

**Report of the  
Accreditation Inspection Committee  
(AIC)**

**on**

**Institute of Soil and Environmental Sciences,  
University of Agriculture Faisalabad (UAF)**

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**July, 2008**



## **Acknowledgments**

The Evaluation Committee acknowledges with gratitude the willing support of the Vice Chancellor, Dean Faculty of Agriculture and the faculty staff of Institute of Soil and Environmental Sciences, University of Agriculture Faisalabad. The guidance provided by the Chairman, NAEAC was of immense help and the committee records its indebtedness to him. Finally the committee is pleased to thank Mr. Naseer Alam Khan, Secretary and Raja Mehtab Yasin, Admin/Finance Officer, NAEAC Secretariate for the arrangements of undertaking visit to UAF, Faisalabad and their valuable help and contributions during the various stages of draft reports.

Accreditation Inspection Committee (AIC) of NAEAC

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## 1. General

### 1.1 Introduction

The Accreditation Committee was briefed by the Director of the Institute of Soil and Environmental Sciences (ISES) about University of Agriculture, Faisalabad (UAF), formerly the Punjab Agriculture College and Research Institute which was established in 1906. It was the premier seat of teaching, research and extension in agriculture and made great contributions to promote agriculture in the country.

The college was upgraded to the status of Agriculture University in 1961 upon the recommendations of National Commission on Food and Education. The University has six faculties, 53 teaching departments, and a number of directorates and institutes. The ISES is affiliated with the faculty of Agriculture which has an academic faculty of 126 PhD's and 58 non-PhD teachers.

### 1.2 Accreditation of Agriculture Education Institutions in Pakistan

As per clause 10 subsections (d) and (l) of the byelaws of NAEAC, an Accreditation Inspection Committee (AIC) is to be constituted for assessment and accreditation of the degree awarding academic programs of the agricultural education institutions in Pakistan. The first AIC, constituted by Chairman NAEAC with the following membership undertook visit to the Institute of Soil and Environmental Sciences on June 27-28, 2008.

- |  |          |
|--|----------|
| 1. Prof. Dr. Shahana Urooj Kazmi<br>Co-Chairperson NAEAC<br>Dean, Karachi University , Karachi | Convener |
| 2. Prof. Dr. Riaz Ahmed Khattak<br>NWFP Agricultural University, Peshawar                      | Member   |
| 3. Mr. Muhammad Tahir Saleem<br>Former Chief/Project Director NFDC, Planning Commission        | Member   |

The terms of reference of the committee are as follows:

- To validate the Self-Assessment Report and Peer Team Report of the Institute.
- To carryout external evaluation of the academic programs for rating and accreditation.
- To synthesize and submit consolidated report on the basis of interaction with Dean, Director, teaching faculty and students as well as detailed visits of infrastructure and facilities.
- To submit recommendations to NAEAC Chairman.

The team composition and itinerary schedule is given at Annex-I.

### 1.3 The Institute of Soil and Environmental Sciences (ISES):

The committee was apprised that the Institute of Soil and Environmental Sciences (ISES) emerged from its predecessor, the then section of Chemistry & Agriculture Chemistry of the Punjab Agricultural College, Lyallpur before 1961. The institute has a teaching faculty of 27 members (against sanctioned positions of 32). It is operating with an annual

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recurring budget of Rs.11.80 million, mainly utilized for the salaries. The support staff consists of 32, with teacher- support staff ratio of 1:1 as compared to the recommended ratio of 2:1. Moreover, it has 3 teaching laboratories and 7 research laboratories. The Institute consists of 6 sections:

- i). Soil fertility & plant nutrition
- ii). Soil physics genesis, morphology and classification
- iii). Saline agriculture
- iv). Soil microbiology & biochemistry
- v). Soil and water chemistry
- vi). Environmental sciences

However, the environmental sciences section is not yet fully operational. The ISES has the following objectives:

- Development of trained human resource base in the disciplines of soil and environmental sciences
- To inculcate the graduates with a sense of dedication, motivation and hard work so that they are able to maintain and uplift the standard of soil & environmental sciences in the country
- Basic and applied research in Soil and Environmental Sciences
- Advisory services to farmers, NGOs and the relevant agro-based industry
- Short term training of farmers and in-service agricultural personnel pertaining to the technological development and sustainable resource management

Section-wise courses and the list of faculty by qualification is presented in the following table:

**Table: Section-wise courses and faculty by qualification.**

| Program Areas                               | Courses in the area | Faculty in each area | Faculty with PhD degree |
|---|---------------------|----------------------|-------------------------|
| 1. Soil & Microbiology & Biochemistry       | 4                   | 7                    | 7                       |
| 2. Soil Physics, Genesis and Classification | 6                   | 2                    | 2                       |
| 3. Soil Chemistry                           | 5                   | 6                    | 4                       |
| 4. Soil Fertility                           | 3                   | 6                    | 3                       |
| 5. Saline Agriculture                       | -                   | 5                    | 3                       |
| 6. GIS                                      |                     | 1                    | 1                       |
| Sub-total                                   | 18                  |                      |                         |
| * <i>Common Courses</i>                     | 12                  |                      |                         |
| Total                                       | 30                  | 27                   | 20                      |

\* *These courses are taught by teachers from more than one or by all the sections*

The Institute of Soil and Environmental Sciences (ISES) has so far produced 64 PhD's, 1150 MSc (Hons) and 1025 BSc (Hons) and completed 57 research projects and has 16 on-going ones. These projects were funded by national and international agencies, including HEC. The faculty has been duly recognized and has earned different international and national awards on account of its performance.

### 1.4 Academic programs

As reported by the Director, ISES presently offers three degree programs, namely BSc (Hons) Agriculture, MSc (Hons) Agriculture and PhD in Soil Science. It also plans to offer a multidisciplinary Master's degree program with the collaboration of three other faculties i.e. agricultural engineering and technology, sciences and agricultural economics and rural sociology. The BSc (Hons) Agriculture Program is a four-year degree program spread over eight semesters. Degree requirement is 150 credit hours, including 10 credit hours internship in the agricultural research institutes. The admission requirement for BSc (Hons): HSSC with not less than 45 per cent marks from any BISE of the Punjab with quota: urban 25 per cent, rural 75 per cent and female 10 per cent besides open merit for female candidates; M.Sc (Hons): GRE (General) type + BSc (Hons) + Interview and PhD: GRE (Subject) type (International) + MSc (Hons) in Soil Science + Interview.

Detail of rules and regulations pertaining to admission and other academic matters is available separately in the printed form under-graduate and post-graduate prospectus besides the University website: [www.uaf.edu.pk](http://www.uaf.edu.pk) and from Directorate of Advanced Studies, University of Agriculture, Faisalabad.

## 2. Criterion-wise analysis

### 2.1 Curriculum design and development

The curriculum is a reflection, how far it is supportive in achieving learning objectives and student learning outcomes. The team members were informed that degree level curriculum has been developed with the collaboration of HEC through its Curriculum Review Committees (CRCs). The members of the curriculum review committee (CRC) are senior professors from this institute. A uniform curriculum approved by HEC has been adopted by all the Agricultural Universities/Colleges. **There are a few assessment instruments for students' assessment in the exams (amend it to clarify the ambiguity).** Generally, maximum weightage is given to final exams (60 per cent), followed by mid term (30 per cent) and assignments/quizzes, etc. (10 per cent).

To keep abreast of the latest knowledge in the concerned discipline, it is imperative to have a regular review and update of the curriculum. In the recent years, feedback mechanism is considered extremely useful for participatory and objective decision making. The Quality Enhancement Cell (QEC) of UAF has made positive efforts to develop this mechanism on regular basis for continuous improvement of teaching-learning quality. This mechanism has to be further streamlined to improve the quality of education on the basis of the feedback from all the stakeholders such as employers, alumni, students, peer academicians and parents.

This criterion was assessed in the light of evidence whether the Institute is functioning under a set of well-defined and known objectives yielding expected learning outcomes which support program objectives. Also programs are redesigned and reviewed from the feedback. The committee is of the view that the Institute has developed a set of worthwhile

curriculum design according to the needs of the students using interdisciplinary and multidisciplinary approaches. However, **it was noted that curriculum revision exercise by the board of studies is not very regularly being carried out (AIC to discuss it; the Director ISES has objected to it and according to him “curriculum revision is regular exercise in the ISES).** The curriculum summary for under-graduate and post-graduate programs is given at Annex-II.

## **2.2 Strength and quality of faculty**

The evaluation committee met some professors, associate and assistant professors and lecturers of ISES to discuss their academic background, areas of interest, their perceptions about the academic programmes, students and peers, opportunities for professional growth besides research opportunities, facilities available, teacher-student relationship, teaching load and strengths and weaknesses of the programme. It was done in a random way by calling the faculty staff of various levels and holding frank and free discussions assuring them that the objective was to effect improvements rather than a criticism of their programme. This helped to clear the fog and any misunderstanding that could arise of this meeting. Following is the upshot of the discussions held at length:

- A great majority of the faculty staff-teachers-were happy and satisfied with the facilities, support and the teaching environment. They, in fact, seemed enthusiastic and committed to their profession which augurs well and is a happy sign.
- All agreed that student population in different courses has increased enormously while the number of teachers and the student-space was the same - 70 or more students are seated in a room meant for 50. **The Director ISES has reported that 50 – student capacity lecture rooms are being expanded for 80 students’ capacity.** Obviously there has been no expansion in the teaching space resulting in congested atmosphere which is not as conducive to learning as a more normal and comfortable space for individual students. This may impact the quality adversely.
- The same is true about the laboratory space: there are more students than the normal or optimum number which could imply a sort of deterioration overtime in the quality of education.
- The aforesaid scenario could also affect the teacher-student interaction adversely.
- The same applies to oral exams- *viva voce*. The numbers of students was so high that judging individual’ capabilities were rather difficult. The importance of oral examination is obvious from the fact that it evaluates students’ skills of communication, comprehension of the subject and the level of confidence reflected by the students. In a way, oral exams have their own unique place in the scheme of examinations.
- A few faculty members expressed that some teachers did not encourage the students to seek clarifications from them, whether in the classroom or out of classroom.

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- There are 15 departments of undergraduate students, general and special courses, for which the strength of the faculty was not enough. One way was that the teacher could go to the other department and deliver his lecture - this will lessen his load on his departmental classroom. However, this is not possible for laboratory purposes.
- A number of research projects have been successfully completed and many are ongoing in the ISES. This is a great help in providing funds and facilities to those who run these projects. But those without the projects lack necessary university funds and facilities for adequate performance of their duties.
- The committee enquired some teachers if their research findings were written as general information/extension bulletins? The answer was No. **(The Director ISES has contested this to say that they do disseminate research findings regularly by publishing and distributing the extension articles, pamphlets in Urdu & English among farmers and agricultural extension workers)**. It is felt that the research projects generate very valuable information which can be used by the country in their development strategies. This information not going out meant that the nation did not benefit from the research findings which have been achieved after a strenuous effort and expenses. Time constraints is conceded on the part of faculty members due to their heavy teaching load, nevertheless, writing the results for general information is the need of the hour.

### *Faculty development*

- It was noted by the team members that the ISES has no regular and organized faculty development program in place.
- Out of 20 PhDs, only three possess PhD from foreign universities and rest of them are local PhDs who have received their BSc, MSc and PhD from the same institution. **However, most of them have foreign exposure in the form of short term/long term training and post doctoral fellowships from abroad.**
- The faculty lacks professional and institutional level interaction with the international organizations. **The Director ISES has contested this and reported that they do have professional and institutional interactions with ICARDA, Bangor, University of Wales, UK, University of California Riverside, Centre for Environmental Risk and Contamination, South Australia, Australia.**

### *Faculty-teaching load*

Teaching load plays an important role in the quality and contents of teaching. It is observed that present teaching load with 125 BSc (Hons), 150 MSc (Hons) and 54 PhD students is heavy. Similarly, the annual intake at the University level is very large which yields very high student-teacher ratio of 35:1 as compared to HEC prescribed ratio of 20:1. On an average, each teacher supervises the research work of 6-7 PhD students **(ISES Director reported 4 PhD students)**

A list of teaching faculty is given at Annex-III.

### **2.3 Students support and progression**

The evaluation committee was apprised that students are provided handouts in the class and/or a folder containing topics wise data and lecture material for the given class and semester which are placed in the library. However, students stated that it is not always the case. Some teachers place the folder while others do not; some teachers provide handouts of lectures along with presentation on multimedia while others do not.

Students were of the opinion that the number of assignments should be increased and more quizzes should be conducted to keep the students fully involved in the semester system. In addition to the regular mid term and final examination in a given semester, the ISES has a unique system of arranging a comprehensive paper covering major core subjects for the B.Sc (Hons) final year students. It is a useful and very effective method of revision of the important topics which will help the students in practical life and as well as in the M.Sc program.

Because of very high enrollment in the general courses offered during first four semesters the students felt congested in the practical classes and the teachers are overloaded. This may adversely affect the quality of teaching.

Internship, which is a prerequisite for the award of Bachelor degree, is regularly conducted in a system manner. Most of the students are sent to various research institutes throughout the province where they acquire practical training and submit a formal report.

A few internship reports were checked and found of good quality. The curricula were properly presented in the form of handbooks for Bachelor, M.Sc and Ph.D programs. Courses were mainly those designed and approved. During the discussion, the M.Sc and Ph.D students were questioned to judge the degree and extent of the knowledge they had learnt and assimilated. Since all students are not identical, some of them had a very clear concept about the core subjects and other aspects of their research while some were not very clear.

