



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

HELLENIC REPUBLIC

Α.ΔΙ.Π.

H.Q.A.A.

ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ

HELLENIC QUALITY ASSURANCE AGENCY

ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

DEPARTMENT of Veterinary Medicine

UNIVERSITY of Thessaly

May 2011

External Evaluation Committee

The Committee responsible for the External Evaluation of the Department Veterinary Medicine of the University of Thessaly consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005 :

1. Prof. Willeberg, Preben (President)

University of California, Davis, USA

2. Prof. Moennig, Volker (Coordinator)

University of Veterinary Medicine, Hannover, Germany

3. Prof. Clarke, Kathy

Royal Veterinary College, London, United Kingdom

4. Prof. Cenci-Goga Beniamino

University of Perugia, Italy

5. Prof. Gortazar, Christian,

University of Castilla-La Mancha, Spain

Introduction

I. The External Evaluation Procedure

The site of the external evaluation committee took place from Monday, May 9th to Wednesday, May 11th. After arrival in the Faculty of Veterinary Medicine, University of Thessaly the committee was received by Dr. Ioannis Theodorakis, *Vice Rector of Academic Affairs and Personnel & President of U.Q.A., University of Thessaly*, Dr. Ioannis Messinis, *Head of the School of Health Sciences*, Dr. Charalambos Billinis, *Dean of the Faculty of Veterinary Medicine*. Dr. Charalambos Billinis presented the Faculty to the committee.

The undergraduate curriculum of the Faculty was presented by Drs. Leonidas Leontides and Apostolos Galatos, the postgraduate studies were presented by Drs. George Fthenakis and Fotini Athanassopoulou. The research activities were summarized by in the Vice-Dean Dr Alexander Govaris.

Institutions visited:

- Department of Medicine
- Department of Surgery
- Department of Obstetrics & Reproduction
- Laboratory Departments
- Anatomy
- Physiology
- Lecture halls
- Library
- Student's canteen

Documents provided:

- Internal Evaluation Report (2004-2008)
- Annex A – Study Guide 2010-2011
- Annex B – Course Descriptions
- Annex C – Postgraduate Clinical or Laboratory training Programme
- Annex D – Questionnaire for Teaching Evaluation

Boxes with additional documents were available but there was inadequate time to study these.

A. Curriculum

UNDERGRADUATE

The undergraduate curriculum at the Veterinary Faculty of Karditsa lasts 5 years (10 semesters). The average duration of student attendance currently is around 6.5 years (median), with the best and the worst 25% graduating after ≤ 6 and ≥ 7.5 years, respectively (page 15, internal evaluation report (IER)).

The hours for theory (2,300 hrs) and practical work (1900 hrs including clinical training) are given in Table 3.3.1 of the IER. More data on the hours of clinical training would be useful. These are EAEVE (European Association of Establishments for Veterinary Education) requirements. The overall ratio for theory to practicals, calculated using the ECTS, is 1:0.83.

What are the goals and objectives of the Curriculum? What is the plan for achieving them?

The curriculum aims to provide scientific, theoretical knowledge, and day one skills to: i) diagnose and treat animal diseases, ii) manage animal husbandry to achieve optimal production while preserving animal health and welfare, iii) control the safety and hygiene of food of animal origin and, iv) contribute in the control of zoonotic diseases (pages 7 and 8 IER).

How were the objectives decided? Which factors were taken into account? Were they set against appropriate standards? Did the unit consult other stakeholders?

The IESC (internal evaluation steering committee) from 2009 was responsible for guiding through the first internal evaluation process and for the drafting of the first report, which was written in English and submitted to the HQAA (Hellenic Quality Assurance Agency) in September 2009. The EESC (external evaluation steering committee) from March 2011 was responsible for guiding the Faculty through the first external evaluation process. Basically the IESC coordinated all academic staff to describe their teaching and research activities on standardized templates. The EESC translated these documents

The IER does not state how the objectives have been decided. No standards were used for the decision. Although the Faculty has been a member of the EAEVE since 2003 it does not seem that the curriculum has been organised with reference to EU directive 2005/36/EC or the EAEVE «EVALUATION OF VETERINARY TRAINING IN EUROPE - Principles and Process of Evaluation and Manual of Standard Operating Procedures 2009».

The IER states that the curriculum was originally copied with minor alterations/adjustments from that implemented at that time in the Faculty of Veterinary Medicine of the University of Thessaloniki. The Faculty is aware that the

curriculum does not fully meet today's needs.

Is the curriculum consistent with the objectives of the Curriculum and the requirements of the society?

The curriculum is consistent with the objectives, however reference to the latest EAEVE documents is suggested (<http://www.eave.org/evaluation/sop-standing-operation-procedures.html>).

How was the curriculum decided? Were all constituents of the Department, including students and other stakeholders, consulted ?

Since the curriculum was largely adopted from the Faculty of Thessaloniki it is unlikely that stakeholders were consulted.

