ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Α.Δ.Ι.Π.
ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ
ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

HELLENIC REPUBLIC
H.Q.A.A.
HELLENIC QUALITY ASSURANCE AGENCY
FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

DEPARTMENT OF CROP PRODUCTION
TECHNOLOGICAL EDUCATIONAL INSTITUTE
OF WESTERN MACEDONIA, FLORINA
November 14-19, 2011

External Evaluation Committee (EEC)

The Committee for the External Evaluation of the Department of Crop Production of the Technological Educational Institute of Western Macedonia of Florina consisted of the following three (3) expert evaluators drawn from the Registry compiled by HQAA in accordance with Law 3374/2005:

1. Constantin Genigeorgis (Coordinator), Professor Emeritus University of California, Davis, U.S.A and Professor Emeritus, Aristotle University, Thessaloniki, Greece.

2. Dionysis Bochtis, Professor, University of Aarhus, Denmark.

3. Andreas Ntoulis, Senior Researcher, National Agricultural Research Foundation, Institute of Viticulture, Floriculture & Vegetable Crops, Heraklion, Greece.

Introduction

The External Evaluation Committee (EEC) arrived at Florina at 16:30 of Monday November 14, 2011. From 18:00 to 19:30 the EEC had a warm welcome meeting with the chair of the Department and the members of the Internal Evaluation Committee followed by the President and the Vice President for Academic Affairs of TEI of Western Macedonia who came to Florina from the city of Kozani. The general discussion was friendly, open, and informative. The fact that the top management of the Institute expressed their serious personal interest for this external evaluation, was indicative of their true belief and dedication to the Hellenic Quality Assurance for Higher Education national program. Returning to their Hotel the EEC had a brief meeting concerning the activities of the day.

On Tuesday morning from 9:00 till 18:30 (with a short break for lunch) the EEC had a series of meetings which included:

A presentation by the Head of the Department of Plant Production, Assistant Professor T. Lazaridou. This was followed by a presentation on the Undergraduate Teaching Program by Professor E. Tamoutsidis and the Educational Work by Assistant Professor F. Papathanasiou. Research activities and European research Programs were presented by Assistant Professor I. Papadopoulos. Next, Assistant Professor T. Lazaridou reviewed the activities and interactions of the Institute with society at large and the market. Administrative services and support was reviewed by the administrative assistant Ms. E. Halvatzi. The above presentations were followed by a long discussion between the EEC and the presenters.

Before lunch the EEC met with over 45 undergraduate students and had an extensive discussion on a variety of issues ranging from work load, teaching quality, educational material and interaction with the faculty.

After lunch the EEC met with the other academic personnel, technical personnel, and teaching and laboratory supporting academic personnel which is hired by the institute on a temporary basis. A very rewarding meeting with 10 former graduates of the school followed. Their time since graduation ranged from 5 to 20 years. They were all successful professionals in various agricultural enterprises. Late in the afternoon the EEC visited the library and the athletic facilities of the institute. Before dinner the EEC reviewed the activities of the day.

On Wednesday 16/11/2011 from 08:30 till 11:30 the EEC met with the members of OMEA and discussed in detail the statistical data presented in the Tables of the Self Evaluation Report (SER). Subsequently, the EEC visited the different teaching and laboratory facilities in the main building. After lunch the EEC toured the farm and related facilities which included greenhouses,

experimental fields and related laboratories (teaching and research) as well as the agricultural machinery warehouse. A student class was in session at that time.

Departmental Structure (Self Evaluation Report page 7)

The ECC reviewed the SER, the Departmental Student Guide, and the curriculum vitae of the permanent academics. In addition, the ECC reviewed several additional documents provided by the Department.

The Department is one of the three Departments constituting the School of Agricultural Technology; the other two being the Department of Animal Production and the Department of Marketing and Quality Control of Agricultural Products.

Faculty (as of November 2011) in the ranks of lecturer, assistant, associate and full professor includes 0, 5, 0, and 3 persons respectively. Three (3) persons of varying educational levels constitute the permanent (tenured) Special Technical and Laboratory Personnel (according to the table provided by HQAA). Included in the teaching and laboratory personnel are 25 persons hired on an annual part-time basis and with diverse qualifications. The administrative needs of the entire Department are served by a single Secretary.

A. Curriculum

APPROACH

The Department offers a single undergraduate program with two specialization options namely i) Field Crops and ii) Horticulture.

The main goal of the Department of Plant Science, as stated in the SER, is to provide education, at the undergraduate level, which covers all aspects of agricultural activities comprising both theoretical and practical aspects related to prospects of Greek Agriculture.

