

Anexa 4

The External Evaluation Report of a Doctoral Study Domain AGRONOMY University of Agricultural Sciences and Veterinary Medicine of Iasi

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I. Introduction

The objective of the external evaluation: *periodic evaluation*

Visit period: 20 – 24 September 2021

Doctoral field: *Agronomy*

Composition of the ARACIS commission that performs the evaluation:

Coordinator: *Prof. univ. dr. Roxana VIDICAN*

International expert: *Prof. univ. dr. Petr KONVALINA*

PhD student: *Dănuț Nicolae ENEA*

- details about the doctoral school(s) of which the doctoral domain under review is part (number of doctoral advisors, number of students, institutional context, short history etc.).

The Doctoral School of Engineering Sciences (SDSI) organizes and carries out doctoral university study programs in the doctoral fields: Agronomy, Horticulture, Animal Husbandry and Engineering and management in agriculture and rural development.

The general framework of organization and functioning of the doctoral school of Engineering Sciences is established by the provisions of GD 681/2011 on the approval of the Code of doctoral studies, with subsequent amendments and completions, IOSUD regulation (Annex II.03), SDSI doctoral school regulation (Annex II .04), in compliance with the law.

According to GD 681/2011 art. 14 (1), the Doctoral School of Engineering Sciences (SDSI) is led by the director of the doctoral school (Annex II.01; Annex II.60b) and by the Doctoral School Council (CSD) (Annex II.01) . The Council of the Doctoral School of Engineering Sciences is composed of six members (Annex II.01): three members from among the doctoral supervisors within the doctoral school, in proportion of 50%, two doctoral students of the fields within the doctoral school, representing 33.3 %, and a member from outside the doctoral school, recognized scientific personality.

The Doctoral School of Engineering Sciences was previously called the Doctoral School of Agronomy, Horticulture and Animal Husbandry. It was established in accordance with the legislation in force (art. 158 paragraphs (1) and (2) of the National Education Law no. 1/2011 and Government Decision no. 681/2011 on the approval of the Code of doctoral studies, with amendments and completions subsequent). The Doctoral School of Agronomy, Horticulture and Animal Husbandry received a temporary operation authorization on September 29, 2016 by MENCS Order no. 5382, published in the Official Gazette no. 925 of November 17, 2016. By Senate Decision no. 8 / 28.09.2016 (Annex II.02), the Doctoral School of Agronomy, Horticulture and Animal Husbandry (SDAHZ) became the Doctoral School of Engineering Sciences (SDSI). In the previous period, the doctoral university studies within USAMV Iași were organized within a single Doctoral School, established according to GD 411/2011.

Currently, the Doctoral School of Engineering Sciences has a number of 29 doctoral supervisors (Annex II.01). Within the doctoral fields, on 1 Oct. 2020 PhD students, were: Agronomy - 47 (Annex II.51); Horticulture - 57; Animal Husbandry - 33; Engineering and management in agriculture and rural development -17.

The doctoral studies in the field of Agronomy within IOSUD, have a character of continuity, being carried out without interruption from the establishment of the Doctoral School until now.

In 2019/2020, the number of doctoral supervisors in the field of doctoral studies in Agronomy was 10 (Annex II.23), and that of doctoral students was 46 (Annex II.24).

In the period 2016-2020, the doctoral training in the field of Agronomy was carried out in 8 specializations (Agrotechnics, Botany, Exploitation of land improvement systems, Phytotechnics, Plant physiology, Mechanization of agriculture, Production and storage of fodder, Plant protection).

USAMV Iași, the legal representative of IOSUD, is certified by the Romanian Agency for Quality Assurance in Higher Education with the qualification “High degree of trust” for the period 2018-2023 (Annex II.06) and has adopted the ISO 9001 quality management system (initial certification: 2011; last recertification: 2020; valid until 2023) (Annex I.45).

II. Method used

In order to elaborate the external evaluation report of the AGRONOMY field within the Doctoral School of Engineering and Management of Plant and Animal Resources from USAMV Iași, the commission of expert evaluators used methods and tools according to the Guide for the process of periodic external evaluation of doctoral studies.

- Analysis of the Internal Evaluation Report of the evaluated doctoral university field and its annexes. The internal evaluation report is structured as follows:
 - ✓ Part 1: Institutional capacity of the „Ion Ionescu de la Brad” University of Agricultural Sciences and Veterinary Medicine of Iași.
 - ✓ Part 2: Criteria, standards and performance indicators for the accreditation and periodic evaluation of the domain of doctoral studies.
- Other sources of information such as the website of USAMV Iași
- Onsite visit of USAMV Iași (according to the calendar of the periodic evaluation visit - September 23, 2021) – only evaluators from Romania (international experts got information online):
 - ✓ classrooms,
 - ✓ laboratories (Agrotechnics, Botany, Culture of meadows and fodder plants, Phytotechnics, Plant physiology, Informatics, Land improvements, Machines and installations for agriculture and food industry, Pedology, Plant protection).
 - ✓ Research centers (Research Institute for Agriculture and Environment, Plant and Soil Analysis Laboratory);
 - ✓ reading rooms for students (Library);
 - ✓ student dormitories, canteen and sport base on the USAMV Iași campus.
- Meetings / discussions took place in accordance with the visit schedule attached and agreed by the team of evaluators and the management of USAMV Iași. Considering the hybrid way in which the periodic evaluation of the doctoral field is performed, the discussions took place online, being registered and located on the ARACIS cloud. The meetings took place in accordance with the program annexed to this report.

This is it meeting / discussions with:

 - ✓ doctoral students in the field of evaluated doctoral university studies;
 - ✓ graduates in the field of doctoral studies evaluated;
 - ✓ employers of graduates in the field of doctoral studies evaluated;
 - ✓ management of the Doctoral School;
 - ✓ doctoral supervisors in the field of evaluated doctoral university studies;
 - ✓ representatives of the various structures of IOSUD / Doctoral School (Doctoral School Council, the Quality Evaluation and Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the students representing these structures)).

Following the analysis of the Internal Evaluation Report and the annexes to the report, it was not necessary to request additional documents for the construction of the evaluation experts.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

IOSUD is legally represented by the "Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine in Iași (USAMV Iași). The head of the institution (USAMV Iași) which legally represents IOSUD is the Rector of USAMV Iași. USAMV Iași is the result of an academic, scientific and administrative journey supported by big names in education and agronomic science in Romania. The beginnings of Iași agricultural education can be found in the first half of the 19th century, more precisely between 1842 and 1848, when the first great Romanian agronomist, Ion Ionescu de la Brad, whose name is today the university, presented the first agricultural courses at Mihailean Academy in the capital of Moldova. The year 1912 represents the official date of establishing agronomic education in Iași, when the Law on Higher Education, published in the Official Gazette in March, establishes the functioning of the Department of Agricultural Sciences within the Faculty of Sciences of the University of Iași (Annex I.1).

In 1948, by the decision of the Ministry of Education no. 26237, published in the Official Gazette of October 24, the Agronomic Institute of Iași is established with the Faculty of Agrotechnics (later - Agriculture) (Annex I.3). Subsequently, the Agronomic Institute of Iași diversified its educational offer by establishing three new faculties, namely: the Faculty of Horticulture, the Faculty of Animal Husbandry (HCM no. 1056 of October 2, 1951) and the Faculty of Veterinary Medicine (HCM no. 428 / 23.05.1961).

By H.G. 812/1993, the Agronomic Institute of Iași becomes the "Ion Ionescu de la Brad" Agronomic University of Iași, and starting with 2001, the official name of the educational institution becomes the "Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine from Iași (HG 696 / 24.08.2000).

The establishment and development of USAMV Iași is extensively presented in the monograph "History of agronomic university education in Iași 1912-2012", elaborated on the occasion of the celebration of 100 years of agronomic university education in Iași (Annex 1.9) and on the web page www.uaiasi.ro .

The University of Agricultural Sciences and Veterinary Medicine of Iași (USAMV Iași) is a public higher education institution with legal personality, having its own patrimony, which operates on the basis of university autonomy, according to the University Charter (Annex I.10), in accordance with legislation national law in force.

Criterion A.1. The administrative, managerial institutional structures and the financial resources

Standard A.1.1. The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies.

The existence of regulations, procedures and other specific documents for the organization of doctoral studies according to the legal provisions was analyzed.

Performance Indicator A.1.1.1. The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:

a) the internal regulations of the Doctoral School;

At the level of IOSUD / doctoral school there are internal regulations of the administrative structures (Institutional Regulation for the organization and conduct of doctoral studies, regulations of doctoral schools): Institutional Regulation for the organization and conduct of doctoral studies (Annex II.03), adopted by The decision of the USAMV Iași Senate on 15.09.2011, was updated and completed by the Senate Decisions of 27.06.2012, 12.09.2013, 29.09.2014, 24.10.2018 and 20.01.2021, being available for consultation on the USAMV Iași website (https://www.uaiasi.ro/ro/files/doctorat/documente/2021/Regulament-IOSUD_2021.pdf).

The Regulation of the Doctoral School of Engineering Sciences (Annex II.04) was approved by the USAMV Iași Senate on 28.08.2016 and amended in the meeting of 24.10.2018, being available for consultation on the USAMV Iași website (https://www.uaiasi.ro/ro/files/doctorat/documente/2019/Regulament_SD_SI_2019.pdf).

b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;

Within IOSUD, the process of establishing and electing the management structures and functions is carried out in accordance with the Regulation on the organization and conduct of elections in the management structures and functions of IOSUD from USAMV Iași (Annex II.55); Methodology for organizing and conducting elections for management structures and functions in USAMV Iași, mandate 2020-2024 (Annex II.56); Election procedure, mandate 2020 - 2024 (Annex II.57). All these documents that regulate the conduct of the elections were approved in the meeting of the USAMV Iași Senate on October 24. 2019 and can be consulted on the USAMV Iași website (https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/alegeri_2020.html).

The Regulations and Methodology regulate the legal framework of these elections. Section IV of the Regulation describes the particularities of the elections in the structures and management functions of IOSUD: CSUD (Art. 14) and CSD (Art. 15). Within the Election Methodology, Art. 62-80 regulates the organization of elections at the level of doctoral schools, and art. 81-89 - Election of CSUD members.

The public competition for the position of CSUD director took place on the basis of a specific Methodology and Procedure (Annex II.61; Annex II.62), approved in the Senate meeting of 11.05.2020. The vacant CSUD director position was published in the M.O. 103, part III, from 31.01.2020. The announcement regarding the competition and the calendar of the competition (Annex II.63), as well as the result of the competition (Annex II.64) are published on the USAMV Iași website (https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/alegeri_2020.html).

The candidatures for the positions of member in the Doctoral School Council and CSUD (Annex II.58) and the election results (Annex II.59; Annex II.60) are published on the web (https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/alegeri-2020_candidaturi-CSUD.html; https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_conducere_IOSUD.html).

The director of SDSI was appointed by Decision of the Rector of USAMV Iași (Annex II.60b).

c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);

The general framework for organizing and conducting doctoral studies (admission of doctoral students, completion of doctoral studies; structure and duration of studies; content and completion of doctoral programs) at USAMV Iași is regulated by the Institutional Regulation for organizing and conducting doctoral programs. doctoral studies (Annex II.03), as follows: Selection, admission of doctoral students and employment in doctoral programs (Chapter VII); Structure and duration of doctoral studies (Chapter VIII); Content and completion of doctoral study programs (Chapter XI).

