SUBJECT REVIEW REPORT

DEPARTMENT OF BIOLOGICAL SCIENCES

FACULTY OF APPLIED SCIENCES
VAVUNIYA CAMPUS

18th to 20th May 2009

Review Team :

Prof. M. J. S. Wijayaratne, University of Kelaniya
Prof. Sanath Hettiarachchi, University of Ruhuna
Dr. (Ms.) M. I. S. Safeena, South Eastern University of SL

CONTENTS

Page

1. SUBJECT REVIEW PROCESS

A key factor required to promote and safeguard public confidence in higher education is university accountability for quality and standards. Since higher education in Sri Lanka is a public good, it is expected from universities to conscientiously exercise their responsibility to maintain quality and standards.

Subject review is one of the components of the external quality assurance programme carried out in Sri Lankan universities by the quality Assurance and Accreditation Council (QAAC) of the University Grants Commission (UGC). It evaluates the quality of education provided to the main stakeholders, the students, within a specific discipline. It is focused on evaluating the student learning experience, student achievements and the teaching learning process.

Salient features of the subject review process include critical analysis of self evaluation report, peer observation of teaching, observation of documents, observation of facilities, and gathering information on activities towards quality assurance through discussions with as many stakeholders as possible. Documents that are observed include, examples of student work, handbooks, student handouts, lesson guides, statistics on student achievements and progress, samples of answer scripts, external examiners reports, peer evaluation reports, student feedback reports, minutes of Departmental committees etc. Peer observation carried out during the review process includes observing teaching both in theory and laboratory classes. The stakeholders with whom the discussions are held include the Head of the Department, members of the academic and non-academic staff, academic administrators, alumni, student counselors, undergraduate students and postgraduate students.

Subject reviews evaluate how teaching-learning process helps in the achievement of intended learning outcomes stipulated in the self evaluation report.

Aspects of the subject review

Following eight aspects are evaluated in the subject review process.

- Curriculum design, content and review
- Teaching, learning and assessment methods
- Quality of students including student progress and achievements
- Extent and use of student feedback, qualitative and quantitative
- Postgraduate studies
- Peer observation
- Skills development
- Academic guidance and counseling

Review Process

The review team consisted of the following members

1. Prof. M. J.S. Wijeyaratne
   (Senior Professor of Zoology, University of Kelaniya)
2. Prof. Sanath Hettiarachchi
   (Professor, Department of Botany, University of Ruhuna)
3. Dr. Mrs. M.I.S. Safeena
   (Senior Lecturer, Department of Biological Sciences, South Eastern University of Sri Lanka)

The Self Evaluation Report prepared by the Department was provided to the review team on 4th May 2009 by the QAAC of the UGC. The review was carried from 18th to 20th May 2009.

On 18th morning, the Quality Assurance Specialist of the QAAC briefed the review team about the quality assurance process and writing of the review report. The Dean of the Faculty of Applied Sciences then gave a presentation on the history and the present situation of the

Faculty. He described in detail the facilities available and study programmes offered by the Faculty. The Rector of the Campus, two Heads of Departments and members of the academic staff were also present at this meeting. After this presentation, the Rector of the Campus highlighted the present situation of the Campus, the constraints faced and future plans.
The review team then finalized the agenda for the review visit with Head of the Department, which is given in Annexure 1. The review team then met the Head of the Department and other members of the academic staff. At this meeting, the Head of the Department explained the contents of the Self Evaluation Report which was followed by a discussion. During the visit, the review team had discussions with the Rector of the Campus Dean of the Faculty, members of the academic staff, non academic staff, student counselors of the Faculty of Science, Alumni, Librarian, System Analyst, Systems Engineer, Deputy Director of the Regional Agricultural Research Station and undergraduate students. The list of persons met is given in Annexure 2.
During the review visit, several documents were also perused. These included the Faculty Handbooks, lists of examiners, Senate Minutes, Minutes of the Campus Board, handouts given to students, answer scripts, question papers, marking schemes, samples of student reports etc. The documents examined are listed in Annexure 3.
The review team also examined the facilities available for teaching and learning. These included the lecture halls, teaching laboratories, equipment, library, ICT centre etc. The list of facilities observed is given in Annexure 4.
The review team observed some presentations of students, and teaching in two theory classes and one laboratory class.
On 20th May, a feedback of the findings was given to the Head of the Department and other members of the academic staff.

