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ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

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

## **EXTERNAL EVALUATION REPORT**

DEPARTMENT OF FORESTRY, MANAGEMENT OF THE ENVIRONMENT  
AND NATURAL RESOURCES

DEMOCRITUS UNIVERSITY OF THRACE

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### **External Evaluation Committee**

The Committee responsible for the External Evaluation of the Department of Forestry, Management of the Environment and Natural Resources of the Democritus University of Thrace consisted of the following four (4) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005 :

1. Dr. Costas Kadis (President)  
(Title) (Name and Surname)  
Frederick University, Nicosia, Cyprus  
(Institution of origin)
  
2. Dr. Tala Awada  
(Title) (Name and Surname)  
University of Nebraska –Lincoln, USA  
(Institution of origin)
  
3. Dr. Andreas Christou  
(Title) (Name and Surname)  
Ministry of Agriculture, Natural Resources and Environment, Department of Forests, Nicosia, Cyprus  
(Institution of origin)
  
4. Dr. Aikaterini Dounavi  
(Title) (Name and Surname)  
Forest Research Institute of Baden-Wuerttemberg, Freiburg, Germany  
(Institution of origin)

**N.B.** The structure of the “Template” proposed for the External Evaluation Report mirrors the requirements of Law 3374/2005 and corresponds overall to the structure of the Internal Evaluation Report submitted by the Department.

The length of text in each box is free. Questions included in each box are not exclusive nor should they always be answered separately; they are meant to provide a general outline of matters that should be addressed by the Committee when formulating its comments.

## **Introduction**

### **I. The External Evaluation Procedure**

The external evaluation of the Department of Forestry, Management of the Environment and Natural Resources of the Democritus University of Thrace (hereafter the Department) took place between May 9 - 13, 2011.

The External Evaluation Procedure included the following steps:

#### **Monday May 9**

Morning

- Brief meeting of the members of the External Evaluation Committee (EEC) with the president and members of the HQAA.

Afternoon

- Meeting of the members of EEC to discuss documents provided by the Department.
- Departure from Athens, arrival to Alexandroupolis and transfer to Orestiada by members of the Department’s faculty.

Evening

- Informal briefing of the EEC by members of the Department’s faculty over dinner.

#### **Tuesday May 10**

Morning

- Arrival at the Department. Welcome of the EEC by Prof. Soutsas.
- Presentation of the Department’s Curricula.
- Presentation of the Department’s Research activities.
- Presentation of the procedure followed for preparing the Department’s Internal Evaluation Report and its main outcomes.
- Unannounced meeting with students during a class session.

Noon

- Visit of the EEC to the students’ dormitories and lunch at the students’ restaurant.

Afternoon

- Meeting with the members of the Department’s Internal Evaluation Committee.
- Visit to the Department’s buildings (offices, classes, amphitheatres and library) and laboratories.

Evening

- Dinner hosted by the Department’s faculty.

**Wednesday May 11**

- Meeting with laboratory and teaching supporting staff.
- Meeting with administrative personnel (secretary and library).
- Meeting with the students' representatives.
- Final meeting with the Department's faculty, personnel and students.  
Discussion of the overall findings of the EEC.

## Noon

- Lunch at the students' restaurant.

## Afternoon

- Meeting of the EEC members at the hotel in Alexandroupolis to draft comments and notes regarding the site visit.

**Thursday May 12**

- Departure from Alexandroupolis to Athens.
- Preparation of the External Evaluation Report.

**Friday May 13**

- Preparation of the External Evaluation Report.

The members of the EEC note that the site visit was conducted in a constructive atmosphere of cordiality and professionalism and they express their sincere gratitude and appreciation to the faculty, personnel and students of the Department for their hospitality and support to the external evaluation procedure.

**II. The Internal Evaluation Procedure**

The Internal Evaluation was completed in 2008 and was accompanied by appropriate documentations. The Internal Evaluation reflected the status of the Department over a 5 year period (between 2004-2008). The EEC received a brief update on the Departmental progress since 2008. The participation of the faculty in the development of the document was satisfactory. The procedure followed in the preparation of the report was as expected. The objectives were met quantitatively, but the mission and strategic planning were general and brief, and conclusions and recommendations were not formulated by the Department based on their finding.

## **A. Curriculum**

### APPROACH

#### **Undergraduate Programme**

The overall objective of the program is to educate and train students in the areas of forestry and environment with special emphasis on the management of natural resources. The Department has 18 faculty and five external instructors, who teach a total of 72 courses, of which 60 are core courses and 12 are specialized courses that cover the following five areas of specialization:

1. *Ecology, environmental protection and forest production.*
2. *Rangeland science, and game science division.*
3. *Management and development of natural resources.*
4. *Technical forest-water management works.*
5. *Forest harvest and technology of forest products.*

The curriculum is designed to be completed in 10 semesters. In the third semester students are required to select one of the five listed specializations. A thesis is required for the completion of the Bachelor's degree. Topic for the thesis is selected no later than the 8<sup>th</sup> semester with the consent of the academic advisor.

Three months practical training (practicum) in forests and forest services/companies is compulsory, and usually takes place during summer months. Additionally, short class field trips are also conducted.