Most of the students expressed satisfaction over the cooperation and assistance provided to them by the teachers other than their major supervisor. Since the Institute has many research projects funded by HEC and PARC, students were fully contented with the availability of chemicals and equipments for their M.Sc and Ph.D research. The Ph.D oral and comprehensive examinations are conducted regularly in the ISES. Some impressions are recorded below:

- The committee was pleased to know from the students that they were keen to be involved during the semester through quizzes, assignments, etc. In this way teachers were bound to do justice with their profession.
- Because of summer vacations, under-graduate students were not available in the institute and the post-graduate students who were available complained that their research supervisors were not doing full justice to their job because of overburden. Hence, the number of Ph.D students may be reduced for each supervisor. (*see recommendation*)

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- Students were also of the view that there was a minimal interaction with the teacher because of the power point presentation and the use of multimedia. It should be a mix of use of white board, chalk and multimedia thus ensuring involvement of the student in the process of learning.
- Internship and practical training should be a regular feature with a view to developing a strong and effective program.

### 2.4 Infrastructure and learning resources

*Classrooms:* There were only three classrooms for post graduate classes. There is serious shortage of classrooms and faculty offices. Increasing number of students results in the congestion of classrooms which affects adversely the quality of teaching.

*Laboratories:* The ISES has 3 teaching labs and 7 research labs besides a High-Tech lab financed by Japan International Cooperation Agency (JICA) and established in 1997. The extension block of central hi-tech laboratory is under construction. Most of the equipment in these labs was modern however a few instruments were out of order.

The lab equipment in the 11 teaching labs and five research labs of the institute is sufficient to undertake the higher education and research activities. Besides the laboratories, the institute has 54 computers and 23 printers available for use. About 23 computers and printers are being used by the faculty whereas 25 computers are available for students.

*Library:* There is a university library which is centrally air-conditioned and contains a large amount of books, journals, etc. A number of international agricultural databases have been acquired. Reference and bibliographical assistance is also provided. Besides, there are two photocopying machines and a number of computers for the convenience of academic community. The library is linked with digital library developed by the Higher Education Commission of Pakistan, where, over 15000 full text journals and 25000 abstracted journals are available free of cost. There is also a book bank which provides textbooks on loan to the students on nominal rent. In addition to the main library, ISES has its own library with essential literature, both books and journals, relating to the various disciplines in soil science and allied subjects. However, the institute's library needs further development.

The library also has good electronic media equipment including internet, multimedia, and other facilities. At present only one computer is available for 11 students. Keeping in view the large number of post graduate students, more computers with printers and internet facilities are required.

*Experimental farms:* The institute is provided with a large experimental area earmarked by the university on its farms at Jhang road, Faisalabad. On-farm research and demonstrations are carried out for research projects and thesis research. All the farm equipment and machinery is university - owned and is available as and when required.

### **2.5 Research and consultancy activities**

There seems to be adequate research and consultancy activity in the institute as reflected by the completed research projects, the ongoing ones and those submitted for funding. Research papers published both in foreign and local journals based on the institute's research speak volumes of the research effort and commitment of researchers for achieving high standards. A number of excellence research awards have been earned by the faculty. For cross reference please see para 1.2. However, only senior professors are availing of such opportunities for projects, mainly on personal contacts. This institute is also offering courses to the different agriculture education institutions in other provinces.

The team was briefed that it was mandatory for the teaching faculty to devote 80 per cent time to teaching and 20 per cent to research. At present Rs.11.8 million recurring budget of the institute is mainly for salaries. At least 20 per cent of this budget should be allocated for research activities which constitute 20 per cent compulsory activity.

### **2.6 Governance and leadership**

The highest administrative governance authority is the Vice Chancellor, followed by the Registrar, Treasurer and Controller of Examinations. The organizational setup of the Institute of Soil and Environmental Sciences consists of a Director who is responsible for its directorate and reports the Vice Chancellor of the university.

The Vice Chancellor is the overall controlling authority of faculty as well as the institute of soil and environmental sciences. The university provides funds to this institute besides HEC and other organizations providing funding for different projects of the institute.

Important bodies of the university include the Syndicate, the Senate, Academic Councils, Advanced Study & Research Board, finance & planning committees, selection board, boards of studies & of faculty, directorate of students' affairs and hall warden. The rules and procedures of the university are well organized and documented. All bodies of the university function within the framework of well defined rules and procedures.

A good rapport exists among the faculty members and those responsible for management in the university. To further improve leadership in research and teaching, an exchange with other universities, local and abroad, will be of great help. In fact, a sort of inbreeding which tends to be taking roots should be guarded against for emerging as real leaders in the discipline.

### **2.7 Innovative practices**

The committee members were briefed about a few innovative practices of ISES.

- The institute has started an exercise for the assessment of students as well as teachers. However, it is not yet fully functional. There exists a mechanism of feedback from both the students and the teachers on the assessment of program/courses.
- In addition to the regular mid term and final examination in a given semester, the ISES has a comprehensive paper covering major core subjects for the B.Sc (H) final year students. It is a useful method of revision of the important topics for the students.