Has the unit set a procedure for the revision of the curriculum?

Discussions for a change of the curriculum are under way. The External Evaluation Committee (EEC) is not aware of the exact procedure.

IMPLEMENTATION

How effectively is the Department's objectives implemented by the curriculum?

How does the curriculum compare with appropriate, universally accepted standards for the specific area of study?

The majority of goals of the Faculty are implemented. Deficiencies in the curriculum are listed below.

The curriculum basically contains the main so called «EU-listed subjects» (EU directive 2005/36/EC). However, certain subjects are not easily visible within the current curriculum, i.e. the titles of the lectures/courses. Subjects that do not appear explicitly include: plant biology, preventive medicine, veterinary state medicine and public health, veterinary legislation and forensic medicine agronomy, animal ethology and welfare, practice management, veterinary certification and report writing, career planning and opportunities. Presumably these subjects are covered within other titles, however, it would be advisable to make the subjects visible.

Is the structure of the curriculum rational and clearly articulated?

The curriculum is clearly articulated, but the structure requires improvement, see above. Specific comments are:

- i) The absolute number of lectures in the first years should be reduced and the contents and necessity of preclinical lectures should be critically reviewed.
- ii) The committee recommends increasing efforts to integrate basic subjects, especially anatomy, physiology, epidemiology and infectious diseases, pharmacology, pathology with clinical subjects and clinical cases. That will

demonstrate to the students the importance of these basic sciences for their later clinical training.

iii) Significantly reduce overload of theoretical/classroom teaching, which is more pronounced in basic sciences.

iv) Move theoretical parts of the curriculum to earlier years in order to consider a final clinical year without lectures.

v) The application of ECTS system requires clarification (Table 3.3.1. IER), as it is not clear how many hours per credit have been allocated to each subject.

Is the curriculum coherent and functional?

The programme is adequately coherent and functional; however there are some critical issues that should be considered:

- In general the weekly teaching load appears to be unacceptably high for students and staff
- There is an uneven distribution of teaching load during the course.

Is the material for each course appropriate and the time offered sufficient?

- The material is appropriate for most modules, the academic staff is young and committed and the quality of material is high.
- The text books currently used are new and updated; handouts provided by the academic staff in some modules help to update the knowledge to current levels.
- The material and time offered are sufficient.

Does the Department have the necessary resources and appropriately qualified and trained staff to implement the curriculum?

All of the staff is appropriately qualified and trained in veterinary and related sciences. All academic staff is required by law to have a PhD and most of the faculties have obtained their masters and PhD in English speaking countries. This is a key consideration and a real motivation for students. It is unclear if any of the academic staff has the appropriate training in pedagogic methodologies (i.e. teaching techniques and delivery, assessment methods, curriculum design and delivery- see Section B).

- The resources available for the laboratory and the directed clinical training are generally considered adequate (see Section B).
- The number of support staff available for training in companion animal clinical practice are considered suboptimal for a veterinary educational institution.
- The overall resources (equipment and case load) available to the clinics, especially the obstetrics and gynaecology are considered adequate for a veterinary educational institute although there are variations between different departments (see section B).

RESULTS

How well is the implementation achieving the Department's

predefined goals and objectives? If not, why is it so? How is this problem dealt with?

Does the Department understand why and how it achieved or failed to achieve these results?

See above and not applicable.

Post-graduate courses

APPROACH

a) **Master of Science** in «Aquaculture - Aquatic Animal Health»

The goal of the postgraduate programme (MSc – 2 years in duration) is to provide advanced teaching and training in fields of study related to aquaculture and aquatic animal health as described in detail in IER page 12. This includes the necessary scientific background and general philosophy for the prevention of and the applied therapy of the aquatic organisms diseases, together with basic economics of aquatic animal production and quality control systems.

b) **Postgraduate clinical and laboratory training programme** (usually 12 months)

The goal of these programmes are to provide clinical or laboratory experience, specialized scientific knowledge, update on the current scientific data and training in research and in evaluating and applying modern scientific knowledge.

c) **Residency** for the European College of Small Ruminant Health Management

The Department of obstetrics and reproduction is recognized by the European College of Small Ruminant Health Management and one student is finalising his residency.

(d) **PhD** programme

The goal of the PhD programme is to offer advanced research training in the areas of veterinary and biomedical sciences (3-4 years minimum).

How were the objectives decided? Were they set against appropriate standards? Did the unit consult other stakeholders?

For the MSc and PhD programmes, the objectives and factors taken into account include:

1. The need for the delivery of undergraduate practical/clinical training according to EU standards and to the rules and regulation of the University of Thessaly.
2. The need for advancing strategic fields of Veterinary Science
3. The need to advance and promote the delivery of veterinary science in the private and public sector.
4. The need for the growth of veterinary and biomedical research

The appropriate standards are set and monitored according to University of Thessaly

policies, currently a committee formed by the general assembly of the Veterinary Medicine Faculty, is working towards the development of a concise set of additional requirements.