#### **Graduate Programme**

The overall objective of the Master's (MSc) graduate programme is to further the education of students in one of the following specializations:

1. *Sustainable management of mountainous watersheds with intelligent information systems and GIS.*
2. *Environmental policy and integrated development of the countryside.*
3. *Ecology and protection of forest ecosystems.*

The curriculum is designed to be completed in three semesters and includes six obligatory and two elective courses. Students are also required to prepare and defend a post graduate dissertation.

#### **Doctoral Programme**

The objective of the doctoral programme is the production of highly specialized scientists and researchers in the field of Forestry and Management of the Environment and Natural Resources. The minimum time for a post graduate student to complete his studies is six semesters and the maximum is ten. Defence of the thesis is required.

The curricula of the above under- and post- graduate programmes are designed to provide academic training to students interested in the areas of forestry and the management of the

environment and natural resources. The curriculum and any changes are decided and approved by the faculty.

While there has been a great effort to develop a curriculum that meets the contemporary societal and environmental needs, the EEC found that there are areas that are not well emphasized in the undergraduate curriculum including climate change and variability, ecosystem services, vegetation cover change (i.e., desertification, adaptation, alien and invasive species), and biodiversity.

The curricula were developed based on the faculty expertise with little input from stakeholders and other constituents.

The EEC did not note any structured or formal process to track the professional development and the career of the alumni through a special career office. This was attempted once through questionnaires that were sent by the Department to its alumni.

Undergraduate curriculum revisions are done according to the Department's regulations; the program has been revised 8 times since the establishment of the Department in 1999. Most of these revisions involved either the inclusion or exclusion of courses. The last and most significant revision that occurred in 2009 incorporated the ECTS system. However, the EEC noted that the last revision was performed more or less in an arbitrary fashion. More specifically, the method of determining the ECTS per course was based only on the number of teaching periods and did not take into account the overall effort of the student as required by the *Bologna process*. This is also indicated by the large number of students failing to pass courses with relatively low number of ECTS.

#### IMPLEMENTATION

Given the relatively small number of students who join the program on an annual basis (120 students are enrolled but only 50-70 remain and continue their studies in the program), it is not hard for the faculty to implement the program. In general, the implementation of the curriculum achieves the Department's predefined goals and objectives.

Even though the structure and the sequence of the curriculum is well organized, the EEC notes the large number of offered courses per semester (in some semesters, there are ten courses). This situation contributes in some extent to the low pass-success of the students and as a consequence the graduation is extended to 12, 13, or even more semesters.

The EEC recommends the revision of the curriculum and reducing the number of offered courses, to better reflect the name and mission of the Department. New courses should include topics on resource management, climate change and variability, ecosystem services, vegetation cover change (i.e., desertification, adaptation, alien and invasive species), and biodiversity. The proper number of ECTS should be allocated to each course during this revision.

The EEC notes the weak second language (e.g., English) and writing skills of many students who are mostly average or even below average and have not listed the Department as their first choice. The EEC recommends a seminar class that would include scientific writing and presentations, library and data base training, public speaking and English terminology.

The teaching material consists of class notes and readings which are considered quite sufficient and up to date. Students are generally given the syllabus of the class, including objectives and expectations. Lecture notes are posted online or provided electronically to students. The introduction of “Evdoxos” system is a move in the right direction to ensure the delivery of books in a timely fashion.

The EEC notes that a large number of books come from the Department of Forestry at the Aristotle University of Thessaloniki due to the limited available time for the faculty to prepare their own materials. This is an additional item that needs to be addressed as the Department identifies its long term distinct mission and objectives.

The implementation of the curriculum is delivered by highly qualified and trained personnel who work in an effective way.

The EEC stresses the small number of technicians who support only a limited number of classes and laboratories.

Practicum was viewed as being a very important and integral part of the programme, but there are concerns about the future availability of resources to effectively carrying it out. The EEC strongly recommends that the Department secures a bus and a University Forest. Furthermore, for some courses it has been noted that the length of practicum is not sufficient and does not provide the necessary training to students.

Important deficiencies have been noted in the lab spaces and infrastructure, a situation that creates additional challenge to the implementation of the curriculum.

## RESULTS

Overall, the program implementation achieves the Department’s predefined teaching goals. The method of teaching is quite modern and the students are satisfied. The incorporation of research and practice in the curriculum provides additional motivation and contributes to the broad interdisciplinary education. Postgraduate students have the opportunity to participate in conferences, seminars and publications. The EEC notes the collaborations which have been developed by the faculty with other institutions in Greece and abroad to cover some of the needs in all programmes.

Graduation rates are high but the committee is concerned with the significant delays in the completion of the program. Most students (53-75 %) are unable to complete the program in 10 semesters (for the students enrolled in the program from 2000-2001 to 2005-2006).. The EEC recommends that the Department performs curriculum and student assessments on a regular basis to address this issue. Issues to be considered during assessments are the a) large number of courses per semester, b) low attendance by the students, c) low basic education level of incoming students, and d) large teaching load.

The EEC noted that a large number of students do not pass and carry forward basic low level (i.e., first 4 semesters) courses essential for the more specialized advanced courses. As a

result students find senior level classes to be difficult to comprehend and pass. The EEC recommends a more balanced schedule to help students succeed in their program of studies (i.e., combine subjects that require different levels of effort - this should be addressed while revising the number of ECTS per course according to student's effort).

