	3
8	Planning and realization of practical trainings for field inspectors	4.1	2
9	Established requirements related to the competence and qualifications of inspectors who perform controls on organic farms	4.0	3
10	Established requirements related to the necessary experience of inspectors who perform controls on organic farms	4.0	3
11	Planning and realizing trainings for on-site employees involved in the certification process	3.9	2
12	Assessment of inspectors' field work (i.e. controls supervised by representatives of the certification bodies)	3.9	3
13	Cooperation with external experts within the scope of the organic farm certification process (e.g. in relation to the interpretation of control results, sample test results)	3.8	2
14	Verification of nonconformities detected by the WIJHAR-S (Voivodeship Agricultural and Food Quality Inspectorate) inspectors within the organic agriculture supervision	3.8	2
15	Established and applied principles for training an inspectorial candidate at the certification body	3.8	3
16	Assuring the opportunity to increase an inspector's qualifications through internal and external trainings	3.7	3
17	Planning and realization of theoretical trainings for field inspectors	3.7	2

18	Adequate equipment and apparatus e.g. for obtaining samples	3.7	3
19	Established requirements related to the competence and qualification of on-site employees involved in the certification process	3.7	3
20	Established requirements related to the experience of on-site employees involved in the certification process	3.7	3
21	Cooperation with qualified, accredited laboratories and reference laboratories	3.6	3
22	Performing controls according to the control plan and assignment from the certification body, in particular in the context of the scope of control, its duration, areas of higher risk of nonconformity	3.5	3
23	Established and applied criteria for recruiting on-site employees and external inspectors	3.4	2
24	Size of the budget to cover all the costs of the organic farm assessment	3.3	4
25	Salary incentive system in the certification body	3.2	3
26	Adequate infrastructure of the certification body (properties, telecommunication systems, technical support, IT)	3.0	4
27	Non-salary incentive system in the certification body	2.7	4
IV	**Clients**	**3.8**	**-**
1	Clear and accessible catalog of nonconformities, penalties and validations	4.5	2
2	Access to the forms used in the certification body	4.3	2
3	Effective forms of contact with the client (e.g. telephone, e-mail)	4.3	2
4	Applying unequivocal criteria for determining the size of the certification process fee	4.2	2
5	Adequately planned time necessary for performing the control on a farm	4.0	3
6	Access to the up-to-date pricelist in the certification body	4.0	2
7	Clear and accessible procedure for complaints and appeals within the certification process	3.9	2
8	Defined deadline for filing the application documentation	3.8	3
9	Clear and accessible procedure for monitoring producers' complaints	3.8	2
10	Availability and easy contact between the inspector and the producer	3.7	3
11	Effective supervision and management of relations with clients	3.6	4
12	Access to a clear scheme of the course of the certification process, in particular to the materials related to the course of the control on the farm	3.6	3
13	Clear and accessible (for producers) criteria for analyzing risk of nonconformities with the organic production principles	3.6	4
14	Assuring trainings for representatives of organic farms, e.g. on organic agriculture legislation, the possibility of applying external production measures, labeling principles etc.	3.6	4

15	Way of transferring the application documentation by producers (Communicating the start of organic agriculture activity, Description of a production unit, Annual cultivation schedule)	3.0	4
16	Additional costs related to the certification process for producers, e.g. additional costs related to controls, obtaining and testing samples	2.9	3

Source: author's own study

The factors that received the value of at least 4.0 have been considered the most significant for assuring the proper course of the certification process of organic farms. Among the 70 factors included in the list 29 factors received the highest values (4 or higher): 4 in the group of organizational factors, 9 within the scope of system documentation, 10 in the group of resources for assessment, and 6 within the group of clients. The values range varied between 0 and 4.

The most important organizational factors are:

- defined authority and competences of employees involved in the certification process. The group embraces on-site employees of the certification body, organic agriculture inspectors performing field controls, external sample collectors etc.,
- engagement of the top management in the effort made to properly assess organic farms. This engagement may take the form of updating documentation regularly, granting access to resources necessary for the realization of the process, performing periodical reviews of documentation, direct contact with on-site employees and inspectors etc.,
- internal and external communication e.g. between a certification body and field inspectors as well as between a certification body and external entities, which include supervision organs and other certification bodies.

Within the scope of system documentation of a certification body experts attached the highest importance to the factors, which may be divided into two groups:

- factors related to planning and preparing the organic farm assessment:
  - uniform forms within the application documentation for producers,
  - principles of planning the organic farm assessment (developing the plan of the assessment),
  - criteria for selecting an inspector for performing the assessment (taking account of qualifications, competence and experience of the inspector, the specialization of the assessed farm and the deadline for performing the assessment),
  - criteria for selecting producers for the planned sample obtainment on a farm,
  - criteria for risk assessment in relation to nonconformity with organic production principles,

    - diligence in completing the documentation, which is transferred to an inspector within the preparations for organic farm assessment, in particular the complete application documents of a given producer.
- factors related to performing the organic farm control:
    - clear and uniform way of documenting the control results (including a uniform template for the minutes of control developed by the certification body and used by inspectors),
    - principles of the uniform qualification of nonconformity, penalties for producers and validation,
    - recommended techniques of conducting the assessment (control and sample obtainment) of organic farms.