The Curriculum develops in eight semesters. From semester 1 through 7 students attend theory classes and laboratory exercises. During the eighth semester students complete a practicum and a diploma Thesis. According to Student Guide, successful completion of all requirements leads to a diploma degree equivalent to 240 ECTS (students are required to sit and succeed in 40 courses from a list of 70 offered courses). The 6-months practicum (aiming at providing working experience in the private or government sectors dealing with plant production) gives students 15 ECTS credits while the diploma thesis 15 ECTS credits. The later can be of experimental nature or literature review on selected subjects. The practicum (practical training) is obligatory and can be undertaken as soon as the student has completed 2/3 of the required course work including all specialty courses. With respect to the diploma thesis a committee of three faculty members guides the student in subject selection and execution of the project and assigns the final grade. Each semester includes 13 weeks of course attendance followed by 2 weeks of

examinations. A typical attendance schedule includes 24 hours per week (30 ECTS).

Semesters 1-4 are devoted to foundation building courses while the following three (semesters 5-7) are devoted to one of the two areas of specialization namely Field Crops (cereals, grains) and Horticulture. Regarding attendance requirements the courses are divided into: required, required electives (one course required out of a list of courses per semester) and electives. With respect to the content, courses are divided into: core, specialization (2 levels) and ELSA (economic, legal, societal aspects).

Of the total courses attended by the students, 46 % constitute laboratory classes. Some of the courses are structured in a sequence whereupon attending one requires attendance of a prerequisite course which can be taken during the previous or earlier semester. Most of the theoretical courses are accompanied by laboratory sections. Attendance is not mandatory for the vast majority of the theoretical courses – especially in the first two years of study. Laboratory attendance is mandatory. By the end of the semester at least 13 weeks lectures for each course must have been carried out.

Data on the student work load in terms of hours devoted to lectures and laboratories are given in the SER. From semester 1 to semester 7 the work load ranges from 30-34 hours per week. This work load does not include the time devoted to Thesis, the field trips (at least one) nor the 6-months practicum in the private or government sectors dealing with plant production.

Based on a standing Departmental decision it is required that the curriculum is re-evaluated every four years. At the beginning of each academic year the General Assembly of the Department decides on the scheduling, personnel and teaching room assignment.

IMPLEMENTATION / RESULTS

The Department has effectively implemented the curriculum. The content of the courses offered in the area of Plant Production is appropriate. Of the 7 permanent academic personnel 6, hold doctoral degrees with appropriate research publication record. Teaching and student training is supported by 3 teaching rooms, 12 teaching laboratories, one greenhouse of 1000 m^2, and an experimental farm of 200.000 m^2. All teaching rooms are equipped with effective audiovisual equipment. All teaching laboratories were found to be appropriately equipped to fulfil the goals set by the Department.

During the 2010-11 academic year 172 students entered the program. Eventually only 151 remained in the program. As shown in table 11-1 of the SER during the said academic year, in addition to the permanent faculty, 25 temporary scientific personnel was hired to fulfil the teaching needs of the 70 overall offered courses.

IMPROVEMENT

Recommendation 1: The EEC suggests that in the plant protection group of courses chapters addressing plant virology, plant pathology and plant

nematology/entomology are incorporated and emphasized. Given the recent retirement of a faculty member assigned to this important area, a rapid filling of the vacancy is of great significance to the program.

Recommendation 2: It is very important to reconfigure the whole educational programme in a "horizontal structure", i.e., provide courses that underpin the fundamental knowledge to support the "vertical specialisations" in crop production. This will create the required space for the introduction of topics related to advanced technologies, such as GIS-based technologies, precision agriculture practises.

Recommendation 3: In light of the increasing contribution of fruits and vegetables to food borne diseases, it is important to introduce courses on good agricultural practises as well as include certification systems such as AgroCert and HACCP.

Recommendation 4: In light of the need to reduce the cost of hiring personnel and at the same time diversify teaching topics, the Department may consider making use of local/regional expertise and human resources by introducing jointly taught courses. These courses may address topics such as, exploitation of thermal energy from electric power plants for greenhouse heating, use of renewable energy resources in agricultural areas, rangelands and crops for animal feeds, etc.

B. Teaching

APPROACH

The structure of the curriculum largely depends on regulations passed on by the Hellenic Ministry of Education, Lifelong Learning and Religious Affairs. Consequently, the Department may be lacking the autonomy to optimise course offerings in order to meet scientific advancements and market needs. Based on this fact, and given the limited number of permanent faculty, the Department is obligated to cover the necessary teaching hours with personnel (lecturers) hired on a yearly part-time basis.

In the past, relevant regulation mandated that each course was offered twice a year; in both spring and winter semesters. This practice has recently been changed and each course is offered only once per year; either in the winter or spring semester. It is anticipated that the reduced course load will allow faculty to be more effective in other areas of activities (e.g., research, continuing education, course content revision and course notes offering). On the other hand, in view of the generalized fiscal crisis of the country, reductions in funding to hire temporary teaching and laboratory personnel will increase the teaching load of the permanent personnel significantly at the expense of teaching quality.