The Department recognized these challenges and the EEC recommends that the faculty move forward to address them.

#### IMPROVEMENT

The Department recognizes the need to revise the curriculum. Steps will be made to move forward on this.

Introduction of new specialized courses and seminars is an important step to the improvement of the curriculum, while the revision of the number of ECTS per course according to student's effort will help the students to put an equal effort per semester. For some courses, the number of practical days should be increased to better reflect the nature of the class. The above will lead to a more balanced schedule and will help students succeed in their program.

Faculty in the Department are encouraged to prepare their own teaching materials. We commend the Department on its effort to regularly revise the program and we encourage them to continue with their efforts in modernizing the program and incorporating student assessments in these revisions.

Increasing state support is critical for the success of the program. Funds are needed to improve the infrastructure, and teaching laboratories; additional support staff are required to support students needs; securing a bus is imperative for the success of the practicum; and the acquisition of a University Forest for teaching and research purposes is essential.

## ***B. Teaching***

### APPROACH:

The Department provides education and training in five undergraduate and three post graduate specializations.

#### Undergraduate specializations

1. Ecology, environmental protection and forest production
2. Rangeland science, and game science division
3. Management and development of natural resources
4. Technical forest-water management works
5. Forest harvest and technology of forest products

#### Postgraduate specializations

1. Sustainable management of mountainous watersheds with intelligent information systems and GIS
2. Environmental policy and integrated development of the countryside
3. Ecology and protection of forest ecosystems

- ***Teaching methods used in under- and post-graduate programs:***

Teaching methods include classroom lecture, laboratory training, practicum, field visits and opportunities for under- and post-graduate research. Faculty use modern means (e.g., PowerPoint) to deliver lectures. Numerous faculty in the Department use a web-based learning platform (E-Class). Others have developed personalized WebPages to deliver lecture and reading materials, and provide information and updates on courses.

- ***Student/Teaching staff ratio:***

There are 18 faculty and 5 temporary instructors (407) who teach in the Department. Student to teaching faculty ratio in the undergraduate program is 15 without accounting for students who have not completed the program in 5 years, and 21 when accounting for the latter group. Student to faculty ratio in the postgraduate program is 4.8. The ratio is high for the undergraduate program and given the limited resources, and laboratory space in the Department, the EEC is concerned about the ability of the Department and faculty to sustain quality program in the future.

- ***Teacher/student collaboration:***

After an unannounced visit to an undergraduate course, and interviews with numerous undergraduate and postgraduate students, it is evident that teaching faculty are very approachable, accessible, respond to students concerns and collaborate with students especially the postgraduates on research. Off campus postgraduates stay in contact with faculty via email and scheduled Departmental visits. It was also apparent that the 4 technical staff and numerous graduate students provide significant support to and facilitate collaborations with various groups in the Department.

- ***Adequacy of means and resources:***

Faculty and EEC recognize that while there are adequate lecture classrooms to accommodate the current student population and potential future increase in student numbers, the general inadequacy in laboratory resources and infrastructure are evident,

and need to be addressed to maintain the momentum in the Department. Teaching laboratories are lacking and undergraduate students conduct their laboratory exercises in research labs. This conflicts with graduate students' research and creates equal challenge to both faculty and students involved. Moreover, laboratory exercises are performed in small groups due to the general small laboratory space, inadequate number of instruments, and/or limited amounts in consumables. In many instances faculty and postgraduate students have used their own personal funds to cover the cost of laboratory materials and consumables to be able to conduct research or run laboratory exercises for undergraduate students. There were instances where faculty have used their research grants to support teaching exercises. Faculty have confirmed that the allocated allowance per faculty on an annual basis is minimal and is not sufficient to support teaching needs.

There are several overcrowded labs where small spaces are shared by two or more faculty of unrelated disciplines. The EEC suggests that the Department should re-examine current laboratory space allocations to better reflect the program and current faculty needs.

Postgraduate students have mentioned the lack of instruments critical for their research. Faculty have mentioned that the state has provided little equipment or facility funds in the last years. The lack of instruments in this Department is identified as a significant challenge to the delivery of quality program and research by faculty. The EEC views that support for instruments is critical for the success of this program especially given the remote location of the Department.

- ***Use of information technologies:***

Numerous faculty in the Department use modern means to deliver lectures and laboratory exercises. Lectures are taught using PowerPoint. PDF copies of the notes are available for students online (E-Class, and faculty WebPages), or given directly to the student (on a flash drive). It was noted that while postgraduate students utilize the various web based data bases for their research, undergraduate students in their 5<sup>th</sup> or 6<sup>th</sup> semester were in large unaware of the presence of such database or what it can offer. Additionally, it was communicated to the EEC that the database is not attractive to undergraduate students given language barriers (i.e., English).

- ***Examination system:***

The format of the exams is mainly in the form of traditional single final; laboratory and oral exams are conducted when appropriate. Some faculty give additional exams to students during the semester. Students that fail in either semester have the opportunity to retake the final in September.