Is the curriculum consistent with the objectives of the Curriculum and the requirements of the society? How was the curriculum decided? Were all constituents of the Department, including students and other stakeholders, consulted ? Has the unit set a procedure for the revision of the curriculum

The curricula of the MScs are consistent with the objectives, and with the requirements of the aquaculture industry. To the knowledge of the EEC there are no plans for revision in the near future.

The PhD and postgraduate curricula are specific to the individual programme.

IMPLEMENTATION

MSc.

The curricula of the MScs implement the goals, appear of a high standard and are coherent, functional and clearly articulated. The programme has an appropriately qualified and well trained staff.

Postgraduate Training Programme.

Details of the methods of selection, and training guides for the Postgraduate training programmes were presented to the EEC as Appendix C of the data provided. Detailed curricula are dependent on the individual programme and their existence was not made obvious to the EEC. The Trainees are presented with a certificate at the end of training but the methods of assessment used were not clear. Recourses for the training appear adequate.

Residency in Small Ruminant Health Management

The curriculum for this programme is set by the respective European College. Recourses are good.

PhD

Although the IER states that the PhD first year programme (for those without an MSc) should consist of evaluated courses, the EEC were unable to confirm the existence of such courses. There appears to be no specific curricula for the PhD, the research being carried out with individual members of staff (see section B).

RESULTS

The MSc programme and the PhD, have produced numerous graduates (see Section

B) and data on their performances have been clearly reported, including time to obtain the degree, number of publications (the majority in peer reviewed journals) and follow up regarding employment.

IMPROVEMENT

There are no plans for changes with the very successful MScs.

The EEC recommend that the taught first year PhD course as stated in the internal review is implemented, or if it exists, made more visible (See section B)

B. Teaching

UNDERGRADUATE PROGRAMME.

APPROACH:

Does the Department have a defined pedagogic policy with regard to teaching approach and methodology?

Teaching methods used :

The curriculum is divided into 65 courses, based on the objectives of the curriculum. There is no defined pedagogic policy. An academic member of staff is responsible for each course, and the methods by which it is taught. Staff are not provided with any specific modern pedagogic training in teaching or assessment. Most courses consist of very large numbers of didactic lectures, and practical classes or clinical exposure as relevant.

Teaching staff/ student ratio: Teacher/student collaboration:

The overall academic staff/student ratio in 2009-10 was 1/5.3, including overall time given by adjunct lecturers. This is adequate to cover the courses. Adjunct lecturers are very much involved the practical teaching, and therefore the actual ratio for practical classes is better than the overall ratio. For specific subjects, visiting lecturers are employed. In the majority of cases observed, and from student comments, teacher/student interactions appeared good.

Adequacy of means and resources:

Presentation of didactic lectures is limited by there being too few lecture theatres of adequate size. As a result lectures continue until 9.00 pm in the evening. Practical classrooms are small, and classes need to be repeated up

to four times, but this repetition might be required anyway to ensure adequate supervision by the staff available.

Financial resources are inadequate to supply all needs, equipment and consumables, for many of the courses. Part of the deficit (for example in providing facilities within the laboratories) has been met by allowing the students to make use of research equipment (e.g. microscopes), but this is less practicable in other areas.

Students (currently numbers up to 35, future years up to 50) in their final four semesters rotate through four areas, medicine (small and large), surgery, reproduction and obstetrics, and pathology/avian medicine/food hygiene. Annual caseload in small animal medicine is around 200-300 cases per year, and in surgery/anaesthesia it is 600-800 cases. There is a clinical laboratory within the clinics. Small animal clinical material, and equipment (including diagnostic) is sufficient to teach 'day one veterinary skills' in small animals for the existing numbers of students, but may need to be increased for future larger classes. For large animal work, including reproduction, some animals are available on site but for the greatest exposure the students are taken to farms. There is a College bus and driver available for farm visits. Student exposure to ruminants and pigs through these visits appears to be good, although it is not clear to the EEC what is the ratio of herd health to individual animal treatment. For future larger classes transport will be a limiting factor. Student exposure is deficient for horses and other equidae.

A library is open for long hours, and provides adequate material (see section D).

Use of information technologies.

The information technology provided is adequate and there is an 'intranet' managed by the University of Thessaly. Full use is not made of this technology for teaching.

Examination system

Assessment of most courses is by means of a written and practical/oral examination at the end of the course, with opportunities to repeat at the end of each semester. Marks given are on a scale of 1-10, with 5 as the pass mark. There is no defined policy as to format, modes of marking or validation of the procedures used.

IMPLEMENTATION

Quality of teaching procedures

The EEC is impressed with the enthusiasm and commitment of all the staff involved in teaching, and the achievements they have made with very limited resources. Lectures were not observed, but practical and clinical classes seen, and conversations with students, suggest excellent staff/student interaction.