IMPLEMENTATION

Overall, the Department has at its disposal modern teaching methods and tools including electronic availability of teaching materials, PowerPoint presentations,

communication via email, etc. However, the use of these tools and methods by members of academic staff is variable; some use these tools consistently while others rarely or never. It should be noted that the majority of the courses contain a laboratory component. The EEC noticed the fact that the student groups are of relative large size. Students on the other hand, voiced their non-satisfaction with the quality and quantity of laboratory equipment.
Information related to courses offered, course content, responsible instructors and scheduling of courses is available to students through the general catalogue, the student guide, billboard announcement and regular e-based announcements. So far, data concerning 19 out of 40 (47.5%) required courses can be found at the institutional web-site. Textbook and course notes for student needs are available for all courses. Text-book delivery is managed through a specialized, web-based software operated by the relevant Ministry (EUDOXUS).

As mentioned above, the Department has the necessary infrastructure to provide students with electronic access to course materials and bibliography. Students however, noted that faculty (mainly regular faculty) do not always make course bibliography available electronically; thus, students have to rely on their own notes.

RESULTS

It is worth noting that for the majority of students, registering and attending the degree program of the Department was their first preference and choice. The ratio of permanent faculty to temporary lecturers is 1:3.5. This ratio can be considered high in absolute numbers of relevant personnel. Contract lecturers mentioned that they had difficulties in fully integrating themselves in the life of the Department and in research activities (Thesis supervising, etc.).

Of the 53 courses declared in table 11-5.1 of SER, 31 were taught by 8 permanent faculty (this amounts to 1-6 courses per person). In relation to the teaching load of the temporary personnel, 15 individuals taught one course each, 1 person taught three courses and 1 person taught four courses. A discrepancy is noted here, since based on the above, temporary personnel sums up to 17 individuals. However, in the one page summary document provided by HQAA temporary personnel appears to be 25 persons. For the academic year 2011-2012 this number was reduced to 12 individuals.

With respect to theoretical classes final grading is based either on an optional progress report and a final examination or alternatively on final exams as well as term-papers. As far as the laboratory classes are concerned the grade is based on written or final examination as well as weekly assessment of student progress. With regards to courses containing both a theoretical and a laboratory part, the first part is mostly evaluated through a single, final, written examination. Oral exams are sometimes used but mainly for the second part of the course.

The Department uses the 10 grade scale; a minimum grade of 5 is required for successful completion of a course. For the Academic years 2004-2011 (Table 11-6.1 of SER) the average GPA was 6.49 (ranged between 6.35 and 6.58). For the same

period, mean percent of students getting a GPA between 5 and 5.9 was 10.9% (range 6.1 to 15.9%). The corresponding figures for GPA 6 to 6.9, and 7 to 8.4 were 77.2% (range 71.4%-81.6%) and 11.6% (range 4.6% to 14.8%), respectively.

Participation in examinations. According to Table 11-5.2 of SER the percent of registered students taking part in examinations of the 49 recorded courses taught in the winter semester had a median value of 53%, a mean of 54% with a standard deviation of 21% and a range of 4% to 94%. Therefore it can be argued that during this semester, half of the registered students took part in the final examinations. Yet, there are courses in which participation in the final examinations is very low; at the range of 4 or 7%. Courses presenting such low participation should be assessed and examined by the responsible instructors as well as the administration in order to reveal and correct the reasons. Similar data should be generated for the Spring semester and the laboratory courses. Data comparing the numbers of students attending a course and those of students successfully completing the course ('passing' the examination) are presented in the same table. Based on these data the percentage of success for the theoretical courses taught in the winter semester was calculated. The analysis indicated that the median success as percent of those taking the examination was 19%, the mean 24% with a standard deviation 17% and a range of 3-81%. The above data identify a serious problem related to student ability in successfully completing ('passing') a course. Median % rates of 19 are unacceptable. Courses with passing rates of 3, 3, 5, 8 and 9% should be reviewed by the administration and the causes of the problem should be identified. Actually the overall low passing rate has to be reassessed by instructors and administration, the causes have to be identified and corrective actions should be taken. Evidently, there is a relationship between low passing rate and delayed graduation time.
The SER lists three ERASMUS exchange programmes with foreign institutions that have been developed in the last years. However, from the presentations made during the evaluation, it became evident to the EEC that only a limited number of students (5) and an even more limited number of academic staff (1) have participated in the exchange programmes. The EEC considers this low participation to be related to income disparities between Northern and Southern Europeans. In the SER the ERASMUS exchange programme are identified as practically non existing (page 76).

Facilities: Teaching infrastructure, in addition to what is mentioned above, includes 2 computer rooms; one devoted to software teaching and the other to everyday use (i.e. in support of diploma thesis). According to Table 11-5.2 it appears that only one course (Plant Biotechnology) out of 28 was considered as having inadequate educational means.

Some pieces of field machinery were modern while others were found adequate. They were well serviced and found fit for the objectives of teaching and research goals of the Department. Similarly, the greenhouse was maintained in good shape allowing for demonstrations, teaching exercises, thesis related research and research conducted within the framework of externally funded projects.

