



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

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## **Acknowledgment**

The evaluation team acknowledges the support and cooperation of the honourable Dean Faculty of Agriculture, Chairman and faculty/staff members of the Department of Agronomy, Sindh University of Agriculture, Tandojam, Pakistan. The immense help, guidance and logistic support of Mr. Naseer Alam Khan (Secretary) and Malik Muhammad Kashif Anwar (IT Coordinator) of NAEAC Secretariat is highly appreciated.

## **Accreditation Inspection Committee (AIC), NAEAC**

## **Prologue**

The Accreditation Inspection Committee (AIC) constituted by the National Agriculture Education Accreditation Council (NAEAC) for the external assessment of the degree programs of B. Sc. (Hons.), M. Sc. (Hons.) and Ph. D. offered by the Department of Agronomy, Sindh Agriculture University Tandojam, visited the Department on March 5-6, 2012. The NAEAC secretary and the AIC members also visited the Office of the Dean, Faculty of Crop production. Mr. Naseer Alam Khan (Secretary NAEAC) highlighted the aims and objectives of this review process. Dr. Shamsuddin Tunio, (Dean of the Faculty) briefed about the academic programs being offered in the Faculty. The tentative schedule provided by the NAEAC was followed by the AIC and detailed interviews and discussions were made with the Chairman, Dean, Faculty members, Alumni and senior students of department. Visits were also made to review the lab facilities, research area, classrooms, offices and library.

### **a) Accreditation of Agriculture Education Institutions in Pakistan**

In pursuance to its mandate given by the HEC under clause 10 Sub Sections (d) and (1) of the bye laws of NAEAC, an Accreditation Inspection Committee (AIC) was constituted comprising of following scientists to review the Department of Agronomy, Sindh Agriculture University, Tandojam for assessment and accreditation of their degree programs:

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|-----|--|------------|
| i)  | Prof. Dr. Muhammad Bismillah Khan<br>Principal, University College of Agriculture,<br>B. Z. University, Multan | (Convener) |
| ii) | Dr. Rashid Ahmad Shad<br>Chief Scientific Officer (Rtd), NARC, Islamabad                                       | (Member)   |

### **b) Terms of References of the Committee (TORs)**

The team visited Agronomy department on March 5-6, 2012

- To validate the Self-Assistance Report of Department of Agronomy.
- To carry out external evaluation of the academic programs for rating and accreditation.
- To synthesize and submit consolidated report on the bases of interaction with Dean, Chairman, Faculty members, Alumni and students as well as detailed visits of infrastructure and facilities.
- To submit recommendations to NAEAC Chairman.

## **Department of Agronomy**

Agronomy is the science of principles and practices of crop production and soil management and mother of agricultural knowledge. Sindh Agriculture College Tandojam was established in 1955 and in the same year B.Sc. (Hons.) Agronomy program was started; however, master program was started in 1973. College was raised to the level of University in 1977. In the same year Department of Agronomy started functioning.

Currently Agronomy is the biggest discipline and its scope is evident from the number of students opting it as major subject. This Department is actively participating in developing trained human resource base in production technology. Mostly research conducted is of applied nature. Various aspects of field crop production and soil management under varying agro-ecological conditions and socio-economic conditions of the farming community are addressed. It provides advisory services to farmers, NGOs and relevant agro-based industry, pertaining to the latest developments in this field for better resource management and sustaining crop yields under changing environmental scenarios.

### **Program mission**

Inculcate amongst students sense of discipline, organization, refinement of their vision and skills, help them graduate with maturity and distinction to be the useful citizens of the society and to realize the dream of sustainability in agriculture for food security and safety.

### **Program Goals and Objectives**

- Produce competitive and quality graduates who can understand and solve real agronomic and environmental problems.
- Prepare graduates with ability to assess soil, seed, crop, water, fertilizer and weed problems.
- Prepare graduates to conduct field and pot experiments, collect data, perform statistical analyses and interpret the results.
- Field research in crop science and agronomy.
- Pedagogical research pertaining to effective agronomy.
- Document the long term sustainable crop production.
- Quantify the procedures for achieving satisfactory yield targets without degrading soil and environment.
- Develop and improve technology of soil, water and crop spatiality at the crop grower and research level.
- Evaluate the need and value in developing professional agronomy and crop scientists.
- Develop improved teaching procedures suitable for classroom and laboratory education.

