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HELLENIC REPUBLIC  
**H.Q.A.**  
 HELLENIC QUALITY ASSURANCE AND  
 ACCREDITATION AGENCY

## EXTERNAL EVALUATION REPORT

DEPARTMENT OF ENVIRONMENT  
 UNIVERSITY OF THE AEGEAN



August 20, 2012

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### **External Evaluation Committee**

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

1. Professor Evan Vlachos, Coordinator  
Colorado State University, Fort Collins (USA)
2. Professor Angelos M Efstathiou  
University of Cyprus, Nicosia (Cyprus)
3. Adjunct Professor and Professional Engineer Christos Katopodis  
Katopodis Ecohydraulics Ltd., and the University of Alberta (Canada)
4. Dr. Irimi Fotiadou  
British Petroleum, BP Europe  
Hamburg (Germany)
5. Dr. Nikolaos Voulvoulis  
Imperial College  
London (United Kingdom)

## ***Introduction***

### I. The External Evaluation Procedure

- Dates of the site visit (Mitilini, Greece)

The visit was carried out from 6 pm on 23/04/2012 until 3 pm on 25/04/2012.

- Whom did the Committee meet?

#### **Day 1 - Monday April 23, 2012:**

At the beginning of the evaluation process, the External Evaluation Committee (EEC) members met at the Elysiion Hotel (Mitilini) with the Head of the Department of Environment (DoE) of the University of the Aegean (UoA), the Vice Rector of Academic Affairs of UoA, and the Chairman of the Internal Evaluation Committee (OMEA).

An introduction and a general discussion were held on the history of the Department, where the Chairman of OMEA highlighted four main issues related to the significance of the Department for Greece: (i) the Department was the driving force behind the evolution and the establishment of the UoA, (ii) it was conceived as a contemporary and pioneering Department, goal oriented and future driven with a mission to connect the past, present and future with a key role for social sensitivity, (iii) the Department formed the foundation of modern environmental strategic analysis and influenced all other environmental departments in the country that followed its creation, and (iv) the Department introduced for the first time interdisciplinary and multidisciplinary approaches for both studies and research.

The EEC was also informed that the two currently independent departments (Environment and Marine Sciences) are expected to be merged into the School of the Environment according to the new Law regarding higher education in Greece. A discussion was also held regarding the material provided by the HQAA (ADIP). The Department informed the EEC that they compiled additional relevant material in an electronic form (DVD) which will be available to the EEC. The EEC asked whether the following information was available on the DVD, or if not can it be made available: (i) publication metrics (e.g., h-index, detailed citations per faculty, journal impact factors); (ii) competitive research grant details, such as funding source, amounts and duration.

The EEC also discussed and revised the schedule for the site visit. In particular, EEC requested that the interviews with the faculty members, staff and students be done as small groups of the same rank and not individually.

#### **Day 2- Tuesday April 24, 2012**

On the second day, the EEC attended two series of presentations regarding the Department and the electronic material they prepared for the external evaluation:

- the objectives of the Department, the various curricula, the current programs of undergraduate and postgraduate studies, statistics for students and staff, research performance, presentation of results regarding competitive research performance nationally and internationally, research funding overview, best practises in the Department (self-evaluation provided by European University Association; students evaluations), summer practical training, students exchange programs (ERASMUS) and a SWOT analysis.
- Presentation of what is included in the electronic material provided (DVD).

After the presentations the EEC met with the academics and staff of the Department in groups based on their rank.

#### **Day 3- Wednesday April 25, 2012**

On the third day, EEC met with administrative staff of the Department, and with some undergraduate students, postgraduate students, PhD candidates, Post-docs and graduates.

The EEC visited all teaching and research laboratories/facilities of the Department and observed some laboratory classes in progress. At the end of the on site visit, EEC had a debriefing session with the Head of the Department, the chairman of the OMEA and the Dean of the School of Environment.

In the late afternoon of Day 3, EEC members returned to Athens.

#### **Day 4 - Thursday April 26, 2012**

The EEC members worked on the final draft of the EER at the Hotel facilities arranged by the HQAA.

#### **Day 5 - Friday April 27, 2012**

The EEC members continued working on the final draft of the EER and submitted the first Draft to HQAA.

#### **Day 6 - Saturday April 28, 2012**

The EEC members continued discussing the conclusions and recommendations. The EEC members departed from Athens.

**Summary:** The DoE was well prepared and had provided a program that allowed meetings, discussions and visits with all divisions of the Department. In these meetings, all members of the academic staff were present except those who were on leave of absence abroad. Furthermore, EEC had the opportunity to speak to the students and laboratory instructors, visit all teaching and research laboratories/facilities, and the core teaching and research instrumentation used. EEC also met and had discussions with a number of students (undergraduate, MS), PhD candidates, Post-docs and some graduates/professionals. The DoE had informed all involved regarding the forthcoming External Evaluation procedure and had invited relevant parties to take part in the process.

#### II. The Internal Evaluation Procedure

- *Appropriateness of sources and documentation used*

The EEC members had at their disposal prior and during the evaluation process the following documentation: (i) reports of teaching and research activities of the Department in the period 2010-2011, (ii) Internal Evaluation Report (IER) for the period 2009-2010, and a Self-Evaluation Report made by the European University Association (2005).

These documents included detailed information on the structure of the Department, the building facilities and a short introduction of the organisational structure of the University. Additional documents concerning several research aspects and activities were made promptly available upon the request of the members of the EEC (e.g., textbooks, theses, teaching load, h-index and citation records of academic staff, tables of research grants).

- *Quality and completeness of evidence reviewed and provided*

The documentation supplied reflected the current situation of the Department (up to 2011). It clearly describes the goals, structure, organisation and facilities of the Department. The Department made a truly professional effort to provide a complete picture of teaching and research activities, of administrative and laboratory facilities, and expeditiously responded to all requests of EEC.

- *To what extent have the objectives of the internal evaluation process been met by the Department?*

Overall, the Internal Evaluation Report and additional material provided and requested met

the objectives of the evaluation process.

## ***A1. Undergraduate Curriculum***

### **APPROACH**

#### **Goals and objectives of the Undergraduate Curriculum (UGC)**

This is a relatively new program, established in 1987 under the administrative authority of the University of Aegean. The first significant revision of UGC was made in 2000, and a second major revision was implemented in 2004 to reflect the decision of the Department to set a new strategy of the UGC, to select new courses, merge existing courses, update and integrate courses in thematic units in order to create a contemporary and internationally competitive UGC.