The EEC discovered that the management of the laborious hiring process of

temporary scientific personnel creates additional administrative load reducing, thus, the permanent faculty's productive time while at the same time, overburdens the single administrative assistant (Departmental Secretary).

IMPROVEMENTS

Recommendation 1: The EEC comments the practice of reducing the frequency of selected course offerings from twice to once a year. It is considered that this practice will result in more contact hours for the faculty. The EEC further considers that savings on teaching needs will decrease the Department's dependency on temporary personnel. Benefits resulting from time saved will further increase by hiring fewer but highly qualified individuals while faculty resources can be directed to course improvements, continuing education offerings/programs and seeking research funding in areas related to the teaching goals of the Department and the agricultural needs of this area of Greece.

Recommendation 2: The Department is encouraged to enhance the usage and content of the e-class approach to all courses and moreover is advised to expand on the use of web-based teaching software packages.

Recommendation 3: Faculty members should make every effort to improve communication with students. This is critical in case of student complains about grading and course failures. Instructors should keep final examinations for at least a year in order to be able to address and discuss student complaints in case of low grades or exam failure. Academic freedom in organizing and conducting a course is a privilege not a right.

Student mentoring during their studies is a very important approach in improving their performance. Unacceptable class grade performances should be first explored by the responsible instructor and next by the Department Head in order to identify and correct the causes. Similar recommendations are proposed for the analysis of students' replies to evaluation questionnaires.

Recommendation 4: The Department should seriously consider longer-term appointments of the temporary contract lectures if this is feasible within the state funding process

Recommendation 5: The Committee wishes to encourage the Department to increase student and academic staff mobility via ERASMUS or similar programs. Increased mobility is an opportunity to present institutional and faculty accomplishments and quality in teaching through the final product, the student. We understand that funding and language may be hindering mobility. Yet involving foreign visitors in research projects is more feasible.

Recommendation 6: The EEC strongly encourages the introduction of more elaborate statistical analysis (at least basic statistical indicators such as median, range, standard deviations, etc.) in assessing course evaluation Questionnaires at the individual instructor and departmental level. Such analysis will allow the

individual instructor and the administration to draw more sound conclusions and identify the true central tendency of the results. Calculating only the mean is a biased approach as a few very good or very bad responses may affect the mean of the responses. Furthermore, the EEC recommends that the Department should make an effort to comply with current legislation and requirement pertaining to course evaluation process; that is, evaluation of each course in every semester. The EEC feels that a student evaluation report at the end of each course is beneficial to the instructor. The results of such a report could remain private for exclusive use by the instructor. Still, every four years the formal evaluation will take place for drawing institutional conclusions. Moreover the EEC, acknowledging the scarcity of administrative personnel to support the whole evaluation process, recommends that evaluation procedures are computerised (for example use of optical scanners to read filling forms and automated data compilation and presentation), saving tedious processing time and at the same time allowing more sophisticated statistical analysis to identify trends over time. [Perhaps, this proposed automation should be co-ordinately organised at a national level by the Hellenic Ministry of Education, Lifelong Education and Religious Affairs]

Recommendation 7: EEC finds that the mean GPA for the period 2004-2011 is rather low. The fact that the range of this mean GPA for this 7-year period is very small (6.38-6,55) and remains stable indicates that whatever the reasons for such a low performance are they remain constant over the 7- year period. This systemic situation needs further exploration to identify the chronically existing causes and hopefully lead to corrective actions.

In addition to the low GPA, the graduation time is also disappointing. According to Table 11 6.2 of the 158 students who entered the program in the academic year 2002- 2003 (8 years ago) only 18,4 % have graduated. Of the 229 students who entered the academic year 2003 -2004 (seven year ago) only 11,4 have graduated so far. The corresponding figures for 2004-2005 for 218 students entering the program only 6% graduated, while of those entering the program in 2005-2006 only 5.4 % graduated. Whatever the reasons the EEC considers this record as tragic.

The Department is presently making a successful effort to modernize infrastructure by securing state funds earmarked for TEI laboratory upgrade. Laboratories in the process of upgrading include physiology and tissue culture. Laboratories already upgraded include Agricultural Chemistry with end-of-line instrumentation, ICT, as well as selected field machinery. Adequate laboratory teaching resources were found for seed production, phyto-pathogenic fungi and insect herbaria as well as a microscopy room. Despite, the EEC noted a lack of a Departmental coordination regarding planning and areas of expansion. In addition, great care should be taken in order not to duplicate existing or planned infrastructure by simultaneously assuring cost-aware and equitable use of research infrastructure.

It is expected that increasing research laboratory capacities would greatly

facilitate ongoing Departmental efforts for establishing a post-graduate program. Simultaneously, it is more realistic to expect that the development of such post-graduate studies will be realised via cooperative agreements with other similar/complementary Departments. Consequently, upgrading of such research infrastructure will play a critical role in establishing future post graduate interdepartmental complementarities by increasing the critical mass of available scientific personnel.