The committee is concerned that the number of lectures is excessive (see section A), and this, coupled with the long days, does not encourage good learning. Practical exposure (scientific and clinical) appeared to be adequate in most areas, and within practical classes (scientific and clinical) enthusiastic staff appear to foster the same enthusiasm in the students.

Quality and adequacy of teaching materials and resources.

See above. Financial resources are inadequate to cover on-going costs of some practical areas, such as the visits to farms.

Quality of course material. Is it brought up to date?

Course material to support didactic teaching consists of Greek textbooks, uploaded power-point presentations of lectures and in some cases further supportive material on line. Material generated by staff is updated each year. English textbooks are available for reference in the main library and elsewhere, and for some areas of study these are essential, as no Greek texts exist. References to relevant web sources are given- most of these are in English. This ECC considers the opposition from some students to read material given in English will, in this profession, be a bar to reaching international standards.

Linking of research with teaching

Lectures include the staff's research interests if relevant, but in general undergraduate students are not directly involved in research. However, the scientific quality of the staff ensures up-to-date teaching.

Mobility of academic staff and students

Students spend 8 weeks during their latter summer vacations at veterinary practices or other relevant establishments in order to gain more experience working directly with animals or in other related professional areas. This has, to date, been funded by Government grants. Visiting staff may cover areas where the Faculty is lacking expertise.

Many Faculty staff attend relevant national and international meetings.

The EEC suggests that the potential for more cooperation with the other faculties of the School of Health Sciences should be considered.

Evaluation by the students of (a) the teaching and (b) the course

content and study material/resources

Students evaluate the lectures and courses by means of an extensive on-line questionnaire. Results are passed to the 'Course director' who takes the comments into account for the next year.

RESULTS

Efficacy of teaching.

Efficacy of teaching is not formally assessed other than by the student evaluations mentioned above. On the basis of examination results (see below), comments from the students, and, as this is a professional degree, comments from graduates teaching would appear good. Students and graduates now professionally employed all expressed satisfaction with the training they had received.

Discrepancies in the success/failure percentage between courses and how they are justified; Differences between students in (a) the time to graduation, and (b) final degree grades.; Whether the Department understands the reasons of such positive or negative results?

All points above are strongly influenced by the law that means that the students do not have to pass examinations before proceeding to the next stage of the course. In a professional course, this results in students who have made use of the option being insufficiently prepared for the subsequent courses, and thus finding them difficult. Full examination results were not provided to the committee.

This committee finds it unacceptable that the average time to qualification for a 5 years course is over 6 years. This is a waste of both public and student's resources.

IMPROVEMENT

Does the Department propose methods and ways for improvement? What initiatives does it take in this direction?

The Faculty, in their self-evaluation, have identified the need for a full structural reform of the curriculum. The requirements of the curriculum is to be re-considered, to identify what is needed both for 'day one skills' and to encourage life-long learning. A revised curriculum should result in fewer lectures, and time-tabled periods for self-learning. A lecture-free clinical final semester is under discussion. A new multipurpose building including a lecture theatre has been funded and will be constructed in the next few months. This should enable better timetabling and a reduction in the length of the student day.

This evaluation committee fully supports these suggested reforms.

Additional recommendations and suggestions.

The opportunity of a new curriculum should include modern pedagogic policies such as implementation of Faculty teaching and assessment strategies, and validation of the assessment procedures through the formation of a Teaching and Assessment Committee. Suitable experts in modern educational methods could assist the staff in this, and provide on-going pedagogic training for staff.

- (a) The new curriculum should make more use of the internet facilities for interactive learning and formative assessment.
- (b) A staff to student mentoring system, which may assist the students to complete the course in a more timely fashion should be established. This should also include post-graduate students.
- (c) The clinical load (Large and small animal) should be increased to meet the needs of the larger student numbers. This will require more clinical staff, and funds for student transport.
- (d) The time (currently 8 weeks) that students carry out extramural studies in order to improve student/animal exposure should be increased.
- (e) The clinical departments should consider the use of a simple 'clinical skills laboratory' to allow the students to practice some techniques without animals present.

POSTGRADUATE, Training available:

MScs. (a) MSc in Aquaculture all courses are carried out at a collaborating Technical Institute in Igoumenitsa. (b) MSc in Aquatic Animal Health (course Igoumenitsa and Veterinary Faculty, Karditsa).

Postgraduate training; Residency in Small Ruminant Health Management; individual postgraduate experience in scientific training in laboratory and/or clinical techniques.

PhDs.

APPROACH:

MScs.

Teaching for these 2 MScs is carried out at weekends, every 15 days over a period of 4 semesters, enabling the students to continue full time work. Teaching methods are lectures, laboratory practicals, and field work. Staff/Student ratio is very good (10 university staff, 7 from the technical college plus visiting lecturers for 36 students). Examination includes a thesis.

Residency.