### **Degree plan**

Presently three programs are being offered by the department.

## **B. Sc. (Hons) Agronomy**

B. Sc. (Hons) degree program consists of 4 academic years (8 semesters). As a whole, a student has to study 136 total credit hours. For each course 10% marks are reserved for the assignments, 30% marks for mid-term examination while 60% marks for final examinations as per university rules. Degrees are awarded after completing the required number of credit hours (courses) followed by comprehensive examination and internship report submission and presentation.

## **M. Sc. (Hons) Agronomy**

The M. Sc. (Hons) degree program consists of 2 academic years (4 semesters). A student has to study 34 credit hours with 10 credit hours (research work and thesis writing) consisting of total 44 credit hours. Degrees are awarded after completing course work, one year research work, thesis writing and comprehensive examination. For each course 10% marks are reserved for the assignments, 30% marks are for mid-term examination while 60% marks for final examination as per university rules.

## **Ph.D. Agronomy**

The Ph.D. program has been designed for quality research completely coherent with HEC standards. The Ph.D. study program consists of three academic years (6 semesters). As per HEC rule, a student has to complete 40 credit hours for course work, two-year research work, thesis writing and after the recommendation/approval of thesis from foreign examiners of technologically developed countries.

## **Criterion Wise Analysis**

### **Criteria I: Strength and Quality of Faculty**

The department has 10 faculty positions (8 regular, 2 part time members) with different specializations in Agronomy. Three faculty members hold Ph.D. degree while others have M.Phil degree. The faculty is specialized in diverse disciplines of Agronomy with covering almost every aspect of the crop production and management technology.

The teaching load in the department has been distributed according to the faculty's position i.e. 15 credit hours per week for Professor, 18 for Associate Professor, 22 for Assistant Professor and 22 for Lecturer. Similarly, graduate students are equally distributed. Eight Ph.D. students per supervisor and 10 M.Sc./M.Phil. students for each faculty member for research of their degree programs giving consideration to the aptitude as well as the mutual understanding of the faculty and student. Besides teaching and research, the faculty is also shouldering various administrative responsibilities in various capacities i.e. departmental administration, students counseling, hostel warden ship, farm management etc.

The faculty, properly and adequately use assignments, mid-term and final exams for students evaluation during the active semester. Similarly, course review report is prepared and submitted regularly by each faculty member. The program monitoring system exists and being exercised by the department. A Quality Enhancement Cell (QEC) has been established in the university to facilitate course review and monitoring system, but practically the task is assigned to the faculty. Systematic teacher's plan exists as well as some orientation in the department for newly inducted faculty. The salaries and other fringe benefits are attractive. Each faculty member is very much satisfied by his job with adequate opportunities for academic progress. Majority of faculty members believe that the working environment in the department is very good. The faculty stability index is very good. Three faculty members have won best teachers awards. Faculty members participate in various seminars and conferences, however the expenses are born y the faculty members. Five books on different aspects of Agriculture and one chapter in text book has been published. Moreover seven proceedings of Conferences were compiled by the faculty.

Since the birth of the department 9300 students got B.Sc.(Hons.),4100 M. Sc. (Hons) degree and 16 completed Ph.D degree.

The job satisfaction was reasonable and opportunities for academic progress are abundant subject to the devotion. The existing faculty members are satisfied with the degree programs. The teaching-learning techniques and implementation seem professional.

## **Criteria II: Curriculum Design and Development**

All the courses of the degree programs are developed by HEC constituted committee and adopted by the department. The objectives of curriculum are well defined, structured and rich in contents, compatible with emerging needs, information technology integrated into the curriculum. The curriculum is revised regularly after 2-3 years in the light of national, HEC and international requirement and demand of the market. The department is lacking with latest text books and reference books. The faculty and students rely on the main library which is fully equipped with the textbook, references and journals. The length of semester (19 weeks) is within the desired requirement of HEC. Completion of theory and practical courses are well in time as observed from faculty course files. The admission policy is well documented and notified. The course registration and withdrawal policy is well defined. All faculty members maintained course files and some of these were randomly checked by the AIC. Meetings of Board of Studies and Board of Faculty are being held regularly. The mechanism of feedback from the stakeholders is being broadened by participation of members from research and other relative bodies. Students are satisfied with the teacher's performance.

