SUBJECT REVIEW REPORT

DEPARTMENT OF BOTANY

FACULTY OF SCIENCE
UNIVERSITY OF JAFFNA

26th to 28th September 2005

Review Team :

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1. Summary of the purposes and aims of the subject review process:

The quality of undergraduate programs in Botany, at the Jaffna University of Sri Lanka was evaluated. The aim of this subject review is to evaluate the quality of the student learning experience/education at the subject level. The main principles of subject review underline evaluation of the aspects of education against the aims and expected learning outcomes of the programs set by the Department, which have been stated in the self-evaluation report presented by the Dept. of Botany.

The aspects of education/provision reviewed are:

A-Curriculum design, content and review
B-Teaching, learning and assessment methods
C-Quality of students, including student progress and achievements
D-Extent and use of student feedback
E-Postgraduate studies
F-Peer observation
G-Skills development
H-Academic guidance and counseling, which have been stated in the guidelines for subject evaluation.

The review team visited the Department of Botany of the Jaffna University, during the period of 25th to 27th September, 2005, and initiated the peer review process *(Annex 1 gives the agenda of the visit)*. The purpose of the visit was to search for evidences and observe those pertaining to the aims and the intended student learning outcomes and evaluate them according to the guidelines as stated above. Data were gathered by meeting with the academic and non-academic staff, undergraduates (both general and special), observing theory and laboratory classes and going through relevant documents , inspecting facilities provided by the department and other facilities available for students such as library, student counseling, health, career guidance etc. In between these activities, the review team constantly met together and discussed the outcomes of these meetings. Each reviewer took the lead responsibility for different aspects of provision while all contributed to the writing of the report and making judgments in the eight aspects.

2. Background of the University and the Department

The University of Jaffna was established as a campus of the University of Sri Lanka in 1974 and gained the status of an independent University in January 1979. The Faculty of Science was established at Vaddukoddai, initially only with the department of Mathematics and Statistics. The Faculty shifted to the present location of Thirunelvely in June 1978 with the completion of the construction of the new Natural Science Block where the departments of Botany and Zoology are housed at present. Today the Faculty

consists of 6 Departments which include departments of Chemistry, Physics, Computer Science, and Mathematics and Statistics in addition to the departments of Zoology and Botany. The total numbers of students in the University stand at present at 7000, in the Faculty at 600 and the number of students in the Botany programs at 134 (General) and 6 (Special).

The subjects of study in the Faculty are Botany, Chemistry, Zoology, Pure Mathematics, Applied Mathematics, Physics, Statistics and Computer Science, but a certain combination of courses in Pure Mathematics, Applied mathematics, and Statistics may be designated as Mathematics and a certain combination of courses in Botany and Zoology may be designated as the subject Biology.

A list of programs and the student numbers registered for each course during the last year (2003/2004) in the Department of Botany are given below (see in section 4 C).

The Faculty of Science offers the following B.Sc. degree programs in Biological Sciences with Botany as a subject.

(a). B.Sc. General Degree program of 3 years duration
(b). B.Sc. Single Honors Degree program of 4 years duration
(c). B.Sc. (with Education) degree program of 4 years duration where Botany or Chemistry is offered as a subsidiary subject.
(d). B.Sc. Joint Honors Degree program of 4 years duration which would be implemented in 2006 (with the extension of the new credit based system into the 3rd year).

The four year degree program offered by the Botany department is designated as B.Sc. (Botany) Honors. With the return of the academic staff member who is undergoing overseas training at present in U.K, the department expects to introduce the degree program B.Sc. (Biotechnology) in collaboration with the Zoology department.

3. Aims and learning outcomes (extracted from the Self Evaluation Report)

3.1. AIMS

In keeping with the mission and the vision of the University of Jaffna, the aims of the Faculty of Science as stated in the Hand Book of 1998, are to attain an internationally recognizable level of teaching and research, to disseminate science knowledge and popularize science, to improve the quality of science education, to provide services directed towards the environmental, social and technological needs of the region and to be a regional research centre in Science, developing indigenous scientific methods using local resources to improve the economic and social conditions of the local population. The goals of the Department of Botany fall within these aims.