The way of organizing the didactic activity for the doctoral education is described in a specific procedure (UAIASI.POB.03) (pg. 150 in Annex II.46).

Admission is made by the Admissions Commission, in accordance with the law, on the basis of a competition, according to the specific regulations and norms developed by CSUD and USAMV Senate Iași: Specific norms regarding admission to doctoral studies (Annex II.65), Admission Regulations for doctoral studies (Annex II.66); Methodology for conducting admission to USAMV Iași (Annex II.67: table 1-pg. 3; section F, pg. 14-15); Methodology for admitting foreign citizens to university studies (Annex II.68; Annex II.68b).

All these documents, together with the Admission Calendar and other relevant information, are published on the USAMV Iași website (<https://www.uaiasi.ro/admitere/doctorat.php>; Annex II.69) and on the CSUD notice board with at least six months before application.

The number of places allocated for each doctoral supervisor is established on the basis of the Procedure for conducting the competition between doctoral schools for the distribution of doctoral grants - UAIASI code. POB. 32 (Annex II.10). In applying this procedure, the observance of the principle of the demand / supply relationship, regulated by competitiveness criteria, is taken into account; the request is formulated by the doctoral schools, and the offer is presented by IOSUD, based on the distribution of doctoral places received from MEN.

The registration of doctoral students is done by the Decision of the Rector of USAMV Iași (Annex II.25).

Completion of doctoral studies is carried out according to chap. XI (Art. 50-63) of the

Institutional Regulation for the organization and development of doctoral university study programs (Annex II.03), chap. VII (Art. 42-53) of the SDSI Regulation (Annex II.04), of the Norms regarding the elaboration and drafting of the doctoral thesis (Annex II.18) and of the Procedure regarding and defense of the doctoral theses (Annex II.20; https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat_procedura.html).

d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;

The recognition of the quality of doctoral supervisor, the activity of doctoral supervisors, their status, the way in which they are evaluated, as well as their rights and obligations are regulated in Art. 3h, 19-25) of the Institutional Regulation for organizing and carrying out doctoral studies (Annex II.03), as well as in Art. 10-13 of the SDSI Regulation (Annex II.04).

The recognition of the quality of doctoral supervisor and of the equivalence of the doctorate obtained in university institutes accredited abroad is made according to the Methodology regarding the automatic recognition of the quality of doctoral supervisor (Annex II.70), respectively the Methodology regarding the recognition of doctoral degree and doctoral degree in science or in a professional field obtained abroad (Annex II.71).

e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;

IOSUD / CSUD / CSD management structures have operated regularly within IOSUD. The functionality of these management structures is demonstrated by the agendas of the CSUD and CSD meetings containing the debated documents (Annex II.72; Annex II.72b) and their resolution, the signature of the participants confirming the participation and approval of the resolution on the debated documents.

f) the contract for doctoral studies;

The rights and obligations of doctoral students, doctoral supervisors, as well as IOSUD-USAMV Iași, through the doctoral school, are established by the doctoral studies contract (Annex II.16).

g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.

The proposals regarding the doctoral study programs, as well as the composition of the guiding commissions are analyzed at the beginning of each academic year, in a working meeting of the Doctoral School Council, convened (Annex II.72; Annex II.72b) and chaired by the CSUD director, in which the SDSI director participates, as well as the affiliated doctoral supervisors.

At the level of USAMV Iași Faculties, there are Development Strategies and annual operational plans (<https://www.uaiasi.ro/agricultura/documente/ro>) that have direct specifications for the third cycle of doctoral training.

In the process of analysis and approval of the proposals on the topic of doctoral study programs, the following aspects are taken into account (Art. 19 (2) in the SDSI Regulation -Annex II.04): "the curriculum of the doctoral study program of SDSI must either at the level of similar

top institutions in the field; research topics to be relevant at national / international level; the methodology of their approach must be made to international standards; the result of doctoral study programs must enter the international circuit, both in terms of visibility and especially in terms of impact”.

The existence of the documents submitted for Indicator A.1.1.1 is confirmed

Recommendations: -

The indicator is fulfilled.

Performance Indicator A.1.1.2. The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.

(a) The Regulation of the Doctoral School of Engineering Sciences (Annex II.04) includes in Art. 10 membership of the doctoral school. Similar references are present in the Institutional Regulation for the organization and development of doctoral studies, Chap. VI. (Annex II.03). The quality of doctoral supervisor at SDSI is granted, by order of MEN, at the proposal of CNATDCU for granting the habilitation certificate, in accordance with the standards and procedures developed by MEN. The recognition of the quality of doctoral supervisor obtained in accredited institutions of higher education from other states is regulated by a specific methodology (Annex II.70). Withdrawal of SDSI affiliation can be done at the request of the doctoral supervisor (voluntary withdrawal) or can be proposed motivated by the SDSI Council, respectively by the Faculty Council (Faculty Councils), according to the specific procedure (Annex II.73).

(b) According to Art. 10-11 of the Institutional Regulation for the organization and development of doctoral studies (Annex II.03), the opportunity to organize a doctoral training program in the field of Agronomy, as well as its structure and content are at the discretion of the Doctoral School of Engineering Sciences (SDSI). In accordance with Art. 1 of the Regulations of the Doctoral School of Engineering Sciences (SDSI) (Annex II.04), doctoral studies organized in the field of Agronomy aim to develop knowledge through original scientific research, in order to acquire scientific research skills and skills to use knowledge, both for a research career and for the wider labor market. The SDSI Regulation (Annex II.04) contains clear provisions (Art. 1; Art. 19; Art. 28-32) regarding the structure and content of the training program based on advanced university studies and the decision-making mechanism in this regard.

(c) According to Art. 40 (5) of the SDSI Regulation (Annex II.04), and Art. 5 (m, n) of the Study Contract (Annex II.16), the doctoral student has the right to request the Doctoral School Council / the university management changes the doctoral supervisor (in the same field) if he is unavailable, does not comply with the clauses of the study contract, has lost his quality of doctoral supervisor, in case of his death or in other situations provided by law. On the other hand, according to Art. 13 (3g, h) of the Doctoral School Regulations (Annex II.04) the doctoral supervisor has the right to refuse the guidance of a doctoral student in the conditions in which he is involuntarily placed in a conflict of interests. and to request the Doctoral School Council to

terminate the guidance relationship of a doctoral student. The resolution of the conflicts between the doctoral student and the doctoral school, between the doctoral student and the doctoral supervisor or between the doctoral supervisor and the doctoral school is the competence of the Council for Doctoral University Studies (CSUD) (Art. 5 (8m) in Annex II.03) based on a specific procedure (Annex II.74).

(d) The conditions under which the doctoral program may be interrupted / extended are clearly regulated by the SDSI Regulation (Annex II.04) - Art. 3 (3, 6, 7, 8), Art. 26 (5), Art. 40 (3), as well as by the Contract for doctoral studies (Annex II.16) - Art. 5 (k, l).

(e) According to the SDSI Regulation (Annex II.04), the Doctoral School of Engineering Sciences promotes transparent activities to combat fraud in scientific research, including plagiarism, by implementing appropriate methods of identifying, preventing and sanctioning them (Art. 6- d). Respecting the scientific, professional and university ethics is an explicit criterion for continuous and final evaluation of the doctoral student's activity (Art. 58-2). The regulation of all aspects related to the prevention of fraud in scientific research, including plagiarism, as well as the relations between all members of the academic community is made at IOSUB-USAMV Iasi through specific codes and procedures: Code of Ethics and University Ethics (Annex II.07) , Procedure for the functioning of the University Ethics Commission - UAIASI.POM.02 (pg. 17 in Annex II.46), Code of Student Rights and Obligations (Annex II.75), Code of Ethics in Scientific Research (Annex II.76) ; Procedure for submitting and defending doctoral theses (Annex II.20).

(f) According to Art. 36 (g, h) of the Doctoral School Regulations (Annex II.04), as well as Art. 5 (5d) of the Study Contract (Annex II.16), the doctoral student has the right to benefit from logistics, the documentation centers, libraries and equipment of USAMV Iași for its preparation, for the elaboration of the research project, of the research reports and of the doctoral thesis, as well as to be included, with the agreement of the doctoral supervisor, in research projects carried out in USAMV Iași. Annex II.77 presents the situation of participation of doctoral students / graduates of doctoral studies / in the field of Agronomy, as members in the research teams of contracts / research grants carried out within USAMV Iași, during 2016-2020.

(g) In accordance with Art. 37 (a) of the IOSUD-USAMV Iași Regulation (Annex II.03), during the cycle of doctoral studies, the doctoral student has the obligation to carry out the activities provided in the individual plan of doctoral studies , in accordance with the provisions of the Study Contract (Annex II.16). Participation in these activities is included as a minimum performance requirement in the Discipline Sheet (Annex II.78). The doctoral student undertakes to respect the schedule by signing the study contract (Art. 5 (6) in Annex II.16). For the general subjects of the first semester, the schedule is established at the level of the Doctoral School (Annex II.79), and for the specialized disciplines the schedule of activities is established together with the doctoral supervisor, with the approval of the Doctoral School and CSUD approval, as an annex to discipline sheet (Annex II.78).

It is found that the Doctoral School Regulations include the documents submitted, and they are in accordance with the requirements for Indicator A.1.1.2.

Recommendations: -

The indicator is fulfilled.

Standard A.1.2. The IOSUD has the logistical resources necessary to carry out the doctoral studies' mission

Performance Indicator A.1.2.1. The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.

IOSUD has and uses two computer systems to record doctoral students and their academic background:

1. RMU - UNIC Matriculation Register - contains the records of doctoral students starting from 2015-2016, with information regarding personal data, schooling (promotion, expulsion, interruption of studies, extension) scholarships, completion of studies and study documents issued (series and registration number) etc. (Annex II.80).
2. UMS-University Management System - contains the record of students -doctoral students starting with the academic year 2009/2010, with information regarding personal data, school situation, financial situation, etc. (Annex II.80).

The situation of doctoral students is permanently updated at the level of the doctoral service and presented to the faculties, corresponding to the doctoral field.

It confirms the existence and efficient application of adequate information systems for the record of doctoral students and their academic path according to the requirements of indicator A. 1.2.1.

Recommendations: -

The indicator is fulfilled.

Performance Indicator A.1.2.2. The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.

The verification of the similarity of the doctoral theses is done, starting with 2016, on the Sistemantiplagiat.ro platform (Annex II.81). The access of doctoral students to this system is made on the basis of a written request, with the approval of the doctoral supervisor, approved by the Doctoral School Council. The person appointed by CSUD for the verification of doctoral theses in the anti-plagiarism system notes on each thesis, under signature, the similarity coefficients (CS) and issues a summary table with the results of the verifications. In order to be accepted, the verified theses must not exceed the values of 15% (CS 1), respectively 10% (CS 2). Annex II.82 presents the results of the anti-plagiarism checks of the doctoral theses defended in the period 2016-2020, for the field of Agronomy. The values of the similarity coefficients had values well below the maximum limits allowed by the standards, in all cases analyzed, thus respecting the legal provisions.