## **Criteria III: Infrastructure and Learning Resources**

The available space for faculty offices is appropriate with availability of internet. The department has 2 labs and each of these is being used for teaching purpose as well. Both labs are

almost fully operational equipments and are being utilized properly and these are in good quality. Qualified and moderately experienced labs staff is present.

It has been noticed that farm lab has not been adequately equipped. No specific budget allocation is made for labs. Departmental research farm has sufficient land (10 acres) for conducting research. It was observed that farm is not well mechanized. Being the first agricultural university in Sindh, research farm may be upgraded to the level of Model Research Farm by providing all the latest farm implements/machinery and irrigation systems for practicals/demonstrations. Farm urgently needs one tube well for occasional irrigations and one mini tractor for operations in the small plots.

There is no subscription for foreign journals. Therefore in future allocation for purchase of books and subscription for foreign journals for the departmental library is needed. Main library has more than 500 subject books whereas departmental library has 300 text books. Book bank has 6000 books, however, bank lacks recent editions. Computers and internet facilities are available for faculty and for Ph.D. scholars, but faculty student computer ratio is poor. Experiments are being conducted regularly as per requirement of the curriculum. Practical note books are properly maintained.

#### **Criteria IV: Students Support and Progression**

The highest number of students seeks admission in Agronomy major in B. Sc. (Hons) degree program. On an average 150 students per session (5<sup>th</sup> semester) choose agronomy as major subject. Majority of the passing out B.Sc. (Hons.) students opt for M. Sc. (Hons) program. The intake for Ph. D is encouraging. Average drop out in B.Sc. and M. Sc. is less than 15%. The average CGPA in B.Sc. and M.Sc. is 3.00/4.00 while in Ph.D. it is 3.30/4.00. Merit and need based scholarships are available, however less in number. In addition interest free loans are also available for the students. Keeping in view the strength scholarship availability to the students is in sufficient. The number of hostels for accommodation is adequate with a capacity of 3,000 students. An auditorium is present in the university to meet the university needs for various events. Indoor and outdoor sport facilities are available. University owns 25 buses for student transport with total seating capacity of 1250. University has an adequate medical facility for faculty and students. Guidance is available for students beyond teaching hours. The internship program is the permanent feature of B.Sc. (Hons) degree at final semester. The students are encouraged to conduct their internship assignment at progressive farmers' fields or provincial/national research centers. According to the students/faculty view point the credit hours assigned to internship program are more than enough. The student's interaction with the teachers is encouraging. The student's attitude towards studies, their attendance and perception about degree program was positive. Students have opportunities to participate in seminars/conferences and welfare parties.

### **Criteria V: Research and Consultancy Activities**

The faculty is actively conducting research on various aspects of agriculture. Department is unable to get any research grant from HEC, PSF. University has sponsored various projects to faculty from its research promotion funds. University provides an operational budget amounting only Rs. 0.253million. The findings and outputs of these research projects as well as post graduate students research is regularly published in HEC approved/ impact factor journals. The research findings are published in the form of books, booklets and brochures.

The department has quite effective academic collaboration with other agricultural research organizations (NIA, Agriculture Engineering Workshop, Drainage and Reclamations Center Tandojam and Agricultural Extension Department Sindh). However, the department has no budget for participation and organizing conferences and seminars. Advisory services are rendered to the organizations (Seed and Pesticide companies, Agricultural Extension and Research Departments of the Province).

### **Criteria VI: Governance and leadership**

The Vice Chancellor is the Chief Executive of the university and is assisted by the Deans of the faculties, Directors of the Institutes, Chairmen of the Departments and Principal Officers. The administrative authorities/governance of the university and department is clearly defined. University catalogue is published every year. The implementations of statutory rules/regulations are intact. All the statutory bodies like Senate, Syndicate, Academic Council, Department Board of Studies, Faculty Board of Studies, Board of Advanced Studies and Research etc. are properly functioning. The academic setup rests with the departments while financial matters are controlled by the Treasurer office. The department does not have its own fund generating resources. The financial resources of the department mainly depend on the university. Departmental placement bureau is not present while Alumni's Association has been established. The departmental calendar for various activities is being observed. Department regularly publishes a newsletter, however, magazine is published at University level.