In this context the Department aims to contribute by providing:

3.1.1. Bachelor of Science general degree with Botany as one of the 3 main subjects and Bachelor of Science special degree program with Botany as the main specialized subject with either chemistry or zoology as subsidiary subjects to develop knowledge and skills for carrier development.

3.1.2. A range of challenging learning opportunities within the modular teaching structure, allowing students to develop their academic interests and potential through curricula consisting of the set of principal core units, supplementary units, elective units and auxiliary units.

3.1.3. Programs of study that includes laboratory sessions, field studies and projects involving research and analysis (only in the case of special degree students), which will expose the students to recent advances in knowledge and techniques.
3.1.4. Encouragement to students to acquire knowledge and develop skills and attitudes that will enable them to meet the needs of their present or prospective employers and contribute effectively in their choosing carriers within the subject area of Botany or elsewhere.
3.1.5. An academic environment conducive to cultivate attitudes and personal skills required to foster lifelong learning.
3.1.6. A certificate in Science at the end of successful completion of the first year program in B.Sc. including Botany as a main subject (when the student has to abandon the course due to some named specific reasons) leading to a formal qualification.
3.1.7. A diploma in Science at the end of successful completion of the first and second year programs in B.Sc including Botany as a main subject (when the student has to abandon the course due to named specific reasons) leading to a formal qualification.
3.1.8. A friendly and supporting departmental environment that promotes enthusiastic learning and successful completion of courses by the students.
3.1.9. A departmental representative (Head of the Dept. of Botany) in the Faculty Action Committee for University Reforms (FACUR) for effective review, designing and development of curricula.

3.2. LEARNING OUTCOMES

On successful completion of Botany courses in the B.Sc. degree program, the student should have:

3.2.1. Gained a basic knowledge in Botany, covering the core areas of the subject enabling an understanding of the subject as a whole.
3.2.2. Learnt the fundamentals, major concepts, principles and theories associated with Botany.
3.2.3. Familiarized themselves with the terminology, nomenclature and classification systems.
3.2.4. Gained experience in the methods of acquiring, interpreting and analyzing information related to Botany.
3.2.5. Become aware of the contribution made through Botany to develop knowledge on the diversity of life and its evolution.
3.2.6. Acquire knowledge and skills in a range of practical and experimental techniques and methodologies related to Botany.
3.2.7. Obtained an insight into the knowledge and skills gained and acquired the motivation to apply these to the careers, which they aspire.
3.2.8. Become aware of some of the current developments in Botany and their applications, and the philosophical and ethical issues involved, and be able to relate these to the quality and sustainability of life.
3.2.9. Developed team work abilities.

On successful completion of the Botany courses in B.Sc. special degree program, the students are expected to have gained the following additional skills:

3.2.10. Gained knowledge and understanding of the different areas in Botany having been trained in the relevant technical skills and acquiring the professional attitudes appropriate to the type of program concerned.
3.2.11. Developed the ability to carry out critical, self-directed study, having been stimulated intellectually through the study of Botany to appreciate its application and relevance in a variety of contexts.
3.2.12. Developed the ability to apply the knowledge and skills gained to solve both theoretical and applied problems in Botany and associated fields.
3.2.13. Acquired the range of transferable skills that will be of value in employment or self-employment.
3.2.14. Gained analytical skills and the ability to develop simplifying framework to study the real world
3.2.15. Gained sufficient research skills, abilities to plan and design research projects independently and present results with critical discussion of results
3.2.16. Gained experiences in group communication and presentation abilities.

4. Overall Judgment:

The overall judgment was arrived at after summarizing judgments of all aspects of provision. The findings of the team and discussion of strengths and weaknesses of each of the eight aspects of provision are documented below (from A – H).

4. A: Curriculum Design, Content and Review

Introduction: Curriculum is designed to cater to the 3 year B.Sc. (General) Degree program, and to the 4 year B.Sc. (Special) Botany. A credit valued course unit system is in operation since 2004. The B.Sc. first year and second year (General) students are following their programs under this new system that came into operation in 2004 while the 3rd year (General) and 3rd and 4th year (Special) students still come under the non-credit based course unit system that was in operation earlier. The incorporation of the credit based system into the remaining levels will be completed by the year 2007.