In the one page summary form (April 2011) Identity of a Department of a Higher Education Institute we note the recording of weakly hours of theory and laboratory attendance a student should have in order to graduate. The number of hours recorded for theory for the 4 Winter and the 3 Spring semesters are 56 and 42 respectively. The corresponding hours for the laboratory sessions are 40 and 30 respectively. These amount to 14 hours of theory and 10 hours of laboratory for a total of 24 hours weekly per semester. The Department is not at this moment (due to the absence of critical mass of instructors to teach so many undergraduate courses and the chronic need to hire outside instructors) to develop autonomous graduate programmes at the Masters level by itself. The EEC welcomes the existing collaborations with other Universities in relation to postgraduate course provision and research as they will enhance and diversify the relevant knowledge and experience of the Department.

C. Research

APPROACH

The research activities are mainly undertaken by some of the faculty members on a voluntary basis. There is no departmental strategy on how to enhance the future research component of the Department. If the Department seeks to become a graduate research environment of regional significance, the overall research activities need considerable improvement.

On the other hand, there is a clear effort towards attracting extramural funding along 2-3 distinct research and development lines. These lines focus around collecting, characterising and breeding locally available plant germplasm for a-biotic stress resistance, for increasing yield and for field performance.

IMPLEMENTATION AND RESULTS

Funding

Regarding the origin of extramural funding for the last decade and based on the data presented to the EEC the following observations are made:.

- Special Account for research projects (TEI of Western Macedonia): 5
- Private company funded projects:1
- Hellenic Ministry of Education, Lifelong Learning and Religious Affairs: 12

- Greek Secretariat for Research and Technology (GSRT): 3

The EEC finds that there is a good number of projects originating from either TEI of Western Macedonia (special account) or the Hellenic Ministry of Education, Lifelong Learning and Religious Affairs and especially "earmarked" for structural / renovation / upgrading purposes of TEI.

On the other hand, the EEC finds that there is a limited representation in nationally funded competitive research and no representation in European Union competitively funded projects. However, the last category is very important since it has the potential to increase regional visibility of the Department, strengthen its presence and attract regional visiting scientists. Nevertheless, there is an effort to attract competitive funds for regional cooperation (two proposals submitted recently to INTERREG initiative).

Publications

Table 11-9 of the SER presents the publication record of the faculty. The total number of research papers published in journals with editorial boards by all the permanent and temporary faculty personnel so far is 190. The corresponding papers presented in congresses /conferences having scientific committees to screen and accept a certain number of submitted papers is 157. The publication record of the 7 permanent academic personnel as per Appendix 13 of the SER is 36 multi-author published papers for the period 2004-2011. In addition Appendix 13 shows 8 multi-authored papers presented in international meetings and 7 in Greek conferences/congresses; that is a total of 15.

The committee did not take into account the publication record of the non-permanent personnel as reflecting the publication productivity of the department. Many of these scientists work in other academic and non academic places, coming to the Department mostly to contribute to the teaching of theoretical courses and laboratories. Therefore their possible research activities (in joint projects) with the Departments' faculty cannot be assessed in a quantitative fashion. For example Mr. P. Danos' extensive publication record does not include even one member of the Department's faculty indicating that the work was done in another institution which rightfully can claim Mr. Danos research productivity. The Department's overall publication record in peer reviewed journals, for the 7 year period (2005-2011) is 36/7 = 5.14 and the annual publication record for each of the 7 faculty members is 5.14/7 = 0.73 (SER pages 123-132). Department's publications in congress proceedings for the period 2006-2011 are 15 or 15/6= 2.5 per year and 2.5/7 = 0.36 per faculty member. Overall, the publication record per faculty and per year is 1.09 (0.73+0.36) papers. . If one takes into account the number of times a professor is a co-author in the 36 papers published in journals then the distribution is as follows: 10, 8, 5, 4, 15, 1 and 1. The distribution for senior authorship is: 1, 4, 2, 2, 11, 0, and 1. The above statistical facts demonstrate that the publication record is seriously uneven and the reasons have to be identified and considered in long term research planning. Some members of the faculty seem to be doing very well in number of publications and senior authorship. The EEC also noted that there is a high disparity regarding journal quality. Definitely the low number of competitive projects funded

by the Greek Secretariat for Research and Technology and none by the EU has a serious impact upon the Department's publication record. Research capabilities and productivity are imperative in sustaining graduate degree programs and professional recognition at the international and regional level. Table 11-9 of the SER records the publication of 8 books or monographs during the period 2004-2011.

Table 11-10 of the SER addresses the recognition of the research record of the faculty. Papers published by the permanent and temporary faculty were cited 414 times so far. Citations reflecting the papers published by the permanent faculty were not provided. Members of the Department were appointed 9 times to the scientific committees of congresses/conferences. Whether these appointments were in international or national meetings is not reported in the SER. In the future such information should be tabulated as it reflects the faculty's professional status in the international scientific community.One patent was awarded in 2004.