- The evaluation system in ISES involving the teachers teaching a course to different sections and those teaching different subjects to the same section in holding a point meeting to compare, contrast and review the performance of the students is useful. The purpose is to assure justice and fair play in grading uniform and consistent manner.

### **3. Overall analysis**

#### **3.1 Major strengths**

- Enough research grants from local and international donor agencies for specific projects.
- Availability of well equipped laboratories, both for research and teaching of under-and post-graduate students.
- Provision of a good library with latest books, relevant journals besides being equipped with sophisticated audiovisual system.
- Existence of availability of advanced research and experimentation facilities like controlled growth chambers, green houses/glass houses.
- A sound and qualified teaching and research faculty; majority of them have Ph.D degrees.

#### **3.2 Major weaknesses**

- A limited number of trained supporting staff i.e. laboratory technician/assistants.
- Lack of instrument and networking engineer.
- Limited and relatively small space for lecture rooms.
- Lack of trained faculty in soil classification/genesis and GIS.
- Lack of international professional teachers' training programs.
- A large-scale inbreeding in the faculty.

#### **3.3 Major opportunities**

- Potential for training of HRD at post-graduate level.
- Increasing the number of grants from the national and international donors.
- Provision of training to staff of research and extension departments.
- Initiation of M.Sc and PhD degrees in environmental sciences through inter-faculty collaborate Program.
- Provision of facilities for soil and water testing for agriculture, engineering and construction departments besides the industry.

### 3.4 Major challenges

- Enhancement of environmental sciences discipline.
- Improvement of out-reach programs.
- Strengthening of linkages between faculty and stakeholders.
- Generating financial resources.
- Adding to the laboratories space in view of increasing number of students in soil science.

### 3.5 Employers' feedback

The employers seem to feel that the soil science graduates generally lack capability of problem formulation and solution. Computer knowledge and mathematical background is also inadequate. Further, the communication and presentation skills are weak. Very few possess leadership qualities and they generally lack motivation and dedication to the job. They also need more training to use modern laboratory equipment. Curriculum may be devised such as to inculcate these skills and qualities. **See Director ISES's comments and modify if AIC feels necessary.**

## 4. Recommendations

### 4.1 General recommendations

1. **Curriculum** – Curriculum is the cornerstone in the structure of any academic program and a direct reflection of the objectives of the institute. It must ensure students learning skills besides inculcating moral, social and ethical values. The curriculum of the degree program of the institute should be market-driven and meet the needs of the society. It should reflect strong linkage with the industry. The curriculum should also encompass contemporary and current topics to prepare the graduates to meet global challenges.

Presently, curriculum revision seems to be a casual activity of ISES. It should constitute a regular exercise on the basis of continuous feedback from all the stakeholders namely employers, alumni, peer academicians and the students. Meetings of the Board of Studies should be held, at least once in two years, to review the progress of teaching and to revise/introduce new courses of studies, and submitted for approval from the faculty and academic council. **Director ISES's comments: curriculum revision is the regular exercise in the institute. Further, meetings of the Board of Studies are held regularly (more than once) in every semester.**

2. **Faculty development program** - Although the institute has highly qualified faculty yet very few have acquired higher qualification from abroad. Some mechanism needs to be evolved to reduce the practice of inbreeding. Faculty development program may be planned for long-term and short-term trainings for the capacity enhancement of teaching and non-teaching staff. Participation of faculty members in conferences, seminars and workshops may be encouraged to

3. improve exposure and interaction with experts. Teaching load as well as student-teacher ratio may be reduced to facilitate the task of teachers and to create student-friendly environment in the classrooms.

4. **Students** – Students have good interaction with the faculty members; some of them do give time to resolve their academic problems. There is, however, a need to minimize congestion in the classrooms and making teaching methods diversified and effective by using whiteboard, chalkboard and OHP instead of exclusive use of multimedia. There is a need to promote students-teacher friendly environment in the larger interest of all the stakeholders of ISES. Adequately furnished more class rooms and faculty offices are required for the Institute.

Further, the number of Ph.D students for each supervisor may be reduced and HEC may give some other incentives to the supervisors who are supervising less Ph.D students. **Director ISES's comments: the statement "Students have good interaction with the faculty members" under Students, is contradictory with the statement: there is need to promote students-teacher friendly environment.**

5. **Infrastructure** – Increasing number of students results in the congestion of classrooms which affects adversely the quality of teaching. It was felt that there is shortage of classrooms and faculty offices. Therefore, the university may consider increasing the classroom space and faculty offices.

*Laboratories:* The laboratory system of ISES is well established. With a view to sustaining and upgrading the system, training and education on laboratory safety and bio-safety of laboratory staff is absolutely essential. One qualified and trained laboratory maintenance engineer may be recruited to keep all instruments functional. The ISES may consider establishing a workshop for repair and maintenance of all major equipments.

