

SUBJECT REVIEW REPORT

DEPARTMENT OF ANIMAL SCIENCES



**FACULTY OF AGRICULTURE
EASTERN UNIVERSITY OF SRI LANKA**

26th to 28th July 2006

Review Team :

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CHAPTER 1. SUBJECT REVIEW PROCESS

This review was carried out from the 26th to the 28th of July, 2006 by a team comprising the following persons.

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Prof SSE Ranawana, Wayamba University

Dr Aruni Weerasinghe, Rajarata University

The terms of reference for the review team were according to those described in the Quality Assurance Handbook of the CVCD and UGC (page 13 to 16 and Annex E).

The team based its findings on discussions held with the staff of Eastern University of Sri Lanka, observation of activities, inspection of facilities and perusal of available documents, as listed below:

1. A Self Evaluation Report prepared by the Head of Department and Staff and a presentation based on this report
2. Discussions with academic staff from the Department of Animal Science for an in-depth assessment of the contents of the curriculum, the teaching/learning/assessment methods used and other matters arising from their self-evaluation report
3. Observation of classroom teaching (Lectures and Practicals)
4. Records of Student Z scores at entry and performance during the course
5. A survey of facilities available for teaching
6. An inspection of academic support facilities such as Library, Farm and Computer Unit
7. Perusal of miscellaneous documents related to teaching activities
8. Interactions with the following personnel:
 - a. The Vice-Chancellor and the Dean of the Faculty of Agriculture
 - b. Academic Staff from other Departments in the Faculty
 - c. The Academic support Staff of the Department and the non-academic staff of the Department under review
 - d. Undergraduate students from the 1st, 2nd and 3rd years
 - e. Student Counsellors

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

The Eastern University of Sri Lanka (EUSL) was first established as a University College with Faculties of Agriculture and Science, respectively, in 1981 at their present site in Vantharamoolai in Chenkalady, and conferred full University status in 1986. Two more faculties for Arts & Culture and Commerce & Management were added in 1990 and a Faculty of Medical and Allied Sciences, located in Batticaloa town was added this year (2006). During the last 25 years, there has been a progressive improvement in infrastructure, Staff and other facilities and presently, the University has a student enrolment of 1580 . The EUSL is, therefore, now a full-fledged University with a wide range of teaching activities that has taken its place among the Universities in Sri Lanka.

The population of the area is largely rural with 75% engaged in Agriculture and 15% in fishing. The region is well-endowed with a range of natural resources which have not developed to their potential and have not, therefore, contributed fully to the economy of the Island. The University from its inception has been aware of its unique location in Sri Lanka and sees its role as that of a catalyst for the development of the region. The priority given to establish a Faculty of Agriculture at the outset, reflects the importance of trained manpower in this field, to the region.

The Faculty of Agriculture, therefore, sees its mission as not only producing graduates of the highest academic quality but to also contribute towards the development of technologies and the dissemination of information for increasing and sustaining productivity. The Faculty conducts an undergraduate course that leads to the degree of Bachelor of Science in Agriculture over a period of four years. Initially, they followed the curriculum used at that time by the University of Peradeniya – of which it was a part – but later revised the curriculum to meet its individual needs. The subjects presently offered are in six major disciplines, namely, Agricultural Chemistry, Agricultural Biology, Agricultural Engineering, Crop Science, Animal Science and Agricultural Economics. The first four disciplines are grouped under a Department of Agronomy so that the Faculty consists of 3 Departments, namely Agronomy, Animal Science and Agricultural Economics. A special feature of the degree program is the focus on development of practical skills through a Farm Practice Course, a rural work experience program and the advanced research project. The Faculty has recently introduced a M.Sc. program in Food Processing Technology to which most Departments contribute. Over the years, the Faculty of Agriculture has also developed other facilities such as the Centre for

Sustainable Agriculture and Resource Management (CENSARM) to help in their outreach activities. They maintain close ties with Agricultural Institutions in the rest of the country and use them to train their students, in particular for the final year research project. The academic activities of the Faculty are monitored by the Faculty Board, which includes student representatives and members from the civil society in addition to the academic staff.

The Faculty of Agriculture currently has 110 students in its roll with 30, 34, 42 and 25 respectively in years 1,2, 3 and 4. A credit-based semester system, similar to those in other Agriculture Faculties, was first introduced in the year 2000. The number of students who have graduated in the previous 5 years are 17,15, 12,15 and 11 respectively; with more than 40% possessing first or second class passes.