Overall, the EEC realizes that the absence of graduate studies at the MSc level significantly restricts the potential for a better research accomplishments and publication record. Obviously, a professor with minimal to non-existing technical personnel support and non-existing graduate students cannot compete with colleagues in other institutions of higher learning who enjoy both of these opportunities. Relying on undergraduate students to get involved in research cannot substitute for the presence of graduate students.

IMPROVEMENTS

Recommendation 1: Additional research and technological activities need to focus on extension activities and on targeted technological development in the near to medium term future. This could be coupled with Lifelong Education activities to be funded or implemented independently of the above. These activities are expected to infuse the problematic of the regional agricultural reality to the applied research realm within which they could be efficiently addressed and resolved. They also hold the potential for increasing regional cooperation and personnel exchanges.

Recommendation 2: The Department should explicitly layout the long-term research objectives, and in parallel to introduce explicit statements about the areas in which the Department aspires to excel. There is a clear Departmental research effort for exploiting and valorising regionally available agricultural biodiversity. In addition, and without sacrificing the above, an effort could be made to identify and to promote wild indigenous promising flora species (wild vegetables, ornamentals, aromatic, pharmaceuticals, etc), together with experts in biodiversity assessment such as from Botanical Gardens. Additional research proposal ideas may include geothermal and renewable energy resources applications in agriculture (to be jointly proposed with the Department of Geotechnology and the Environment) or agricultural pollution (to be jointly proposed with the Department of Pollution Control Technologies), rangelands and animal feeds (to be jointly proposed with the Department of Animal Sciences) and others.

Other activities -in the form of service for fee -may include extension activities and

problem solving of regionally operating agro-industries (chemical analyses, quality assessment, tissue culture, general consulting, etc).

Recommendation 3: The Committee urges researchers to publish their contributions in learned journals (peer-reviewed) that are of high international reputation and quality, as measured by appropriate metrics.

The reasons for the uneven publication record among faculty should be addressed and identified. Is a heavy teaching load a serious reason? We feel that younger faculty should be supported and encouraged by senior members in submitting research proposals and given more financial support from state funds when this is possible. Obviously, co-operative research work with well established Greek scientists as well as others in the region should be cultivated. Visibility in international meetings through research reporting or participation is a key to networking, eventually resulting in joining teams of transnational research proposals.

In view of the current economic crisis we realize the difficulty in getting travel funds, yet we encourage the above when possible.

D. All Other Services

The Department has access to web support, and computer stations are available to students at the library and in specifically designed laboratories. The library provides access to international journals through the HEALINK program

Indoor and outdoor athletic facilities are considered above average.

The Department has a very lean administrative structure that consists of only one staff member. Coordinating student affairs, processing the hiring of a high number of temporary personnel on a yearly basis and administering and tabulating course and instructor evaluation questionnaires is an unbearable task. On the other hand heavy administrative work conducted by the faculty will have an impact on teaching quality and securing competitive research funding.

The Department is increasingly adopting electronic means in dealing with communication and dissemination of information to staff and students. The EEC is fully supportive of this course of action and would like to see such initiatives maintained and enhanced.

The EEC has not identified any health and safety programs especially in the laboratory areas. The restaurant facility and the food served, based on our personal experience, was excellent.

Recommendation 1: The Department needs to identify additional and better ways of supporting its students. This should include methods for supporting students who

under-achieve in their studies, provide advice to students when they are under work and study pressures, offer guidance to students regarding careers and choice of optional courses, and introducing new students to the course. Individual mentoring at the beginning of each semester in a more formal way may minimize the chronic problems of low passing rates, low grades and delayed graduation.

Collaboration with social, cultural and production organizations

Recommendation 1: The EEC considers that building strong links with organisations at local and national levels is a very important aspect in terms of enhancing the public understanding of what the Department does and promoting its interfaces with agriculture production in the geographical area where Department is located. This is vitally important both in terms of developing research programmes and also supporting the life-long learning aspirations of past graduates in new technologies and methods in crop production.

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

The SER on pages 80-83 discusses the proposed plans of action to minimize the weaknesses and strengthen the positive aspects of the departmental programs on a short and intermediate term approach. The EEC went through the proposed plans with the SEC step by step. The overall assessment was that most of the proposed plans have been either implemented or are in progress. The objective of closer cooperation with the market forces in identifying needs and advertise what the graduates can do for agricultural enterprises seems to be on course. According to the SER 60% of the graduates work in jobs related to their degree and knowledge. Proposed improvements in electronic administration, teaching, communications, literature searching have either been completed or are in progress.

Members of the Department are encouraged to participate and/or organize conferences, seek cooperative research projects at the national and international level, improve the quality of teaching using modern approaches and enhance the laboratory component of the various courses and publish in well established international journals. Special effort should be made to submit departmental rather than individual research proposals and cultivate solution oriented projects with the agricultural industry.