The Department of Obstetrics and Reproduction is a training centre for Small Ruminant Health Management.

Clinical and Laboratory postgraduate training. PhD.

There is no formal overall training strategy for these posts. All depend on specific individual teacher/student collaboration. Some postgraduate trainees (most usually, PhDs) are supported by research grants, and become part of a well funded successful research group, with a high probability for a successful project and PhD completion (see section C). Others are self-funded, and just wish to gain further experience. These students often provide a great deal of the adjunct teaching. PhDs are examined by thesis. The EEC could find no formal assessment system for those seeking postgraduate experience, although those completing satisfactorily are awarded a certificate.

IMPLEMENTATION**MScs.**

The EEC did not visit Igoumenitsa and do not have all the information necessary to fully assess quality. Nevertheless, from what was presented resources are excellent and research is an integral part of the course, Mobility is excellent with many visits including some abroad. The courses are self-funded, but appear to have adequate means and support, partly through co-operation with the aquaculture industry. The EEC does not know if the students evaluate this course.

Residency.

The Department of Obstetrics and Reproduction is a training centre for the European College of Small Ruminant Health Management. This college has approved its facilities and resources as adequate.

Clinical and laboratory postgraduate training. PhD.

As described above, the resources vary depending on whether the student is part of a funded project or not. There is no formal method for the students to evaluate their courses. The EEC is concerned that the small animal clinical case load and equipment are inadequate to provide clinical training to an international level, and indeed this is why the Departments have not attempted to obtain recognition to run European Residency programmes, although some of the staff are qualified to do so.

RESULTS

MScs

The EEC is impressed at the high level of completion of the MSc courses in the previous years (35/36 for the 2008 completion, to date 29/40 for 2010 completion).

PhD

This small Faculty is justly proud that 17 students have achieved PhD degrees since the beginning of the programme. However, the EEC does not know how many students failed to complete.

The EEC is very concerned about the lack of structure of the PhD programmes. The programmes within a funded research programme appear well supervised and controlled, and the groups have a record of good completions. Others, even some within an active research laboratory, become very prolonged with the danger that they will not be completed. Many PhD students also work as adjunct lecturers (and are essential to the running of the Departments). Whilst this provides good experience and is to be encouraged, it must not be at the expense of the student's research.

IMPROVEMENT

The Faculty had no proposals for change in the post-graduate areas.

The EEC congratulates the Faculty on the MSc programme, and would encourage it to see if other similar programmes could be organized.

The EEC is concerned at the lack of structure, or of continuing assessment of progress of the post-graduate research and clinical students who are not aiming at a higher degree. Similar concerns in relation to some PhD students are expressed above.

C. Research

APPROACH

What is the Department's policy and main objective in research?

As stated in the internal report, the Faculty encourages research and publishing in international peer-reviewed journals. However, this is a rather quantitative and global goal, and should be complemented by a proper research strategy, aiming at strengthening areas of originality and of quality research.

Has the Department set internal standards for assessing research?

The Department lists data on the number of peer-reviewed international publications, as well as conferences, grants and directed PhD dissertations per year by the Academic Staff.

IMPLEMENTATION

How does the Department promote and support research?

As stated above, quality research (meaning published in international journals) is promoted by encouraging the academic staff. However, the Faculty lacks the financial means to have a more active policy.

Quality and adequacy of research infrastructure and support.

The general research infrastructure is basic, with almost no common facilities. Equipment is spread (sometimes even replicated) across laboratories. Important differences between laboratories do exist, largely reflecting their varying success in external funding. This is because regular (national) funding for research equipment is very limited. Therefore, most infrastructures have been obtained from external funding, such as company contracts or EU grants. However, the existing equipment allows performing quality research as evidenced by the current output.

Scientific publications, Research projects, Research collaborations.

Please refer to the section below (RESULTS).

RESULTS

How successfully were the Department's research objectives implemented?

The global goal of promoting internationally visible research is clearly achieved, given the good scientific production and successful competitive fund raising. It is also remarkable that almost all Faculty members do actively contribute to this productivity.

Scientific publications.

For a Faculty with just 32 academic staff members, and given the environment of limited facilities and limited national research funding, the scientific production in terms of internationally visible, peer reviewed papers is good (18-50 SCI (science citation index) papers/year; 1-2 papers per year per Faculty member).

Performance in terms of internationally visible scientific production is unequal among Academic Staff members. The number of international papers co-authored in the last 5 years varies from 0 (only 2 cases) to over 30. While some areas have an excellent productivity (reproduction and large animal medicine, infectious diseases and epidemiology, food hygiene) some others need to improve their output (e.g. aquaculture, genetics). In some particular cases, a low recent productivity may be a consequence of recently employed staff members or a lack of critical mass. Most other laboratories have a more than reasonable output.