Publication of the review report
A report incorporating the findings of the review team is prepared after the review visit. In the report, the strengths/ good practices and the weaknesses of each aspect reviewed will be highlighted together with some recommendations. Each aspect will also be given a judgment of good, satisfactory or unsatisfactory. The draft report will be sent to the Department and the feedback will be obtained. If there is disagreement with any judgment, it would be resolved by the QAAC through discussion. The judgment will be submitted to the Standing Committee on Quality Assurance of the UGC for approval. After its approval, the report will be published in the QAAC website, www.qaacouncil.lk. The Department has to take action to improve the quality of the aspects that receive a judgment of unsatisfactory within six months of approving the judgments by the Standing Committee on Quality Assurance of the UGC.

2. BRIEF HISTORY OF THE UNIVERSITY, FACULTY AND THE DEPARTMENT

University of Jaffna to which the Vavuniya Campus is attached was started in 1974 as the Jaffna campus of the University of Sri Lanka with two Faculties, namely the Faculty of Arts and the Faculty of Science. In January 1979, with the enactment of the Universities Act No. 16 of 1978, Jaffna Campus was upgraded as the University of Jaffna. In 1979, the third Faculty of the University, namely the Faculty of Medicine was established. The Faculty of Agriculture of the Jaffna University was established in 1990, and the Faculty of Management Studies & Commerce and the Faculty of Graduate Studies were established in 1999.
The origin of the Vavuniya Campus goes back to the establishment of the Northern Province Affiliated University College (NPAUC) in 1991, which was affiliated to the University of Jaffna. As other Affiliated University Colleges that existed in the country at that time, the

NPAUC also offered Diploma programmes. By an Order made under the provisions of Section 22 of the Universities Act No. 16 of 1978, the NPAUC was upgraded as the Vavuniya Campus with two Faculties, namely the Faculty of Business Studies and the Faculty of Applied Sciences, on 1st April 1997. The first and the second batches of students who were following the Diploma course in Mathematics at the NPAUC were admitted to the B.Sc. degree programmes of the Vavuniya Campus in 1996 and 1997 respectively. Thus the B.Sc. degree programmes of the Vavuniya Campus have actually been started in 1996. The first and second batches completed their degree programmes in 1998 and 1999 respectively.

The vision of the Faculty of Applied Sciences is to be the Center of Excellence in the provision of technologically advanced and appropriate Applied Science education in the direction of Information Technology, Environmental Sciences, Biotechnology, Mathematics and Applied Physics. At present, three B.Sc. (General) degree programmes namely B.Sc. (Applied Mathematics and Computing), Bachelor of Information and Communication Technology, and B.Sc. (Environmental Science) and three B.Sc. (Special) degree programmes, *viz*, B.Sc. degree in Computer Science, B.Sc. in Information and Communication Technology, and B.Sc. in Environmental Science are offered by the Faculty.

The Department of Biological Sciences was started in 1997 with the establishment of the Faculty of Applied Sciences. Its vision is to be the Centre of Excellence in knowledge creation and dissemination through active research. Its mission is to be the leader in the provision of academic services of excellence in producing readily marketable graduates with intellectual and professional skills who can face challenges imposed by the 21st century and contribute to the sustainable development of the regional, national and international arenas. At present it offers the B.Sc. (Environmental Science) degree and B.Sc. (Special) degree in environmental Science.

3. AIMS AND LEARNING OUTCOMES

3.1 Aims

The goal of the Department is to enrich the knowledge and know-how of students with clear understanding on the associated environment, use of renewable and non-renewable resources in sustainable ways, conservation and preservation of natural resources and management of wastes without environmental degradation.

To achieve the Department of Biological Sciences aims to provide students with:

- Degree programmes that offer high quality learning experience in ecosystems, biotic and abiotic factors of the environment and their dynamic role in balancing and sustaining the ecosystem and management of resources in an efficient way**.**
- An exposure to the community; identify the problems within the community with special reference to resource management (waste disposal, bio diversity conservation, deforestation, use of agrochemicals, etc) and to find suitable and appropriate remedial measures in conjunction with community approach.
- An adequate knowledge on the system-based approach that will enable them to adopt the holistic approach to all environmental problems and develop solutions that is viable, feasible, effective, sustainable and eco-friendly**.**
- An opportunity to expose them in to a research project to develop research and documentation skills in their chosen field of specialization and promoting their critical thinking and effective interaction with scientific world to develop innovations which will immensely contribute to conserve the environment.
- The enthusiasm and necessary skills towards a continuous learning process and to

facilitate the achievement of the above aims of the department.