## IMPLEMENTATION

- ***Quality of teaching procedures:***

From the interviews with students and faculty and examination of courses evaluation, it appears that the majority of faculty are dedicated and eager to teach. Classroom attendance is relatively low in general (20-60%, depending on the class), however, the general practice in Greek Universities is not to introduce compulsory attendance. Faculty when applicable have made the lecture as part of the laboratory to increase attendance. Introduction of incentives (e.g., mid-term exams, and laboratory and class

assignments) to address the low attendance is important for quality education.

- ***Quality and adequacy of teaching materials and resources:***

It is apparent to the EEC that faculty do their best to accommodate students by making lecture notes available electronically on E-Class or their personal webpage. Postgraduates assist in the process. Students stated that lecture and laboratory notes are generally up to date, but continue to be concerned about the process and delays in book delivery system despite the switch to electronic ordering. The EEC believes that this issue will be eventually resolved.

Students have access to the library as well as online databases and major disciplinary journals. It was noted that the internet connection is awfully slow in the Department and downloading materials can be a challenge. Postgraduate students use library resources on a regular basis, while undergraduate students are unaware of several of these resources and do not see themselves using available databases in the foreseeable future. The EEC strongly recommends that undergraduate students be introduced to library resources early on in their program. This could easily be embedded in existing classes (i.e., language classes). Large number of undergraduate students (also confirmed by postgraduates), view the lack of basic knowledge in English terminology, and ability for public speaking as barriers to their progress. The EEC recommends the introduction of English terminology in class lectures and laboratory exercises and the development of a seminar class which aims to train students in research methodologies, oral presentations, literature search, and scientific writing.

Practicum was viewed as being a very important and integral part of the program, but there are concerns about the current and future availability of resources to effectively carrying it out.

- ***Quality of course material:***

Students indicated that most course materials are up to date. The EEC encourages the faculty to offer more literature in each course and promote more literature search by the students. Some concerns were raised regarding the relevance and content of selected courses to the current and future emerging issues in natural resources and the environment. The EEC recommends the re-evaluation of selected classes to better address policy and management of natural ecosystems and the environment in the face climate change and population increase.

- ***Linking of research with teaching:***

Few undergraduate students seemed to be aware of, or take the opportunity to participate in faculty research. Postgraduate students provide support and assist in laboratory teaching. Neither group is compensated for their efforts.

- ***Mobility of academic staff and students:***

Faculty has the opportunity to go on sabbatical to other institutions for professional development. The faculty we visited with recognized the importance of this activity; however, none has gone or is planning on going for sabbatical in the near future. Resources, faculty ranking, and opportunities were some of the major reasons provided.

Selected students have participated in Erasmus Programme. Several postgraduate students have presented or planning on presenting their research finding at international conferences, and have visited or planning on visiting other research

institutions for training and other professional development. Postgraduate students are not compensated for their travel. The EEC recommends that the Department continues to promote student travel and sets aside a small pool of funds (generated from postgraduate student tuition) to partially support graduate student travel to professional meetings.

- ***Evaluation by the students of (a) the teaching and (b) the course content and study material/resources:***

The Department provided the EEC with a summary of students' evaluations for classes taught in 2008-2009. Courses evaluation included questions on teaching, course content and materials. Evaluations were positive and complementary to the faculty in general. We have some concerns to why some students chose not to answer several questions on the evaluation form.

Results have shown that in some classes a large number of students (~40%) indicated that the course was hard to comprehend, this was confirmed by students when interviewed. Students believe that more instruction and teaching support in classes identified as "hard" will be helpful. Faculty should emphasize to students the importance of their participation in course evaluation for the continuous improvement of the program.

#### RESULTS

- ***Efficacy of teaching:***

There is no formal process in the Department to assess the efficacy of teaching or the program. A process should be developed and introduced to assess the efficacy and learning outcomes of each specialization and its objectives.

- ***Discrepancies in the success/failure percentage between courses:***

The EEC noticed high grades in elective courses, and absence of normal distribution in several core classes (i.e., grades were skewed to either the right or left hand side of the distribution). Faculty presented several reasons for the observed trends including: rigor of the class, level of attendance, timely arrival of books, student's interest in the course, relevance of the topic, and the average or below average level of students accepted in the program.

- ***Differences between students in (a) the time to graduation, and (b) final degree grades:***

On average, students complete their program of studies in 12-13 semesters. This is considered too long and excessive; students and faculty attributed this to the large number of courses required of students to complete this degree and by low class attendance.

Faculty are aware of the positives and negatives. The faculty have used these results to implement revisions to the program.

#### IMPROVEMENT

The Department has revised the curriculum 8 times since it was first established in 1999. Several junior faculty who seem to be very motivated and enthusiastic have joined the Department in the last couple of years.

The Department has requested resources for the improvements in current facilities and infrastructure, the acquisition of University Forest, and the commencement of construction of the new building to conduct training and research, but the Department has not received approval yet.

There is little the faculty can do at this point to improve teaching conditions without state intervention. In fact, further delays in state intervention and support will most likely slow down the momentum and enthusiasm of faculty and staff and will have negative impacts on the program.

## C. Research

### APPROACH

- **Department's policy and main objective in research:**

The internal evaluation report does not provide clear policy or main objectives for the Department. The overall research policy is not defined by the Department's assembly but by the research objectives of each individual laboratory.