A brief analysis of selected themes addressed in the last 100 papers co-authored by Academic Staff members of the Veterinary School that are visible in PUBMED (Accessed on May 8th 2011), gives the following results:

Research area	~% of last 100 in PUBMED	Remarks
Sheep and goat	41	Includes health, reproduction, food hygiene...
Clinics (Mainly small animal)	17	Includes dermatology, surgery, microbiology etc.
Wildlife diseases, epidemiology...	10	See note.
Food hygiene	9	See note.
Bovine (Mainly reproduction)	7	
Aquaculture/aqu. animal health	2	Low visibility given the potential of this field.
Others	36	Including pig, human, and avian; and anatomy, biochemistry, pharmacology and physiology, among others.

Note: The sum is not 100% since there are overlaps between areas. For instance, many food hygiene papers are on sheep and goat derived food, and some wildlife

disease papers deal with diseases shared with livestock. Papers are often co-authored by staff of different laboratories, which is positive.

The strongest research area is a cross-disciplinary one on sheep and goats including clinical research in this area. This area produced 12/17 PhDs and several of the most visible projects. However, other clinical research is also quite strong and should not be neglected. Other areas also have some visibility, often in combination with sheep and goat related research, for instance food hygiene or wildlife diseases.

Research projects.

According to the information received, there is no regular (annual) public competitive call for research grants in Greece. Apparently, only two such calls were opened in the last 6 years, and with a limited funding per grant. Although the participation in the above-mentioned national calls was successful, research groups depend almost exclusively on international funding and funding from the private sector. Academic Staff members have been or are members of seven consortia/research projects funded by the European Commission. The total amount of external funding for research from 2004 to 2011 was approximately 5 million €, of which 1 million € was granted by industry and 4 million € by competitive calls. In addition, there was an income of 500.000 € for services. Of the competitive grant funding, 1/3 is international (mainly EU). Key areas of successful research funding are sheep and goat research (reproduction, “-omics”, health), and research on emerging wildlife diseases. Other areas with significant EU research funding are aquaculture and food hygiene.

Research collaborations.

Research collaborations can be analyzed at the Faculty, Regional, National and International levels. Regarding the interaction among Faculty belonging to different laboratories, it is clear that such collaborations do already exist, particularly in the fields of sheep and goat/wildlife research. These interactions involve mainly members of the reproduction laboratory with members of infectious diseases, epidemiology, and food hygiene. Sheep and goat research is also addressed by large animal medicine, among others. Another significant area of collaborative research among Faculty members is the (broad) field of clinical veterinary medicine. This includes mainly small animal medicine and surgery, with links to several other laboratories. However there are also areas where research is mostly done individually, rather than in larger multidisciplinary teams. While this might be explained in some cases by recently hired staff to the Faculty, individual research has a limited impact in the current highly competitive environment of international biomedical research.

Regarding regional and national collaborations, it is important to note that Thessaly University also has a Faculty of Aquaculture (Volos), a Faculty of Medicine and a Biochemistry and Biotechnology one (both in Larissa). Collaborations within the University are limited. In contrast, there are abundant links with the Veterinary School in Thessaloniki. This is expected since most Faculty members graduated in Thessaloniki, and since Thessaloniki and Karditsa are the only two veterinary schools in Greece.

About one third of the recent publications are co-authored by international researchers. While this is a reasonable proportion, more efforts can be made to promote internationalization.

Efficacy of research work. Applied results. Patents etc.

Only one patent has been produced by the Veterinary School. However, patenting depends not only on reasonable funding and quality research, but also on close interaction with the industry and the private sector. This interaction appears to be somewhat limited.

Is the Department's research acknowledged and visible outside the Department? Rewards and awards.

The international visibility of the Faculty is well above average, and far above the visibility one would expect given the geographical, economical and critical mass constraints faced by the Academic Staff of the Veterinary Faculty.

IMPROVEMENT

Improvements in research proposed by the Department, if necessary.

During the interviews in Karditsa, the Faculty suggested that it would be interested in identifying internationally visible research priorities. Given the current strengths of research at Karditsa, these priorities would include mainly three areas, namely "Cross-disciplinary ruminant research", "Small animal clinical research" and "Epidemiology and emerging wildlife and zoonotic diseases (One Health Initiative)". While the first one is clearly original and highly competitive within Europe, the second one is more diverse and less original. However, small animal clinical research contributes with about 1/5 of the total scientific output, involves a large proportion of academic staff, and could eventually facilitate the integration of pre-graduate students in research activities. Regarding the third one, current trends in animal health research and in the perception of the role of wildlife as disease reservoirs suggest that research on wildlife epidemiology will prove rewarding. Thus,

all three areas should be bolstered. As stated above, other areas also have some visibility, often in combination with ruminant related research, for instance food hygiene. These are clearly competitive, even at a European scale, and should also become a reference in any strategic research planning. Ideally, areas should team up with the large ones, as is already evident in some cases. By contrast, research aspects need to be strengthened in strategic areas for Greece such as aquaculture and aquatic animal health.