Design

An academic year consists of two semesters, which are the semesters 1 and 2. The duration of a semester is sixteen weeks. The first semester consists of a first half of 8 weeks, a mid semester vacation of 1 week, a second half of 8 weeks and a vacation of 5 weeks. The second semester consists of a first half of 8 weeks, a mid semester vacation of 1 week, a second half of 8 weeks with a vacation of 13 weeks. The calendar of dates for the two academic years will be made available at the beginning of each academic year through display in notice boards after the commencement of the semester.

The curriculum of the offered courses indicates that it is well designed to provide adequate knowledge to students in the fundamentals of Botany to proceed to the next levels. The design of other programs too can be rated as good.

Content

Degree program (General) The curriculum offered to the General Degree Students contain all subject areas necessary to give a good basic knowledge in Botany . However we have observed certain short comings in the curriculum. It is obvious through the course contents that current developments in some areas in the subject have not been incorporated into the syllabus. These include areas such as fields of current interest in biotechnology, molecular biology, and environmental sciences. In the case of environmental sciences, only the term pollution is mentioned and there is no reference to the study of specific environmental problems both globally as well as with special reference to Sri Lanka and the region. Basic knowledge given in microscopy is inadequate. The curriculum also deals inadequately with the use of the Hand Book to the Flora of Ceylon. In taxonomy, no special reference is made to the Botanical Gardens of Sri Lanka and their uses in Botany specially with reference to Plant conservation. The rest of the course contents are sufficient to fulfill the teaching aims. The new curriculum revisions would introduce new Elective Units such as Molecular Biology techniques (1 credit), Mangroves (1 credit) and Processing of Horticultural Products (1 credit) into level 3G. It is also planned to introduce Genetic Engineering (4C) as a core course, and Food Microbiology (2C), Post Harvest Physiology (2C), Industrial Microbiology(1C), Advanced Plant Tissue Culture and Advanced Biotechnology as Elective courses to 4G level. None of the courses are intended to give training in research project planning and writing a research project. Such a course unit need to be introduced. Through the introduction of a mini project as an assignment in the General Degree curriculum.

Degree Program (Special) Most of the topics dealt within the curriculum are well designed to give specialized knowledge in the most important fields of Botany. The method of evaluation of the quality of the research project is not clear. Introduction of instrumentation unit as well as analytical methodologies need to be more stressed to induce the practical knowledge of students. Visits to more Botany based organizations need to be introduced.

Post-graduate courses The Dept. of Botany does not offer any Post-graduate programs either by course work or by research. There had been some post-graduate students (M.Phil.) students working on Botany based projects until 1990, but since then there had been no post-graduate students in the department. The main reasons for this are the lack of senior staff to supervise and the situation that prevailed in Jaffna during the last 2 decades.

Review:

The FACUR is the relevant body appointed by the Faculty to review curricula and make recommendations for improvements. This body has a representative from each Department. This committee is supposed to meet regularly and report back to the Faculty on the progress achieved in curriculum development. It is an agenda item of the Faculty Board meetings .There was some evidence to show that meetings have been held but not at a regular manner. Information leading to the fact whether curriculum revisions have been discussed at the departmental level could not be obtained. There were also no evidences for any departmental meetings. The implementation process of the proposed curriculum revisions seemed slow as neither the department nor the faculty had a final document on the curriculum revisions. The last major curriculum revision according to available information has been in 1998. With the introduction of the modualarised unit

system, there had been a curriculum revision in 2004 which is now implemented for 1st and 2nd years. The proposed curriculum revision for the 3rd and 4th years are still under draft stage. In the revised curriculum, it was observed that the G.C.E.(A.L.) Biology syllabus had been the basis of the revisions incorporated into the 1G curriculum.

Judgment: Taking all aspects, strengths and weaknesses in the curriculum design, content and review are judged to be **GOOD**. Recommendations are listed at the end of the report also taking into account the grievances of the students regarding the curriculum.