The strategic plan of the DoE is to maintain its broad coverage, enhance integration and the interdisciplinary approach to Environmental Sciences. The strategy includes emphasis on four principle areas: climate, biodiversity, human health, and environmental resource management. Although most of the Curricula of similar Departments abroad are quite focused, the DoE offers a series of courses that aim to cover the wide range of scientific approaches to the Environment.

Currently, the courses of UGC consist of seven general areas as classified by the academic staff: computer science (5%), chemistry (11%), biological (24%), earth sciences (13%), social sciences (18%), chemical/mechanical/civil engineering (14%), mathematics and physics (8%) and various others (7%).

- *What is the plan for achieving excellence?*

The structure of the current curriculum is rather unique for Environmental Science and Studies offered in Greece. It capitalizes on the strengths of the environmental science courses and academic staff expertise. In particular, the aim of the program is to continuously update the UGC, and be sensitive to scientific and international policy developments.

EEC noted that this Department has focused on continuous evaluation at three levels: (a) students evaluation of the program and academic staff, (b) internal self-motivated evaluation (see European University Association), and (c) external evaluation.

It is commendable that the academic and other teaching staff is investing extra efforts in order to improve the technical and scientific level of incoming students with very weak background in this subject due to the current criteria of national entrance examination.

The academic staff also stated that the Department's capacity to admit approx. 30 students per year is always exceeded. The national central administration allows the registration of more than 100 students per year.

The undergraduate laboratory training is successful. The Department has been successful in keeping the curriculum current and effective.

Current student attendance, participation and motivation are considered good by both the academic staff and the EEC. However, due to the economic crisis some students prefer to

reduce their attendance to the minimum required. Another problem mentioned by the academic staff was the accumulation of approx. 40 ‘perpetual’ students who started their studies in the nineties.

- *How were objectives decided? Which factors were taken into account?*

The Department has adopted periodic reviews and evaluations as mechanisms for deciding its future objectives based on its original vision. These objectives are rather fluid providing the Department and the program with the ability to adapt to the dynamic conditions in this scientific field. The EEC noted though that the Department lacks a systematic process to assess and prioritize future scientific, social and environmental objectives. However, the DoE has tried to keep abreast with environmental problems and concerns and in so doing adopted changes in its Undergraduate Curriculum introducing new courses, labs and seminar work. To this end new faculty positions were proposed and adopted by the University Senate.

### **IMPLEMENTATION**

- *How effectively is the Department’s goal implemented by the curriculum?*

The Department has been proactive in adapting the UGC to achieve the goal of establishing an interdisciplinary and multidisciplinary Environmental program.

The current curriculum is at a similar level to those of internationally recognized universities in Europe (European Credit Transfer System, ECTS) and North America. As such, the training of undergraduate students will produce environmental professionals and scientists who will effectively meet the needs of academia, industry and the public sector. Moreover, the UGC shapes professionals with a unique profile of a holistic and integrated set of skills to address environmental planning, management, decision making and policy issues.

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

As stated previously, the current curriculum compares very well with well established environmental management programs abroad, being significantly different to other equally established programs focusing on Environmental Engineering or Ecology.

- *Is the structure of the curriculum rational and clearly articulated?*

Although the current UGC is rational and clearly articulated, the EEC is concerned that considerable effort is needed to assist incoming students to catch-up and improve their weak scientific background on chemistry, biology and physics.

- *Is the curriculum coherent and functional?*

Since 2001 the Department has consolidated the number of courses as a result of continuous self-evaluated procedures. As a result, the current UGC consists of 48 courses (33 out of which are mandatory) required for a student to graduate (four-year degree of studies). This has led to a rather stable number of courses which are well suited to the profile of their graduates. The EEC recognises this as an example of best practise with the number of



courses offered as optimum for this type of program of studies.

On the other hand, EEC notes that the proportion of the experimental and practical aspects of the UGC to the theoretical content should be increased (see Recommendation 1).

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

Generally yes. However the EEC notes the following:

- (i) There is a lack of a coherent mandatory laboratory course covering basic knowledge on instrumentation and methodologies used in Environmental Chemistry (e.g., Organics).
- (ii) The summer practical course should be made mandatory and increased from one to 2-3 months, and be more systematically organised.
- (iii) No courses on systems engineering and project management are offered.

The time spent on the experimental part in some courses should be increased.

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

The departmental facilities provide classrooms and laboratories of good quality that conform to international standards. The same is also true for instrumentation and utility areas.

Well experienced and qualified (MSc/PhD level) instructors supervise the laboratories, which are highly motivated, and appreciated by both the students and faculty. The EEC was impressed by the strong effort and the high morale of the laboratory staff.

**Recommendation 1:** The merging of the existing UGPs (Department of Environment and Department of Marine Science) under the same School provides an opportunity to examine and review the menu of courses offered to increase the proportion of practical to theoretical courses without increasing the number of courses needed to graduate.

**Recommendation 2:** Continue reviewing and adapting the existing UGC to local, national and global challenges with a strong understanding of temporal variations with uncertainty and implement a systematic process to assess and prioritize future scientific, social and environmental objectives for the Department.

**Recommendation 3:** Increase the homework and project load to the students; introduce mandatory mid-term exams and internships; offer a course for delivering transferable skills and other training for capacity building to respond to a rapidly changing conditions and unexpected situations.

**Recommendation 4:** Provide field trips and study trips to support and facilitate the theoretical aspects of the UGC.

**Recommendation 5:** Create a course (2-4 ECTS) based on a series of lectures/seminars offered by external experienced speakers preferably from industry/government/academia/NGOs and include topics such as project management, systems engineering and cost-benefit analysis.

**RESULTS**

- *How well is the implementation achieving the Department's predefined goals and objectives?*

The current curriculum includes very good quality core/elective courses that meet the Department's predefined objectives. Implementation of the above Recommendations 1-5 will further improve the curriculum.

- *If not, why is it so? How is this problem dealt with?*

N/A

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

The Department understands the weaknesses of the curriculum to a large extent, and has already invested on its strengths. The EEC feels that the Department will consider and work towards the implementation of the above recommendations.

**IMPROVEMENT**

- *Does the Department know how the Curriculum should be improved?*

The Department has made no specific suggestions on the improvement of the curriculum. However, the Department has articulated its position in a document on the strategy of the department's academic developments which foresees a stable state of interdisciplinary courses.

**Recommendation 6:** Currently, a lack of fellowships exists for non-permanent teaching assistants who can support the instructive work of the academic staff during their laboratory courses. Funding and provision of these teaching fellowships by the State and/or the University is necessary and urgently recommended, on a priority basis.

The feasibility of creating some university student scholarships for low income but high-achieving students should also be examined.