Animal husbandry, in particular milk production, is an important activity in the area and this is reflected in the priority given within the Faculty by allocating a separate Department to Animal Science. The Department was established at the outset and has developed since then with improved facilities, including a teaching farm, and trained staff. According to the undergraduate course structure in the Faculty, all students follow common compulsory courses in a core program for the first six semesters. In the final year they branch out into different disciplines in which they follow a number of electives in semester 7 and carry out a research project in semester 8. The Department of Animal Science contributes 18 credits (12% of total) to the core program and a further 12 credits in the final year to students specializing in Animal Science adding up to a teaching load of 30 credits units. Over the last 20 years the Department has produced nearly 100 graduates specializing in Animal Science.

The Department has 5 academic staff members to carry out the teaching program with 2 middle level and 6 minor staff to support them. Three members of the Staff have post-graduate qualifications and are senior lecturers with the other two being still on probation. The post of Professor and one academic staff cadre are vacant. According to their estimates, the staff spend 70 to 80% of their time teaching and the balance in research. The facilities in the classrooms and laboratories, for both teaching and research are minimal but adequate; the Staff recognize this shortcoming and plan to improve them in due course. In contrast, the animal science farm is well organized, is established within the main campus and is a good training facility which at the same time is commercially viable. The 3rd year students are also given the opportunity to interact with local farmers through a Rural Livestock Work Experience (RLWE) program. The Department also

carries out some outreach activities of a problem-solving nature and organizes field days at the Faculty level. Students are likely to benefit from these programs through contact with farmers. In the final semester, students are sent to Institutions throughout the Island to carry out a research project and this has proven to be a very valuable experience.

CHAPTER 3. AIMS AND LEARNING OUTCOMES

The aims of the Department of Animal Science together with the intended learning outcomes, as stated in their self-evaluation report, are shown below.

3.1. Aims

Department aims to provide degree students with

- 3.1.1 Recent advances in knowledge and techniques on animal production and productivity and their role in raising national benefits.
- 3.1.2. An exposure to the community and community livelihood systems; the problems of the farming community; differences in farming practices, preference of animal breeds between different agro-ecological regions and traditional knowledge of livestock farming system.
- 3.1.3 An adequate knowledge on the system based approach that will enable them to adopt the holistic approach to all agricultural problems relevant to livestock production or management and develop solutions that are viable, feasible, effective and acceptable to farmers and orienting towards sustainability.
- 3.1.4 An opportunity to expose them into a research project to develop research skills in their chosen field of specialization and promoting their critical thinking to develop innovations which will immensely contribute to foster agricultural production.
- 3.1.5 Opportunities for students to develop the skills and enthusiasms required for lifelong learning.
- 3.1.6. A friendly responsive and supportive departmental environment that is conducive to enthusiastic learning high standards and good completion rates.
- 3.1.7 Support for teaching staff in their career development including the provisions of feedback and peer advice.

3.1.8 The effective teaching and learning process with hand-on experience provided by the department leads to quality enhancement of undergraduates and ultimate production of high quality competent graduates in B.Sc. degree in Agriculture.

3.2. Learning Outcomes

On successful completion of B.Sc. degree program in Agriculture, in the subject of Animal Science, students should have

- 3.2.1 Gained knowledge and conceptual understanding of areas of Animal Science, based on programs that provide initial broad frameworks followed by progressively increasing depth of study.
- 3.2.2 Understood how this knowledge and understanding can be applied effectively and efficiently in working alongside the farming community for improvement in the productivity, profitability and sustainability of exiting farming systems.
- 3.2.3 Developed a range of personal and transferable skills (e.g. critical ability, independence of thought, data handling and interpretation, computer literacy, information management, oral and written communication, team work) and had experience of applying them to varied situations.
- 3.2.4 Learnt theoretical, technical, conceptual and intellectual skills necessary for the acquisition and analysis of data through laboratory work, and had direct experience of research (based on laboratory or field work).
- 3.2.5 Developed technical skills and capability for scientific experimentation, including data handling, interpretation and presentation of research results.
- 3.2.6 Developed ability for critical, self-directed learning through extensive reading, access to electronic information media and self-evaluation.
- 3.2.7 Motivated group-learning process towards a teamwork to understand the beneficial nature of such effort.
- 3.2.8 Acquired knowledge and management skills to be professional in Animal Science based disciplines 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 knowledge and a thorough understanding of the range of

topics covered under Animal Science. The coverage of each of these programmes is as follows.