- Intends to maintain an informal, supportive and responsive atmosphere in order to promote student-centered, enthusiastic learning towards a high completion rate.
- Supports the teaching staff to widen and enrich their knowledge and strengthen the skills which ultimately enhance and promote their career development.
- Courses to gain experience and management skills to improve the quality in these aspects.
- In nutshell, the effective teaching and student centered learning processes with hands-on experience provided by the Department lead to quality enhancement of undergraduates and ultimately production of high quality competent graduates in B.Sc. degree in Environmental Science.

3.2 Learning Outcomes

On successful completion of four-year course, students are expected to have:

1. Earned a virtual understanding of the concepts in the holistic (ecological or systems) approach to learning and analysis of environmental systems.
2. Understood how this approach can be applied effectively and efficiently to implement the development projects and to manage the natural resources in sustainable ways and reduce the manmade and natural hazards.
3. Realized the importance to give concern on the minimal use of high external inputs; safety of the environment against degradation and sustainable farming systems rely on natural inputs, resource conservation and minimum adverse effects on the associated living environment. In other words to have realized the essential features of organic farming.
4. Acquired both theoretical and practical knowledge on water management, soil management, waste disposal, wild life conservation and agro forestry to ensure the resource conservation in regional and national levels.
5. Acquired knowledge and skills in laboratory techniques in measuring pollutants in water bodies, chemical, biological and physical analysis of soil, identification of microbes, and forest menstruation. These techniques will help to conserve the resources from degradation.
6. Developed technical skill and capability for scientific experimentation, including data handling, interpretation and presentation of research results.
7. Improved their capacity for self-directed learning through extensive reading and access to electronic information media.
8. Motivated group-learning process towards a team work to understand the beneficial nature of such an effort.
9. Acquired knowledge and management skill to be professional in environmental science and to seek readymade employment both in public and private sectors.

On successful completion of the general programmes offered during the first 3 years, students are expected to have obtained adequate knowledge and a thorough understanding of the range of topics covered under Environmental science.

To achieve the outcomes in 1 to 9 the programmes provide learning experience that intends to enable students to:

1. Improve their knowledge and conceptual capacity buildup by progressive development of knowledge in a system approach.
2. Gain adequate experience of the real environmental conditions, the environmental problems and other constraints faced by the community.
3. Undertake a final year research project of their desired field of specialization and enable

them to interact with senior academic staff with considerable research experience.
4. Learn the experience and skill within a manageable work-load, within the University guidelines fall in line with the corporate plan of the Faculty of Applied science.
5. Assess their progress through a systematic, appropriate assessment and grading system designed by the Department of Biological science approved by the Faculty board and senate and accepted by the council of Jaffna University.

Programme Details

The Department offers credit based degree programmes where a B.Sc. (General) Degree students are required to accumulate 90 credits over 6 semesters and B.Sc. (Special) degree students are required to accumulate 120 credits within 8 semesters. One credit in theory is equivalent to 15 hours of lectures while in practical and field classes one credit is equivalent to 30 or 45 hours of laboratory/field work. One semester is of 15 weeks duration. There are two semesters per academic year. Students are required to follow course units accumulating to 30 credits in each academic year.

During the first two semesters, the curriculum is designed to impart detailed subject specific knowledge pertaining to Chemistry, Botany and Zoology. From the 3rd to 8th semester, the curriculum deals with the detail study of environmental management. The second semester of the final year focuses on a research project, so as to develop research skills and to promote the acquisition of in-depth knowledge in the chosen research topic of regional and national interest.

In order to enable students to gain knowledge on the environmental issues i.e. the water pollution, waste disposal, poverty, deforestation and unplanned urbanization, students are requested to prepare a field report/term paper by visiting the actual fields as a part of subjects. Students have the opportunity to interact with outside resources i.e., other Faculties, Universities, Research organizations and specialized institutions particularly in relation to the research projects to gain more experience in problem based learning.