### **Criteria VII: Adoption of Best Practices**

A quality enhancement cell (QEC) has been established by the university authorities to ensure the quality of degree programs. The curriculum review and development is practiced under the umbrella of HEC as per need of the region. Curriculum is designed keeping in view the demand of public and private sector and is approved through the concerned bodies (Departmental Board of Studies, Faculty Board of Studies, Academic Council).

Distribution of all taught courses is well balanced in terms of theory and practical classes. The allotted credit hours to theory and practical are satisfactory and well maintained. The classes are being taught regularly and course contents are completed within the stipulated period of time.



# SWOT Analysis

## 1. Major strengths

- The highest numbers of students seek admission at under-graduate and post-graduate level in the Department of Agronomy, being the most preferred subject.
- The classes are being taught regularly and course contents are completed within the stipulated period of time.
- Computer and internet facilities are available for the faculty in the department.
- The faculty is highly skilled and has expertise in their respective areas of teaching and research.
- Well established research groups working on different research projects.
- The department has established library and one well maintained lab (seed lab). Young teachers are enthusiastic about their career development.

## 2. Major weakness

- Department has only three Ph.D. faculty indicating acute shortage of qualified academic staff. Teaching load is almost double than recommended.
- None of the faculty member is HEC approved supervisor. Number of Ph.D/M.Sc. scholars supervised is higher than the maximum requirement.
- QEC is not fully performing its job. It was observed that though QEC exists, however, compilation of data generated through questioners is assigned to the faculty.
- As per need of the time department needs advance equipments for conducting advanced research. Shortage of laboratory and field equipments, tools and machinery. Department is facing difficulties in practical training of students.
- Non-availability of audio-visual aids for class room teaching and seminars.
- Shortage of communication facilities and insufficient computer facility for students.
- Lab maintenance budget has not been specified. Funds for the purchase of books/subscription for journals are just nominal.
- System of fund allocation is faulty and there is biasness for allocation of funds.

## 3. Major opportunities

- Abundant job opportunities for agronomy graduates in different government and non-government organizations.
- Technical guidance for students is available from different research groups for their undergraduate and post-graduate studies.
- An opportunity to win projects from national and international donors.

#### **4. Major threats**

- Admission of students in B.Sc. (Hons) based on F.Sc. (Pre-Medical) having urban background.
- Reduction of credit hours of courses of agronomy B.Sc. (Hons) Agri.
- Trend of shifting emphasis from teaching to publications is developing.

#### **General Recommendations**

- New faculty with Ph.D. degree may be appointed to obtain the required teacher student ratio.
- Faculty may try to get the status of HEC approved supervisor and also try to win research projects.
- A separate computer lab may be established for the students with the latest computer and internet facilities in the department.
- Budget allocation for development, research, library and labs may be specified and increased at least to the level of one million.
- Research farm status may be raised to the level of Model Research Farm.
- Funding to conduct/attend International conferences/seminars may be ensured.
- The latest editions of text and recommended books may be purchased. International journals may be subscribed and communication facilities be upgraded.
- The credit hours of the general courses of Agronomy for B.Sc. (Hons) Agri. may not be reduced.
- Admission in agriculture may be restricted only to the candidates having rural background.

#### **Final Recommendation**

The Department has research farm, laboratories, equipment and qualified teaching faculty (However lesser in number) to cater the needs of present level of enrolment of B.Sc. (Hons.), M.Sc. (Hons.) and Ph.D.

On the basis of the inspection/evaluation, the team recommends accreditation/rating of the degree programs of Department of Agronomy, Sindh Agriculture University, Tandojam, Pakistan in the Middle band (70%) of “X” category of National Agriculture Education Accreditation Council/HEC.

## Signatures of AIC Members

### Name and Designation

### Signatures

**Prof. Dr. Muhammad Bismillah Khan**  
Principal  
University College of Agriculture,  
BZ University, Multan.

(Convener)

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**Dr. Rashid Ahmad Shad**  
Chief Scientific Officer (Rtd), NARC

(Member)

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### Comments and Signatures of Chairman

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

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**Chairman**

Department of Agronomy  
Sindh Agriculture University,  
Tandojam.