*Computer facilities:* At present only one computer is available for 11 students. Keeping in view the large number of post graduate students, more computers with printers and internet facilities are required to be provided.

6. **Linkage with local industry** - During the discussion with ISES staff it was felt that the institute had weak linkages with the national and international organizations, especially with the industry. Linkages of the students and teachers may be promoted with local industry through Memorandum of Understandings (MoUs) to benefit from the resources of the private sector. This may help the graduates to get better job placements.

7. **Library** - The present departmental library is inadequate for an institute which has an enrolment of 320 students. Hence, it may be upgraded as per institute status to include a computer laboratory with 20 CPUs and internet facility for exclusive use by the post-graduate students of ISES.

8. **Budget** - The operational budget provided to the institute by the university is nominal and grossly inadequate to meet the genuine needs of teaching of research. University should consider increasing the annual grant and allocating appropriate amount for repair and maintenance and operational activities of the Institute.



9. ***Dissemination of research information*** – A lot of useful research is carried out besides research projects completed in the ISES. The findings of these research studies/projects should be edited and printed in the form of technical bulletins, extension leaflets and brochures for use by the community and extension workers. Also the community training programs, such as focus group meetings or farmers' field days, etc may be organized in order to disseminate research information.
10. ***Annual seminar roster*** - The institute should develop an annual seminar roster; organize fortnightly faculty and senior student seminars. Postgraduate students may also be encouraged to participate in such academic forums. Announcement about the seminars by posted on institute Website.
11. ***Placement bureau*** - The institute may establish its own placement bureau and alumni association in the larger interest of students and alumni of the institute.

#### **4.2 Final recommendation**

The institute (ISES) has a historical background and made valuable contributions in the field of soil science. However, there is ample room for improvements to match the international standards and to meet the market challenges. Thus, ISES needs to focus on some grey areas and weaknesses discussed in this report. Obviously, it requires more funding for providing the requisite facilities.

In view of these considerations, the committee recommends that the institute be graded as X category (i.e. the classification of degree program with minor shortfalls expected to meet the criteria as set by the Council for Accreditation) with scope for up-gradation to category W after appropriate improvements in due course of time.



**Name and signature of the Peer Team Members**

1. Prof. Dr. Shahana Urooj Kazmi:  
(Convener)
2. Prof. Dr. Riaz Ahmed Khattak:  
(Member)
3. Mr. Muhammad Tahir Saleem:  
(Member)

I agree with the observations and recommendations made by the peer team in this report.

**Director of the Institute**

**National Agriculture Education Accreditation Council****Annex-I****Itinerary of Accreditation Visit**

- Institution:** Institute of Soil and Environmental Science, University of Agriculture, Faisalabad.
- Resource Person:** Prof. Dr. Muhammad Arshad, T.I, Director, Institute of Soil & Environmental Sciences, Phone# 041-9201091, Fax#041-9201221, E-mail: bio@f.comsats.net.pk
- Review Team:**
- |  |          |
|--|----------|
| 1. Prof. Dr. Shahana Urooj,<br>Co-Chairperson NAEAC                                      | Convener |
| 2. Pro. Dr. Riaz Ahmed Khattak<br>NWFP Agri. University., Peshawar                       | Member   |
| 3. Mr. Muhammad Tahir Saleem<br>Former Chief/Project Director, NFDC, Planning Commission | Member   |

**Schedule of Visit:** June 27-28, 2008 (two days)

| Day 1   | Time        | Activity  | Remarks |
|---------|-------------|---|---------|
| 27.6.08 | 08:30-08:45 | <b>Meet Dean of the faculty</b> <ul style="list-style-type: none"><li>• Explain purpose of the visit</li><li>• Describe the program review process</li></ul>  |         |
|         | 08:45-09:00 | <b>Meet Director of the Institute</b>   |         |
|         | 09:00-10:00 | <b>Presentation: Director of Institute</b> <ul style="list-style-type: none"><li>• Program goals and objectives</li><li>• Curricula summary</li><li>• Faculty summary</li><li>• Students summary</li><li>• Infrastructure summary</li><li>• Alumni survey</li><li>• Q/A session</li></ul> |         |
|         | 10:00-11:00 | <b>Infrastructure visit</b> <ul style="list-style-type: none"><li>• Labs</li><li>• Greenhouse</li><li>• Library</li><li>• Classrooms and faculty offices</li></ul>  |         |
|         | 11:00-12:30 | <b>Curriculum review</b> <ul style="list-style-type: none"><li>• Course files</li><li>• Attendance</li><li>• Examination record</li><li>• Session/Semester record</li><li>• Evaluation instruments</li><li>• Research projects</li></ul>  |         |
|         | 12:30-1:30  | <b>Forms filling and comments/views</b>   |         |
|         | 1:30 onward | <b>Break</b>  |         |
|         | 4:00-5:30   | <b>Meeting of the evaluation team</b>   |         |