Within IOSUD / SDSI there are computer programs and there is evidence of their use to verify the percentage of similarity in all doctoral theses according to the requirements of indicator A.1.2.2.

Recommendations: -

The indicator is fulfilled.

Standard A.1.3. The IOSUD makes sure that financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented through additional funding besides governmental funding.

Performance Indicator A.1.3.1. Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.

All 10 PhD supervisors coordinated as project director / project manager. In the period 2016-2020, the PhD supervisors in the field of Agronomy (USAMV Iași) obtained, as directors, a number of 13 research or institutional development / human resources grants. Of these, a number of 2 grants are in progress / implementation at the time of submission of the self-assessment file (1 - SOP IEC, POC 2014-2020; 1- Human resources) (Annex II.83).

During the same period, a number of 13 PhD students in the field of Agronomy (27.6% of the number of PhD students existing at the time of evaluation) were involved, as members of the research team, in 19 research / institutional development grants // human resources / within USAMV Iași (Annex II.77).

There are 2 grants in progress (POS CCE, POC 2014-2020 (SMIS 2014+) and AGROSTUDIS-AG 59 / SGU / NC / I / 24.11.2017) and 13 contracts developed in the last 5 years. The grants address issues relevant to the field of Agronomy (Establishment and implementation of partnerships for knowledge transfer between the Research Institute for Agriculture and Environment Iasi and the agricultural economic environment, Complex, integrated system for technological optimization and superior capitalization of wine by-products, Behavior of corn hybrids cultivated in the conditions of the Iasi Didactic Resort, etc.) and also involved doctoral students.

It is found that the requirements for indicator A.1.3.1 are met and the evidence of this is presented in the report and annexes.

Recommendations: -

The indicator is fulfilled.

Performance Indicator A.1.3.2. The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.

In the period 2016-2020, a number of 13 PhD students in the field of Agronomy (27.6% of the number of PhD students existing at the time of evaluation) were involved, as members of the research team, in 19 research / institutional development grants // human resources / carried out within USAMV Iași, being remunerated for the activity carried out (Annex II.77). During the same period, a number of 2 PhD students in the field of Agronomy (4.2% of the number of PhD students existing at the time of evaluation) performed mobility within the ERASMUS program, as follows: 1 PhD student-two internships of 5 and 7 months respectively ; 1 doctoral student - an internship of 4.5 months (Annex II.84). Also, two students enrolled for a fee (Annex II.25, pages 33, 40) supported their doctoral studies with their own funds or were funded by research or economic units (Annex II.25, pages 33, 40). Thus, the proportion of doctoral students who benefit for a minimum of six months from sources of funding other than government funding is higher than 20%.

The reported data are confirmed according to the annexes (Annex II.77), (Annex II.84).

Recommendations: -

The indicator is fulfilled.

*Performance Indicator *A.1.3.3 At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).*

At the level of the Doctoral School of Engineering Sciences (SDSI), the share of expenses used for the professional training of doctoral students (participation in conferences, summer schools, courses, internships abroad, publication of specialized articles or other specific forms of dissemination, etc.), reported to the budget allocation, in the period 2016-2020, it was between 15.6% (2016) and 22.2% (2017) (Annex II.85).

*According to the financial data, the requirements of the Indicator * A.1.3.3 are met.*

Recommendations: -

The indicator is fulfilled.

Criterion A.2. Research infrastructure

Standard A.2.1. The IOSUD has a modern research infrastructure to support the conduct of doctoral studies' specific activities.

The material basis of IOSUD / Doctoral School within the research centers and laboratories, Resorts and teaching farms is analyzed based on the reported documents, discussions with the staff involved and the field visit.

Performance Indicator A.2.1.1. The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.

The Doctoral School of Engineering Sciences, through IOSUD-USAMV, has the appropriate material base for carrying out doctoral studies, top endowments, special equipment, software, in accordance with the mission and objectives assumed.

USAMV Iași has a Center for data and applied information communications (CCDIA) through which the hardware and software resources within the university are managed and exploited and a Center for Advanced 3D Visualization. Within the Advanced Visualization Center (https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/1_3D.html), 3D objects and scenarios specific to the activity profile and the general educational profile were developed.

Within the doctoral field of Agronomy, the leading PhD teachers and doctoral students carry out their scientific research activity in research centers and laboratories equipped with high-performance equipment in the laboratories and research centers of the faculties, greenhouses and research stations of USAMV Iași. The research centers and laboratories are presented in the Annexes (Annex II.11), (Annex II.12), (Annex II.29).

Within USAMV Iași there are five computer laboratories equipped with modern computers containing the corresponding software programs (Annex II.13). It is possible to access the docotrans in the field of AGRONOMY in order to analyze and interpret the data obtained in the research.

After 2016, equipment and consumables were purchased with funds from both budget allocations and own revenues of the faculties or research contracts, which completed the existing material base and allowed the development of specific expressions of the doctoral theses in the faculty. The list of research equipment and software for the disciplines in the field of Agronomy purchased in the last five years, amounting to a total inventory of 5092876.43 lei, is attached (Annex II.86).

For the documentation of doctoral students, permanent access is provided to the USAMV Iași Library (Annex II.87; Annex II.88b), as well as to the libraries of the faculties and

doctoral supervisors that are made available to the coordinated doctoral students. The USAMV Iași Library has a rich collection of books and scientific journals (Annex II.88; Annex II.88b).

The USAMV Iași Library provides a large number of subscriptions to Romanian and foreign publications and periodicals (Annex II.88). During 2020, the Library purchased 205 books (worth 21,496.34 lei); 284 Romanian magazines (worth 5,148.30 lei); 250 foreign magazines (worth 41,158.14 lei) etc. (Annex II.88b).

The annual bibliographies of the documents entered in the Library, between the years 2006-2020, are available at <http://www.uaiasi.ro/biblioteca/>.

Through the services of the USAMV Iași Library, PhD students in the field of Agronomy have free access to a number of 13 international databases (http://www.uaiasi.ro/biblioteca/index.php / ro / bd_acces-liber). Also, doctoral students have free access, based on account and password, to a number of 6 international databases (http://www.uaiasi.ro/biblioteca/ index.php / ro / bd_Anelis-plus).

The Library's databases, including virtual libraries in the country and abroad (Annex II.30), can be accessed by doctoral students from anywhere, free of charge, both through free access (http://www.uaiasi.ro/biblioteca /index.php/ro/bd_acces-liber), as well as based on account and password, (http://www.uaiasi.ro/biblioteca/index.php/ro/bd_Anelis-plus).

The main research facilities operating within USAMV Iași are made public by posting on the university's website:

(https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/4_infrastructura-cercetare.html).

The research infrastructure presented complies with the standards necessary for the activity of doctoral students. In the last 5 years, purchases of laboratory furniture, computers, apparatus and equipment have been made. PhD students have access to IOSUD libraries and international databases.

Recommendations: -

The indicator is fulfilled.

Criterion A.3. Quality of Human Resources

Standard A.3.1. At the level of each domain there are sufficient qualified staff to ensure the conduct of doctoral study program.

For the field of Agronomy, the activity of the doctoral supervisors, the degree of fulfillment of the minimum CNATDCU standards, the international visibility of the teachers are analyzed.

Performance Indicator A.3.1.1. Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.

Within the doctoral field of Agronomy (SDSI, USAMV Iași) in the period subject to evaluation (2016-2020) a total of 10 doctoral supervisors were active who obtained this quality in accordance with the legal provisions. All the 10 doctoral supervisors (Prof. Dr. Gerard JIȚĂREANU, Prof. Dr. Costica AILINCĂI, Prof. Dr. Daniel BUCUR, Prof. Dr. Eugen ULEA, Prof. Dr. Teodor ROBU, Prof. Dr. Doina Carmenica JIȚĂREANU, Prof. Dr. Ioan ȚENU, Prof. Dr. Vasile VÎNTU, Prof. Dr. Costel SAMUIL, Prof. Dr. Culiță SÎRBU) are affiliated to SDSI at the time of the internal evaluation report (Annex II.22; Annex II.22b; Annex II.23; Annex II.40).

All PhD supervisors currently affiliated to the Agronomy field meet all the minimum CNATDCU standards, necessary and mandatory for obtaining the qualification certificate, in force at the time of the evaluation, achieving a score between 1602.4 and 4328.5 points, compared to 420 points the minimum value according to order 6129/2016 (Annex II.38; Annex II.39).

All PhD supervisors (100%) in the field of Agronomy meet CNATDCU standards.

Recommendations: -

The indicator is fulfilled.

Performance Indicator *A.3.1.2. At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.

All 10 PhD supervisors in the field of Agronomy, SDSI (100%), are holders within IOSUD-USAMV Iași (Annex II.22; Annex II.22b).

The requirements of indicator A.3.1.2 are met, respectively 100% of the doctoral supervisors are holders with employment contract for an indefinite period within IOSUD.

Recommendations: -

The indicator is fulfilled.

Performance Indicator A.3.1.3. The study subjects in the education program based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified doctoral thesis advisors, professors / CS I or lecturer / CS II, with proved expertise in the field of the study subjects they teach, or other specialists in the field who meet the standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.

The disciplines in the training program based on advanced university studies related to the field of Agronomy (List of disciplines: Annex II.41; Worksheets: Annex II.78) are supported by teachers or researchers who have the quality of doctoral supervisor / ability, professor (Annex II.22; Annex II.22b).

All doctoral supervisors affiliated to the field of Agronomy, SDSI, USAMV Iași, have a rich expertise in teaching the disciplines included in the curricula of doctoral studies, proven by the skills acquired, research fields addressed, research grants conducted, books and scientific articles published, etc., as shown in the attached documents: list of publications (Annex II.35); representative publications (Annex II.36; Annex II.37); self-assessment sheets of compliance with national standards (Annex II.38); synthesis standards (Annex II.39); CV (Annex II.40); expertise in the field of Agronomy (Annex II.41).

The analysis of the documents confirms the fulfillment of the requirements of the indicator A.3.1.3.

Recommendations: -

The indicator is fulfilled.

*Performance Indicator *A.3.1.4. The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs does not exceed 20%.*

Of the ten doctoral supervisors in the field of Agronomy, one (10%) coordinates at the same time more than 8 (but not more than 12) doctoral students currently undergoing doctoral studies (Annex II.89).

A number of 9 doctoral supervisors have in coordination between 1 and 8 doctoral students. A single PhD supervisor (10%) coordinates 12 PhD students. Given that this represents 10%, we consider the indicator fulfilled.

Recommendations: We will insist on the completion of research activities and public defense of doctoral theses in time and also on attracting new doctoral supervisors in the field to respond to requests from some candidates to pursue doctoral studies.

The indicator is fulfilled.

Standard A.3.2. The Doctoral advisors within the domain are carrying out a scientific activity visible at international level.

The scientific production of doctoral supervisors and their international visibility are analyzed.

Performance Indicator A.3.2.1. At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science-or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research -development -innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.

All 10 PhD supervisors (100%) currently affiliated to the field of Agronomy within SDSI have published at least 5 articles in indexed publications Web of Science with impact factor (Annex II.37; Annex II.39; Annex II.42) , which includes international contributions that reveal a progress in scientific research - development - innovation for the field of Agronomy. 5 of the representative works in this category are attached (Annex II.37; Annex II.42).