4. B. Teaching, Learning and Assessment Methods

Teaching:
Teaching at the Dept. is through the conventional teacher centered black-board method. The provision of supplementary lecture materials was not observed nor could be verified, though some lecturers said that supplementary teaching materials are provided. The use of audio-visual aids was minimal or non-existent though an OHP was available in the Department. The discussion with students verified this and some students were not aware of the existence of multi-media projector utility in a modern day lecture room. There was some evidence for field visits and the lecturers indicated that lack of fund allocation for field visit was a constraint.

The central library stores around 157, 310 books. The total Botany related books amount to approximately 1200. There are also a large number of journals (268) subscribed by the University out of which 12 Botany related journals are subscribed annually. The library does not offer any modern facilities other than a video cassette bank for lending based on medical sciences. The opening hours of the library are from 8.00 a.m. till 8.00 pm except on Sundays. According to available statistics, nearly 350 students use the library during 5.00 pm to 7.30 pm but on an average around 50-60 during the rest of the day. Generally the library issues around 300 books per day to students.

Learning:
Guidance on the overall learning procedure was reported inadequate according to the students whom the reviewers interviewed. The students were not aware of the existence of a hand book and the type of information that a hand book could deliver to student. The hand book given to the reviewers by the Dean was from 1998 which was already outdated with regards to levels 1G and 2G curricula and some other information on student facilities. The students depend on notice board announcements for information on academic matters. The reviewers had a 1 hour discussion with students from all levels but unfortunately the students were very reluctant to comment on teaching and learning methodologies. Their active participation at this meeting overall in the form of a viable discussion was not forthcoming. It became evident from this meeting that there is a significant gap between the student –teacher relationships. The few students who spoke out commented on the extra workload due to too frequent and numerous assessments during the course of one week. They were also very critical of holding some assessment tests on Monday mornings. The practical work, according to them is not well organized as they are made aware of the schedule or the practical programme only after the commencement of the practicals by the teacher-in-charge. The reviewers were able to confirm this from the Head of the Dept. who said that only in the case first years, are the practical schedules displayed in advance. Handouts are not given during the practical

sessions. The scheduled practical hours of a class amounted to 4 hours but the reviewers observed that the classes commenced at least half hour late in the mornings. There appears to be lack of communication and assistance from some non-academic staff members which the reviewers presume as the cause for this delay. However reviewers observed much better teacher student interactions at the lecture class for Special degree students. The OHP was used as audio visual equipment and there was an ideal learning environment.

Assessment methods

There are rigorous assessment methods which are basically same for the 1G, 2G and 3G levels except in the case of the course unit Biometry. In the case of the theory component, the assessment methods adopted are as follows with their weightages as indicated within brackets. There are two quiz tests each of half hour duration (20%),two tutorial based examinations, each of half hour duration (20%) and end of course examination of two hours duration (60%). The practical in-course assessment consisted of their practical recordings (5%), an assignment based on a class practical or a written problem(5%), a spot examination of 3 minutes duration (10%), two in-course examinations of two hours duration (20%) which are notified to students at least one week in advance, and the end of course examination of two hours duration (60%). In the case of Biometry (which consists of 15 lecture and tutorial hours), there are two tutorial assignments (5%), one test based on tutorials (10%),one class room assessment test (25%), and end of course examination of one and half hours duration where students need to answer three out of four questions (60%). The final mark is calculated by giving a weightage of 75% to the theory assessments and 25% to the practical assessments. The results of quiz tests and the tutorial based examinations are displayed on the notice boards one week after holding the examinations and the answer scripts are handed back to the students.

Judgment: Having evaluated the teaching, learning and assessment methods, the reviewers are of the opinion that this component could be rated as **SATISFACTORY**.

4. C: Quality of Students including Student Progress and Achievements

The quality of students entering the Botany program appears to be a very variable factor. Most students appeared to be rather demotivated due to the existing situation in the area and also due to lack of facilities in the lecture rooms, and laboratories etc.