4. FINDINGS OF THE REVIEW TEAM

4.1. Curriculum Design, Content and Review

The curriculum delivered by the Department is up to date in many aspects. In keeping with current trends, the Department follows credit based and semester based course unit system. The credit rating is as per recommendations by UGC. The Department offers a three year General Degree course and an extended four year course. This program had been named as B.Sc. Special Degree in Environmental Science, but will be renamed as B. Sc. (Environmental Science) as per UGC guidelines. A four year Special Degree in Environmental Science has also been designed to replace the former Special Degree. Students will be admitted to Special Degree program after the completion of two academic years.
The curriculum is revised recently to incorporate these features and also to include revision of content considering current needs. While maintaining the essential course content directly relevant to the Degree offered, a number of interdisciplinary and multidisciplinary courses have also been incorporated as auxiliary courses. English language I and II, Communication skills, Sri Lankan studies, social harmony & natural resources of Sri Lanka, Career guidance and Management and entrepreneurial skills are examples for such auxiliary courses. These courses are evaluated and are considered for the award of the Degree, but are not used in

computation of the GPA. Course units that provide necessary knowledge in mathematics, statistics and information technology are also offered. Learning objectives of each course unit have been identified, but learning outcomes are stated for the entire Degree program.
The members of the Department have designed the revised curriculum by proposing the course units by individuals and by discussions held afterwards. The curriculum agreed upon by the staff has been presented to the Faculty Board and the Senate for recommendation and approval.

Review team noted that a considerable proportion of the alumni is employed in fields relevant to their Degree program and a few have taken the path of higher studies. The students have gained access to job opportunities in private sector, NGOs and INGOs in addition to state sector. Four graduates are employed abroad. Eight out of the 39 alumni are engaged in postgraduate studies. These graduates have not followed the new revised curriculum, yet above mentioned data indicate the relevance of Degree program to the demands of the job market.

Discussion or any other forms of contact have not been made with the stakeholders such as potential employers and alumni during the curriculum revision. Such consultations would have been beneficial in identifying specific deficiencies and needs which could have been addressed. This would have improved the curriculum and in addition would have helped to advertise the Degree program.
The three-year General Degree program does not provide any flexibility for the students. Students have to follow all course units that aggregates to minimum 90 Credit requirement and all six auxiliary course units. At present, only five students in each batch follow the Degree program and the number of staff is also limited. Therefore, at present providing more flexibility may not be practical. Nevertheless this would be factor for consideration in time to come. The Department offers some degree of flexibility in year four. It is also noteworthy that the Department allows the students to revert to the three year Degree, if the student desires so and decides before the release of the final results of the fourth year.

In relation to the curriculum design, content and review the judgment of the team is SATISFACTORY.

4.2 Teaching, Learning and Assessment methods

Teaching and Learning Methods
The review team noted that the teaching methodology adopted by the staff in delivering lectures and conducting practical classes is highly satisfactory. When PowerPoint presentations are used, the presentations are provided in printed form to the students before the lecture. The PowerPoint slides were clear. The voice of the teacher was audible and clear. The lecturers encourage the students to speak, but it was noted that the response was poor. Use models where necessary is in practice. Learning objectives of the lecture are given at the beginning of the lecture. Although a white board was fixed, this was used to project the PowerPoint presentation. Therefore use of white/black board was not observed. When conducting practical classes, Senior Lecturer in charge is present in the laboratory to guide the Demonstrators and to assist the students.
Library facilities are adequate for the present number of students. However upgrading is necessary in order to cater for the projected number of students.
It is commendable that students are given self learning exercises, such as term papers and group work as a part of curriculum and students are also expected to improve their IT skills.

However, the reviewers felt that the outcome would be hampered greatly due to the extremely slow internet access.
Further, the delivery of knowledge and inculcating skills heavily depend on the field visits in this Degree program. However it was noted that the number and extent of the field studies are not optimal.
Ventilation of the lecture halls is very poor. Lecture halls become very hot after mid day. The laboratories have sufficient facilities and are maintained well. However, facilities must be improved if the number of students is increased. The number and the quality of the laboratory specimens are not adequate.