**Recommendation 7:** Currently, a lack of technical staff exists to maintain and run the instrumentation of the Department that is a basic requirement of the curriculum. The EEC recommends the employment of key technical staff (e.g., technicians).

**Recommendation 8:** The EEC strongly recommends the implementation of homework assignments, group projects, including report writing and presentation, and mid-term examinations. In addition to the final exams, these items should contribute to the final grade. This will largely improve the quality of the educational experience.

**A2. Postgraduate Curriculum****APPROACH AND IMPROVEMENT- RECOMMENDATIONS****Goals and objectives of the Postgraduate Program (PGP)**

The PGP consists of two directions that may be followed sequentially (A and B) or in the case

of A be a final destination.

- A) Post graduate Diploma of specialization (Master of Science; M.Sc thesis is mandatory)
- B) Ph.D. Diploma

The Post graduate Program leading to M.Sc. offers three self-contained curricula: Agriculture and Environment (2003); Environmental and Ecological Engineering (2003); and Environmental Policy and Management (1998). In addition, the Department offers two inter-university M.Sc. degree programs entitled “Franco-Hellenic, Conservation of Biodiversity” (Universities of Aegean, Montpellier, 2007), and “Erasmus-Mundus, Environmental Science, Policy and Management” (Universities of Lund, Manchester, University of Central Europe, 2005) with faculty from national and international universities (IER, pages 23-33), and two inter-University M.Sc. degree programs entitled “Costal Management” (Dept. of Marine Sciences), “Tourism, Planning, Management and Policy” (Dept of Tourism, Economics and Management in Chios), and “Environmental Education” (Dept of Pre-School Education and Education Design). It is important to note that all the above mentioned M.Sc. programs are self-financed.

The PhD program is based on theoretical and experimental research and it may include courses from the other MSc postgraduate programs. It is worth noting that the University environment fosters the spirit of excellence among graduate students and several of them have followed successful academic careers abroad.

The quality of the program is evidenced by the number of publications in high-impact international journals for the respective areas of research, attesting to a high level of achievement of the academic staff and graduate students (see section C).

The PGP through the MSc courses is well designed to meet the needs of the national and regional economy and education, whereas the PhD program is more appropriate for the preparation of supervisory and managerial industrial positions, academic positions or post-PhD research positions. The PGP appear both academically attractive and successful, and their sustainability and viability depend on continued success in attracting external funding.

**Recommendation 9:** The EEC recommends the establishment of a mechanism to obtain financial support for postgraduate students (PhD level) through merit-based fellowships. Such support could come from the establishment of tuition fees, where a significant portion of it should be given as fellowships. Another source of support could come from the return to the Department of part of the overhead earned by the department’s academic staff through competitive research or industrial grants.

**Recommendation 10:** There is a need to increase the practical courses, site visits and field-trips with the appropriate logistical means; this was also requested by the students (MSc/PhD).

**Recommendation 11:** Specialised technical support is required to run the maintenance of all the infrastructure of the teaching and research laboratories of the Department.

## ***B. Teaching***

### **APPROACH**

The overarching principle of the teaching philosophy of the Department is to provide sufficient interdisciplinary knowledge in Environmental Science through core and elective courses, as well as applied projects towards undergraduate and graduate (MSc and PhD) degrees.

- *Teaching methods used, course updates, student participation, grades, and average duration for the undergraduate degree*

Teaching methods employ the traditional classroom lectures based on black-board, projection facilities and web-based tools. The content of the courses was updated as stated before (see section A) and was also based on an external critical assessment (EUA report, 2005) requested by the department.

Faculty members of the Department have published their own textbooks or are using translated popular modern textbooks in several core areas. Most course lectures, notes, homework assignments and solutions are made available in hard copies or through the use of Web resources and multimedia.

The combination of these methods reflects the good quality and teaching expertise of the academic staff. The teaching staff members for course work and laboratory work are available to the students not only through regularly scheduled office hours but also on demand at any requested time by the students.

Teaching strengths include:

- most tuition has a holistic, multidisciplinary and interdisciplinary approach;
- the integration of fieldwork, experimental and theoretical investigations underpin the learning experience;
- quantitative and qualitative approaches for acquiring and interpreting data;
- examination of the exploration and exploitation of physical and biological resources;
- examination of the implications of sustainability and sustainable development
- *Teaching staff/student ratio, interactions of faculty and students, and faculty teaching hours per week*

The ratio of the overall teaching staff to the number of undergraduate students (4 years of study) is  $34/318 = 1/9.4$  (2011-2012). Taking into account the 241 additional undergraduate students attending between 5-10 years, the overall number of undergraduate student ratio becomes  $34/559 = 1/16.4$ . The faculty have on average a teaching load of 12 h/week, and this load significantly increases if one considers the time devoted to the supervision of final-year diploma thesis. The EEC noted that the number of technical staff (4 members of EETEP and 2 member of EDIP) is small.

- *Teacher/student collaboration*

The interviews conducted with the students demonstrated that there is a high level of collaboration between students, lab instructors, and academic staff. Such collaboration

contributes to an academic environment which is conducive to study and supports the academic mission of the Department.

- *Adequacy of means and infrastructure resources*

The Department is well-equipped for both teaching and research. The facilities and research instruments for teaching are in an acceptable condition and well maintained. In general, the teaching laboratories meet international safety standards. However, EEC notes that some essential improvements need to be made (e.g., use of protective material in the Analytical Chemistry lab course, inappropriate storage of propane gas used in laboratories, lack of posting safety notices in the laboratories).

The Department has access to a well-maintained central university library which unfortunately is not located on campus (distance of 6km away). However, the focus in the future should be concentrated on on-line resources, e-Journals and e-Books.

- *Use of information technologies*

Computer equipment and internet resources are used, including on-line bibliographic databases. However, improvements should be made on utilising the latest technologies and teaching on-line tools. Dedicated computational facilities with several personal computers are available to the students within the Department. However, continuous upgrading of IT is needed.

- *Examination system and assessment of course work by the students*

Assessing the performance of students in each class is carried out mainly through written final exams. At the discretion of the instructor, in certain classes/laboratories, the final grade is a combination of lab assignments and written reports. All courses are evaluated centrally using student questionnaires for the assessment of course quality.

**Recommendation 12:** The EEC highly recommends that the findings from the student questionnaires should be used in a timely manner by the Department to improve teaching effectiveness. The student evaluations should be periodically reviewed as part of a systematic effort to evaluate/analyse feedback and make further improvements.

This evaluation process should be done via access to a secure internet University site at which each student will provide his/her comments anonymously. The findings from this process and any action taken as a result should be clearly communicated to the students.