Areas identified in the SER with negative impact upon the Department's teaching and research include the nearly non-existing student and faculty mobility, organizing continuing education programs, limited number of permanent faculty

and reliance on temporary personnel and absence of an autonomous graduate MSc level program (approval pending to the Hellenic Ministry of Education, Lifelong Education and Religious Affairs since 2009). Special note is made on the lack of sufficient administrative personnel to meet the Departmental needs. The EEC further notes that the management of the laborious hiring process of temporary scientific personnel in addition to overloading the single administrative assistant, burdens the permanent faculty with significant administrative responsibilities and duties, reducing thus, their productive time .

The Department proposes the establishment of autonomous PhD degree program at the TEI level. Finally, we were informed that the budget of the Technological Educational Institute of Western Macedonia was cut from 5.3 million Euros in 2010 to 3,500,000 in 2011, a reduction of 30%.

F. Final Conclusions and recommendations of the EEC

The Department's educational programs are essential to Greek agriculture as they address more applied agricultural practices than university curricula. This becomes obvious by the extensive laboratory components of nearly all taught courses. The location of the Department fulfills not only regional agricultural needs but also national strategic objectives in potential international educational and research programs.

It is worth noting that for the majority of students, registering and attending the degree program of the Department was their first preference and choice and that they are intending to seek employment in agricultural enterprises.

Evidently, the Department in terms of location and educational goal, is in the privileged position to offer young adults originating from this north-western corner of Greece a unique opportunity to acquire formal knowledge and skills for the agricultural sector; a sector among the few viable professional alternatives of this region.

The Department could envisage extending its activities and somehow attract students interested in the agricultural sector from the geographically proximal two countries: FYROM and Albania. In doing so, it would augment its potential and unique role within the national Hellenic RTD system.

The curriculum offers 58 courses taught by 8 permanent faculty and 25 part time lectures in the academic year 2010-11. The majority of courses also have a laboratory segment.. It seems that all courses have adequate educational means.
For the Academic years 2004-2011 the average graduation GPA was 6.49 with 77% of the students getting a GPA of 6 to 6.9 and 11% a GPA of 7 to 8.4.

In a typical winter semester only 53% of registered students participated in the finals of 49 courses with a range of 4% to 94%. The median success rate as percent of those taking the examination was 19%, with a range of 3-81%. In addition to the low GPA, the graduation time is also disappointing. Of the 158 students who entered the program in the academic year 2002- 2003 (8 years ago) only 18.4 % have graduated. Of the 229 students who entered the academic year 2003 -2004 (seven year ago) only 11.4% have graduated so far. Of the 218 students entering the program the academic year 2004-2005 only 6% graduated, while of those entering the program in 2005-2006 only 5.4 % graduated. Whatever the reasons the EEC considers this record as tragic.

The EEC finds that there is a good number of projects originating from either TEI of Western Macedonia (Special Research Account) or from the Hellenic Ministry of Education, Lifelong Learning and Religious Affairs and especially "earmarked" for structural / renovation / upgrading purposes of TEI.

The EEC also finds that there is a diminished representation in nationally funded competitive research and zero representation in European Union competitively funded projects. The last category is expected to increase regional visibility of the Department and to strengthen its presence and attract regional

visiting scientists. However there is an effort to attract competitive funds for regional cooperation (two proposals submitted recently to INTERREG initiative).

The Department's overall publication record in peer reviewed journals, for the 7 year period (2005-2011) is 36/7 = 5.14 and the annual publication record for each of the 7 faculty members is 5.15/7= 0.73. Department`s publications in congress proceedings for the period 2006-2011 are 15 or 15/6 =2.5 per year and 2.5/7= 0.36 per faculty member. Overall the publication record per faculty and per year is 1.09 (0.73+0.36) papers.

If one takes into account the number of times a professor is a co-author in the 36 published in journals papers then the distribution is as follows: 10, 8, 5, 4, 15, 1 and 1. The distribution for senior authorship is: 1, 4, 2, 2, 11, 0, and 1. The above statistical facts demonstrate that the publication record is seriously uneven and the reasons have to be identified and considered in long term research planning. Some members of the faculty seem to be doing very well in number of publications and senior authorship Definitely the low number of competitive projects funded by the Greek Secretariat for Research and Technology and none by the EU had a serious impact upon the Department`s publication record. Research capabilities and productivity are imperative in sustaining graduate degree programs and professional recognition at the international and regional level.

According to the SER there have been 414 citations for the 2004 to 2011 period. We assume that this number represents the citations of the 36 published papers and probably of the 15 publications in congress proceedings.

Under the present conditions of heavy teaching load which will increase in the current academic year as the number of temporary teaching personnel is cut significantly we anticipate that the research and publication record of the faculty will be seriously affected.

Recommendations

Recommendation 1. Courses with low final examination participation rate and very low passing rate should be reviewed by the administration in cooperation with the responsible instructors in order to reveal and correct the reasons for such an unacceptable record.