Assessment methods
Each course unit is assessed by continuous assessment by two quizzes and a term paper and by end of semester written paper. Students are advised in advance how they would be assessed. The question papers are moderated internally and by an external examiner. All answer scripts are sent outside the Faculty for second marking. Reviewers appreciate this practice, but at the same time noted that this causes a serious delay in release of results.

In relation to the teaching, learning and assessment methods the judgment of the team is GOOD

4.3 Quality of Students including Student Progress and Achievements

The Department has a serious problem of attracting students. At present only five students are present in each batch. The maximum number per batch had been nine (2001/2002). Although the Department is willing to take 50 students per batch, the UGC has sent a list of only 16 students for 2007/2008 batch. Of those, only six students have registered. This trend (registering only 6 out of 16 in the UGC list) is not very much different from many other Faculties of Science in Sri Lanka. Some students do not accept the placement as they wait to enter in to a Medical Faculty in the subsequent attempt, while others get transferred to other courses. Except for the two students from Mullativu District, others have relatively high Z-scores.
Although the curriculum is designed to expose the students to various situations, students did not have opportunities to participate in national level activities due to the unsettled situation prevailed in the country. Nevertheless students have taken part in regional activities and also helped to generate funds which are used for the development of the Department.
Student progress is not monitored by the Department. However, by examining the final results of the graduates, it was evident that a considerable progress has been observed. However it is not clear whether the students showing good results are the same ones who have entered with good Z-scores. Therefore, analysis of student progress is necessary.
Reports of research projects and group work indicate good achievements of the students. The student presentations were also very satisfactory.
Students do not seem to be motivated to follow the extended forth year. This would improve when more students are admitted to the Degree program. Availability of career opportunities with the three year degree, uncertainty of importance of spending one more year for undergraduate education and unsettled, non-conducive environment in the region in particular and in the country in general are seen as causes of lack of interest in extended forth year.

In relation to the Quality of students, including student progress and achievement the judgment of the team is GOOD.

4.4. Extent and use of Student Feedback

A system of obtaining formal feedback from students teaching, course contents and assessments is in place. A well designed questionnaire is used for this purpose. The questionnaire is given to the students at the end of each theory course.
Since the class sizes are small, teachers also obtain informal feedback. However, review team noted that the responses of the students were not analyzed quantitatively.
The review team was unable to observe that the teachers have considered the responses and comments made by students and taken steps to improve the quality of teaching and learning environment.

In relation to the extent and use of student feedback the judgment of the team is SATISFACTORY.

4.5. Postgraduate Studies

The department has a plan to offer a postgraduates programme in near future. Few staff members of the department supervise postgraduate students, who are reading for M. Sc. degrees at other institutions. Some members of the academic staff are carrying out research activities either in collaboration with other organizations or individually. The senior members of the academic staff with postgraduate qualifications may try to obtain research grants and register research students for M. Phil degrees and thereby develop postgraduate studies.

In relation to the postgraduate studies the judgment of the team is SATISFACTORY

4.6. Peer Observations

The junior staff is supervised by the senior staff during laboratory classes. The practices such as moderation of question papers, second marking of the answer scripts are carried out. However, there is no organized formal mechanism for peer observation of the staff, including the senior members.
The comments made by the external moderators, second examiners and external members during research presentations have to be taken up at staff meetings for further improvement in the quality of teaching and evaluating processes.

In relation to the peer observation the judgment of the team is SATISFACTORY.

4.7. Skills Development

Review team noted that skills development has been identified in the learning outcomes and the Department has taken many steps to develop subject specific skills as well as generic skills among the students. Even with limited facilities, subject specific skills are developed through laboratory classes and field work. Field work carried out at the Regional Agricultural Research Station also helps to develop subject specific skills.
The curriculum facilitates development of skills such as IT skills and English communication skills. The review team noted that in the teaching learning process, an attempt is made to develop self learning skills also because the teacher gives information on the relevant websites and reference material during the lecture for students to carry out self learning activities.
Communication skills are developed by oral presentations and report writing. These are