The international recognition of doctoral supervisors is also proven by (Annex II.42): membership in the scientific committees of international publications and conferences (5 doctoral supervisors); membership in the boards of international professional associations (1 doctoral supervisor); membership in international professional scientific associations (7 PhD supervisors); the quality of reviewer of articles for international scientific publications (4 doctoral supervisors); number of citations in ISI indexed journals: on average - 62.6 / lead. doct., min. 4, max. 145; Hirsh index (web of science): on average - 4.8 / lead. doct., min. 1, max. 9.

The reported data are compliant, meeting the requirements of indicator A.3.2.1. All PhD supervisors (100%) have reported at least 5 WoS indexed articles with Impact Factor, and have international visibility, are members of the scientific committees of international publications and conferences.

Recommendations: -

The indicator is fulfilled.



*Performance Indicator *A.3.2.2. At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years.*

The activity of doctoral supervisors from 2016-2020 is a significant one compared to the CNATDCU minimum standards. All 10 PhD supervisors (100%) currently affiliated to the field of Agronomy within SDSI are scientifically active, obtaining based on scientific results from the last 5 years over 25% (min. 144.1%, max. 474.5 %) of the score required by the minimum standards CNATDCU in force at the date of evaluation, necessary and mandatory for obtaining the certificate of qualification (according to Order 6129/2016) (Annex II.38; Annex II.39).

All doctoral supervisors (100%) affiliated to the field of doctoral studies Agronomy, have achieved at least 25% of the score required by the minimum standards CNATDCU in force at the date of evaluation.

Recommendations:-

The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

For the field of Agronomy within the Doctoral School of Engineering and Management of Plant and Animal Resources, the correct and complete information regarding the doctoral studies program is provided to the candidates for this program, to the university community and to all those interested.

It is ensured the publication on the internet of all the necessary information regarding the doctoral university study program, such as: the doctoral school regulations; information on the content of doctoral study programs; the model of the framework contract for doctoral studies; information on doctoral supervisors; information on doctoral theses, respectively elaboration standards, procedures and criteria for their evaluation; the summaries of the doctoral theses to be defended publicly, as well as the date, time and location related to the public defenses, at least 20 days before their defense; the addresses to which the completed doctoral theses can be accessed, published on a site administered by MEN; information on the process of obtaining the authorization certificate.

Criterion B.1. The number, quality and diversity of candidates enrolled for the admission contest

Standard B.1.1. The institution organizing doctoral studies has the capacity to attract candidates from outside the higher education institution or a number of candidates exceeding the number of seats available.

Graduates of master's degree programs from other universities, both in the country and abroad, also participate in the competition for admission to doctoral studies organized by IOSUD.

Performance Indicator*B.1.1.1. The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.

The number of candidates exceeded the number of places budgeted in two years (2018, 2020) of the analyzed period and was equal to the number of places budgeted in the other three years (2016, 2017, 2019), the ratio between the number of candidates in the last five years (2016 -2020), and the number of places financed from the budget put up for competition within the field of doctoral studies Agronomy being, on average, 1.04 (Annex II.90), compared to a value > 1, 2 according to ARACIS standards.

The ratio between the number of master's degree graduates of other higher education institutions in the country or abroad who have registered for the competition for admission to

doctoral studies in the last 5 years (2016-2020) and the number of places financed from the budget of state put out to tender was, on average, 0.28 (Annex II.90), compared to a value of min. 0.2, according to ARACIS standards.

The ratio between the number of candidates and the number of budgeted places was on average 1.04, and the ratio between the number of master's degree graduates of other higher education institutions in the country or abroad who entered the university entrance exam doctorate in the period 2016-2020 and the number of places financed from the state budget put up for competition was, on average, 0.28.

Recommendations: Given a significant approach to ARACIS standards in terms of the ratio between the number of candidates in the last five years and the number of places financed from the state budget put up for competition in the field of doctoral studies, it is recommended to attract students to the the third cycle of studies by identifying research topics of interest including for the agricultural economic environment, identifying alternative sources of financial support for research to motivate candidates.

The indicator is fulfilled.

Standard B.1.2 Candidates admitted to doctoral studies demonstrate academic, research and professional performance.

Considering the university autonomy, IOSUD, legally represented by USAMV Iași, organizes a competition for the selection and admission of doctoral students, respecting the legislation in force that provides the right to study of every citizen. At the same time, IOSUD and the SDSI doctoral school give equal opportunities to all young people, regardless of the environment they come from, race, sex or religious options, etc.

Performance Indicator *B.1.2.1. Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.

Admission is made by the Admission Commission, under the law, on the basis of a competition, within the schooling capacity approved by ARACIS and decided by government decision, according to specific regulations and norms developed by the Council for Doctoral Studies and USAMV Senate Iași : Specific norms regarding the admission to doctoral university studies (Annex II.65), Regulation for admission to doctoral university studies (Annex II.66); Methodology for conducting admission to USAMV Iași (Annex II.67: table 1-pg. 3; section F, pg. 14-15); Methodology for admitting foreign citizens to university studies (Annex II.68; Annex II.68b).

Only graduates with a master's degree or equivalent, from the country or abroad, have the right to participate in the procedure for admission to doctoral university studies, according to art. 152 paragraph (2) of Law no. 1/2011. The specific knowledge of the field of doctoral studies

Agronomy and the research topic of the candidate are verified through the admission contest. The admission criteria, including those for evaluation, are set out in detail and prior to the organization of the admission competition (Annex II.69). The doctoral school ensures the transparency of the selection and admission procedures for doctoral studies and guarantees access to information through various and accessible means, including through the website: <https://www.uaiasi.ro/admitere/doctorat.php>, providing the necessary information to the community university and the public (Annex II.69).

The admission procedure to doctoral study programme is based on requested selection criteria.

Recommendations:-

The indicator is fulfilled.

Performance Indicator B.1.2.2. The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission does not exceed 30%.

The expulsion rate (including by waiver / dropout) of PhD students in the field of Agronomy, enrolled in the period 2015-2020, was between 7.14% and 30% (average - 14.8%) (Annex II.91) .

The expulsion rate registered in the field is on average 14.8%, within the provisions of ARACIS.

Recommendations:-

The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

Standard B.2.1. The training program based on advanced university studies is appropriate to improve doctoral students' research skills and to strengthen ethical behavior in science.

The completion of the training program based on advanced university studies lasts for a period of 3 months and leads to the granting of a number of 30 transferable credits for doctoral students in doctoral fields within SDSI (Annex II.16). The training program based on advanced university studies includes disciplines established by the training program and specialized disciplines provided in the annexes of the curriculum. The evaluation of the courses from the advanced university training plan is done with the grades "Very good", "Good", "Satisfactory" and "Unsatisfactory".

Performance Indicator B.2.1.1. The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.

The courses in the curriculum of the doctoral schools within IOSUD include disciplines with reference to the research methodology, statistical data processing, elaboration of the doctoral thesis, ethics and academic integrity. All these disciplines, provided in the training program based on advanced university studies, are relevant for the training of doctoral students in scientific research.

The training program for the first year of doctoral studies for the field of Agronomy includes three compulsory disciplines, two specialized disciplines, and a Scientific Research Project (Annex II.16; Annex II.78), all of which are relevant for the preparation in the scientific research of doctoral students. The compulsory subjects are represented by: Modern research methods, Career Management and Ethics and academic integrity (the latter was introduced in the curriculum starting with the academic year 2018-2019) (Annex II.16; Annex II.78). The discipline Modern research methods is intended for the in-depth study of the methodology of research and / or statistical processing of experimental data (Annex II.16; Annex II.78). The specialized disciplines are chosen by the doctoral supervisor, in consultation with the doctoral student and the guidance committee, from a package of three disciplines relevant to the topic of the doctoral thesis (Annex II.16; Annex II.78). To these are added the individual training program of the doctoral student, which includes the research objectives and the reporting of the results obtained (Annex II.16 - Annexes to study contracts).

The training program based on advanced university studies includes disciplines relevant to the training in scientific research of doctoral students of which they are part: Modern research methods and Ethics and academic integrity.

Recommendations:-

The indicator is fulfilled.

Performance Indicator B.2.1.2. At least one discipline is dedicated to Ethics and Intellectual Property in scientific research or there are well-defined topics on these subjects within a discipline taught in the doctoral program.

Starting with the academic year 2018-2019, in the training program of the first year of doctoral studies for the field of Agronomy, Ethics and academic integrity were introduced - as a compulsory subject (Annex II.16; Annex II.78). Prior to this year, the topic related to university ethics and deontology was included in the discipline Career Management (Annex II.78).

The training program based on advanced university studies includes the discipline Ethics and academic integrity.

Recommendations:-

The indicator is fulfilled.

Performance Indicator B.2.1.3. The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes”, specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities

Through the training program based on advanced university studies that takes place over a period of 3 months, doctoral students obtain 30 transferable credits, and the individual scientific research program doctoral students obtain 150 credits, totaling 180 ECTS. The evaluation of the courses from the advanced university training plan is done with the grades "Very good", "Good", "Satisfactory" and "Unsatisfactory".

The competencies, skills and attitudes that doctoral students must acquire after completing the Training Program are defined in a general sense in Art. 51 of the IOSUD-USAMV Iași Regulation (Annex II.03) and Art. 2 of the SDSI Regulation (Annex II. 04) and are detailed in the Discipline Sheets (Annex II.78). These sheets are endorsed by the Director of the Doctoral School and approved by the Director of the Council for Doctoral Studies (CSUD).

Both the training program based on advanced university studies and the scientific research program are an integral part (as annexes) of the doctoral studies contract (Annex II.16), being undertaken by the doctoral supervisor and the doctoral student, endorsed by to the Doctoral School Council and approved by the Director of the Council for Doctoral Studies (CSUD).

Mechanisms are provided to ensure that the training program, based on advanced university studies, aims at "learning outcomes".

Recommendations:-

The indicator is fulfilled.

Performance Indicator B.2.1.4. All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.

At the level of SDSI-USAMV Iași, Agronomy field, doctoral students benefit from the counseling / guidance of the members of the guidance commissions (composed of the doctoral supervisor and three other specialists) (Annex II.43), during the entire duration of the doctoral training, or whenever necessary (by direct meetings, telephone, e-mail) as well as by regular meetings, during the preparation and when taking the exams, reports and projects included in the Training Program and the Scientific Research Program. The doctoral students also collaborate with the members of the guidance commission in the creation and publication of scientific articles. For example, in Annex II.32, is presented the list of scientific papers (total 76) published by doctoral students who defended their doctorate in the period 2016-2020, jointly with the members of the steering committees.

PhD students benefit throughout the training period from the guidance of a functional guidance committee composed of the doctoral coordinator and three other specialists with research activity in the field.

Recommendations:-

The indicator is fulfilled.

Performance Indicator B.2.1.5. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.

The ratio between the number of doctoral students in the field of Agronomy, in the period 2016-2020 (total 54, cf. Annex II.24), and the number of teachers / researchers who provided guidance (total 42, cf. Annex II.43) was of 1.28:1 (= 54:42).

The ratio recorded for the reporting period was less than 3:1, this indicator being met.