Moreover, the clear and uniform way of documenting the control results (including a uniform template for the minutes of control developed by the certification body and used by inspectors) was considered the most significant factor for assuring the proper course of organic farm assessment. The experts attached the average value of 5.0 to it.

Within the category Resources for assessment experts indicated the biggest number of significant factors – 10 entries received the value of 4 or higher. They have been divided into two groups:

- competence and qualifications of employees (field inspectors):
    - assuring objectivity and confidentiality of on-site and external employees,
    - lack of mistakes and completeness of control results documentation through creating the post-control documentation in a proper and accurate way,
    - lack of mistakes reflecting the fact that the control was performed by inspectors in a negligent or biased way,
    - lack of mistakes reflecting the fact that the control was performed by inspectors in an incompetent or reckless way,
    - established requirements related to the competence and qualifications of inspectors who perform controls on organic farms,
    - established requirements related to the necessary experience of inspectors who perform controls on organic farms.
- inspectorial trainings:
    - requiring the participation in a practical field training from an inspectorial candidate,
    - requiring the participation in a theoretical training at the certification body’s headquarters from an inspectorial candidate,
    - supervision of an experienced inspector while performing first independent controls by a newly-employed inspector,
    - planning and realization of practical trainings for field inspectors.

Among the factors belonging to the fourth category the experts emphasized:

- clients' access to:
  • catalog of nonconformities, penalties and validations,
  • forms used by the certification body,
  • up-to-date pricelist of the certification body.
- effective forms of contact with the client,
- applying unequivocal criteria for determining the size of the certification process fee,
- adequately planned time necessary for performing the control on a farm.

Conclusions

The certification process of organic farms in Poland is conducted by certification bodies authorized by the Minister of Agriculture and Rural Development to perform controls as well as to issue and revoke organic agriculture certificates. They are obliged to develop and apply control procedures, make use of relevant technical means, and verify the qualifications of persons performing inspections on their behalf. The compliance with these requirements along with checking the documents related to controls are subjected to the annual audit performed by the Agricultural and Food Quality Inspection [Ustawa 2009].

During the research 29 most significant factors in the context of the proper organization and course of the organic farm certification process have been identified. The group of the factors of key importance includes (in the brackets we present the average significance value on the scale ranging from 1 to 5): clear and uniform way of documenting control results (5.0), defined authority and competence of employees involved in the certification process (4.9), requiring the participation in a practical field training from an inspectorial candidate (4.7), engagement of the top management in the effort made to properly assess organic farms (4.6), internal communication (4.6), established and implemented principles of the uniform qualification of nonconformity, penalties for producers and validation (4.6), requiring the participation in a theoretical training at the certification body's headquarters from an inspectorial candidate (4.5), clear and accessible catalog of nonconformities, penalties and validations (4.5), assuring objectivity and confidentiality of on-site and external employees (4.5).

The knowledge of the certification process determinants allows for defining the areas of certification bodies' activity, determining the elements of system documentation as well as the measures and instruments applied by them in the certification process, which have the largest impact on assuring the proper organization and course of the organic farm certification process in Poland. Not only is this identification important due to the proper functioning of the organic agriculture control system but also because of the possibility of

indicating the areas which, if improved, may bring the biggest system benefits. The clear and uniform way of documenting the control results (including a uniform template for the minutes of control developed by the certification body) was considered crucial. To conclude, it seems to be justified to conduct further research in the control procedures applied by certification bodies within this scope.

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DETERMINTY SKUTECZNOŚCI PROCESU CERTYFIKACJI GOSPODARSTW EKOLOGICZNYCH W POLSCE

Streszczenie: Proces certyfikacji gospodarstw ekologicznych w Polsce prowadzą jednostki certyfikujące, upoważnione do przeprowadzania kontroli oraz wydawania i cofania certyfikatów w zakresie rolnictwa ekologicznego. Jego celem jest weryfikacja, czy prowadzony proces produkcyjny jest zgodny z wymogami rolnictwa ekologicznego. Udzielenie certyfikatu ekologicznego stanowi potwierdzenie spełnienia wymogów prawnych w zakresie rolnictwa ekologicznego podczas całego procesu produkcyjnego żywności.
Artykuł prezentuje wyniki badań w zakresie identyfikacji i analizy istotności determinant skuteczności procesu certyfikacji gospodarstw ekologicznych w Polsce. Badania, w których wzięło udział 11 ekspertów z zakresu rolnictwa ekologicznego zrealizowano metodą delficką. Ostatecznym zadaniem ekspertów była ocena, w skali 1-5, istotności każdego ze zidentyfikowanych w trakcie badań czynników. Podzielono je na 4 grupy: czynniki organizacyjne, dokumentacja systemowa jednostki certyfikującej, zasoby dla oceny oraz klienci.
Wyniki badania pozwalają na identyfikację elementów kluczowych dla zapewnienia skuteczności certyfikacji gospodarstw ekologicznych w Polsce. Są to wybrane obszary działalności jednostek certyfikujących, elementy dokumentacji systemowej oraz środki i narzędzia stosowanych przez nie w procesie certyfikacji.

Słowa kluczowe: gospodarstwa ekologiczne, certyfikacja, determinanty skuteczności certyfikacji, szacowanie istotności