## IMPLEMENTATION

- *Quality of teaching procedures*

The teaching methods are highly commended. This reflects the experience, flexibility, availability, and dedication of the teaching staff. This was also reflected by the undergraduate and postgraduate students during the interviews.

- *Quality and adequacy of teaching materials and resources*

In this rapidly evolving field of environmental science, the teaching material seems appropriate and updated frequently.

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

The quality of the course material is considered up to date.

- *Linking of research with teaching*

The Department has implemented a mandatory Diploma Thesis in the undergraduate curriculum. The latter provides the students with a first-hand research experience which may also link with industry. For those students that enter the MSc program, the link between experimental research and teaching is clearer, and as a result of this there are better opportunities for industrial employment and professional career development.

- *Mobility of academic staff and students*

Since its establishment, the Department has been part of the ERASMUS and SOCRATES exchange program agreements of the University of Aegean. Within this program, the Department was collaborating with several other European Universities (page 38, IER 2009-2010). This program has given students the opportunity to spend 1-2 academic semesters abroad. The Department also participates in several research collaborations with other Universities and Institutes. These efforts should be maintained and further increased in the future.

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

The evaluation by the undergraduate and postgraduate students during the interviews was extremely positive on both aspects (see Recommendation 12).

**Recommendation 13:** Some essential safety improvements need to be made: (a) use of protective material in the Analytical Chemistry lab course; (b) appropriate storage of propane gas used in laboratories; (c) posting of safety notices in the laboratories.

**Recommendation 14:** It is strongly suggested that special efforts should be given to the use of supplementary tools to facilitate the learning experience, such as computer-based tutorials, oral presentations by students, field-visits and interactions with industry. The Department should actively search for and implement methods to improve the employability of the students through transferrable skills.

**Recommendation 15:** It is suggested that mechanisms must be introduced to recognise and sustain good and innovative instruction. For example, student nominations for awards, teaching grants for faculty. In addition, the focus in the future should be concentrated on on-line resources, e-Journals and e-Books and continuous upgrading of IT.

## RESULTS

- *Efficacy of teaching*

Based on the interviews with the undergraduate and postgraduate students, teaching activities are very efficient and highly appreciated by the students.

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

The number of undergraduate students varied from 459 to 561 between 2008 and 2011; the number of students who initiated their studies during these years were on average approx. 100 per year. The average grade of the undergraduate degree ranges between 5.79/10 (2006-2007), and 7.0/10.0 (2008-2009). The percentage of students achieving a mark of 8.5 or more ranges from no student (2007 and 2009) to 9 students (2005).

The percentage of students that graduated in four years ranged between 17% and 56% for the academic years 2003-2009. Based on the evaluation tables for 2008-2011, the percentage of students that graduated during these years ranged between 26% and 48%.

- *Whether the Department understands the reasons of such positive or negative results?*

From the presentation of the OMEA Chairman and the EEC's staff interviews, it is likely that the current length of graduation time and the final degree grades are a result of: (a) the large percentage of admitted students who study subject areas which they did not select, at a university that was not their first choice, so they may not be as motivated and engaged to do well and complete the program in a timely fashion; (b) the indefinite number of repetitions following failure in examinations; (c) the need of certain students to support their educational expenses by working; and (d) the lack of state-funded fellowships and interest-free loans to support education.

## **IMPROVEMENT**

- *Does the Department propose methods and ways for improvement?*

The Department has made several general positive suggestions in their Internal Evaluation Report (see pages 49-50, IER 2009-2010), which the EEC agrees with. While the Department has invested a considerable effort to assess the current teaching program, it has not proposed any specific course of action for improvement. The DoE is conscious of its responsibility to provide an academic environment that motivates students and enable them to achieve their full potential. The EEC therefore suggests that the DoE should examine the following overarching concerns in seeking improvements (a) does the education offered by the DoE meet the interests of students who enter the University of the Aegean? (b) should the number of students admitted be reduced significantly? and (c) should a more appropriate scientific background and higher admission standards be implemented?

- *What initiatives did the department take in this direction?*

The Department has already requested to the competent authorities the reduction of the

incoming students and the increase of technical support of its teaching programs. Thus, the EEC finds that the responsibility for addressing these issues lies primarily outside the Department.

**Recommendation 16:** The EEC strongly recommends that the Department should expend considerable effort to find effective ways of increasing classroom attendance for the undergraduate students. For example, classroom assignments will only be handed to those attending and would need to be completed before a student is allowed to conduct the experimental part of the course.

**Recommendation 17:** The EEC strongly recommends that a significant increase in the quality of the incoming students would be guaranteed if the students come with a background in natural (currently known as «Θετικές») and technological (currently known as «Τεχνολογικές») sciences. In addition, there should be more meaningful dialogue between the Ministry of Education and the Department for an agreed upon number of admitted students, and minimum standards for entrance examination performance.

## C. Research

### APPROACH

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

The Department presently has 22 faculty members and has asked for 8 further reader positions. The DoE has organised their research expertise in three research sectors: (a) Ecosystem Management; (b) Social and Humanistic Environmental Sciences; and (c) Environmental Engineering and Science. The Department has 11 research laboratories which are considered adequate. Overall the Department aims at high quality research as one of the basic competitiveness tools for the regional and national economy, which depends on environmental stewardship and ecosystem services.

The EEC duly noted with concern that the DoE: (a) lacks funding opportunities and receives negligible support from the Ministry of Education and the General Secretariat of Research and Technology of the Hellenic Republic; (b) lacks fellowships and teaching assistantships for the M.Sc. and Ph.D. programs; (c) faces long delays in the approval and hiring process for new faculty members; (d) lacks a start-up granting system for new faculty members, and a bare minimum of state funding to cover absolute basic necessities for research consumables and equipment.

The research profile of the Department is rather broad and unique, while the subject areas are covered appropriately. However, the research program would benefit greatly from a strategic research focus on priority thematic areas utilizing the strengths of the faculty and available opportunities. Each faculty member should become more independent in developing his/her research activities but still in line with the thematic areas. Furthermore, additional emphasis should be placed on research outputs especially in English (e.g., more emphasis in publishing in high-impact peer reviewed international journals; more efforts in attracting and coordinating competitive research grants through European framework programs).



While many individual academic staff has strong research links with universities in other countries, there seems to be a lack of strategic partnerships and important international cooperative arrangements at the departmental level. Furthermore, the DoE research strategy and its main objectives were not clear to the EEC (see Recommendation 18).

- *Has the Department set internal standards for assessing research?*

The Department follows national and international procedures for assessing all aspects of research activity including internal (EUA Report, 2005; Internal Evaluation Report, 2011) and external reviews.