Recommendations:-

The indicator is fulfilled.

Criterion B.3. The results of doctoral studies and procedures for their evaluation.

Standard B.3.1. Doctoral students capitalize on the research through presentations at scientific conferences, scientific publications, technological transfer, patents, products and service orders.

During the evaluated period, the results of the scientific research of the doctoral students in the field of Agronomy were capitalized, depending on their character, through scientific publications, consultancy and specialized assistance, etc. Coordinating teachers and PhD students annually publish results of their own scientific research in articles published in ISI scientific journals (with and without Impact Factor), journals indexed in various international databases (BDI - e.g. CAB International).

The main scientific achievements of the leading PhD teachers in the field of Agronomy are presented in Annexes II.35, II.36 and II.37, and the main scientific achievements of doctoral students in the doctoral fields within SDSI can be found in the annexes (Annex II. 31) and (Annex II. 33). Also, the research results were presented (scientific communications) at domestic and international congresses, conferences and symposia (Annex II. 92).

Performance Indicator B.3.1.1. For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain.

In the period 2016-2020 in the field of doctorate Agronomy, 16 doctoral students defended their theses and obtained the title of doctor (Annex II.17).

The complete list of articles published by doctoral students who have obtained the title of doctor in the field of doctoral studies in Agronomy in the last five is presented in Annex II.31. This list includes a number of 169 scientific articles published by doctoral students, of which 22 ISI articles (7 in journals with impact factor), 119 BDI articles and 28 articles published in other journals (volumes of international and national conferences, etc.).

For each doctoral student who has obtained the title of doctor in the field of doctoral studies in Agronomy in the last five and whose title has been validated by CNATDCU, at least one representative scientific article is mentioned in Annex II.33. All these articles are available, in pdf format, in Annex II.34.

Papers selected for analysis:

1. Petru-Marian Carlescu, Vlad Arsenoiaia, Radu Rosca, Ioan Tenu - *CFD simulation of heat and mass transfer during apricots drying-LWT* - Food Science and Technology, (85) 2017, 479-486.
2. Alexandra Leonte, Constantin Găucă, Simona Pochișcanu, Teodor Robu - *Research regarding „Secuieni method” influence on stalks and fiber yield at monoecious hemp cultivated under climatic conditions of central Moldavia-I.N.C.D.A. FUNDULEA, VOL. LXXXIV, 2016, Electronic ISSN 2067-7758, www.incda-fundulea.ro*
3. Constantin Dragos Motco, Simona Gabriela Ciocan, Daniel Bucur - *The effect of deforestation in the sihastria watershed, Suceava county, on the technical efficiency of the small hydroelectric*

power plant-Scientific Papers. Series E. Land Reclamation, Earth Observation & Surveying, Environmental Engineering. Vol. VII, 2018 Print ISSN 2285-6064, CD-ROM ISSN 2285-6072, Online ISSN 2393-5138, ISSN-L 2285-606

4. Mihaela Covașă, Carmen Doina Jităreanu, Cristina Slabu, Alina Elena Marta, Beatrice Alexandra Modiga - *The Influence of Biostimulants on the Growth and Some Physiological Processes of Three Bean Cultivar*, Bulletin UASVM series Agriculture 76 (1) 2019 Print ISSN 1843-5246; Electronic ISSN 1843-5386 DOI:10.15835/buasvmcn-agr: 2018.0027.

5. Traian Ioan Pomohaci, Anca Elena Calistru, Margareta Naie, Oana Spânu (Mîrzan), Gerard Jităreanu - *The influence of different conventional and conservative tillage systems on qualitative indicators of the seedbed for winter oil seed rap.* E-Lucrări Științifice – vol. 58 (1) 2015, seria Agronomie.

For doctoral students who have obtained a doctorate in the last 5 years, there is at least one article or other contribution. All five articles selected for analysis present significant original contributions to the field of Agronomy, being published together with the supervisor and the research team.

Recommendations: -

The indicator is fulfilled.

Performance Indicator *B.3.1.2. The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.

The PhD students in the field of Agronomy who defended their doctoral thesis in the period 2016-2020 had, in total (Annex II.92), a number of 41 presentations at prestigious international scientific events (18 organized outside Romania and 23 organized in the country) . The ratio between the number of presentations and the number of doctoral students is 2.5 (= 41/16).

The ratio between the number of presentations of doctoral students who completed their doctoral studies in the evaluated period (last 5 years) is 2.5.

Recommendations:-

The indicator is fulfilled.

Standard B.3.2. The Doctoral School engages a significant number of external scientific specialists in the commissions for public defense of doctoral theses in the analyzed domain.

The number of participants' participations in the commissions for public defense of doctoral theses is analyzed.

*Performance Indicator *B.3.2.1. The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.*

For the public defense of doctoral theses, commissions of specialists in the field of Agronomy are appointed (5 members: head of commission, supervisor, 3 specialists, of which at least 2 from outside the university), to evaluate their quality (Annex II.17; Annex II.93).

The Doctoral School of Engineering Sciences (USAMV Iași) appeals to a significant number of external scientific references (22) in the commissions for public defense of doctoral theses in the field of Agronomy. The ratio between the number of internal and external scientific references in the period 2016-2020 was 9/22 (Annex II.17; Annex II.93).

Decisions to appoint commissions for the defense of doctoral theses during the period under review are annexed (Annex II.21). In the period 2016-2020, the number of doctoral theses in the field of Agronomy allocated annually to a certain external referent USAMV Iași, for the same doctoral supervisor, was between 1 and 2 (Annex II.93).

No more than 2 participations / year of a referent in the analysis of theses coordinated by the same doctoral supervisor.

Recommendations: -

The indicator is fulfilled.

*Performance Indicator *B.3.2.2. The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.*

In the period 2016-2020, the ratio between the number of doctoral theses assigned to a certain scientific referent from another higher education institution than the one in which the doctoral thesis was organized (USAMV Iași) and the number of doctoral theses defended in the field of Agronomy was 0.25 (Annex II.93).

The maximum ratio registered between the number of doctoral theses assigned to an external scientific referent and the total number of theses defended in the field of Agronomy was 0.25.

Recommendations: -

The indicator is fulfilled.

Domain C. QUALITY MANAGEMENT

In accordance with the Regulation on quality assurance in USAMV Iași (Annex II.45), one of the constant concerns within the university is to establish a policy of assurance and constant improvement of quality. In achieving the quality standards, USAMV Iași has in view the following priority objectives: strategic planning of the activity of USAMV Iași, including in the field of quality assurance and training of specialists; reviewing educational goals and technologies in order to align them with modern educational standards; improving the provision of resources; diversification of educational pathways according to the needs of the labor market and consumers of educational services; updating, resizing and restructuring educational plans and programs based on the principle of early development.

Regarding the teaching-learning activity, the USAMV Iași quality assurance policy emphasizes focusing the activity on the student. For this, the students are partners in the quality evaluation processes, being represented in the CEAC structures at university, faculties and departments level. The executive activity regarding the quality assurance (elaboration of regulations, procedures, self-evaluation reports, etc.) is carried out in collaboration with the Quality Assurance Department (DAC), which operates in accordance with the legislation in force and based on its own regulation (Annex II.45) and prepares an annual report (Annex II.54).

The quality of the educational process in USAMV Iași is achieved through the annual internal evaluation of the study programs from all forms of education, based on the quality standards recognized at national and international level; external evaluation of study programs and compatibility of the university's educational offer with that of the universities in the EU and not only, from the perspective of the conferred competences, the quality and actuality of the accumulated knowledge, the developed practical skills and / or the competence.

Within USAMV Iași, the Department for Quality Assurance (DQA) carries out its activity, which is part of the executive structure of the university and which has the mission of coordinating and achieving the conformity of the quality management system with the reference standards. DQA carries out the decisions of the Quality Assessment and Assurance Commission within USAMV Iași (Annex II.48) and of the Vice-Rectorate for Quality Assessment and Assurance and carries out current activities related to the elaboration and implementation of quality assurance procedures at university level. DQA is subordinated to the Rector of USAMV Iași, as the person directly responsible for quality management and has functional and collaboration relations with the academic and administrative structures of the University.

The internal quality assurance system within USAMV Iași leads to the assurance of high quality standards regarding the institutional and managerial capacity for the development of a high-performance higher education.

The use of information produced by the internal quality assurance system contributes to the evaluation of the individual professional performances of the teaching staff for teaching, scientific and research activity, participation in the activities of the department, the academic community, the local community and the economic and social environment and other relevant activities associated with the quality of teacher; to identify the changes that are required in the subject sheets and in the Curriculum, in order to improve the quality in this field.

Criterion C.1. Existence and periodic implementation of the internal quality assurance system

Standard C.1.1. There are an institutional framework and procedures in place and relevant internal quality assurance policies, applied for monitoring the internal quality assurance.

According to the Regulation on quality assurance in USAMV Iași (Annex II.45) and the Procedure for the organization and functioning of the Commission for evaluation and quality assurance-code UAIASI.POM.04. p. 65 in Annex II.46), the Rector of USAMV Iași is directly responsible for the quality management within the university, being the coordinator of the Commission for evaluation and quality assurance (CEAC) (Annex II.48).

Within the management and coordination structures of the quality assurance process at the USAMV Iași level, in addition to teachers who have the quality of doctoral supervisor, there are also a series of specialists from the research and / or production units in the field of Agronomy (Annex II.01; Annex II.50), as well as doctoral students (Annex II.01; Annex II.49; Annex II.50). The managements of the faculties, departments, services and other organizational structures, as well as each teacher, auxiliary or non-teaching staff are personally responsible for ensuring the quality of each activity they carry out.

The internal quality assurance system at the level of doctoral studies in Agronomy is regulated both by regulations and general procedures, valid at institutional level (Regulation on quality assurance in USAMV Iași - Annex II.45; Internal institutional evaluation procedure - code UAIASI.POB.18, pg. 544 in Annex II.46; Organization and functioning procedure of the Commission for quality assessment and assurance - code UAIASI.POM.04, pg. 65 in Annex II.46, as well as by regulations and methodologies specific to doctoral studies. The institutional regulation for the organization and development of doctoral university study programs at IOSUD-USAMV Iași (Annex II.03); Methodology for periodic internal evaluation of doctoral schools (Annex II.05); Methodology for periodic evaluation of the activity of doctoral supervisors (Annex II.09).

According to the documents mentioned above, the purpose of the internal quality assurance system is to identify and certify the degree to which the doctoral program responds to the public interest and ensures measures to increase quality in teaching-learning and scientific research. The quality assurance policy within the Doctoral School of Engineering Sciences is that of applying the principles of performance-oriented management and continuous quality assurance.

The procedures for the internal evaluation of the quality of the doctoral studies program are elaborated by CSUD (Annex II.01), together with the Department of Evaluation and Quality Assurance (DEAC) of USAMV Iași (Annex II.48), based on the minimum criteria established by the Code of doctoral university studies (GD no. 681 of June 29, 2011) and by the Institutional Regulation for organizing and conducting doctoral study programs at IOSUD-USAMV Iași (Annex II.03), and approved by the USAMV Senate Iași.

The policies, strategies and procedures for quality assurance are detailed in Chapter II of the Regulation on quality assurance in USAMV Iași (Annex II.45).

