

**MNS University  
of Agriculture,  
Multan**



# **ANNUAL** REPORT

**2022-2023**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





# ANNUAL REPORT

## 2022-23

MNS University of Agriculture, Multan

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# Annual Report Committee

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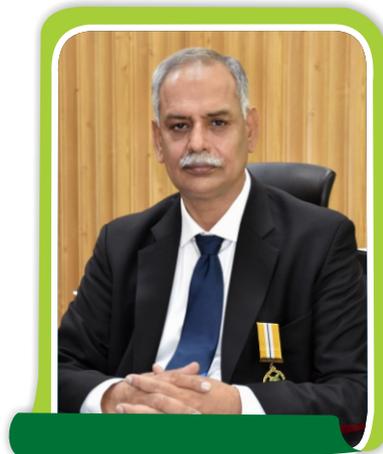




## VICE CHANCELLOR'S MESSAGE

Dear Readers,

I am pleased to present the Annual Report for the year 2022-23 that unravels success stories pertaining every aspect of Muhammad Nawaz Shareef University of Agriculture, Multan. The realignment of the institution's vision and mission has significantly impacted the research, innovation as well as the delivery of quality education. Guided by a mindful vision, mission and a set of core values, various initiatives have been undertaken, and new ideas implemented for the betterment of the Institution. Our substantial and sincere efforts have set the benchmark of academic excellence, and problem-oriented/demand driven research with principle focus on community service and knowledge-based economy. The transition towards interdisciplinary degree programs, research-oriented interactive learning, and technological integration has opened several new horizons.



Our academic canvas continues to expand steadily, as we introduce new degree programs to address the evolving demands of our stakeholders. Students are encouraged to explore alternative perspectives and acquire a broad spectrum of knowledge through our emphasis on interdisciplinary learning, internship, and research. We have nurtured an innovative research culture where scientific dreams are being transformed into reality. Our research ethics are purely based on integrity, accountability, and equal opportunities for all.

During the year under review, teaching and research facilities have been upgraded through infrastructure development, procurement of scientific equipment, and improvement of learning resources. New faculties have been established, accompanied by a substantial number of recruitments across various teaching departments, strengthening the foundation of highly-qualified faculty of MNSUAM. Faculty members and students have also actively participated in numerous National and International workshops, seminars, symposiums, and conferences to develop networks and exchange knowledge in different scientific fields. We are committed to fostering an environment where every person feels appreciated, respected, and motivated to reach their best potential. We firmly believe that promoting creativity, innovation, and knowledge requires a diverse and inclusive learning environment. Training workshops for the faculty help them to learn from the experienced resource persons. Young and vigorous faculty members learn from these workshops, about workplace harmony and work dedication, which has always been at the top of my priority list.

Physical infrastructure has also been improved with on-going construction work of Girls Hostel, National Crop Genomics and Speed Breeding Centre, and Central Mosque. Quality Enhancement Cell, Office of Research, Innovation and Commercialization, Business Incubation and Agricultural Entrepreneurship Center, and Department of Continuing Education and Outreach are functional and striving hard to achieve the deliberated goals. We recognize the value of entrepreneurship in today's competitive market. Our Business Incubation Center facilitates translation of research into commercialization through strong industry-academia linkages and entrepreneurship.



The industrial partnership and the bond we share with the local and international community have paved new avenues in every sector and strata of the farming community and industry. Memorandums of Understanding have been signed with various national and international organizations for cooperation in academics and research. Community-based services have been launched to fulfill one of the prime objectives and moral obligations of the University. Apart from these offices, the plethora of opportunities we provide from the platform of Graduate Research Center, Directorate of Students Affairs, Senior Tutor Office, Career Development Center like co-curricular activities, character and skill-building programs contribute to the well-being of our students.

All our achievements whether in academia, research, construction, infrastructure development, and administration have virtually no limits; and we are poised to further strides in the near future. The credit for achieving these targeted milestones goes to my brilliant team, whose sincere devotion has been instrumental in our achievements. By the grace of Almighty, we were able to cultivate an academic ecosystem characterized by operational efficiency, administrative effectiveness, discipline, and harmony on campus.

As an agriculturist, I have profound concerns for the energy crisis and adverse effects of deforestation on the environment. Standing firm to our tradition of a Green Pakistan, MNSUAM's "Plant for Pakistan" campaign was carried out vigorously on the Multan Campus, planting about 1500 plants in Spring. The campaign was extended beyond the campus borders to the outskirts of Multan, where a Model Plantation Block was established, covering 30 acres and containing 30,000 trees in Jalalpur Pir Wala Campus. In pursuit of environmental sustainability, our campus is harnessing the benefits of solar energy to meet our electricity requirements.