**National Agriculture Education Accreditation Council**

| <b>Day 2</b> | <b>Time</b> | <b>Activity</b>   | <b>Remarks</b> |
|--------------|-------------|---|----------------|
| 28.6.08      | 09:00-09:30 | <b>Meet Dean of the faculty</b> <ul style="list-style-type: none"><li>• Briefing on yesterday's activities of the visit</li><li>• Seek guidance/help if required</li></ul>  |                |
|              | 09:30-12:00 | <b>Faculty meeting: 10-15 minutes per faculty</b> <ul style="list-style-type: none"><li>• Graduation</li><li>• Personal background</li><li>• Area of interest</li><li>• Perception about the program, students and peers</li><li>• Opportunities for professional growth</li><li>• Research opportunities</li><li>• Salary perception</li><li>• Teaching load</li></ul> |                |
|              | 12:00-12:30 | <b>Classroom visit: Two classrooms with 15 min. each</b> <ul style="list-style-type: none"><li>• Students interview</li><li>• Students assessment</li><li>• Students perception</li><li>• Students feedback</li></ul>   |                |
|              | 12:30-1:15  | <b>SWOT analysis: faculty /students point of view</b> <ul style="list-style-type: none"><li>• Strengths</li><li>• Weaknesses</li><li>• Opportunities</li><li>• Challenges</li></ul>   |                |
|              | 1:15-1:45   | <b>Meeting with Director of Institute</b>   |                |
|              | 1:45-2:00   | <b>Break</b>  |                |
|              | 2:00-3:30   | <b>Discussions among the evaluation team member</b>   |                |
|              | 3:30-4:30   | <b>Meeting with Dean/Exit meeting</b> <ul style="list-style-type: none"><li>• Findings</li><li>• Recommendations</li></ul>  |                |
|              | 4:30        | <b>End of review visit</b>  |                |

**Annex-II**
**Curriculum Summary: (Separate for each Program)**

| Course category | B.Sc (Hons)    |              | M.Sc (Hons)    |              | Ph.D           |              |
|-----------------|----------------|--------------|----------------|--------------|----------------|--------------|
|                 | No. of courses | Credit hours | No. of courses | Credit hours | No. of courses | Credit hours |
| Core courses    | -              | -            | -              | -            | -              | -            |
| Major courses   | 15             | 68           | 7              | 26           | 10             | 25           |
| Support courses | 5              | 10           |                |              |                |              |
| Other courses   |                |              |                |              |                |              |
| <b>Total</b>    | 20             | 78           | 7              | 26           | 10             | 25           |

**Major Courses (B.Sc (Hons) Agri. Major Soil Science)**

| Course code | Course title  | Credit hours | Prerequisite |
|-------------|---|--------------|--------------|
| SES-301     | Soil and Environment-I                                  | 3(2-1)       |              |
| SES-302     | Soil and Environment-II                                 | 3(2-1)       |              |
| SES-501     | Physical Properties of soil                             | 4(3-1)       |              |
| SES-502     | Salt affected soils and water quality                   | 4(3-1)       |              |
| SES-503     | Chemical Properties of soils                            | 4(3-1)       |              |
| SES-504     | Soil Fertility and Fertilizers                          | 4(3-)        |              |
| SES-505     | Instrumentation and Laboratory Techniques               | 3(0-3)       |              |
| SES-505     | Soil and Plant Analysis                                 | 4(1-3)       |              |
| SES-506     | Soil Genesis and Morphology                             | 3(2-1)       |              |
| SES-601     | Soil Survey and Land Evaluation                         | 3(2-1)       |              |
| SES-603     | Soil Microbiology and Environment                       | 4(3-1)       |              |
| SES-605     | Environmental Pollution and Management                  | 4(3-1)       |              |
| SES-607     | Soil, Water and Environment Conservation                | 3(3-0)       |              |
| SES-610     | Internship  | 20(0-20)     |              |
| SES-611     | Preparation of Research Projects and Scientific Writing | 2(1-1)       |              |

**National Agriculture Education Accreditation Council**
**Support Courses**

| Course code | Course title                                    | Credit hours | Prerequisite |
|-------------|---|--------------|--------------|
| I & D - 501 | Irrigation and Drainage Practices               | 2(1-1)       |              |
| FMP - 501   | Farm Mechanization                              | 2(1-1)       |              |
| Agron - 502 | Introduction to Weed Science                    | 2(1-1)       |              |
| AEE-502     | Communication Skills and Leadership Development | 2(1-1)       |              |
| VMD-601     | Introduction to Veterinary Preventive Medicine  | 2(1-1)       |              |