The internal evaluation of the doctoral study programs in Agronomy is initiated at the level of the Council of the Doctoral School of Engineering Sciences and of the Council for Doctoral University Studies (CSUD) (Annex II.01), being carried out by applying the provisions of the Institutional Regulation. development of the doctoral university study programs at IOSUD-USAMV Iași (Annex II.03), of the Methodology for periodic internal evaluation of doctoral schools (Annex II.05) and of the Methodology for periodic evaluation of the activity of doctoral supervisors (Annex II. 09).

Performance Indicator C.1.1.1. The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:

- (a) the scientific work of Doctoral advisors;*
- (b) the infrastructure and logistics necessary to carry out the research activity;*
- (c) the procedures and subsequent rules based on which doctoral studies are organized;*
- d) the scientific activity of doctoral students;*
- e) the training program based on advanced academic studies of doctoral students;*
- f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students*

The quality of the educational process in USAMV Iași is achieved through the annual internal evaluation of curricula from all forms of education, based on quality standards recognized nationally and internationally and the external evaluation of curricula and the compatibility of the university's educational offer with that of the universities in the European Union, and not only, from the perspective of the conferred competences, of the quality and the actuality of the accumulated knowledge, of the developed practical abilities and / or of the attitudes formed by going through each study program.

According to the SDSI Regulation (Annex II.04), the internal evaluation of the quality of the doctoral university study program is performed (Art. 55) by the Doctoral School of Engineering Sciences (SDSI) and the Council for University Doctoral Studies (CSUD), based on procedures developed together with the Quality Assurance Department (DAC) of USAMV Iași, based on the minimum criteria established by the Code of doctoral studies (GD no. 681 of June 29, 2011) and by the Institutional Regulation for organizing and conducting university study programs doctoral degree at IOSUD-USAMV Iași (Annex II.03), and is approved by the USAMV Iași Senate.

The SDSI Regulation (Annex II.04) establishes clear criteria for quality assessment (Art. 54-56 in the SDSI Regulation - Annex II.04), which also refers to the scientific activity of doctoral supervisors and doctoral students (Art. 56 -1g); the infrastructure and logistics necessary for carrying out the research activity (Art. 56-1f); the subsequent procedures and norms on the basis of which the doctoral studies are organized (Art. 54d); the training program based on advanced university studies of doctoral students (Art. 56-1a, b); social and academic support services (Art. 58).

The concrete way of carrying out the periodical internal evaluation process is regulated by the Methodology of periodic internal evaluation of doctoral schools (Annex II.05). The concrete way of carrying out the process of periodic internal evaluation of the activity of doctoral supervisors is detailed in a specific Methodology (Annex II.09).

In accordance with the Methodology for the internal evaluation of doctoral schools (Annex II.05), the Council of the Doctoral School of Engineering Sciences (SDSI) prepares the annual Internal Evaluation Report (eg. Annex II.51; Annex II.52), which includes analyzes regarding the scientific activity of doctoral supervisors and doctoral students, the infrastructure and logistics necessary for conducting research, updating procedures and rules for organizing doctoral studies, etc., as well as recommendations for improving the quality and national and international visibility of doctoral programs. The report prepared by the internal evaluation commission is submitted to CSUD-USAMV Iași.

On the basis of the annual internal evaluation report at the level of the Doctoral School of Engineering Sciences (SDSI), the Council for Doctoral University Studies (CSUD) prepares an annual Activity Report on doctoral university studies (Annex II.53) which includes analyzes to the scientific activity of the doctoral supervisors, to the infrastructure and logistics necessary for the development of the research activity, to the updating of the procedures and norms regarding the organization of the doctoral studies, etc.

The analyzes and conclusions of this report, including recommendations for improving the quality of doctoral studies, are included in the Quality Assessment Report at USAMV prepared by the Department of Quality Assurance (DAC) (Annex II.54), which is presented to the Senate USAMV Iași for approval.

The monitoring of the implementation of the recommendations resulting from these analyzes is performed by the Council for Doctoral Studies.

The Director of SDSI informs the doctoral supervisors about the evaluation criteria, the evaluation results and the recommendations made by the commission and respectively follows the application of these recommendations.

a) the scientific work of Doctoral advisors

The scientific activity of doctoral supervisors is evaluated on the basis of the Methodology for periodic internal evaluation of the activity of doctoral supervisors (Annex II.09). The conduct of evaluation activities is evidenced by annual self-assessment reports of doctoral supervisors (Annex II.38b), to which are attached the self-assessment sheets of compliance with national standards (Annex II.38), and by evaluation reports prepared at higher hierarchical levels. Doctoral School of Engineering Sciences (SDSI) (eg Annex II.51; Annex II.52); Council of Doctoral Studies (CSUD) (Annex II.53); Quality Assurance Department (DAC) (Annex II.54).

b) the infrastructure and logistics necessary to carry out the research activity

The methodology of periodic internal evaluation of doctoral schools (Annex II.05) includes at art. 4 (first paragraph) references to the evaluation and improvement of infrastructure as a tool to achieve the mission of doctoral schools. The results of the evaluation and the recommendations for improving the infrastructure necessary for carrying out the research activity are included in the annual reports of SDSI, CSUD and DAC (Annex II.51; Annex II.52; Annex II.53; Annex II.54).

c) the procedures and subsequent rules based on which doctoral studies are organized

The IOSUD-USAMV Iași Regulation (Annex II.03) and the SDSI Regulation (Annex II.04) include the reference documents on the basis of which the doctoral studies are organized (Art. 8-9, respectively Art. 1). The internal evaluation of SDSI is performed based on the Methodology of internal evaluation of doctoral schools (Annex II.05). The results of the evaluation and the recommendations for improving the infrastructure necessary for carrying out the research activity are included in the periodic reports of SDSI, CSUD and DAC (Annex II.51; Annex II.52; Annex II.53; Annex II.54).

d) the scientific activity of doctoral students

For doctoral students - Agronomy within the Doctoral School of Engineering Sciences, the scientific activity is regulated by the IOSUD Regulation (Chapter XII) (Annex II.03), the SDSI Regulation (Chapter VI) and the Contract for doctoral studies (Annex II .16). The results of the evaluation and the recommendations for improving the infrastructure necessary to carry out the research activity are included in the periodic reports of SDSI, CSUD and DAC.

e) the training program based on advanced academic studies of doctoral students

The initiation, approval, monitoring and evaluation of study programs are carried out according to the provisions of the IOSUD Regulation, chap. XI (Annex II.03), of the SDSI Regulation, chap. V (Annex II.04) and of the Procedure for organizing the didactic activity for postgraduate and doctoral education - UAIASI.POB.03 (Pages 150-164, in the annex Annex II.46). The doctoral studies in the field of Agronomy, within the Doctoral School of Engineering Sciences (SDSI), are carried out according to a matrix established by the Code of doctoral studies (GD 681 of June 28, 2011, published in OJ 551/2011, amended by GD 134 / 2016) and detailed at the level of USAMV Iași through the Doctoral University Studies Program (according to Annex II.16).

The results of the evaluation and the recommendations for the improvement of the study programs are included in the periodic reports of SDSI (Annex II.51; Annex II.52).

f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.

SDSI PhD students in Agronomy are constantly advised and supported in academic activities, as evidenced by their important participation in national and international scientific events (Annex II.92); publication of a large number of scientific articles, including together with the members of the steering committees (Annex II.32); participation in research grants (Annex II.77).

Within USAMV Iași there is a Career Counseling and Guidance Center (https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/10_ccoc-doc.html) which supports the strategy and mission of USAMV Iași in the area of professional training coming to the support of students, both during their studies and after their completion, doctoral students can address the specialists working in the center to solve various problems that may arise during the training period.

Students are also supported by the Student Entrepreneurship Society within USAMV Iași (<https://www.uaiasi.ro/ro/files/regulamente/2020/Regulament-SAS.pdf>) for development of entrepreneurship and their participation in various courses entrepreneurship.

At the level of USAMV Iasi, the Alumni Association from USAMV Iași operates legally (http://ums.uaiasi.ro/ums/do/secure/inregistrare_user), which facilitates the integration of students and graduates in community life and on the labor market.

The doctoral school in which the field of doctoral studies in doctoral agronomy falls is proof of the constant development of the process of evaluation and internal assurance of its quality.

Recommendations: -

The indicator is fulfilled.

Performance Indicator *C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.

PhD students are represented in the Doctoral School Council, in the Council for Doctoral Studies (Annex II.01), as well as in the University Senate (Annex II.49), thus having the opportunity to participate directly in decision-making, by voting, and to address to the management forums any requests and proposals regarding their needs, in order to increase the degree of satisfaction with the doctoral program as a whole, in order to continuously improve the academic and administrative services offered.

Currently, at the level of the Council for Doctoral Studies, a specific procedure for collecting feedback from doctoral students is being finalized, by using a questionnaire to assess the satisfaction of doctoral students, needs analysis, etc. (Annex II.47).

The current problems faced by doctoral students are addressed by them, in a hierarchical way, to the doctoral supervisor, members of the steering committee, secretariat, Doctoral School Council, Council for Doctoral Studies or Rector of the university, being solved operatively, at a level or another, as appropriate.

Recommendations: -

The indicator is fulfilled.

Criterion C.2. Transparency of information and accessibility of learning resources

The Doctoral School of Engineering Sciences within IOSUD offers transparency regarding the doctoral study programs to the candidates for these programs, to the university community and to other interested natural or legal persons.

The doctoral school, with the logistical support of IOSUD, ensures the publication on the internet of all the necessary information regarding the doctoral university study programs, https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat.html, how would be: the doctoral school regulations; information on the content of doctoral study programs; the model of the framework contract for doctoral studies; information on doctoral supervisors; information on doctoral theses, respectively elaboration standards, procedures and criteria for their evaluation; the summaries of the doctoral theses to be defended publicly, as well as the date, time and location related to the public defenses, at least 20 days before their defense; the addresses to which the completed doctoral theses can be accessed, published on a site administered by MEN; information on the process of obtaining the authorization certificate.

Standard C.2.1. Information of interest to doctoral students, future candidates and public interest information is available for electronic format consultation.