Recommendation 2. Faculty members should make every effort to improve communication with students. This is critical in cases of student complains about grading and course failures. Student mentoring during their studies is a very important approach in improving their performance. Unacceptable class grade performances should be first explored by the responsible instructor and next by the Department Head to identify and correct the causes. A similar approach should be followed for the analysis of student questionnaires.

Recommendation 3. EEC considers the mean GPA for the period 2004-2011 as rather low. The fact that the range of this mean GPA for this 7-year period is very small (6.38-6.55) and remains stable indicates that whatever the reasons for such a

low performance are they remain constant over the 7-year period. This systemic situation needs further exploration to identify the chronically existing causes and hopefully lead to corrective actions.

Recommendation 4. The EEC recommends the evaluation of instructor and course process to be computerised, saving tedious processing time and at the same time allowing more sophisticated statistical analysis to identify trends over time. Such analysis will allow the individual instructor and the administration to draw more sound conclusions and identify the true central tendency of the results. Furthermore, it is recommended that the course evaluation process be on a regular basis for all semesters and courses.

Recommendation 5. The EEC feels that, increasing research laboratory capacities would greatly facilitate ongoing Departmental efforts for establishing a post-graduate program. Simultaneously, it is more realistic to expect that the development of such post-graduate studies will be realised via cooperative agreements with other similar/complementary Departments. Consequently, upgrading of such research infrastructure will play a critical role in establishing future post graduate interdepartmental complementarities increasing the critical mass of scientific personnel.

Recommendation 6. The Department is not ready at this moment (due to the absence of critical mass of instructors and researchers) to develop autonomous graduate programmes at the Master and PhD levels . It is rather questionable whether faculty with such a heavy teaching load in the undergraduate program would have sufficient time to develop graduate courses and supervise graduate student research. The EEC welcomes the existing collaborations with other Universities and TEI in terms of postgraduate course provision and research as they will enhance the relevant knowledge and experience of the Department.

Recommendation 7. A curriculum with 58 courses offered by a Department with 8 permanent staff is overbearing and thus acceptable. Therefore the permanent faculty has been assisted in the past by 25 temporary lecturers. This solution has many drawbacks. Temporary personnel cannot plan for course improvements as they are not sure whether they will be hired the next year. Similarly, these people cannot build research capabilities and associations and submit grant proposals as they may be coming from long distances for a day or two while having parallel employment in other institutions.

Recommendation 8. This committee is not aware of the Hellenic Ministry of Education, Lifelong Learning and Religious Affairs Master Plan for Higher Education which is intended to define the approved law for higher education establishing Graduate Schools, the EEC feels that PhD degree role of TEI and the role of Universities in teaching and research. Using examples from other countries and the recently programs should be based on collaborations of Schools and Departments within one or more higher education institutes and the formation of specialized graduates Groups. Membership to such groups should be based on proven academic

excellence in teaching, research and professional competence. Under such a system distinguished faculty from TEI and Universities will be able to teach graduate courses as well as mentor MSc and PhD students.

Recommendation 9. The EEC recommends the development of a research strategy that will include specific methods and procedures for the identification, fostering and development of research topics within the Department and the support and encouragement of academic staff to engage in research programmes and to develop their skills. Provisions must be made to incorporate non-permanent members of staff in research programmes, as this will increase the coherence of the Department.

Recommendation 10. The EEC recommends the development of research and scholarly co-operations with other institutions in Greece and abroad. Aspiring towards this development is valid and should be supported. However, this long term goal requires the development of a coherent research plan that should include methods for developing promising research topics and supporting individual researchers.

Recommendation 11. The EEC recommends that the Department actively develops Continuous Professional Development (CPD) courses that will support the life-long training and educational requirements of a wide range of graduates from the TEI and other Institutions in the area of Western Macedonia.

Recommendation 12. The EEC feels that the serious decrease of the budget of the Technological Educational Institute of Western Macedonia from 5.3 million Euros in 2010 to 3,500,000 in 2011 will have a serious impact on the quality of the current programs.

Overall the EEC commends the Department for a sincere effort to present its activities and define the positive, the negative aspects of present activities as well as future needs of the undergraduate program. The EEC especially commends the Technological Educational Institution of Western Macedonia for the development of a unique, within the Greek Higher Education System and probably within the European Union, student Transcript (Diploma Supplement) in English. Such a document facilitates immensely a graduate's efforts for employment outside of Greece or in seeking admission to Graduate Degree programs in other countries.

The Members of the Committee

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF WESTERN MACEDONIA

DEPARTMENT OF CROP PRODUCTION

Prof. Constantin Genigeorgis
University of California Davis, California, U.S.A.

Prof. Dionysis Bochtis
University of Aarhus, Aarhus, Denmark

Dr. Andreas Ntoulis
National Agricultural Research Foundation,
Institute of Viticulture, Floriculture & Vegetable Crops,
Heraklion, Greece