Initiatives in this direction undertaken by the Department.

As stated in the internal evaluation report, “a mainstream research policy of the Faculty is to support dissemination of research results with publications in international peer-refereed journals”. Eventually, the Faculty could encourage and facilitate collaborations, both within the veterinary school and with external partners.

Final remarks

Strengths: Karditsa’s main research strengths are small ruminant research, and in epidemiology, wildlife and zoonotic and emerging diseases. The clinical veterinary research is also strong in its field. The academic staff is highly motivated and most members contribute actively to the good scientific productivity of the Faculty. Altogether, the committee’s view on the research performed at the Karditsa Veterinary School is highly positive.

Weaknesses: The Faculty needs an integrated research strategy, aiming at strengthening areas of originality and of quality research. Research outputs need to be strengthened in aquaculture and aquatic animal health. There is a strong need to set up a national scheme for funding competitive research. There is no system for rewarding quality research. It is essential to establish a Research and Ethics Committee as many editors reject papers on work that have not gone through this process.

Opportunities: Due to Greece’s environment, climate and geographical location, research opportunities are particularly high in the fields of sheep and goat science (this being the main livestock species), aquaculture (Greece being one of Europe’s largest producers of Mediterranean fish), and emerging wildlife and zoonotic diseases (given its south-eastern location and recent disease trends). However, to benefit from these opportunities a proper research strategy is needed, aiming at strengthening areas of originality and of quality research. There is almost no collaboration with the medical and biochemistry schools at Thessaly University; this

should be changed. As stated above, interaction with the industry and the private sector appears to be somewhat limited. This suggests that promoting more outreach and a closer contact with government agencies, with the veterinary industries and with the livestock breeder associations should become a goal.

D. All Other Services

APPROACH

The EEC has only had its own observations and discussions during the site visit as the basis for its responses below, since the Self-Evaluation Report does not specifically address these questions.

IMPLEMENTATION

Organization and infrastructure of the Department's administration (e.g. secretariat of the Department).

The common Administrative Secretariat and Offices appear to be well staffed and to provide both rapid and courteous service to all staff and students of the Faculty.

Form and function of academic services and infrastructure for students (e.g. library, PCs and free internet access, student counseling, athletic-cultural activity etc.).

The Library is well equipped to enable efficient electronic access to the scientific literature. In addition a library of handbooks primarily in English is available for the students.

Internet access is available for students through a limited number of PCs at the library and through the students' own laptops (WiFi service available). These services appear to be well functioning and modern.

The overcrowded curriculum and the resulting long working days for the students (typically 8 am. – 8 pm.) necessitate access to adequate food facilities for staff and students, including both lunches and dinners.

RESULTS

Are administrative and other services adequate and functional?

The centralized administrative and secretarial services appear to be a cost-effective

way of serving the needs of the departments, staff and students, since it limits the number of administrative staff in the departments and clinics.

However, main research grant holders currently have to manage their own grants in collaboration with the central University Administration. It might be considered to establish a centralised administrative intramural grant service to relieve the academic personnel from administrative routines, which likely facilitates more grant applications from the researchers.

The Library facilities do to some extent serve as a common area for students in between lectures, which seem to lead to overcrowding at times. It would be considered reasonable if additional relaxation space for students were made available, since the current timetable for lectures and practical exercises suffers from a lack of available lecture halls to allow for a rational scheduling of the teaching activities.

Meal services were available at central locations and at reasonable prices.

IMPROVEMENTS

The time scheduling and related leisure space problems mentioned above will improve with the expected addition of a multi-purpose building in the foreseeable future.

Collaboration with social, cultural and production organizations

Several initiatives from the Faculty and its departments fulfill important needs for the local and regional population and organizations, while at the same time supporting the educational and research activities (“win-win situations”). Examples are:

- High-quality free or low-cost veterinary services to farms and companion animal owners
- Neutering clinics for stray dogs organized for and with the local Animal Welfare Society
- Collaboration with the Local Authorities to improve research into farm animal diseases
- Collaboration with graduates from the Faculty to refer or discuss cases and provide support, mostly through personal contacts, but also through an established contact telephone line for practitioners to companion animal specialists

- Organization and participation in regional seminars and workshops for practitioners.

Some of the major educational and research programmes within the Faculty are directed towards areas of great economic significance to the local and regional animal production, e.g. the Aquaculture and Aquatic Animal Health Master Programmes and the research and training programmes in Small Ruminant Animal Health.

In addition, approximately 60% of the staff are residing in the area and 20 local people are employed by the Faculty, thus having a positive effect on the local economy.