An internal committee (OMEA) was established for the evaluation of the scientific work and the presentation of the most important results. This committee was very responsive to all EEC requests for additional information or arrangements. The internal evaluation process used common international standards for the assessment of the scientific work, such as the number of publications (peer review journals and chapters in books) and citations, the impact factor of journals, in which the results have been published, the h-index (ISI Web of Science/Scopus), the number of invited talks at conferences, and the recognition of faculty members with domestic/national or international awards.

## **IMPLEMENTATION**

- *How does the Department promote and support research?*

The Department has initiated multiple actions to promote research: (a) several research collaborations have been set up with Environmental Departments within Greece and Europe, many of them with distinguished researchers; (b) faculty members participate in several national and European funding programs; (c) several faculty members arrange for graduate student exchanges; (d) several faculty members accommodate each other's research by sharing laboratory space and equipment when critical needs appear; (e) several national and international symposia have been organized by the Department at the University.

- *Quality and adequacy of research infrastructure and support*

The research infrastructure of the Department was rather impressive with state-of-the-art instrumentation in many cases. This is a credit to the initiatives of faculty members who have been able to acquire specialized equipment through competitive national and European funding sources. It is worth noting that technical support of the research infrastructure is still a concern. Furthermore, the limited availability of State funds for fellowships for M.Sc. and Ph.D. students are noted. In addition to the economic crisis, there may be a risk that this could jeopardise the high quality of research and contribute to brain drain for Greece in the near future.

- *Scientific publications*

The Department is active in research as evidenced by:

- (i) the number of publications in peer-reviewed journals;

- (ii) the fact that several faculty members have published their own books in English;
- (iii) the appreciable number of contributions to books and participation in conferences (invited talks, keynote and plenary lectures);
- (iv) the fact that several faculty members act as Editors or members of Editorial Boards or have been invited to act as guest editors for special issues;
- (v) several international awards (e.g., Program BIODDEPTH Descartes, Best PhD thesis award in management and preservation of natural environment in Greece from YPEXODE).

The impact nationally and internationally of the research results and achievements of faculty members are indicated by the following two metrics:

- (vi) the annual average number of publications per faculty member of the Department of Environment ranges from 1.6 to 10.9, which is considered a high-level of productivity on average;
- (vii) the average h-index (Hirsch Index: quantitative and qualitative research output index) for the academic staff of the Department (total h-index/22 faculty members) was estimated at 8.05 (Scopus source). In addition, the average citation number for the academic staff of the Department (total citations/22 faculty members) was estimated at 350 (Scopus source). EEC notes that the individual h-index of the faculty ranges between 1 and 21.

According to the Internal Evaluation Report, during the period of 1987-2010, the Academic Staff of the Department have published 627 papers in peer reviewed academic journals (1.2 mean publication index/faculty/year) and had almost 9360 citations (18.5 mean citation index/faculty/year). Moreover, during these years, the faculty members of the Department participated in more than 146 presentations in national and international scientific meetings.

- *Research projects*

The Department has been successfully involved in several competitive research projects that for the period 2000-2012 amounted to approximately 15.9 MEuros for 207 research projects. The EEC members note that a large portion of this support has come through competitive European Union projects.

- *Research collaborations*

It is noteworthy that the Department has had and continues to have numerous research collaborations with domestic and international academic and research institutions. The internal evaluation report provides extensive information on collaborating institutions, including specific information on the nature of each collaborative effort (page 19, IER).

## **RESULTS**

- *How successfully were the Department's research objectives implemented?*

The departmental objective of excellence in research is attained to a degree (see above). The participation of faculty members in several national and international funding programs have attracted research funds in the form of contracts and competitive grants, which led to

the purchase of some current state-of-the-art infrastructure.

- *Scientific publications*

See comments in the IMPLEMENTATION section above. The EEC considers some of the researchers as international leaders in their respective fields of expertise.

- *Research projects*

See comments in the IMPLEMENTATION section above. In addition, EEC notes that for 2011 the University of Aegean had received 67 European projects, where 72% were in the area of Environment. This result shows the potential of the Department in obtaining even higher funding.

- *Research collaborations*

See comments in the IMPLEMENTATION section above. In the EEC's opinion the number of national and international collaborations could be increased.

- *Efficacy of research work. Applied results and patents*

The efficacy and applied results of the Department research activities are evidenced by the high productivity in publications, numerous invited presentations, and awards, though the quality of some of these publications could be improved. The EEC noted the lack of appropriate support for securing intellectual property rights through patents.

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

The international recognition and visibility of several faculty members are evidenced by the invitations to act as Editors and Members in Editorial Boards in peer-reviewed journals/books, journal reviewers, keynotes and international awards. In addition, several faculty members act as partners in European funded research projects.

## **IMPROVEMENT**

- *Improvements in research proposed by the Department, if necessary.*

The Department is commended for its high level of research activities despite the limited resources available within the Hellenic Republic, though the research output could be improved. It was noted by the EEC that some of the faculty members achieve high performance research outputs and strong research links with universities in other countries, while others perform at rather low levels and seem to be not well connected.

- *Initiatives in this direction undertaken by the Department*

The faculty have made significant efforts to maintain and improve their research output.

External factors, such as bureaucratic and financial hurdles, seem to be the main limitations for the Department to reach its full potential. On the other hand the distribution of funds needs to reflect (i) the high quality of research and teaching programs, (ii) the documented excellence and recognition in research, and (iii) the continuation and enhancement of fine examples of excellent work which keep departmental staff competitive with their peers at the international level.

**Recommendation 18:** The EEC believes that the Department's strategic partnerships and international cooperation should be strengthened; a transparent and comprehensive research strategy should be elaborated, and effectively communicated both internally and externally by the DoE.

**Recommendation 19:** As the DoE recognises that it has a social role to play, the EEC recommends that the Department develops a clear outward communication strategy to translate relevant scientific findings for the public and inform and influence policy making and business practises. In addition, an appropriate support for securing intellectual property rights through patents should be considered by the DoE and the Administration.

**Recommendation 20:** The EEC recommends that the Department continues to offer graduate courses as well as MSc Theses and PhD Dissertations in English. The EEC recognises this as an opportunity not only to attract a higher calibre of students, but to increase the research outputs (e.g., publications) of the Department. According to the international practise, MSc and PhD theses should be made available in electronic form.

**Recommendation 21:** The EEC strongly recommends that start-up funding for the junior academics should be provided by the University. This measure will largely enhance participation in competitive grants and excellence in research by young researchers. EEC also recommends that both the University and the Department establish mechanisms to attract talented researchers.

**Recommendation 22:** The EEC recommends that the University establishes a competitive allocation of post-doctoral research fellowships.