The EEC discussion with the faculty members revealed that the Department aims at promoting research in the areas of forestry and natural resources and the environment with emphasis on natural ecosystems, sustainable use of resources, environmental management, ecosystem protection and services.

- **Internal standards for assessing research:**

The Department uses standards for assessing research that are widely accepted, such as the number of publications in international scientific journals with impact factor and the number of citations to these publications.

### IMPLEMENTATION

- **Promoting and supporting research:**

Despite the limited resources, infrastructure and funding, there is serious effort, and enthusiasm by several faculty members to excel and promote their research activities in their areas of research expertise. There is motivation for the faculty to develop research activities, since the number and quality of scientific publications is the most important criterion for their promotion. The Department's research activities were enforced by the introduction of the postgraduate and PhD Programmes and the involvement of a large number of postgraduate and PhD students in research. Overall, a continuous improvement of research indicators has been observed since the establishment of the Department.

- **Quality and adequacy of research infrastructure and support:**

A continuous effort to upgrade research infrastructure has been observed since the Department's establishment. This upgrading was more obvious during the first years of the Department's operation, when sufficient resources from European Union funds were available. In the last few years, upgrading of research infrastructure mainly depended on the limited state resources and the fees generated from the post graduate programme. An inhibiting factor to the development of research activities by the Department is the lack of a University Forest. Despite the improvements described above, the EEC considers that research infrastructure in important scientific domains are inadequate. This is also indicated by the fact that a number of the Department's laboratories are not active.

EEC has concerns relating to the large number of postgraduate and PhD students that should receive adequate training using the limited infrastructure of the Department's labs, especially if this requires modern/expensive equipment. A weakness in the quality of the students' training might impact the rigor of the program. The EEC recommends that students should visit collaborators in Greece and abroad and receive the appropriate experience and training.

- **Scientific publications:**

Many faculty members publish their research results in international journals and present their findings at professional meetings. The number of publications from the faculty is relatively low, but we have observed an increased trend since 2008. There is a large variability in the number of publications among faculty (i.e., some publish numerous papers a year while others do not).

- **Research projects:**

There is not structured and organized effort by the faculty to participate in research projects. This can be attributed to the high teaching and administrative loads of the faculty, the inadequacy of infrastructure and the bureaucratic procedures that are related to the coordination and management of research projects. An additional hurdle is the long delays observed in receiving the funding from approved national projects. Moreover, the participation in research projects is not included in the criteria for faculty promotion.

- **Research collaborations:**

Due to the limited resources, faculty members have developed collaborations with other institutions in Greece and abroad to carry out part of their research activities. EEC has concerns relating to the large number of postgraduate and PhD students that should receive adequate training using the limited infrastructure of the Department's labs, especially if this requires modern/expensive equipment. A weakness in the quality of the students' training might impact the rigor of the program. The EEC recommends that students should visit collaborators in Greece and abroad and receive the appropriate experience and training.

Although, the Department harbours broad range of expertise (e.g., forestry, range management, policy, soil science, forest protection, water science, GIS, biometry and conservation biology), the EEC noted the little effort within the Department to promote interdisciplinary collaborations between faculty. This should be encouraged.

## RESULTS

- **Implementation of Department's research objectives:**

Research objectives are not defined at the Department level but at the laboratory level. The EEC observed variability between the Department's laboratories relative to their success in research. This variability reflects the discrepancies observed in the level of the involvement of faculty members in research activities.

- **Scientific publications:**

There is a positive trend towards increasing number of publications in respectable journals and conference proceedings. However, there is large variability in the number of publications between faculty. For example, the number of referred publications in international journals per faculty member ranged from 0 to 35 between 2004-2008. The total number of referred publications during this period was 93 (on average 6.6 papers per faculty in 5 years and 1.1 per faculty per year), which is below what is expected from such institution. More recent information that was provided during the site visit shows that the number of publications by the faculty has substantially increased. However, there is still great variability in the number of publications per faculty. The EEC recommends that the faculty in the Department needs to increase the number of publications per year, mainly through promoting cooperation and incentives to carry out research (e.g., relief from teaching and/or other duties, and sabbatical). The

EEC considers that further development of research activities and subsequent increase of scientific publications are favoured by the opportunity for utilizing the experience of more established scientists and the enthusiasm of PhD and junior qualified faculty.

- **Research projects:**

The number of research projects carried out by the faculty in the Department is relatively low. Specifically, the Department only secured 8 research projects between 2003-2008. The EEC believes that there is room for large improvement in this area, considering the existence of numerous relevant funding opportunities from the EU, and members of the faculty that have the required skills for preparing competitive proposals. The participation in EU programs is of outmost importance, since it will a) strengthen and create new partnerships with other institutions in Greece and abroad, b) provide the resources for essential upgrading of research infrastructure and supporting of post graduate and PhD students (most of whom do not get any support), and, c) increase the visibility of the Department.

- **Research collaborations:**

Research collaborations with institutions in Greece and abroad have been developed primarily as a result of the need of the faculty to have access in modern infrastructure and secondarily within the framework of funded research projects. Collaborations have been also established through the Department's graduates who work in other academic/research institutions.