Core Program

- Livestock Production and Agrostology
- Functional Anatomy and Physiology of Farm and Aquatic Animals
- Nutrition and Feed Formulation of Farm and Aquatic Animals
- Management of Ruminants
- Management of Non Ruminants
- Aquaculture
- Animal Breeding and Techniques
- Health Care of Farm and Aquatic Animals
- Farm Practice
- *On hand Training*
- *On Farm Training*
- *Training on Commercial Farming*

Advanced Programme

- Advanced Ruminant Nutrition
- Advanced Non Ruminant Nutrition
- Reproductive Physiology
- Lactation Physiology and Digestion in Pre-ruminants
- Advanced Animal Breeding
- Livestock Production Systems
- Livestock Products Technology
- Mineral Nutrition in Ruminants
- Grassland Science

CHAPTER 4. FINDINGS OF THE REVIEW TEAM

Aims and Objectives:

In general, the stated aims and objectives are comprehensive and commendable. The Intended Learning Outcomes have been stated in very general terms; these may with some modification be accepted as a graduate profile. Following from this profile, more

detailed and specific learning outcomes will have to be developed for each course and be made available to both staff and students.

The observation of the review team was that the aims and intended outcomes are achieved, subject to the comments given in the report below.

4.1. Curriculum Design and Content and Review

The original curriculum was modeled on that followed in the Faculty of Agriculture at Peradeniya but was subsequently revised to cater to local conditions and demand. There was no evidence, however, in doing so, that a graduate profile has been developed or that changes to the curriculum followed the needs of such a profile. During the discussions, it was stated that the views of prospective employers had been taken into account in doing so but the procedure adopted has not been documented. There is no evidence that others such as external examiners or students views were canvassed for this purpose.

The curriculum allows students who cannot keep up to drop out at the end of year 1 or year 2 and obtain a certificate or diploma in agriculture, respectively. In this aspect, the curriculum differs from most other Agriculture degree programs in Sri Lanka and may cater to the particular circumstances prevailing in the EUSL.

The curriculum allows for acquisition of knowledge and through the farm practice courses and field programs (RLWE), to acquire skills and attitudes towards farming. It has also been structured for progressive development. The programs are suitable, upto acceptable academic standards and sufficient to obtain subject knowledge. The program also makes an adequate intellectual demand on the students who were generally satisfied with the learning experience. The breadth and depth of the curriculum gives sufficient training for both employment and further studies at the post-graduate level. There is no provision for industrial or work experience within the curriculum; the students made a specific request for this and it should be considered as an alternative to the research project in the final semester.

Some other observations in relation to the curriculum are given below.

- It would make better sense if the nine courses in the advanced program are grouped according to sub-discipline and students are allowed to select one group rather than chose them at random

- Some of the basic courses important for animal science (e.g. genetics) is taught in other Departments; there could be linkages in time between them to ensure continuity
- Although the subject coverage is satisfactory, the sequence that is followed may need to be revisited and improved
- Hourly breakdown of teaching has been satisfactorily prepared for the old syllabus but not for the present one.

*It is the view of the Review Team that the Curriculum Design, Content and Review in the Department can be judged as **Good**.*

4.2. Teaching Learning and Assessment Methods

The Department delivers its curriculum through a range of traditional teaching and learning methods which are a combination of lectures, laboratory practical classes and farm practice sessions, supported by tutorials and seminars. A research project in the final semester provides a unique experience important in imparting skills which are not possible to acquire in the classroom setting. In the advanced program, the students are allowed to select courses of their interest. Although the teachers are aware of their value, newer teaching methods which are more student-centered such as computer-aided-learning, small group discussions and problem-based teaching are still in the early stages of development.

Assessment is carried out on a semester basis with a significant proportion of marks given to mid-term or continuous assessment. In computing the final GPA, different weightages are given to the different years as shown below:

Year 1	20%
Year 2	25%
Year 3	25%
Final year	30%

This arrangement compensates somewhat for the poor performance of students in the first couple of semesters, common in most universities. The Faculty of Agriculture at EUSL is quite generous when compared to other Faculties of Agriculture in allocating grade points to marks obtained. The assessment methods were clear and acceptable to the students.