Presently 134 students follow Botany General program. During the last 5 years, the student numbers that offered Botany are as follows: 88 (2000), 87 (2001), 90 (2002), 141 (2003), 124 (2004), 134 (2005). With reference to special degree students, there were 6 (2001), 8(2002), 1(2003), 8(2004) and 1(2005) students in the final year program. The drop out rates for General degree students offering Botany showed a significant increase during 2004 (35 out of 124) and 2005 (47 out of 134). According to statistics given to us, the drop out rate for the year 2000/2001 was 43.75%. The data supplied to us by the Department were however inconsistent and it was apparent that data had not been kept in a systematic manner.

Even in the case of Special degree students, 4 out of 5 (80%) and 4 out of 8 (50%) students left the special course in 2003 and 2004 respectively. This is a very high drop out rate.

The overall achievements of the special degree students during the last 4 years were as follows:
Out of a total of 23 students (from 2001 – 2004), only 1 student (4%) obtained a first class while 5 students (22%) obtained 2nd –upper division and 4 (17%) obtained lower division passes. 13 students (57%) ended up with general passes.

Judgment: Having considered carefully the quality of students including students' progress and achievements, the reviewers are of the opinion that this aspect of the subject review can be rated as **SATISFACTORY**.

4. D: Extent and use of Student Feedback

The class rooms are overwhelmingly teacher centered and the reviewers could observe only very minimal student feed back during class sessions observed by the reviewers. However there exists a student feed back mechanism through a questionnaire distributed among the students by the relevant lecturers during the semester. The reviewers had the opportunity to inspect the questionnaires and the majority of students have expressed satisfaction on the quality of the lecture in all aspects. The discussion with the students confirmed this though only very few students spoke out. The Head of the Dept, made clear to the reviewers that the weaknesses pinpointed by the students have been given due consideration.

Judgment: Having considered the above points carefully, the reviewers are of the view that a rating **GOOD** can be given here.

4. E: Postgraduate Studies

Facilities for Postgraduate degrees by research are minimal. At present therefore there are no post graduate students mainly due to the lack of senior staff to supervise the projects and facilities. The staff member who possesses a Ph.D. degree needs to restart some post-graduate activities as soon as possible, in collaboration with other organizations or Faculties of the University of Jaffna itself where there are senior and qualified academics. Having observed the facilities available in the Department, the reviewers are of the view that research is possible only in fields where there is less dependency on instruments and the academic staff need to plan research programs accordingly.

Judgment: The reviewers having observed the status of the postgraduate studies in the Department are of the view that this component is **UNSATISFACTORY.**

4. F: Peer Observations

There is no formal procedure for peer observations either in the Department or in the Faculty. However, the junior staff of the Department conducts all practical classes under the purview of a senior academic who is the lecturer responsible for the particular course unit. **Reviewers also noted that undergraduate examination papers are being scrutinized by second examiners both at national and international levels and the out come of overall results (comments) are often informed to the staff members concerned; perhaps reviewers felt this could be one way of peer observation too, to improve quality of UG programme.**

Judgment: The reviewers found therefore some peer observations in the Botany program and therefore rates this section of the review process as **SATISFACTORY.**

4. G: Student Skills Development

The most prominent skill development in all programs is the development of subject related knowledge, which is tested through the evaluation methodologies used during the course, end of course and end of semester quiz tests, examinations and assignments. The students get the opportunity to develop their practical skills during the practical assignments and laboratory work but the general Botany students get little opportunity to develop student/staff relationships. Field visits however are rare. Only the special degree students (only one final year student and 4 third year students) get the opportunity to develop presentation skills, research skills and creativity.