Performance Indicator C.2.1.1. The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:

On the USAMV Iași website there is an area dedicated to doctoral studies where candidates and doctoral students find the necessary information, related to: doctoral school regulations, doctoral admission, admission schedule, regulations, content of study programs, doctoral supervisors for each field, conditions elaboration of the doctoral thesis, links for the summaries of the defended doctoral theses, etc.

https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat.html

a) the Doctoral School regulation

https://www.uaiasi.ro/ro/files/doctorat/documente/2021/Regulament-IOSUD_2021.pdf; Anexa II.03 https://www.uaiasi.ro/ro/files/doctorat/documente/2019/Regulament_SD_SI_2019.pdf; Anexa II.04

b) the admission regulation

<http://www.uaiasi.ro/admitere/files/doctorat/04-Regulament-admitere-doctorat.pdf>

<http://www.uaiasi.ro/admitere/index.php>

http://www.uaiasi.ro/admission/files/Admission_guide.pdf

<http://www.uaiasi.ro/admitere/doctorat.php?sectiune=conditii-de-admitere>

c) the doctoral studies contract

https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat_documente.html

d) the study completion regulation including the procedure for the public presentation of the thesis

<https://www.uaiasi.ro/ro/files/doctorat/documente/2021/Metodologie-sustinere-teze-doctorat.pdf>

e) the content of training program based on advanced academic studies

in: Institutional regulation for the organization and functioning of doctoral university study programs at USAMV Iași (https://www.uaiasi.ro/ro/files/doctorat/documente/2021/Regulament-IOSUD_2021.pdf; Anexa II.03),

SDSI Regulation

https://www.uaiasi.ro/ro/files/doctorat/documente/2019/Regulament_SD_SI_2019.pdf; Anexa II.04) and in the Contract for doctoral studies

(https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat_documente.html; Anexa II.16);

f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data

https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat_SDSI.html;

http://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat_contact.html

g) the list of doctoral students within the domain with necessary information (year of registration; advisor)

https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_teze_2021.html

h) information on the standards for developing the doctoral thesis

https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_doctorat_procedura.html

https://www.uaiasi.ro/ro/files/doctorat/documente/2016/Norme_elaborare-redactare-teza-doctorat.pdf

i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation

https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_teze_2021.html

All information is public on the university / IOSUD website

Recommendations: -

The indicator is fulfilled.

Standard C.2.2. The IOSUD/The Doctoral School provides doctoral students with access to the resources needed for conducting doctoral studies.

PhD students in the field of Agronomy - Doctoral School of Engineering Sciences have access to all the necessary resources for carrying out doctoral studies in good conditions. They have free access to platforms with academic databases relevant to the field of study, they have access to existing libraries within USAMV Iasi.

Doctoral students are allowed access to the scientific research laboratories within the institution, in this sense IOSUD has also concluded a series of collaboration agreements with other scientific research and production institutions.

Performance Indicator C.2.2.1. All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.

According to the Contract for doctoral studies, Art. 5 (2c) (Annex II.16), USAMV Iași permanently ensures access to documentation sources, including through the University Library, for all doctoral students. They can access the Library's databases, including virtual libraries in the country and abroad, from anywhere, free of charge, both through free access (http://www.uaiasi.ro/biblioteca/index.php/ro/bd_acces-free), as well as based on account and password, (http://www.uaiasi.ro/biblioteca/index.php/ro/bd_Anelis-plus) (Annex II.30).

Through the services of the USAMV Iași Library, PhD students in the field of Agronomy have free access to a number of 13 international databases, namely (http://www.uaiasi.ro/biblioteca/index.php/ro/bd_acces-liber): The National Center for Biotechnology Information; LIVIVO The Search Portal for Life Sciences; Biodiversity Heritage Library; FAO Glossary of Biotechnology for Food and Agriculture; Kew Bibliographic Databases; PANGAEA; ResearchGATE; Resources; Scientific Tools & Databases / European Commission, Joint Research Center Species +; Springer Nature Experiments; TIB | AV-Portal; World Register of Marine Species; US Pesticides Database.

Also, doctoral students have free access, based on account and password, to a number of 6 international databases (http://www.uaiasi.ro/biblioteca/index.php/ro/bd_Anelis-plus): ScienceDirect Freedom Collection, Elsevier; Web of Science - Core Collection, InCites Journal Citation Reports, Derwent Innovations Index, Clarivate Analytics; De Gruyter ebooks; CAB Abstracts; CAB ebooks; SpringerLink Journals, Springer.

Students' access to information on the platform with free and open databases is ensured.

Recommendations:-

The indicator is fulfilled.

Performance Indicator C.2.2.2. Each doctoral student shall have access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.

At the level of USAMV Iași, starting with 2016, the Sistemantiplagiat.ro platform is implemented (Annex II.81) which allows the verification of the degree of similarity of the scientific achievements of doctoral students, including the doctoral thesis, with other existing scientific papers. The access of doctoral students to this system is made on the basis of a written request, with the approval of the doctoral supervisor, approved by the Doctoral School Council. Annex II.82 presents the results of the anti-plagiarism checks of the doctoral theses defended in the period 2016-2020, for the field of Agronomy.

Confirm the existence and operation of an electronic system for verifying the degree of similarity with other scientific creations.

Recommendations:-

The indicator is fulfilled.

Performance Indicator C.2.2.3. All doctoral students have access to scientific research laboratories or other facilities depending on the specific domain/domains within the Doctoral School, according to internal order procedures.

Permanent access to the research infrastructure within IOSUD-USAMV Iași of all doctoral students is assumed and guaranteed by the Contract for doctoral studies, Art. 5 (2c) (Annex II.16), in accordance with the IOSUD Regulation, Art. 64d (Annex II.03) and the SDSI Regulation, Art. 36g (Annex II.04).

The research centers and laboratories and their endowment with equipment and software, as well as the didactic and experimental fields accessible to doctoral students are presented in the annexes (Annex II.11), (Annex II.12), (Annex II.13), (Annex II. 29).

Depending on the research topic of the doctoral thesis, based on a prior appointment, with the approval of the doctoral supervisor and under his direct or indirect supervision, with the approval of the Doctoral School, doctoral students have access throughout the internship to research laboratories or those with dual purpose (teaching and research), equipment, IT resources or other resources needed to carry out the contracted research program.

As can be seen from the documents made available to the external evaluation team, as well as the on-site visit, PhD students have free access to the existing infrastructure in research laboratories and those with a dual purpose, teaching and research, based on upon request and according to the work program of the laboratory.

Recommendations:-

The indicator is fulfilled.

Criterion C.3. Internationalization

Standard C.3.1. There is a strategy in place and it is applied to enhance the internationalization of doctoral studies.

The IOSUD partnership agreements in Erasmus+ programs and general bilateral agreements according to which mobilizations have taken place and which may aim at the realization of mobilities are analyzed.

Performance Indicator *C.3.1.1. IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.

In order to develop educational dialogue and partnerships with higher education and research institutions around the world, the International Relations Service within USAMV Iași is constantly concerned with identifying relevant institutions and universities, in order to establish cooperation agreements leading to expanding the internationalization process, for the benefit of all parties involved but also for openness to multiculturalism and diversity.

The situation of the doctoral students carrying out a training internship abroad or another form of mobility such as participation in international conferences is presented in the annexes (Annex II.84), (Annex II.92). In the last five years, there have been a number of 32 partnership agreements for the mobility of PhD students and teachers in the field of Agronomy, concluded within the ERASMUS+, with profile universities abroad, with research institutes or companies carrying out activities in the field Agronomy (Annex II.98; (http://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/5_programul_erasmus-plus_acord.html). During the same period, a number of 2 doctoral students in the field of Agronomy performed mobilities under the ERASMUS+ program (Annex II.84) of the total number of PhD students in the field of Agronomy in the period 2016-2020, 22.2% participated in international scientific events in the analyzed period, giving a number of 53 presentations (Annex II.92). IOSUD has concluded agreements in Erasmus+ programs and general bilateral agreements according to which mobilities have taken place and which may aim at carrying out mobilities.

Within the Erasmus + program, PhD students and PhD supervisors carried out mobilities at various Universities in Poland, Germany, Greece. The share of external mobility is 22.2%.

Recommendations: increase the number of PhD students participating in training courses abroad by stimulating their application and financial support from IOSUD, reducing the number of inter-institutional collaboration agreements and placement mobility and identifying alternative sources of funding.

The indicator is fulfilled/partially fulfilled

Performance Indicator C.3.1.2. In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.

PhD students in the field of Agronomy who had ERASMUS scholarships during 2016-2020 (Annex II.84) benefited from the guidance of international experts from host institutions.

Also, PhD students participated in presentations made by various specialists / external experts (Czech Republic, Turkey, Slovakia, Germany, Hungary, Serbia, Ukraine, Moldova, etc.), on various topics in the field of Agronomy (Annex II.99 ; Annex II.100).

All the defended doctoral theses have public summaries made in English (https://www.uaiasi.ro/index.php?lang=ro&pagina=pagini/7_teze_2021.html).

There are no doctorates organized in international co-supervision in the field of Agronomy in the analyzed period. However, PhD students in the field of Agronomy participated in the presentations made by numerous specialists / first-rate external experts, invited either on the occasion of the annual Scientific Congress organized by USAMV Iasi (Turkey, Czech Republic, Slovakia, Germany, Hungary, Serbia, Ukraine , Republic of Moldova, etc.), or within the ERASMUS+ program (Czech Republic).

Recommendations: Intensifying the preoccupations of attracting scientific personalities in research teams and then as PhD Supervisor in co-tutoring, in order to increase the international visibility of the leading PhD teachers in the field of AGRONOMY.

The indicator is fulfilled.

Performance Indicator C.3.1.3. The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).

IOSUD makes public its educational offer by promoting in English on the university website (https://www.uaiasi.ro/index.php?lang=en&pagina=pagini/7_domenii.html) the doctoral study programs. An international expert was also co-opted as a member of the steering committee of two PhD students in the field of Agronomy (position 23 in Annex II.43; Annex II.44).

The presentation of the educational offer on the occasion of carrying out the mobility with ERASMUS teaching had the effect of attracting three 3 international doctoral students, who carried out documentation and research internships within the Doctoral School of Engineering Sciences (Annex II.101).

Concrete measures are applied to promote educational programs and attract international doctoral students.

Recommendations:-

The indicator is fulfilled.

IV. SWOT Analysis

Based on the Self-Assessment Report and its annexes, the discussions / on-site visits that took place in accordance with the program of the visit, the SWOT analysis of the doctoral field AGRONOMY - part of the Doctoral School of Engineering Sciences (SDSI) from USAMV Iași.

It aims to be a tool capable of providing an overview of the doctoral field, while assessing internal and external influencers in order to highlight strengths and weaknesses in relation to existing opportunities and threats.

<u>Strengths:</u>	<u>Weaknesses:</u>
<ul style="list-style-type: none"> • USAMV Iași is a high-performing university that enjoys prestige among Romanian universities, with a tradition in the agronomic field; • Diverse educational offer, specific to the field at all three cycles of studies: bachelor's, master's and doctorate; • ARACIS accreditation for all study programs: bachelor's, master's, doctorate; • High-performing teaching and research staff, with meritorious activities in the field of professional training based on skills and abilities, but also in guiding the activity of doctoral students; • Human resource represented by doctoral supervisors in the field of AGRONOMY with proven skills in scientific research, in university management - a fundamental condition for conducting scientific research at a high scientific level; • Material base, characterized by the existence of modern education and research equipment, which provides optimal conditions for teaching, as well as for practical training in research centers, experimental stations and units (farms); • Consistent university library in terms of the number and diversity of books and publications, access to scientific literature in the field, databases provided free of charge to doctoral students; • Effective communication with doctoral students, in terms of career path, research directions, access to bibliography, etc.; • The existence of quality assurance policies and strategies targeting doctoral schools, as well as their fields; • Existence of specific measures to promote professional ethics and deontology, avoidance of plagiarism; • Transparency in the selection, admission and enrollment of students in doctoral university study programs. 	<ul style="list-style-type: none"> • Reduced number of teachers / researchers from abroad who participate in the guidance commissions, respectively public defense of the doctoral theses of the doctoral schools; • Lack of doctorates in co-tutoring and low visibility of leading PhD teachers; • Reduced capitalization of research results of PhD students in ISI listed journals; • Relatively small number of PhD students participating in training courses abroad; • Low number of graduates who were integrated on the labor market after obtaining the doctorate in the field of doctoral studies.