Some of the other observations made by the team in relation to the teaching learning and assessment process are listed below:

- The semesters have been designed in a manner that increases the content gradually so that students are not overloaded with work.
- Hand-outs containing lecture and practical outlines are provided at all classes
- The use of visual aids in classroom teaching could be more effective
- The proximity of the Farm, the field program (RLWE, Field days) provide the opportunity for developing practical and applied skills
- The quality and standards of the examination papers and the Research Project reports are satisfactory

Overall, the teaching/learning methods are adequate and the students were satisfied with the learning experience at the Faculty. The team felt however, that if the learning outcomes were better defined, that both teachers and students will be more aware of the results expected and that the teaching, learning and more particularly the assessment procedures, could be more focused.

*It is the view of the Review Team that the Teaching, Learning and Assessment Methods in the Department can be judged as **Satisfactory**.*

4.3. Quality of Students including Student Progress and Achievements

Recruitments and admission of students is carried out by UGC as in other Universities and the Department has no control over this process. An analysis of the Z scores showed that they were low when compared to other Faculties of Agriculture ranging from 0.91 to 1.55 with the majority in the range 1.1 to 1.3. The performance in year 1 (as judged from their GPA) was adequate with most students well over the required GPA of 2. There was a marked and progressive improvement thereon with students performing very well by year 3. All except a few students had GPAs of over 3.0 and the majority was over 3.5. Indeed, this level of performance is higher than in most other comparable faculties and reflects to some degree the fact that grade points given are higher for marks obtained. Nevertheless, this analysis shows that the students are well qualified at entry, although with lesser Z scores, to follow this degree course. It also shows that they make excellent progress through the course. At our interaction with the

students, we found them to be eager to learn, happy with the teaching and learning process and appreciative of their teachers.

The comments above, however, apply to those students who complete the course. The drop-out rates, as mentioned earlier are in fact quite high. The reasons attributed are the fact that the University is located in a conflict area and a high level of poverty among students who qualify from remote areas. It must be appreciated that these are factors beyond the control of the academic staff.

We concluded that the quality of students at entry was adequate and that although there was a high attrition rate, those who remained showed excellent progress and achievement.

*The Review Team is of the opinion that the Quality of Students including Student Progress and Achievements in the Department can be rated as **Satisfactory**.*

4.4. Extent and Use of Student Feedback

Obtaining student feedback on the teaching processes is a standard practice in the faculty. It is carried out through an anonymous questionnaire at the end of each course as well as through an annual meeting with students. Follow-up to the student comments are carried out informally between teacher and students. Whilst commending the Faculty for the initiative taken in this regard, it would be better if the system is formalized and properly documented as in other Universities.

*It is the view of the Review Team that the Extent and Use of Student Feedback in the Department can be judged as **Satisfactory**.*

4.5. Postgraduate Studies

The Faculty conducts one Post-graduate course in Food Processing to which the Department contributes the important disciplines of meat and milk processing. Post-Graduate research as an activity has not commenced at the faculty or Department level as yet. The Staff is engaged in collaborative research of a problem-solving kind with Non-Governmental Organizations in the region who also support any students engaged in these activities. The present undergraduate research has the potential, however, to develop into a good Post Graduate program. The services of qualified academic staff from other Institutions could be obtained for this purpose if the resources are presently not available

at the EUSL, perhaps through joint collaborative research. We believe that the Faculty and the Department should give high priority to doing so.

*It is the view of the Review Team that the Postgraduate Studies in the Department can be judged as **Satisfactory**.*

4.6. Peer Observation

According to the SER, the Head of Department observes classroom teaching of each staff member annually; this is later discussed between them and forms part of the annual staff appraisal. Any good practices that emerge are said to be reported to the Faculty board so that they can be shared out. This procedure, although commendable, is more in the nature of an inspection; we believe it may be more advantageous if peers could also attend each others classes and advise on how their teaching methods may be improved. Such observations should also extend to visiting teaching staff and if possible, vice versa. These practices can later be developed into a more formal system thus ensuring that the practice is both regular and properly documented.