**Recommendation 23:** The EEC strongly recommends that the University and the Department establish support mechanisms to help young researchers and entry level academics to quickly develop their own research. The EEC suggests three ways in achieving this: (i) provisions for mentoring, (ii) professional development opportunities, and (iii) allocation of funds from sources such as overheads retained by the Research Committee of the University from competitive grants received by the researcher.

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

### **APPROACH**

- *How does the Department view the various services provided to the members of the academic community (teaching staff, students).*
- *Does the Department have a policy to simplify administrative procedures? Are most procedures processed electronically?*

The DoE views that the various kinds of administrative and technical services provided by

the Department and the University of the Aegean to the academic community is satisfactory to very satisfactory. When compared to other countries (panel member's impressions), the current DoE appears to have a high proportion of satisfied staff and students partly attributed to the size of the academic community and the island life style. In addition, the Department is aware of its role to offer support through its students' welfare office for those students who face severe financial needs and academic performance and other problems.

Student admissions and the recording of course grades for the UGP are electronically managed by a specific software program since 2011 but not yet for the PGPs. Currently Microsoft Office Excel is used for PGPs' administration. However, there is no interface between the two systems in place. By comparison, in many foreign universities these duties are handled by the central administration and software that interfaces with statistical tools. However, the administration staff made suggestions for simplifying bureaucratic procedures. The EEC also noted that the DoE administration has no access to the research funds account (ELE) and no control of the DoE research funds.

Neither continuous vocational training/development was offered to the administration staff nor did the DoE participate in any EU program for advanced administration training.

**Recommendation 24:** The EEC recommends that the University of the Aegean should create a centralized e-system with respect to the administration staff suggestions for bureaucratic simplification. The central e-system should aim to handle student admissions, student grades and other student-related inquiries. The grades for a given course should be available on line through a secure internet site to address student inquiries. Furthermore, the administration staff should have access to the research funds account (ELE) which is managed centrally and should be able to provide financial overviews for each department when requested.

**Recommendation 25:** The EEC recommends that the DoE and the University of the Aegean offer vocational training to the administration staff and participate in EU programs for advanced administration training.

## IMPLEMENTATION

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

The administrative staff (4 members) supports the teaching and secretarial work of the Department.

The EEC noted that the procedures relating to purchases for the Department's research and teaching needs are largely performed by post-graduate students and members of the teaching personnel responsible for the laboratories. In addition, the administration staff appears to have also little or no involvement in supporting the DoE in the application for research funds within Greece and the EU.

The EEC members suggest that the management and assessment of the secretariat staff must include input from both the University and the Head of the Department.

Technical support is needed by the University to address specific safety issues and improve safety in general and in particular in the laboratories of the Department.

**Recommendation 26:** The EEC recommends that administrative support be also provided for research activities, including the purchase of consumables and equipment in collaboration with the technical staff of the Department and the application procedures for research funds within Greece and the EU.

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

The EEC notes that there is a need for the provision of student support services for those students with disabilities, and others who face severe financial or other problems.

**Recommendation 27:** The EEC recommends that the University of the Aegean should provide student support services and counseling to those students facing severe financial needs and academic performance problems.

## RESULTS

- *Are administrative and other services adequate and functional?*

See comments above.

## IMPROVEMENTS

- *Initiatives undertaken by the Department to improve the services provided*

The Department provides tutor support to students with academic performance problems but this could be improved.

## Collaboration with social, cultural and commercial organizations

Since 1987, when the first students were admitted, the DoE has developed substantial collaboration with local commercial enterprises such as co-operatives. Exemplary and particularly effective are some activities of the DoE, which are associated with social, cultural, and productive institutions (please do also refer to IER 2011, page 43):

- Users Associations, Chambers, advisory committees, local government working groups
- Participation in presentations, speeches, interviews and workshops for the public
- Practical use of Departmental research results for benefit of society

A number of faculty members actively participate in various Hellenic and international scientific union councils, and as expert evaluators of national and international scientific programs.

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

In general the EEC considers the Department's Curriculum rational, functional and effective. Curriculum, teaching quality and efficacy is high due to continuous self- evaluation and external assessment processes. Although the research profile of the Department is rather

good, it would definitely benefit from a more clear and transparent strategic focus on priority subject areas. In an age of globalization, it is extremely important to develop strategic and comprehensive international cooperative arrangements. While many individual academic staff have strong research links with universities in other countries, there seems to be a lack of strategic partnerships. In general, participation in international cooperative research activities, perhaps in a leadership role, could be increased significantly. The EEC is convinced that this worthwhile goal is within the Department's reach, if a clear research strategy with achievable key objectives is developed.

At the start of the EEC's site visit, the DoE presented the institution's strengths, weaknesses, opportunities and threats (SWOT analysis). This analysis is designed to assess and respond to the challenges generated by the dynamic environment that the DoE operates within. Based on the current SWOT analysis future strategic planning has been discussed. Although it is written in Greek the SWOT analysis is inserted below due to its importance for future strategic planning.

### SWOT ανάλυση Τμήματος Περιβάλλοντος

S	W
Επιστημονική αριστεία	Βραδεία κάλυψη των κενών θέσεων ΔΕΠ
Κουλτούρα καλών πρακτικών και έγκαιρων πρωτοβουλιών	Αδυναμία κάλυψης προσθέτων αντικειμένων
Συντονισμός με διεθνείς εξελίξεις επιστημονικού πεδίου	Δομική έλλειψη μελών ΕΤΕΠ/ΕΕΔΙΠ
Συνέργειες/συνεργασία στελεχών	Καθυστέρηση μετακίνησης Διδασκτόρων ΙΔΑΧ
Κουλτούρα «Τμήματος»	Υποχρηματοδότηση/έλλειψη χρηματοδοτικών ευκαιριών
Ισχυρή αυτοχρηματοδοτική ικανότητα	Έλλειμμα κατοχύρωσης επαγγελματικών δικαιωμάτων αποφοίτων
Ελκυστικότητα για μεταπτυχιακές σπουδές	Ανομοιογένεια προσδοκιών φοιτητών
Εφαρμογή θεσμικού πλαισίου ΑΕΙ	Κρίση
Εδραίωση σημασίας περιβάλλοντος στην κοινωνία	Δυσαναλογία στόχων/δυνατοτήτων
Απελευθέρωση αγοράς εργασίας	Δυσχέρειες ενοποίησης Τμημάτων
Ενίσχυση σχέσεων με παραγωγικούς τοπικούς φορείς	Δυσαρμονία με εξωγενή πολιτικό λόγο
Υποστήριξη διεθνών ακαδημαϊκών συνεργασιών	Έλλειμμα διασυνδέσεων/επιρροής με κεντρική Διοίκηση/λήπτες αποφάσεων
O	T