assessed also. In addition, the Colloquium organized by the Staff-Student Interaction Committee and the Research Sessions of the Campus also help in the development of presentation skills.
It is commendable that a course unit on Scientific Journalism is offered by the Faculty. This also helps in the development of communication skills of the students.
Review team noted that the Department has identified the importance of developing management and entrepreneurial skills. This is evident by offering an auxiliary course unit in these fields.
Importance of developing skills is also highlighted in the orientation programme of the new students. Presentations on the importance of developing communication skills and leadership skills are made during the orientation programme.
Review team also noted that group work is carried out by students for some of the course units which is also commendable. This helps the students to develop team work skills as well as leadership skills.
However, it was evident that the potential employers are not consulted on the skills they expect from the graduates. Nevertheless, since steps have been taken to develop many subject specific as well as generic skills among the students, it is expected that most of the skills, if not for all, required by the employers are developed in them.
It was also noted that the subject society, namely the Environmental Society is defunct for the past few years. This society would be very useful in developing many generic skills among the students.
The number of field visits carried out is also limited. However, this is mainly due to the security situation prevailed in the country in the recent past.

In relation to the skills development the judgment of the team is GOOD

4.8. Academic Guidance and Counseling

Academic guidance is provided mainly through the Faculty handbook. A copy of this Handbook is given to each student at the beginning of their academic programme. During the orientation programme, the contents in the Handbook are explained to the first year students by the Dean of the Faculty.
There are two student counselors in the Faculty including a lady student counselor. However, none of them have got formal training on counseling.
There are no academic advisers at the Faculty level or Departmental level. There are no personal tutors also.
There is no Career Guidance Unit in the Campus. However, a course unit on Career Guidance is offered.
There is no Personal Counseling Unit also.

In relation to the academic guidance and counseling the judgment of the team is UNSATISFACTORY.

Based on the observations made during the study visit by the review team, the eight aspects were judged as follows:

Aspect Reviewed	Judgment Given
Curriculum Design, Content and Review	Satisfactory
Teaching, Learning and Assessment Methods	Good
Quality of Students including Student Progress and Achievements	Good
Extent and Use of Student feedback, Qualitative and Quantitative	Satisfactory
Postgraduate Studies	Satisfactory
Peer Observation	Satisfactory
Skills Development	Good
Academic Guidance and Counseling	Unsatisfactory

5. CONCLUSIONS

The strengths/ good practices and the weaknesses of each of the eight aspects considered in the subject review process are summarized as follows.

1. Curriculum Design, Content and Review

Good Practices/Strengths:

1. Curriculum design is in line with current trends
2. Curriculum content addresses the current needs and demands of the job market
3. Various forms of the Degree program are available
4. Curriculum facilitates development of soft skills through interdisciplinary and multidisciplinary courses
5. Students are given an opportunity to opt for the three-year Degree before completion of the fourth year

Weaknesses

1. Relevant stakeholders have not been consulted in revision of curriculum
2. The workload of the noncredit course is obscure
3. No flexibility in the selection of course units in the three-year General Degree program
4. Due to uneven distribution of auxiliary course units over the semesters, the total workload distribution is also not uniform
5. A formal curriculum evaluation and review committee at Faculty level is not established

2. Teaching, Learning and Assessment Methods

Good Practices/Strengths:

1. Lecturers are skillful in teaching and use audiovisual equipment effectively
2. Handouts for lectures and practical classes are given
3. The laboratory equipment are sufficient for the present program
4. Senior Lecturer in charge is available in the laboratory during the practical classes
5. The aims and objectives of the lectures and laboratory classes are given

6. Self learning and group work are encouraged and incorporated into the curriculum
7. Availability of text books in the library is satisfactory
8. Students are informed about assessment methods
9. Students are assessed by different methods such as quizzes, term papers and written examination
10. Moderation of question papers is done internally as well by outside experts
11. Second marking of answer scripts is done by external examiners

Weaknesses

1. Ventilation of lecture hall is poor
2. Use of white board as the projector screen (The reflection of the bright light is disturbing and teacher has no space to write on the board)
3. Number and quality of specimens are not satisfactory
4. The library is located at a considerable distance from where most of the student activities take place
5. Internet accessibility is extremely slow
6. Field visits are inadequate
7. Release of results is delayed

3. Quality of Students, including Student Progress and Achievement

Good Practices/Strengths:

1. Z-score of majority of students is high
2. Students participate in regional level activities
3. Many students obtain high grades/good classes
4. Students develop soft skill satisfactorily
5. Students are exposed to real life problems (e.g. collaboration with research institutes and community)
6. Students find suitable jobs within a short period
7. Students who follow postgraduate programs elsewhere gain high GPA