The Staff of the Department of Botany comprises of 09 permanent academic staff members. There is no Professor since 1991. Among the nine permanent academic staff members, four are Grade two senior lecturers, and four Lecturers (probationary). One probationary lecturer is on study leave reading for his Ph.D.in U.K. In addition there are six Temporary Demonstrators and two temporary assistant lecturers who are involved in conducting practical classes and tutorials. In the year 2004 and 2005 there had been visits from two Professors who are expatriates, to the Dept. on short term basis from whose visits the special degree students have benefited immensely. Overall staff qualification is poor. Only one academic staff member possesses a Ph.D. degree from a foreign University (Anna University in India) who has just returned from his training. Five staff members possess M.Phil degrees obtained from the Post-graduate Institutions in Sri Lanka. Additionally, the present Head of the Department and two other senior members have undergone a 3 months training in the United Kingdom under the Science and Technology Personnel Development Project funded by the ADB. One of the probationary lecturers is at present undergoing his post-graduate training in the Faculty of Medicine of the University of Jaffna. Some academic staff members from the department, contribute to the teaching in other departments. Four Technical Officers contribute to the running and maintenance of the three laboratories. One of the technical officers is in the grade of a Senior Staff Technical Officer. The non academic staff consists further of five lab attendants, two labourers and an office clerk. Only the Senior Staff Technical Officer had undergone a foreign training.

Judgment: The reviewers are of the view that this section can be rated as **SATISFACTORY.**

4. H: Academic Guidance and Counseling

A counseling system is available within the Faculty but not within the Department. There is only a single student counselor for the Faculty of Science which is grossly inadequate. The students, particularly the first year students were only poorly informed of the existing counseling system which prevented most students to get the benefits of the system. Our discussion with the Student Counsellor of the Faculty of Science indicated that deficiencies in the system are mostly due to lack of trained student counsellors and their fewer numbers. The students indicated the existence of a better academic guidance system within the academic departments whereby students get assistance in the selection

of their course units during the first year. The lecturers assist the students in their later years as well to select the relevant course units.

Judgment: Having considered all aspects of academic guidance and counseling available in the Faculty / Department of Botany, the reviewers are of the view that this section could be rated as **SATISFACTORY.**

Overall Judgment – ***Suspended***

5: CONCLUSION:

The summary of the 8 aspect judgments are as follows:

A.	Curriculum design, content and review:	**good**
B.	Teaching, learning and assessment methods:	**satisfactory**
C.	Quality of students, including student progress and achievements:	**satisfactory**
D.	Extent and use of student feedback:	**good**
E.	Postgraduate studies:	**unsatisfactory**
F.	Peer observation:	**satisfactory**
G.	Student skills development:	**satisfactory**
H.	Academic guidance and counseling:	**satisfactory**

Strengths (Good Practices) observed in the system and study program

1. The Department of Botany has a very dedicated academic staff. Conduction of Lectures and practical lessons even during trade union action undertaken by non-academic staff indicates their dedication.

2. Politically motivated student agitations, boycott of programs etc. are far less than at other Universities as a result of which the scheduled programs are concluded on time.

3. In spite of some weaknesses, all curricula are in line with set goals and objectives. The curricula of most of the offered courses indicate that they are well designed to provide adequate knowledge to students according to the levels and programs.

4. Most Senior Lecturers are available for students for both academic and personal counseling and guidance.

5. Attendance of students for lectures and practical lessons are maintained at 80% or above.

6. The basic infra-structure facilities available are satisfactory with ample space for further expansion.

7. A dedicated leadership.
8. The award of Certificate in Science and Diploma in Science for drop out students at the end of successful completion of first and second years of study respectively.

9. The conduction of a Honors degree program in spite of meager staff and other facilities.

10. Moderation of Special degree question papers and answer scripts at the Division of Biology, Imperial College London, maintains standards at an International Level (Dr.Bernard C.Lamb acts as the examiner).

11. Moderation of Question Papers of 2nd and 3rd year (General) students at the Dept. of Botany of the Eastern University.

12. Orientation program lasting two weeks at the beginning of an academic year.

13. Introduction of new courses such as Biotechnology including Tissue Culture to the curriculum.

14. Central Library is adequately equipped with books and other facilities.

15. The introduction of an e-learning centre with 5 computers, laboratories housing around 200 computers belonging to the IT centre providing computer facilities to all University students.

Weaknesses observed in the system and in the study program:

1. Most of the infrastructure facilities are badly maintained. The large elementary laboratory lack many basic facilities due to improper maintenance and is dirty and does not provide a conducive environment for studies.

2. The laboratory equipment are insufficient and those available are badly maintained. Most are either outdated or out of commission.