(i) *Potential inhibiting factors at State, Institutional and Departmental level, and proposals on ways to overcome them*

Inhibiting factors, some of which were also mentioned in earlier sections and do also reflect the weaknesses of the SWOT-analysis, are:

- a) The lack of funding opportunities and negligible support from the Ministry of Education and the General Secretariat of Research and Technology of the Hellenic Republic. The lack of fellowships and teaching assistantships for the MSc and PhD programs is of particular concern and duly noted, as well as the lack of financial support for the postgraduate program;
- b) The lack of response to repetitive requests to the Department relative to the number of incoming students and the criteria for student selection who have

- natural science background;
- c) The small number of technical staff and the long delays in the approval and hiring process for new faculty;
  - d) The lack of a start-up granting system for new faculty members, and bare minimum state funding to cover absolutely basic necessities for research consumables and equipment;
  - e) The current length of graduation time and the final degree grades;
  - f) The lack of appropriate support for securing intellectual property rights through patents;

Proposals made by EEC to overcome the above inhibiting factors can be found in **Chapter F. Final Conclusions and Recommendations** of the EEC.

*(ii) Short-, medium and long-terms goals/plan and actions for improvement by the Department/long-term actions proposed by the Department*

According to the Internal Evaluation Report (page 45) the strategy of the DoE is to provide an interdisciplinary approach to environmental problems and solutions based on the strategic decisions made by the General Assembly (Γενική Συνέλευση).

The above mentioned reference to the DoE strategy is limited to a general approach and short-term actions. The EEC noticed the lack of medium- and long-term goals; concrete plans based on the SWOT-analysis to achieve the goals and actions for improvement by the DoE do not exist.

In addition, strategic thinking concerning capacity building is missing. More professional human resource management and professional development structures should be put in place despite bureaucratic difficulties in order to develop staff member careers in the University.

**Recommendation 28:** The EEC strongly recommends that the DoE should reconsider its strategic approach including medium- and long-term goals, and concrete plans based on the SWOT-analysis; the aim should be to achieve goals and improvements, as well as a professional human resource management team which focuses on the development of staff member careers.

**Recommendation 29:** Taking into account that several departments of the Aegean will be merged into one Environment School in future, the DoE will have the opportunity to focus on its strengths and with the merger the potential exists to create a center of excellence. In parallel, the recently enacted law by the Hellenic Republic for Higher Education has to be implemented by the DoE and its organization hopefully providing more functional autonomy. Especially the legal establishment of funding “Anonymes Etaireies” opens new institutional and industrial opportunities of relationships at the public and private levels. The DoE has already planned to create an Institute for Global Climate Change in Mitilini.



**Recommendation 30:** The excellent work of the University deserves to be better known both within Greece and International. Greater attention to public relations and external communication would certainly help the university to make significant progress.

*(iii) Long-term actions proposed by the Department*

According to the IER (page 49) the DoE has proposed short-term goals and improvements while medium- and long-term plans were missing

## F. Final Conclusions and Recommendations of the EEC

### **Conclusions:**

The Department of Environment of the University of the Aegean since its establishment in 1987 has delivered exceptional graduates from both the UGP and PGPs some of whom have become leaders in their fields. It was designed based on international standards, and it was innovative and pioneering in its inception.

The DoE was the first on Environmental Science and the first to emphasize interdisciplinary studies. The Department was established by high-profile academics that studied abroad and shaped the direction and current profile of the Department.

The Department, although well-grounded on the realities of Hellenic Universities, has identified improvements through continuous self-evaluations.

The success of the Department lies in its inspired design, its dynamic and engaged community and the high relevance of the Environment in modern times. A victim of its own success the Department needs to re-establish its initial innovative activities and grand vision. To conduct state-of-the-art research and teaching, State/University funding is absolutely necessary for personnel, instrumentation and technical infrastructure.

In summary, the strengths of the Department are the broad areas of teaching and research covered and the presence of active and devoted faculty members. The Department's long term strength lies in rediscovering its original pioneering spirit by focusing on new highly productive academic and research activities to complement the rather idyllic island life style, which creates a tightknit community and offers a great recruitment tool for staff and students. The main weaknesses are the lack of fellowships for students at the M.Sc. and Ph.D. programs, the limited number of technical staff, the very limited financial support provided by the State/University and the poor student attendance particularly at the undergraduate courses.

### **Recommendations:**

The EEC members make the following recommendations to enhance the future development of the Department. Some of these recommendations are intended for the Department, while others are directed at the University and State authorities:

#### **Education:**

**Recommendation 1:** The merging of the existing UGPs (Department of Environment and

Department of Marine Science) under the same School provides an opportunity to examine and review the menu of courses offered to increase the proportion of practical to theoretical courses without increasing the number of courses needed to graduate.

**Recommendation 2:** Continue reviewing and adapting the existing UGC to local, national and global challenges with a strong understanding of temporal variations with uncertainty and implement a systematic process to assess and prioritize future scientific, social and environmental objectives for the Department.

**Recommendation 3:** Increase the homework and project load to the students; introduce mandatory mid-term exams and internships; offer a course for delivering transferable skills and other training for capacity building to respond to a rapidly changing conditions and unexpected situations.

**Recommendation 4:** Provide field trips and study trips to support and facilitate the theoretical aspects of the UGC.

**Recommendation 5:** Create a course (2-4 ECTS) based on a series of lectures/seminars offered by external experienced speakers preferably from industry/government/academia/NGOs and include topics such as project management, systems engineering and cost-benefit analysis.

**Recommendation 6:** Currently, a lack of fellowships exists for non-permanent teaching assistants who can support the instructive work of the academic staff during their laboratory courses. Funding and provision of these teaching fellowships by the State and/or the University is necessary and urgently recommended, on a priority basis. The feasibility of creating some university student scholarships for low income but high-achieving students should also be examined.

**Recommendation 7:** Currently, a lack of technical staff exists to maintain and run the instrumentation of the Department that is a basic requirement of the curriculum. The EEC recommends the employment of key technical staff (e.g., technicians).

**Recommendation 8:** The EEC strongly recommends the implementation of homework assignments, group projects, including report writing and presentation, and mid-term examinations. In addition to the final exams, these items should contribute to the final grade. This will largely improve the quality of the educational experience.

**Recommendation 9:** The EEC recommends the establishment of a mechanism to obtain financial support for postgraduate students (PhD level) through merit-based fellowships. Such support could come from the establishment of tuition fees, where a significant portion of it should be given as fellowships. Another source of support could come from the return to the department of part of the overhead earned by the department's academic staff through competitive research or industrial grants.