**Major Courses (M.Sc (Hons) Agri. Major Soil & Environmental Sciences)**

| Course code | Course title                                    | Credit hours | Prerequisite |
|-------------|---|--------------|--------------|
| SES-701     | Soil Chemistry                                  | 4(3-2)       |              |
| SES-702     | Instrumental Analysis and Analytical Techniques | 3(0-6)       |              |
| SES-703     | Soil Fertility and Plant Nutrition              | 4(4-0)       |              |
| SES-704     | Soil Microbiology and Biotransformations        | 4(3-2)       |              |
| SES-705     | Soil Classification                             | 4(3-2)       |              |
| SES-706     | Salt-affected and Waterlogged Soils             | 3(3-0)       |              |
| SES-707     | Soil Physics                                    | 4(3-2)       |              |

**Major Courses of Ph.D**

| Course code | Course title                                  | Credit hours | Prerequisite |
|-------------|---|--------------|--------------|
| SES-708     | Soil and Environmental Chemistry              | 3(3-0)       |              |
| SES-709     | Advanced Soil Fertility                       | 3(3-0)       |              |
| SES-710     | Soil and Environmental Microbiology           | 3(3-0)       |              |
| SES-711     | Soil and Environmental Physics                | 3(3-0)       |              |
| SES-712     | Soil Mineralogy                               | 3(2-2)       |              |
| SES-713     | Soil-Plant Relationship                       | 3(3-0)       |              |
| SES-714     | Principles and Applications of Bioremediation | 3(3-0)       |              |
| SES-715     | Research Methods and Scientific Writing       | 2(2-0)       |              |
| SES-719     | Special Problem                               | 1(1-0)       |              |
| SES-720     | Seminar                                       | 1(1-0)       |              |

*Note: Minimum credit hours should be 35 including minor subjects which shall not exceed one-third of the total*

**Teaching Faculty**  
**Department of Soil & Environmental Sciences**

| <b>Sr No.</b> | <b>Name</b>              | <b>Designation</b>  | <b>Qualification</b> |
|---------------|--------------------------|---------------------|----------------------|
| 1             | Dr. Muhammad Arshad      | Professor           | Ph.D                 |
| 2             | Dr. Anwar-ul-Hassan      | Professor           | Ph.D                 |
| 3             | Dr. Abdul Ghafoor        | Professor           | Ph.D                 |
| 4             | Dr. Rahmatullah          | Professor           | Ph.D                 |
| 5             | Dr. Javaid Akhtar        | Professor           | Ph.D                 |
| 6             | Dr. Manzoor Qadir        | Associate Professor | Ph.D                 |
| 7             | Dr. Muhammad Khalid      | Associate Professor | Ph.D                 |
| 8             | Dr. Zahir Ahmand Zahir   | Associate Professor | Ph.D                 |
| 9             | Dr. Muhammad Yaseen      | Associate Professor | Ph.D                 |
| 10            | Dr. Ghulam Murtaza       | Associate Professor | Ph.D                 |
| 11            | Dr. Azeem Khalid         | Asstt. Professor    | Ph.D                 |
| 12            | Dr. Muhammad Saqib       | Asstt. Professor    | Ph.D                 |
| 13            | Dr. Hafiz Naeem Asghar   | Asstt. Professor    | Ph.D                 |
| 14            | Dr. M. Javed Akhtar      | Asstt. Professor    | Ph.D                 |
| 15            | Dr. Muhammad Iqbal       | Asstt. Professor    | Ph.D                 |
| 16            | Dr. M. Anwar-ul-Haq      | Asstt. Professor    | Ph.D                 |
| 17            | Dr. Saifullah            | Asstt. Professor    | Ph.D                 |
| 18            | Dr. Sai-ur-Rehman Kashif | Asstt. Professor    | Ph.D                 |
| 19            | Dr. Hamaad Raza Ahmad    | Asstt. Professor    | Ph.D                 |
| 20            | Mr. Zulfiqar Ahmad       | Asstt. Professor    | M.Sc (Hons)          |
| 21            | Mr. M.Aamer Maqsood      | Lecturer            | M.Sc (Hons)          |
| 22            | Mr. Muhammad Sabir       | Lecturer            | M.Sc (Hons)          |
| 23            | Mrs. Shamsa Kanwal       | Lecturer            | M.Sc (Hons)          |
| 24            | Dr. Baby Shaharoon       | Lecturer            | Ph.D                 |
| 25            | Mr. M. Zia-ur-Rehman     | Lecturer            | M.Sc (Hons)          |
| 26            | Mr. M. Atif Riaz         | Lecturer            | M.Sc (Hons)          |
| 27            | Mr. Shahid Pervaiz       | Lecturer            | M.Sc (Hons)          |