3. Lack of a common room facility for the non-academic staff members could lead to disharmony and interest for work among them.

4. The quality of some of the teaching material provided is low. This was evident to the reviewers at the practical sessions.

5. Current developments in some subject areas e.g. Environmental Sciences, Microscopy etc. have not been incorporated into the syllabi.

6. General training given to laboratory staff is poor. This is one major reason for the observed poor status of laboratory maintenance. Lack of time for laboratory cleaning during sessions, limitations in space were highlighted by the laboratory staff.

7. Status of research in the Department is poor. Overall research facilities for staff/students are inadequate. Sufficient space for experimental plants is available in the form of a Glass House but certain deficiencies in the glass house have not been rectified to enable the use of this utility (see also 27).

8. The implementation process of the proposed revisions to curriculum is slow and the last major curriculum revision according to available information has been in 1998. There had been only minimal revisions in the curriculum even with the introduction of the modulated course unit system in 2004.

9. Guidance on the curriculum and other university facilities to students is poor in spite of the said orientation program.

10. Information on Practical classes are not provided in time leading to poor organization of practical classes.

11. New course contents are not being developed in accordance with current trends and national needs.

12. The teaching classes are overwhelmingly teacher centered and no attempts were seen to involve student participation.

13. The student requirements are sometimes not considered in scheduling assignments. Assignments are too numerous during a week and holding of an assignment in the morning of a Monday may not be practical.

14. There is insufficient use of audio-visuals at lectures and practical lessons.

15. A high rate of drop outs compared to a conventional university was observed.

16. Facilities for Postgraduate degrees by research are minimal. Students need to depend on outside examiners guidance, supervision and research facilities.

17. There is no formal procedure for peer observations either in the Department or in the Faculty.

18. Only about 1-4% students get the opportunity to develop presentation skills and research skills since this opportunity is given to a very low number of students (only special degree students).

19. The University of Jaffna web site does not support students sufficiently with academic guidance or career guidance.

20. There is no professional counseling unit at the University of Jaffna.

21. Student counselors are insufficient.

22. The students appeared less motivated and ambitious from our experience of the meeting with the students.
23. Though curriculum revisions have been discussed at departmental meetings, implementation processes are slow.

24. The provision of minimal printed teaching materials to students was observed.

25. Generally, the practical session are less organized and the provision of practical schedules is not regularly practiced.

26. The Standard of English of students is generally low which became evident during conversations with them.

27. The 2 Green Houses constructed in 1978 which are most vital for a Dept. of Botany are not been properly utilized. With a minimum investment, the reviewers noted that they could be put into use immediately.

RECOMMENDATIONS

The review team is of the opinion that the Dept. of Botany of the University of Jaffna has the basic infra-structural facilities for development into quality teaching of the subject Botany. In this context, the review team would like to make the following recommendations:

1. Lack of Senior Staff is a major obstacle. We therefore recommend that all cadre positions are filled as early as possible. The Professor post needs to be filled immediately. In the case of difficulties on finding a suitable person immediately, the vacancy can be filled through the creation of a sabbatical position, on contract basis or through invitation of an expatriate academic.

2. The resource base in the form of the expatriate academics who are willing to serve the University of Jaffna free of charge on short term basis need to be tapped through the devise of an efficient mechanism.

3. Only one Ph.D. is available at present in the Department. We therefore recommend that opportunities for Ph.D. programs, especially at overseas universities be offered to the Department.

4. Some of the facilities that would come to the Physical Science programs from the IRQUE **or any other funding** need to be shared by the Biological Sciences including Botany.

5. The available resources in the facilities, especially the human resource in the form of technical staff need to be better utilized for the maintenance and upkeep of the laboratory equipment.

6. The out-moded teacher centered black board teaching need to be replaced by more modern techniques to create interest and a better learning environment for the students.

7. The Department should orient itself for student-centered teaching/learning methodologies.
8. Harmony among the non-academic staff needs to be restored through the mediation of the Head of the Dept. and the Dean of the Faculty.

9. Deficiencies in the orientation program need to be rectified so that students are better informed at the onset of their academic career on the available facilities.