<u>Opportunities:</u>	<u>Threats:</u>
<ul style="list-style-type: none"> • Increasing the educational and vocational training offer by developing postdoctoral and postgraduate study programs, continuing vocational training and lifelong learning programs, vocational retraining programs, etc. and increasing its competitiveness and visibility in the European Higher Education Area; • International cooperation programs for doctoral students that offer doctoral students the opportunity to carry out training courses in the form of various external mobilities for their professional development; • The availability of the private sector to hire PhD students due to their skills, knowledge, etc. with consequences on the interest for doctoral studies and the facilitation of the collaboration between the university and companies (investments, additional financing, joint projects, possibility of financing doctoral students); • The possibility of collaboration with foreign research centers involved in the international network of agricultural research centers; • Development of new European programs such as “Life Long Learning” and e-Platforms that offer the possibility of doctoral theses in international co-supervision, as well as stimulating doctoral students to carry out external training courses; • Development of relations with the socio-economic environment and creation of the premises for its involvement in the development of research projects through partnerships in the field of doctoral schools; • Additional funding based on performance criteria, which also includes the results of doctoral students' research; • Unlocking the potential for cross - border cooperation with Moldova republic. 	<ul style="list-style-type: none"> • The tendency of demographic decrease, with a negative impact on the dynamics of the number of students and the gradual increase of the costs that contribute to the lack of interest for university studies; • Lack of interest in accessing doctoral training programs determined by the weak insertion on the labor market; • Significant reduction of research funds in recent years, while increasing standards for minimum eligibility criteria, for attracting research grants at national level, for project managers; • International competition for attracting students and the aggressive policy of European universities; • Insufficient duration of doctoral research internships conditioned by climate developments and the need to postpone the defense of doctoral theses; • Reduced pay compared to the private sector; • Low budget available for research and academia; • Reduced research duration to 3 years - makes it impossible to conduct research in the field of agriculture subject to the influence of climatic conditions.

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1	*	Indicator A.1.1.1.	fulfilled	
2	*	Indicator A.1.1.2	fulfilled	
3	*	Indicator A.1.2.1	fulfilled	
4	*	Indicator A.1.2.2	fulfilled	
5	*	Indicator A.1.3.1	fulfilled	
6	*	Indicator A.1.3.2	fulfilled	
7	*	Indicator *A.1.3.3	fulfilled	
8	C	Indicator A.2.1.1	fulfilled	
9	C	Indicator A.3.1.1	fulfilled	
10	*	Indicator *A.3.1.2	fulfilled	
11	*	Indicator A.3.1.3	fulfilled	
12	*	Indicator *A.3.1.4	fulfilled	
13	C	Indicator A.3.2.1	fulfilled	
14	*	Indicator *A.3.2.2	fulfilled	
15	*	Indicator B.1.1.1	fulfilled	Given a significant closeness to ARACIS standards in terms of the ratio between the number of candidates in the last five years and the number of places financed from the state budget put up for competition in the field of doctoral studies, it is recommended to attract students to the third study cycle by identifying research topics of interest including for the agricultural economic environment, identifying alternative sources of financial support for research to motivate candidates.
16	*	Indicator *B.1.2.1	fulfilled	
17	*	Indicator B.1.2.2	fulfilled	
18	*	Indicator B.2.1.1	fulfilled	
19	*	Indicator B.2.1.2	fulfilled	
20	*	Indicator B.2.1.3	fulfilled	
21	*	Indicator B.2.1.4	fulfilled	
22	C	Indicator B.2.1.5	fulfilled	
23	C	Indicator B.3.1.1	fulfilled	
24	*	Indicator *B.3.1.2	fulfilled	
25	*	Indicator *B.3.2.1	fulfilled	
26	*	Indicator *B.3.2.2	fulfilled	
27	*	Indicator C.1.1.1	fulfilled	
28	*	Indicator C.1.1.2	fulfilled	
29	C	Indicator C.2.1.1	fulfilled	
30	*	Indicator C.2.2.1	fulfilled	
31	*	Indicator C.2.2.2	fulfilled	
32	*	Indicator C.2.2.3	fulfilled	
33	*	Indicator *C.3.1.1	fulfilled /partially fulfilled	Increasing the number of PhD students participating in training courses abroad by stimulating their submission of applications and financial support from the university, increasing the number of inter-institutional collaboration agreements and placement mobility and identifying alternative sources of funding.
34	*	Indicator C.3.1.2	fulfilled	Intensifying the preoccupations of attracting scientific personalities in research teams and then as PhD Supervisor in co-tutoring, in order to increase the international visibility of the leading PhD teachers in the field of AGRONOMY.
35	*	Indicator C.3.1.3	fulfilled	

VI. Conclusions and general recommendations

Based on the information contained in the Self-Assessment Report prepared, the on-site visit and online discussions with representatives of USAMV management, doctoral schools, teachers, PhD students and employers, as well as with those who coordinate the activity of research centers and laboratories in general, the activity within the doctoral field AGRONOMY was analyzed by reporting on the way of fulfilling the indicators.

Conclusions:

- It is found the fulfillment of the performance indicators regarding the implementation of the functioning mechanisms provided in the specific legislation regarding the organization of the doctoral studies.
- The institutional framework for carrying out the activity within IOSUD is ensured by: the Regulation of the Doctoral Schools criteria, procedures and obligatory standards provided in GD no. 681/2011, including those mentioned in GD 134 of 2.03.2016.
- The regulation of doctoral schools within IOSUD from USAMV Iași establishes mandatory criteria, procedures and standards regarding the following aspect: the inclusion in doctoral schools of new doctoral supervisors, as well as regulations regarding the way in which a doctoral supervisor can be withdrawn as a member of the doctoral school, the decision mechanisms on the opportunity, structure and content of the training program based on advanced university studies, the procedures for changing the doctoral supervisor and the procedures for mediating conflicts between the supervisor and the doctoral student, ways to prevent fraud in scientific research, including plagiarism, ensuring access to research resources.
- USAMV Iași ensures the access of doctoral students to the material base, characterized by the existence of a modern equipment of education and research, offers optimal conditions for teaching, as well as for practical training in pilot units and in experimental resorts and units (farms).
- The research infrastructure presented complies with the standards necessary for the activity of doctoral students. In the last 5 years, purchases of laboratory furniture, computers, apparatus and equipment have been made. PhD students have access to IOSUD libraries and international databases.
- The quality of the human resource is the condition for the successful completion of the doctoral training of the students, for the elaboration of scientific papers with novelty elements and to offer recognition to the authors.
- PhD students carry out their own research under the direct guidance of doctoral leading teachers selected from among teachers and researchers. Within the PhD field of Agronomy, 10 PhD supervisors currently work.
- All doctoral supervisors (100%) meet the CNATDCU minimum standards, achieving a score between 1302.4 and 4328.5 points, compared to 420 points the minimum value according to order 6129/2016.
- The specialized disciplines within the doctoral students' training program are supported by doctoral supervisors in the field of Agronomy who have the degree of professor.
- A number of 9 doctoral supervisors (90%) have in coordination between 1 and 8 doctoral

students; a single doctoral supervisor coordinates 12 PhD students (10%).

- All 10 PhD supervisors (100%) reported at least 5 WoS indexed publications, in journals with Impact Factor or other achievements; all 10 leaders (100%) have international visibility, proven by the number of citations in WoS journals, h-index (WoS), by membership in the scientific committees of international publications and conferences, etc. (Annex II.42).
- For the analyzed period, in the field of Agronomy, the ratio between the number of doctoral students and teachers / researchers who provide guidance / counseling was 1.28: 1 (= 54: 42) (Annex II.24 and Annex II.43) .
- For doctoral students who have obtained a doctorate in the last 5 years there is at least one article or other contribution. All five articles selected for analysis present significant original contributions to the field of Agronomy.
- The doctoral school in which the field of doctoral studies Agronomy is included proves the constant development of the process of evaluation and quality assurance.
- The duration of doctoral studies is 3 years. There are some difficulties related to limiting to 3 years the duration of the doctorate in Agronomy, generated by the fact that certain research in that field can not be completed in 3 years because in these experimental sciences research requires field experiments of at least 3 years, and climatic conditions can compromise experiences, being necessary to extend the duration of doctoral studies.

In the context of the analysis based on standards and external evaluation indicators for the AGRONOMY field, there is only one partially fulfilled indicator: IP *C.3.1.1

IOSUD, for the evaluated field of study, has concluded mobility agreements with foreign universities, with research institutes, with companies that carry out activities in the studied field, aiming at the mobility of doctoral students and teachers (for example, ERASMUS agreements for the cycle of Doctoral studies). At least 35% of PhD students have completed a training course abroad or another form of mobility, such as participating in international scientific conferences. IOSUD develops and implements policies and action plans aimed at increasing the number of doctoral students participating in training courses abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.

It is recommended: Increasing the number of PhD students participating in training internships abroad by stimulating their submission and financial support from the university, increasing the number of inter-institutional collaboration agreements and placement mobility and identifying alternative sources financing.

Recommendations:

- Increasing the number of doctoral students participating in training internships abroad by stimulating the submission of applications by them and financial support from IOSUD.
- Increasing the number of scientific papers published in WoS journals and the number of / patents / inventions, as a result of the research activity.
- Realization of doctoral thesis in international co-supervision.
- Increasing the preoccupations for the internationalization of the activities within the doctoral studies (e.g. participation in educational fairs for attracting international doctoral students; inclusion of international experts in commissions for guiding or defending doctoral theses, etc.).
- Considering a significant approach to ARACIS standards in terms of the ratio between the number of candidates in the last five years and the number of places financed from the state



budget put up for competition in the field of doctoral studies, it is recommended to attract students to the third cycle of studies by identifying research topics of interest including for the agricultural economic environment, identifying alternative sources of financial support for research to motivate candidates.

- Continuous updating of the proposed research topics, inclusion in the topic of topics of interest with applicability in practice, consultation of economic partners in establishing the proposed topic.
- Intensifying the collaboration between the university and the farmers' associations.
- Extending the endowment of laboratories with research equipment, calculation technique and statistical interpretation, which would allow a much better interpretation of the scientific results obtained.
- Connecting research centers and laboratories to the existing network at European level, allowing access to external funding sources.
- Intensifying the preoccupations of attracting scientific personalities in research teams and then as PhD Supervisor in co-tutoring, in order to increase the international visibility of the leading PhD teachers in the field of AGRONOMY.
- Supporting the teachers within USAMV Iași in order to obtain the right to conduct doctoral theses based on the fulfillment of the CNADTCU criteria and the increase of the number of doctoral supervisors at the level of the AGRONOMY field.

All performance indicators were evaluated as satisfied, except for the indicator Indicator * C.3.1.1 from the category of those marked with an asterisk, within the evaluation process, carried out under the conditions of art. 12 of the annex no. 1 to the Order of the Minister of Education no. 3651 of 12.04.2021 on the approval of the Methodology for evaluating doctoral university studies and the systems of criteria, standards and performance indicators used in evaluation.

In České Budějovice 30 September 2021