Weaknesses

1. Programmes to attract students and to persuade the UGC are minimal
2. The opportunities for students to take part in national level activities are lacking
3. Student progress is not monitored

4. Extent and Use of Student Feedback

Good practices/ Strengths:

1. The department obtains students' feedback using a structured questionnaire

Weaknesses:

1 No feedback is obtained for the laboratory classes and field classes.
2.Students' feedback is not analyzed statistically.
3. No feedback obtained for visiting lecturers
4. There are no other mechanisms of obtaining feedback such as through staff-students committees.
5. Students do not know the action taken for their comments on feedback forms.

5. Postgraduate Studies

Good practices/ Strengths:

1. There is a plan to offer a postgraduate programme.
2. Some staff members supervise the postgraduate students at other institutions.
3. Staff members are actively involved in research.

Weaknesses:

1. No postgraduate programmes are offered by the Department

6. Peer Observation

Good practices/ Strengths:

1. Moderation of question papers
2. Second marking of answer scripts.
3. Peer observation of the junior staff at laboratory classes

Weaknesses:

1. No formal mechanism of peer observation

7. Skills Development

Good Practices/Strengths:

1. Identification of skills development in learning outcomes.
2. Offering compulsory English courses.
3. Offering compulsory IT course.
4. Offering optional courses on Scientific Journalism, and Management & Entrepreneurial skills.
5. Making oral presentations and report writing compulsory in many course units.
6. Organizing the colloquium which helps in the development of communication skills.
7. Use of facilities outside the campus to develop subject specific as well as generic skills.
8. Highlighting the importance of skills development at the orientation programme of the new students.

Weaknesses

1. Employers were not consulted regarding skills expected by them.
2. No action has been taken for the continuity of the subject society.
3. Limited number of field visits.

8. Academic Guidance and Counseling

Good Practices/Strengths

1. Handbook is given to each and every student at the beginning of their academic programme.

Weaknesses:

1. No academic advisors at the Faculty
2. No Academic advisors at the Department
3. No formal training given to Student Counselors on counseling
4. No personal tutors appointed to provide guidance to the students

5. No Career Guidance Unit in the Campus
6. No Personal Counseling Unit in the Campus

6. RECOMMENDATIONS

1. establish a Faculty level curriculum evaluation and review committee
2. consult as many relevant stakeholders as possible in future reviews/ revisions of curriculum
3. giving a credit value for auxiliary courses, while not taking these credits for GPA computation
4. provide flexibility in the selection of course units in three-year General Degree program in future curriculum review/ revision
5. distribute the total workload more uniformly
6. installation of ceiling/ pedestal fans in the lecture halls
7. use of part of the front wall of the lecture theaters as a projector screen
8. getting assistance of students to make more specimens of better quality for the laboratories
9. exploring possibility of allocating sufficient time in the timetable for library usage
10. obtaining expert advice on increasing bandwidth in a cost effective manner
11. encouraging students and providing facilities for more field visits
12. releasing results at the Faculty level as soon as the results of a few course units are ready
13. persuading the UGC to increase student intake
14. organizing community based programs with students and giving wide publicity
15. improving the Faculty website
16. giving more opportunities for students to take part in national level activities
17. monitoring student progress
18. discussing the comments, suggestions and other feedback obtained from the moderators of the question papers and second examiners at the curriculum review committee meetings.
19. obtaining feedback for the lectures and practical classes regularly from the general and special degree students.
20. extending the feedback evaluation to visiting lecturers too.
21. establishing formal Staff-Student committees and having regular meetings.
22. statistically analyzing the feedback obtained from students.
23. installing a suggestion box outside the Department.
24. conducting a postgraduate programme leading to a M. Sc. Degree with a research component.
25. Obtaining research grants and registering students for M.Phill. degrees
26. practicing peer evaluation in a formal manner.
27. consulting potential employers regarding the skills they expect from the graduates of the Department
28. carrying out more field visits
29. an academic adviser appointed at the Faculty level
30. an academic adviser appointed at the Departmental level
31. personal tutors appointed and allocating few students to each of them
32. a Career Guidance Unit established in the Campus and conducting activities such as Career fairs
33. the Student Counselors trained in counseling