- **Efficacy of research work:**

Most of the results of the research that is carried out by the Department are applied and can be utilized by the competent forestry authorities. In general, the Department seeks the collaboration of the forestry authorities and other stakeholders that are active in the wider area of forest and environmental management. This, however, is not done in a structured way, but it depends on individual initiatives of the faculty members. The utilization of research results by potential end users is hindered by the absence of a liaison office. The EEC recommends that the Department forms a standing committee to act as the liaison with the major stakeholders in order to create a database of potential applied projects. This way, the Department will be able to attract more funding with the support of the parties that will be benefited from such joint research venture.

- **Acknowledgment and visibility of the Department's research. Rewards and awards:**

The current efforts by several faculty in research and the subsequent publication of their results increases the exposure, visibility and recognition of the faculty and Department. The Department is acknowledged through the participation of its faculty in organising and scientific committees of professional conferences, in editorial committees of scientific journals, as editors in international scientific journals and as reviewers in a large number (28) of scientific journals. This momentum should be capitalized for the development of research networks and the participation in new national and international research projects.

The number of citations on the faculty's published work is relatively low. Between 2004 and 2008, the average number of citations per publication was only 2.5. The EEC recommends that faculty should seek to publish in more main stream and disciplinary

journals to address this problem.

#### IMPROVEMENT

Given the limited resources, infrastructure and funding, the faculty consider that the developed research activity is satisfactory. In the four-year planning that they prepared for the years 2008-2012, they propose a list of equipment that should be acquired to make the research carried out by the Department more competitive. Nevertheless, most of this equipment has not been acquired yet, due to the economic crisis and the limitations in state funding. Both the Department and the EEC recognize that there is room for large improvement in research, especially through the utilization of the opportunities offered by EU funding programs. Moreover, the EEC recommends that the research carried out by the Department be clearly in line with the overall mission and vision of the Department to ensure its success.

The introduction of the postgraduate and PhD Programmes and the involvement of a large number of postgraduate and PhD students in research have positively affected the Department's research activities. The EEC observed that there is involvement of graduate students in research activities and publications. This is also indicated by the students' will to acquire their degree through publishing agreed number of papers in international recognized journals. Such an initiative could be discussed with the authorities of the University.

Overall, the EEC recognises that despite the unfavourable conditions, there has been notable research activity in the Department and the number of publications has increased considerably in the last years. There is however room for further improvement through:

- Utilizing the available EU research funding opportunities, thus developing research networks, upgrading research infrastructure and participating in projects of international interest. Towards this direction, it would be essential for the Department to secure participation in EU funded research collaboration platforms (such as COST projects).
- Taking advantage of the experience of more established scientists.
- Utilizing the enthusiasm of PhD and junior faculty.
- Utilizing the Department's graduates who work in other academic/research institutions to develop research collaborations.
- Promoting cooperation among the faculty members and mobilizing the members that have not been adequately involved in research.
- Publishing the research findings in more main stream and disciplinary journals.
- Forming a standing committee to act as the liaison with the major stakeholders in the public and private sector.

## ***D. All Other Services***

### APPROACH

The Department services are located in four different buildings. Three are on the main campus (teaching rooms, laboratories, administration and library), and the fourth building serves as secondary facility (dormitories and restaurant) and is located nearby.

The Department has 6 administrative assistants, including 4 in the secretary services and 2 in the library. The administrative support is considered satisfactory and covers the needs of the Department. The Department recognizes a deficiency in computerized system in the secretariat for the documentation and management of students' database, as well as in the library for book organization. Since the Department is not autonomous yet, several administrative difficulties arise during the communication with central administration, a fact that further complicates the performance of the administrative staff.

Generally, a great effort has been given from the staff of the Department to improve its overall output. A significant improvement has been made since the establishment of the Department in 1999. Nevertheless, the infrastructure and personnel situation is far from satisfactory.

### IMPLEMENTATION

Concerning the library services, a librarian is missing and as a consequence, the creation of an electronic database for the library of the books and other publications is not feasible. The two administrative staff covers the current needs of the students and it can be expected that once a librarian comes on board, one person of the current library staff can serve other administrative needs in the Department. The absence of a librarian has impacted the speed of database creation; only 1/3 of the books are entered in the database. Faculty and students have online electronic access to major disciplinary journals and databases and the connection with the National Network of Documentation is available. Postgraduate students take advantage of the library. Undergraduate students should be trained and encouraged to use the library and its resources .

Although the secretariat services are considered satisfactory, the absence of a electronic system complicates the communication of the students with the Department's administration and increases bureaucracy. Activities like students' electronic registration and class selection, as well as Department's electronic announcements are non-existent.

After discussions with the Department's staff, the EEC considers that significant administrative difficulties in the communication with the central administration exist, mainly due to the distance between the University central administration and the Department. The Department will overcome such problems if it becomes autonomous.

The EEC was surprised by the absence of information technology staff in the Department. The needs of the Department are covered by the faculty and graduate students. Additionally, the faculty mentioned problems concerning the absence of telephone connection in some faculty offices, slow internet connection and the absence of video conference infrastructure

and wireless in the Department. Specifically, email interruptions and low speed downloading of documents are the most common problems pointed out by all faculty, students and administrative staff. The EEC considers that these problems in a physically isolated Department create further difficulties in the communication of the Department with other academic institutions and should be resolved in the near future.