10. The importance of a more efficient student counseling system need to be seriously identified by the authorities and measures should be taken to rectify the present fear of free expression among students.

11. There is little effort to identify the learning and other skills of the students. Methods need to be devised to address this.

12. Most students in the Botany program complained of lack of opportunities to develop IT skills. This may be true for the general student body. This deficiency needs to be seriously rectified.

13. The poor English language skills of the students are a barrier to enhance communication skills as well as employment prospects. This need to be addressed through the offer of more practical English courses to students.

14. Contacts with industry and other stakeholders appeared to be minimal which again is a barrier for future employment prospects of students. This needs to be rectified through the development of viable contacts with all stakeholders.

15. The introduction of an industrial training component to the special degree students' curriculum is strongly recommended.

16. Our review mission identified the growing trend in the loss of interest among students to follow Botany as a major subject. The academic staff of the Department needs to study the root causes for this trend and take timely action to address it.

17. The involvement of students in extra-curricular activities was found to be at a very low level due to overload with academic activities such as too frequent tests. The Dept. should bring this situation to the notice of the Faculty Board and devise unified efforts to rectify the situation.

18. Utilize the efficiencies of services of senior staff technicians for laboratory and equipment maintenance is essentially important for the laboratory practices.

19. Short term training either local or overseas for technician and laboratory staff on maintenance of laboratory and collection of plant specimens are essential to improve the learning environment.

Annex 1

SCHEDULE OF ACTIVITIES FOR THE QUALITY ASSURANCE SITE VISIT TO THE DEPARTMENT OF BOTANY, FACULTY OF SCIENCE, UNIVERSITY OF JAFFNA, JAFFNA

25th September 2005 (Day 1)

10.00 am : Arrival in Jaffna.
1.15 pm : Meet Dean of the Faculty of Science and the Heads of Departments.
1.30 pm : Presentation on the Faculty by the Dean / Science.
2.15 pm : Tea
2.30 pm : Meet Head of the Dept. of Botany and the academic staff of the Department
2.35 pm : Presentation on Departmental activities by the Head of the Department of Botany and Discussions.
3.45 pm : Observe Facilities, including visits to Laboratories I, II & III
4.30 pm : Observe documents
5.00 pm : End of Programme

26th September 2005 (Day 2)

8.15 am : Arrival in the University
8. 30 am : Meet Vice-Chancellor of the University
9.15 am : Arrival in the Department
9. 15 am : Observe Documents (Cont..)
9.45 am : Meet special degree students (3rd and 4th year)
10.30 am : Meet academic staff in the Department of Botany
11.00 am : Meet non-academic staff
11.45 am : Observe class room (Second year)

12.15 pm- 1.30 pm - Lunch

1.30 pm : Meeting of reviewers
2.00 pm :Observe practical class (Second year) and teaching class
2.45 pm :Meeting of reviewers
3.15 pm :Observe Lab. Class (special degree student)
3.30pm :Observe documents
5.00 pm :Meet students
6.15 pm :End of Programme

Home work

7.30 pm to 9.00 pm : Reviewers' home work
9.00 pm to 9.45 pm : Dinner
10.00 pm to 11.30 pm : Reviewers meeting and planning for day 3.

27th September 2005 (Day 3)

7.45 am : Arrival in the Department
8.00 am : Observe practical class (First year)
9.00 am : Observe documents (Cont…)
9.30 am : Observe Library Facilities in the University
10.30 am : Observe documents (Cont…) and report writing
11.00 am : Observe class room (Third year)
11.30 am to 12.15 pm : Observe documents (Cont…) and report writing (Cont..)

12.15 pm to 1.15 pm- Lunch

1.15 pm to 2.45 pm : Report writing and wrapping up for briefing session

2.45 pm- 3.00 pm : Tea

3.00 pm onwards : Briefing session and discussions with academic staff
5.00pm : End of Programme

28th September 2005 (Day 4)

7.15am : Leaving for Colombo

Professor Morley P. de Silva Professor S.P.Samarakoon Dr.M.Printhan
7th October, 2005