E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors

The Veterinary Faculty was founded in 1993 and is part of the University of Thessaly, School of Health Sciences. The results of the first years of the existence of the new Faculty are impressive, despite a budget that appears low compared to many other European veterinary faculties. The academic staff of the Faculty is highly qualified and motivated and many of them have acquired their qualifications abroad. Given the financial restraints that were in place from the beginning, the members of the Faculty have made the best of the situation. Students in general are very satisfied with their teachers and their commitment, professionals who graduated from the school praise the quality of the training and they are still supported by their former teachers if necessary. The members of the Faculty are aware of the financial situation in the present economic crisis. However, they will need an increase of the budget in order to consolidate the present status and/or to promote the development of the Faculty. The members of the Faculty have goals concerning the future development of the veterinary school. They have analysed the present situation and are aware of certain weaknesses.

At present some legal provisions are impeding the improvement of the curriculum. The system of examinations is counterproductive. Students can repeat exams without any restrictions. That prolongs the average study times considerably. Another regulation enables students to enter courses without having the qualifications from earlier preparatory courses. This complicates and hampers progress in the course of studies and in this professional situation may even be dangerous, since some students are not adequately prepared for the clinical coursework.

The shortage of lecture rooms considerably interferes with a rational class schedule. A new multipurpose building will be available within the next few years easing this shortcoming and allowing shorter hours for lecturing. In addition more laboratory and office space will be available thus enabling expansion of research capabilities.

The Faculty members are aware that the curriculum that was originally adopted from the Faculty in Thessaloniki is not up-to-date and is overloaded. There are clear opinions about a thorough revision. There are plans to form a small curriculum committee that will present its proposal to the general assembly of the Faculty that has to approve the changes.

The Faculty has recently introduced an online system that allows student assessment of the teaching. The Faculty seems determined to implement quality assurance for some areas of the school. The appointment of this international EEC should be seen in this context.

In order to improve flexibility and speed of decisions, the Faculty plans to revise its structure. Existing units will be combined in three divisions, e.g. Basic Sciences, Clinical Sciences, Para-clinical Sciences. This revision would facilitate the decision making process and cooperation between units.

The Faculty is attempting to get access to an experimental farm in order to enhance its teaching and research capabilities. The EEC is not aware of any plans to improve access to equine material.

F. Final Conclusions and recommendations of the EEC

Recommendations:

General recommendations:

- Standing committees (if not yet in place) should be formed, e.g. for Undergraduate Curriculum and Examinations (including teaching and assessment), Postgraduate Studies, Research and Ethics.
- An international external advisory board should be considered in order to support the Dean of the Faculty to draft and execute strategic plans for the Veterinary School.
- A system should be devised to assess annually the performance of academic staff in terms of teaching (teaching load and quality), research (publications

and acquired grants), and services (e.g. clinics, other services). The performance indices should be considered in the allocation of budgets and personnel (see section C).

- Although situated in an agricultural region of Greece the Faculty has no access to an experimental and teaching farm. The Faculty should try to obtain such access.
- The number of technical support staff is very low and should be increased in critical areas, i.e. technical laboratory staff and animal caretakers.
- Greece has two veterinary Faculties. In order to achieve a most efficient post graduate education for veterinarians and a high quality of research, both Faculties should reach an agreement on the creation of centres of excellence that are complementary. In addition all possibilities of cooperation between both Faculties in terms of education, research and service should be explored.

Undergraduate curriculum and teaching:

- The curriculum of undergraduate studies requires thorough revision (see section A).
- The current rules should be changed to allow only a small number of repetitions of examinations, and to prevent students entering follow-up courses without the appropriate credentials.
- Quality assessments for curriculum, teaching, and assessment should be established for the whole Faculty according to modern educational standards.
- A staff mentoring system for undergraduate students should be introduced (see section B).
- An extension of the out-of-semester extramural education should be considered to compensate deficiencies in available material.
- Financial resources have to be increased at the latest when numbers of students are increased. This also applies to transportation to teaching farms.

Postgraduate curriculum:

- More master courses should be introduced in order to enhance the output of highly qualified veterinarians.
- The output of PhDs is satisfactory, though unevenly distributed. Disciplines that are presently not involved in postgraduate education should enter the field. In these cases the provision of funds, i.e. grant money is a prerequisite.
- The Faculty should design a structured programme covering generic skills that first year PhDs, and clinical/research post-graduate students are expected to acquire.

- The progress of the PhD student should be assessed formally by their panel/committee at set intervals (e.g., at 2 and 3 years into a 4 year programme). At these, students should also assess their course.
- Students who are not registered for a higher degree should be given goals and be assessed on their achievements.
- The mentoring system suggested for undergraduates should be extended to post-graduate students.

Research:

- A research strategy for the Faculty should be devised in order to promote its international visibility. Centres of excellence should be identified (see section C). These centres should not only be exempt from budget cuts but financially supported beyond present funding.
- Possibilities for scientific cooperation with the School of Health Sciences of the University of Thessaly, relevant industries and the private sector should be explored.
- Funds for the replacement of outdated or the purchase of new equipment are limited. Therefore every attempt must be made to share expensive equipment among laboratories.

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