34. a Personal Counseling Unit established in the Campus

7. ANNEXES

Annex 1. AGENDA FOR THE REVIEW VISIT

Day 1 : 18th May 2009

09.00 – 09.30 a.m.	Meeting of Reviewers with the representative of the QAAC
09.30 - 10.15 a.m.	Address by Dean/Applied Science
10.15 – 10.30 a.m.	Address by Rector / Vavuniya Campus (Working Tea)
10.30 – 10.45 a.m.	Discuss the agenda for the visit with the Head of the Department
10.45 – 12.00 noon	Address by Head/ Biological Science followed by Discussion
12.00 – 01.00 p.m.	Observing documents in the Department
01.00 - 02.15 p.m.	Lunch
02.15 – 02.45 p.m.	Observing Lecture – ENS 3292 (Lecture hall 2)
02.45 – 03.15 p.m.	Discussion with permanent academic staff
03.15 – 03.45 p.m.	Discussion with temporary staff and Alumni
03.45 – 04.30 pm	Observing facilities.

Day 2 :19th May 2009

09.00 – 09.30 a.m.	Observing Teaching - Lectures – ASB 1273
09.30 – 10.00 a.m.	Observing a practical class - Organic Chemistry.
10.00 – 11.15 a.m.	Observing facilities
11.15 – 11.30 a.m.	Tea
11.30 – 12.00 noon.	Meeting with non academic staff
12.00 – 12.30 p.m.	Discussion with Student Counselors and Head of the Staff Development Centre
12.30 – 01.30 p.m.	Lunch
01.30 – 02.30 p.m.	Observing documents
02.30 – 03.30 p.m.	Discussion with students
03.30 – 03.45 p.m.	Tea
03.45 – 04.30 p.m.	Observing students' presentations

Day 3 :20th May 2009

09.00 – 10.15 a.m.	Field visit to Regional Agricultural Research Station, Vavuniya
10.15 – 10.30 a.m.	Tea
10.30 – 11.00 a.m.	Reviewers private discussion
11.00 – 12.00 noon	Meeting with Head and Staff for Reporting
12.00 – 01.30 p.m.	Lunch
01.30 – 04.30 p.m.	Report writing

Annex 2. PERSONS MET

Rector of the Campus
Dean of the Faculty of Applied Sciences
Head of the Department of Biological Sciences
Permanent academic staff of the Department
Temporary staff of the Department
Non-academic staff of the Department
Librarian of the Campus
Systems Engineer of the Campus
Systems Analyst of the Campus
Student Counselors of the Faculty
Director of the Staff Development Centre of the Campus
Deputy Director of the Regional Agricultural Research Station, Vavuniya
B.Sc. (General) degree first year, second year and third year students

Annex3. DOCUMENTS OBSERVED

Faculty handbook 2007 – 2008
Faculty handbook 2008 – 2009
Corporate Plan 2007 – 2011
Syllabus of the B.Sc. Degree Programme (drafts and final)
Proceedings of the Annual Research Sessions 2008
Students Reports
Syllabus of the proposed M.Sc. programme on Geophysics and Environmental Information
Publications of the Staff
Documents on the Orientation Programme
Documents on the Colloquium
Minutes of the Senate meetings
Minutes of the Campus Board meetings
Lecture notes
Handouts given to the students
Tutorials
Quizzes
Moderated question papers
Marked answer scripts
Making schemes
Mark sheets
Students' feedback forms

Annex 4. FACILITIES OBSERVED

Infrastructure
Lecture halls
Staff rooms
Environmental Information Systems Laboratory
Staff-Student Computer Laboratory
Environmental Chemistry Laboratory
Environmental Biology Laboratory

Campus Library
ICT laboratories of the campus
Students' common room
Students' study room
Students' Computer room

Equipment
Distilled and demonized water plants
Water baths
Rotavapour
Muffle furnace
Lamina flow Chamber
Stereo microscopes
Monocular Student microscopes
Autoclave
Incubator
Refrigerator
Spectrophotometer
Conductivity cum pH meter
Kjeldahl digestion and distillation unit
Fume hood
Flame photometer
GPS receiver
Computers
Printers
Scanner
Multimedia projectors
Overhead projectors