**Recommendation 10:** There is a need to increase the practical courses, site visits and field-trips with the appropriate logistical means; this was also requested by the students (MSc/PhD).

**Recommendation 11:** Specialised technical support is required to run the maintenance of all the infrastructure of the teaching and research laboratories of the department.

**Recommendation 12:** The EEC highly recommends that the findings from the student questionnaires should be used in a timely manner by the Department to improve teaching effectiveness. The student evaluations should be periodically reviewed as part of a systematic effort to evaluate/analyse feedback and make further improvements.

This evaluation process should be done via access to a secure internet University site at which each student will provide his/her comments anonymously. The findings from this process and any action taken as a result should be clearly communicated to the students.

**Recommendation 13:** Some essential safety improvements need to be made: (a) use of protective material in the Analytical Chemistry lab course; (b) appropriate storage of propane gas used in laboratories; (c) posting of safety notices in the laboratories.

**Recommendation 14:** It is strongly suggested that special efforts should be given to the use of supplementary tools to facilitate the learning experience, such as computer-based tutorials, oral presentations by students, field-visits and interactions with industry. The department should actively search for and implement methods to improve the employability of the students through transferrable skills.

**Recommendation 15:** It is suggested that mechanisms must be introduced to recognise and sustain good and innovative instruction. For example, student nominations for awards, teaching grants for faculty. In addition, the focus in the future should be concentrated on on-line resources, e-Journals and e-Books and continuous upgrading of IT.

**Recommendation 16:** The EEC strongly recommends that the Department should expend considerable effort to find effective ways of increasing classroom attendance for the undergraduate students. For example, classroom assignments will only be handed to those attending and would need to be completed before a student is allowed to conduct the experimental part of the course.

**Recommendation 17:** The EEC strongly recommends that a significant increase in the quality of the incoming students should be guaranteed if the students come with a background in natural (currently known as «Θετικές») and technological (currently known as «Τεχνολογικές») sciences. In addition, there should be more meaningful dialogue between the Ministry of Education and the Department for an agreed upon number of admitted students, and minimum standards for entrance examination performance.

Research:

**Recommendation 18:** The EEC believes that the Department's strategic partnerships and international cooperation should be strengthened; a transparent and comprehensive research strategy should be elaborated, and effectively communicated both internally and externally by the DoE.

**Recommendation 19:** As the DoE recognises that it has a social role to play, the EEC

recommends that the Department develops a clear outward communication strategy to translate relevant scientific findings for the public and inform and influence policy making and business practises. In addition, an appropriate support for securing intellectual property rights through patents should be considered by the DoE and the Administration.

**Recommendation 20:** The EEC recommends that the Department continues to offer graduate courses as well as MSc Theses and PhD Dissertations in English. The EEC recognises this as an opportunity not only to attract a higher calibre of students, but to increase the research outputs (e.g., publications) of the Department. According to the international practise, MSc and PhD theses should be made available in electronic form.

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**Recommendation 22:** The EEC recommends that the University establishes a competitive allocation of post-doctoral research fellowships.

**Recommendation 23:** The EEC strongly recommends that the University and the Department establish support mechanisms to help young researchers and entry level academics to quickly develop their own research. The EEC suggests three ways in achieving this: (i) provisions for mentoring, (ii) professional development opportunities, and (iii) allocation of funds from sources such as overheads retained by the Research Committee of the University from competitive grants received by the researcher.

Other Services:

**Recommendation 24:** The EEC recommends that the University of the Aegean should create a centralized e-system with respect to the administration staff suggestions for bureaucratic simplification. The central e-system should aim to handle student admissions, student grades and other student-related inquiries. The grades for a given course should be available on line through a secure internet site to address student inquiries. Furthermore, the administration staff should have access to the research funds account (ELE) which is managed centrally and should be able to provide financial overviews for each department when requested.

**Recommendation 25:** The EEC recommends that the DoE and the University of the Aegean offer vocational training to the administration staff and participate in EU programs for advanced administration training.

**Recommendation 26:** The EEC recommends that administrative support be also provided for research activities, including the purchase of consumables and equipment in collaboration with the technical staff of the Department and the application procedures for research funds within Greece and the EU.

**Recommendation 27:** The EEC recommends that the University of the Aegean should

provide student support services and counseling to those students facing severe financial needs and academic performance problems.

**Recommendation 28:** The EEC strongly recommends that the DoE should reconsider its strategic approach including medium- and long-term goals, and concrete plans based on the SWOT-analysis; the aim should be to achieve goals and improvements, as well as a professional human resource management team which focuses on the development of staff member careers.

**Recommendation 29:** Taking into account that several departments of the Aegean will be merged into one Environment School in future, the DoE will have the opportunity to focus on its strengths and with the merger the potential exists to create a center of excellence. In parallel, the recently enacted law by the Hellenic Republic for Higher Education has to be implemented by the DoE and its organization hopefully providing more functional autonomy. Especially the legal establishment of funding “Anonymes Etaireies” opens new institutional and industrial opportunities of relationships at the public and private levels. The DoE has already planned to create an Institute for Global Climate Change in Mitilini.

**Recommendation 30:** The excellent work of the University deserves to be better known both within Greece and International. Greater attention to public relations and external communication would certainly help the university to make significant progress.

Given however the institutional character of policy-making in Greek universities, and the various layers of hierarchy within the Public sector, it is of outmost importance to assist in further clarifying, which of them correspond to the various levels of academic strategy per se, regarding administrative decision-making and financial support, i.e. the DoE, the UoA and the Ministry of Education. Following grouping of Recommendations reflects the aforementioned principle:

ENTITY responsible for Corrective Action	Department of Environment	University of the Aegean	Ministry of Education
<b>Recommendation No</b>			
1,2,3,4,5,8,9,10,12,13,14,15,16,20,	X		
6, 7		X	X
11	X	X	X
17			X
18,19,23,25,26	X	X	
21,22,24,27		X	
28,29,30	X	X	X

## The Members of the Committee

Name and Surname	Signature
1. Professor Evan Vlachos, Coordinator Colorado State University, Fort Collins (USA)	
2. Professor Angelos M Efstathiou University of Cyprus, Nicosia (Cyprus)	
3. Adjunct Professor and Professional Engineer Christos Katopodis Katopodis Ecohydraulics Ltd., and the University of Alberta (Canada)	
4. Dr. Irimi Fotiadou British Petroleum, BP Hamburg Hamburg (Germany)	
5. Dr. Nikolaos Voulvoulis Imperial College London (United Kingdom)	