*The Review Team is of the opinion that the Peer Observation in the Department can be rated as **Satisfactory**.*

4.7. Skills Development

The need for developing skills has been recognized and according to the SER, has been “embedded” in the curriculum, but have not been listed out separately for the benefit of the students and the staff. We feel it may be necessary to focus specifically on skills development to a greater extent, clearly identifying the skills that a graduate must possess and developing an overall strategy to ensure that they are actually achieved. Such a list should include all transferable skills including communication and IT in addition to practical (psychomotor) abilities and analytical and problem-solving approaches. Aspects such as personality development and team-work should also be included in this list if they are identified in the graduate profile.

*The Review Team is of the opinion that the Skills Development in the Department can be rated as **Satisfactory**.*

4.8. Academic Guidance and Counselling

Student counselling is particularly important at the EUSL due to the disturbed conditions prevailing in the area over a long period of time. The Faculty has a team of counsellors comprising four from the Faculty and a Senior Counsellor, Rev Swaminadan, from the Faculty of Arts who, albeit without a formal training, provide an active counselling service to the students. They have developed several strategies to overcome problems such as ragging and other stress situations. There was no specific place allocated for their activities, however, nor were their activities documented. According to the counsellors, the relatively high drop out rate at the Faculty was due to factors beyond their control; these included the stressful living conditions in a conflict area and the inability of students to continue their studies due to pecuniary reasons.

According to the students, there is a good rapport between the students and the counsellors and with the academic staff, generally. The documents available to them as well as the help from their staff were adequate with regard to academic guidance.

*The Review Team is of the opinion that the Academic Guidance and Counselling in the Department can be rated as **Good**.*

CHAPTER 5. CONCLUSIONS

The strengths/good practices and weaknesses identified in each of the aspects of evaluation of this review are summarized below.

Curriculum Design, Content and Review

Strengths/Good Practices: The curriculum is well-organized, has sufficient coverage of the disciplines and meets acceptable academic standards

Weaknesses: Revisions should be done in a more systematic manner, with full stakeholder participation and must be well documented

Teaching, Learning and Assessment Methods

Strengths/Good Practices: The methods followed are standard and adequate to deliver the planned curriculum. The practical training on the farm and in the field are good.

Weaknesses: Some of the classroom facilities need to be improved and newer methods of teaching introduced.

Quality of Students including Progress and Achievements

Strengths/Good Practices: Although the students at entry have fairly low Z scores, their performance is good and their progress is excellent.

Weaknesses: High drop-out rate apparently not due to academic reasons

Extent and Use of Student Feedback

Strengths/Good Practices: It is a standard practice in the Faculty and carried out by anonymous questionnaires and annual meetings with students

Weaknesses: It is not formalized and not properly documented.

Post-graduate Studies

Strengths/Good Practices: One post-graduate M.Sc. is being conducted by the Faculty

Weaknesses: Post-graduate research programs have not commenced.

Peer Observation

Strengths/Good Practices: Annual inspection of staff teaching by the Head

Weaknesses: Not developed into a formal, well-documented system of peer observation

Skills Development

Strengths/Good Practices: It is embedded in the curriculum

Weaknesses: No separate focus on this aspect. Needs to be preceded by a graduate profile and specific learning outcomes.

Academic Guidance and Counseling

Strengths/Good Practices: Satisfactory arrangements and committed staff; students are benefited and satisfied.

Weaknesses: Counseling activities are not documented and counselors are untrained.

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

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

The overall judgement is suspended.

CHAPTER 6. RECOMMENDATIONS

The following suggestions for improvement are based on the findings of the review team,

1. Redefine the graduate profile and prepare specific “intended learning outcomes” and make them available to students and staff
2. Use feedback from all stakeholders in making revisions to the curriculum. Record all activities connected with curriculum revision and document the evolution of the curriculum since 1981.
3. Group the courses in the advanced program into common areas
4. Offer an In-plant training course as an alternative to the final year research project
5. Introduce more student-centered and newer methods of learning
6. Follow-up action on the student feedback and peer observation activities could be developed further into a formal system in the Department and the Faculty
7. A post-graduate research program should be developed

The review team would finally like to thank the Vice-Chancellor, Dean and the Head/ Staff of the Department of Animal Science for the hospitality extended to us and for the unstinted cooperation given to us to carry out this review. We are sure that the comments and suggestions made by us will be taken in the correct spirit and that with your

undoubted commitment, they will help you to develop the Department and the Faculty further.

Prof Kalyani Perera, University of Peradeniya

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