The EEC considers that the number of teaching rooms is adequate and they are modern and well equipped. On the other hand, although most offices are adequate, the current office facilities have not well accommodated new faculty hires. Moreover, the office situation of the technical staff is really inadequate and inappropriate. Their offices are located in the hole ways without privacy or climate control.

Regarding the laboratories, some courses cannot accommodate all students because of small laboratory space, so students are divided into groups. Also, in some cases the same lab room is used for teaching and research purposes, which impacts the ability of the faculty and graduate students to do research and affects the quality of the scientific results produced. More information is given above (section Teaching).

Considering the implementation of field work, a university bus which is unavailable is necessary in such a Department for carrying out the practical training and field visit of the students. In addition, no permanent or organized services for first aid assistance during practical work in the field are available.

No basic infrastructure for other than academic activities, like promoting athletic and other cultural activities which can recruit from the community are available.

Students don't have an assigned advisor; instead they discuss academic and personal related issues with available faculty members.

With the new online book ordering system (Evdoxos), students can now order their books electronically and in a timely fashion. Minor problems have been observed, mainly based on delayed orders from the students and/or delivery delays from the editorial stores.

Considering secondary facilities, like dorms and restaurant, the EEC was excited with the facilities offered in the dormitories, the cleanness of all rooms in and around the buildings, the high quality of food and the hospitality of the personnel.

## RESULTS

Overall, the EEC noticed a great effort and improvement in the facilities and services of the Department since its first year of operation. Students were satisfied by the services provided by the Department's faculty and staff and they try to support them with their personal input. University funding is not sufficient to cover basic operational functions in the laboratories, secretary and library; as a consequence support of basic functions is done by the faculty personal funds. Moreover, personnel support mainly for the laboratories is essential and very critical for the development of the teaching and research activities of the Department.

## IMPROVEMENTS

The EEC stresses the necessity of more state funding for infrastructure ( e.g., laboratories, office rooms, improvement of information technology, athletic and cultural activities) for the further development of the Department. Faculty should strengthen their efforts in this direction by trying to secure more funding for research projects from EU and other national and international sources.

Moreover, faculty members and students, as well as the EEC agree on the necessity of employment of specialized staff, especially for technical support in the laboratories. This would improve teaching and promote research, thus making the work of the faculty more efficient.

Administrative problems will be in a great extent reduced when the Department become autonomous. Thus, the procedure should be accelerated in this direction.

The EEC suggests that faculty advise and encourage students to use the available services more regularly and more efficiently, like ordering their books electronically early on in the semester, so to ensure early delivery and/or using library services more effectively.

The EEC recommends that the Department boosts its efforts to increase class attendance, promot literature search electronically in the library, organize more information events for the students about subjects of their interests, and support athletic and social activities on campus.

### **Collaboration with social, cultural and production organizations**

The applied and interdisciplinary nature of research and teaching has placed the Department in an excellent position to collaborate and deliver research finding relating to the natural environment, and management of forests and natural resources to end users and managers, local communities and other stakeholders. Together with stakeholders, the Department has organized number of conferences, workshops, exhibitions, and lectures, focusing on natural resources and the environment of the region. Moreover, faculty members participated in local and regional councils to address environmental concerns. The relationship with the productive sector is weak and could be strengthened. The EEC recommends the faculty increase intra-Departmental collaboration, as well as, the establishment of a liaison committee for outreach purposes.

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

Through the internal evaluation report and the site visit, the EEC has identified several inhibiting factors for the Department's activities, such as:

1. Low state funding which is inhibitive to all, however, new faculty are the most affected as they start with no start up funds to initiate original research and strengthen their odds to acquired additional funding and publish their research.
2. Weak infrastructure and laboratory availability.
3. Space assignment which does not reflect the need of faculty.
4. Average and below average students starting the program.
5. Lack of autonomy in the Department, which creates administrative and bureaucratic problems.
6. Lack of incentives and rewards for faculty.

Some of the problems listed above can be handled internally by the unit, examples would be the allocation of resources, mentoring of senior faculty to junior faculty, requesting of faculty to attend grants writing workshops, increasing efforts to submit national and international grants, establishing collaborations with other units around the country, re-evaluating the teaching load and the number of majors offered by the Department, and providing interinstitutional opportunities to graduate students.

We commend the Department on finding creative ways to alleviate the lack of resources via imposing a small registration fee on graduate students.

Other problems discussed in this document can only be solved and corrected with the intervention of the state. It is of outmost importance that the university as a whole takes the necessary steps to provide leadership and support for the advancement of education and research in Greece.

The Department has not developed a coherent strategic planning, and that was attributed to the uncertainty regarding the available state funding in the future, as well as the impending restructuring of the Greek universities.

Based on the Internal Evaluation report, faculty presentations and interviews with faculty, staff, graduate and undergraduate students the EEC recommends that the Department needs to come up with a solid and clear short, medium and long-term vision and strategic planning to successfully achieve their objectives and become successful and competitive unit.

In the areas of curriculum and teaching:

1. Revisions of the curriculum are necessary to better reflect the expertise of the faculty and name of the Department. More specifically, the Department needs to better emphasize the “management” aspect in the curriculum.
2. Overall evaluation of the number of undergraduate specialization, and whether they can be sustained over the long run.
3. Introduce classes to specifically tackle the current and emerging issue specific to the environment and natural resources. Topics like climate change, vegetation cover change, and ecosystem services should be better incorporated in the program.
4. There is a need to increase the effort to attract more undergraduate students into the program. Activities such contacting accepted students, organizing visits to local schools, and having an open house increase the exposure and visibility of the Department.
5. Motivate students, and promote and reinforce the importance of class attendance.
6. Create a standard for the evaluation of teaching faculty and course content.
7. Reallocate the number of ECTS to each course, based on proper criteria (effort of the students).

In the area of research:

1. Encourage and enhance competitive grants activity by faculty, and provide appropriate incentives and rewards.
2. Address the discrepancy in publication records between faculty. Encourage and provide incentives for selected faculty to publish in recognized disciplinary peer referred journals with impact factor.
3. Re-evaluate laboratory allocation in the Department to better reflect the needs of faculty.
4. Address safety and contamination issues in research laboratories.
5. Re-evaluate the staff administrative support job description and incorporate grant managements into the position description of skilled staff member.

Strengths and weaknesses:

The EEC was impressed by the faculty enthusiasm, motivation, and dedication to teaching and research. The committee is concerned that if state support does not improve, it will be hard to sustain this momentum. Faculty are over teaching and therefore, the Department should take the necessary steps to address both the curriculum and faculty efforts. The heavy involvement of faculty in teaching, advising and other activities has taken significant time

from research and grant writing. A better balance should be achieved to ensure the success of the program and promote professional development of faculty. The EEC did not detect any strong leadership in the Department and an effort to bring the various groups together. Faculty should capitalize of the interdisciplinary nature of the Department and promote more collaborations on teaching, grant writing and research. The Department addresses broad teaching and research interests relating to Forestry, and the management of the environment and natural resources and faculty should seek to differentiate themselves from other units in Greece. The EEC reiterates again the critical need of the Department to develop leadership and a clear vision and mission for the short, medium and long term.

### ***F. Final Conclusions and recommendations of the EEC***

The EEC recognized the incredible efforts of the faculty and students to develop the internal evaluation report. A better student representation would be helpful for the next evaluation process. We appreciate the faculty willingness to meet the EEC and be honest about their assessment and needs of the Department as a whole. Students were positive about the programs of study and faculty were enthusiastic, eager to teach and do research. We strongly recommend the assignment of an outside moderator to help the Department develop its goals and objectives for the short, medium and long terms.

The EEC feels that the curriculum and courses need to be revised to better reflect the direction of the Department. The revision of the curriculum should be carried out by reducing the number of offered courses and adding courses that better reflect the mission of the Department and differentiate it from other Departments in Greece. New core courses should include topics on resource management, climate change and variability, ecosystem services, vegetation cover change (i.e., desertification, adaptation, alien and invasive species), and biodiversity. This revision should also address the number of ECTS to each course, based on proper criteria (effort of the students). Student assessments should also be taken into consideration.

A seminar class should be introduced in the undergraduate and graduate programmes to improve basic knowledge and skills of the students. This class could include scientific writing and presentations, library and data base training, public speaking and English terminology.

Faculty needs to reinforce the importance of students' class evaluation and its importance for the continuous progress and development of the program.

The Department needs to re-examine the allocation of laboratory space to better reflect the needs of its faculty.

We commend the Department for finding creative ways to alleviate the lack of resources in the unit via imposing registration fee on graduate students.

Faculty should continue to seek external grants and find ways to financially support graduate students and their research. The Department's research performance could be improved through:

- Utilizing the available funding opportunities, thus developing research networks, upgrading research infrastructure and participating in projects of international interest.
- Taking advantage of the experience of more established scientists and utilizing the enthusiasm of PhD and junior faculty.
- Utilizing the Department's graduates who work in other academic/research institutions to develop research collaborations.
- Promoting cooperation among faculty members and mobilizing the members that have not been adequately involved in research.
- Publishing the research findings in more main stream and disciplinary journals.
- Forming a standing committee to act as the liaison with the major stakeholders in the public and private sector.

The acquisition of a University Forest for teaching and research purposes is essential for the success of the program.

Weak infrastructure and limited operational funding are big problems and are also critical factors that hinder progress in the Department. Such problems can be addressed by the state and the university as a whole.

Increased state support could contribute towards:

- Covering operational expenses.
- Upgrading of research infrastructure and teaching laboratories.
- Securing a bus to facilitate teaching practice.
- Increasing the small number of technicians who support only a limited number of classes and laboratories.
- Improving the communication systems (telephone, internet, teleconferencing, etc.) to minimise problems arising from the physical isolation of the Department.

On the other hand, the Department needs to come up with a solid and clear short, medium and long-term vision and strategic planning to successfully achieve their objectives and become successful and competitive.

Overall, the Department should be supported from the state by funding infrastructure and operational expenses, as well as promoting the processes making the Department autonomous. At the same time, the Faculty should set strategic goals for the development of the Department and try to (a) find ways of extra funding by utilising available funding opportunities (b) revise the curriculum in a way to be more attractive and more modern by covering new scientific aspects and needs of the society and (c) improve teaching by using methods promoting critical and academic thinking which will eventually bring more students to campus.

Such efforts from the state and the faculty will assure that the quality standards will be met from the Department in the future.

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