Interfaith harmony holds a special place in my heart and to inculcate tolerance and love towards humanity in the students, my staff and faculty members leave no stone unturned to arrange seminars on peace and to celebrate events like Christmas. I ensure that our students are active in co-curricular activities as much as their involvement in their academic pursuits. To this end, we have established different fully-functional societies and clubs which guarantee students' participation. Events like Sports Gala and HEC-Intervarsity Football Tournament were successfully arranged in the University this year and I was overwhelmed to see that a number of institutions from across the country had participated in the event.

At the end, as a unified team, we commit to relentlessly strive for excellence in all aspects of education, integration of modern techniques, embracing relevant innovations, fostering an exceptional campus environment, and extending services to student and the community. Insha Allah, MNSUAM will continue to play its prominent role in advancing agriculture and socio-economic development in this region by producing skilled agricultural professionals, scientists and entrepreneurs.

**Prof. Dr. Asif Ali (T.I)**  
Vice Chancellor



## EXECUTIVE SUMMARY

Agriculture sector in Pakistan is the major contributor to the GDP and exports, thereby boosting the country's economy. MNS-University of Agriculture is the institute which connects the farmers with researchers, students with field men, academicians to industries and community to the greater cause; community engagement and active citizenship. From developing the state of the art campus, to fighting with the perks of pandemic, the challenges never came slow but our resilience as a team and hard work had paid it all. It is the efforts of our institute that made it possible for this University to secure the top rank in the country as the most sustainable university of Pakistan. The annual report summarizes the journey of this year.

The first chapter covers the Academic Activities describing the degree programs offered and some details of faculties and departments beside key achievements which include the initiation of new degree programs such as BS Biotechnology, BS Dairy Sciences, M.Sc. (Hons.) Weed Science, M.Sc. (Hons.) Agricultural Extension, Ph.D Computer Science, Ph.D. Zoology. Fruit and Forest Tree Breeding Centre was approved. Dual Diploma Program between Department of Horticulture and Hebei Professional College of Political Science and Law is also underway. Establishment of the Institute of Agricultural Economics (IAE) and the Institute of Agribusiness and Entrepreneurship Development (IAED) are other significant achievements. Foreign academic linkages have been strengthened this year and University is in connection to renowned foreign universities like University of Adelaide, Australia, Eberswalde University of Sustainable Development, Germany, Universiti Putra, Malaysia and many others.

Research and Developmental activities including research projects, publications, workshops, seminars and conferences are discussed in the second chapter. This year faculty has submitted 268 research projects to various international and national funding agencies, including PSF-NSFC, ANSO, IGNITE, BLE-Germany, PARB, FAO, DAP, PIECES, UNESCO, USAID, PERIDOT, HSF, IFS, TDF, SANDEE, UN-Habitat, PAK-UK, VTF, PUAN ASG, HEC-RTTG, RASTA 5.0, The Mohammed Bin Zayed Species Conservation Fund, ISID-BMGF, PSF-CRF, EFS-UAF, SRDB, PIF, RSTMH, ICGBE, STEG, Bill & Melinda Gates Foundation, PARC-ALP, ISESCO, FFAR and industry/private sector organizations. Twenty competitive research grants worth PKR 260.134 million have been won by the faculty from various national/international funding agencies, industry/private sector and NAVTTC. The research projects worth PKR 177.383 million from international funding agencies, PKR 48.298 million from national funding agencies, PKR 25.023 million from the industry/private sector and PKR 9.43 from NAVTTC were awarded to faculty for the proliferation of scientific culture and innovative research. The execution of 58 ongoing research projects worth PKR 1040.70 million is in progress. The research activities of 10 international projects (PKR 265.76 million), 34 national projects (PKR 725.37 million) and 15 industry/private sector projects (PKR 49.57 million) are being undertaken by the faculty. Moreover, ORIC has also facilitated the faculty for the successful completion of 18 research projects worth PKR 51.118 million. The University organized 10 national and international conferences, 12 competitions, and 47 national and international webinars/seminars. The capacity building and mentoring activities include 29 faculty training/workshops and 27 training of students/researchers under the Central Lab System with 33 outreach and recreational activities.



It also covers information related to patent filing, research linkages, ORIC performance farmer advisory and industry consultancy activities, working with communities through social action plans on multiple socio-economic opportunities.

Chapter three focuses on Quality Assurance and reflects tireless efforts towards ensuring quality of education and research at the University. The Quality Enhancement Cell (QEC) of the Varsity is mandated to ensure quality teaching and research through keen assessment for better outcomes. This year, QEC has assisted the faculty to use different platforms (Zoom, LMS, Google meet) and interactive sessions with the students through various platforms. This Chapter also highlights the details about the initiation of new postgraduate degree programs, annual technical review of TTS faculty, plagiarism checking, and capacity building of faculty and students as well as impact of quality assurance at the campus. Teacher evaluation information had been collected from both undergraduate and postgraduate students. Whether it is capacity building, accreditation of undergraduate programs or preparation of curriculum for Outcome Based Education or Hybrid/Blended Learning, the QEC had always been an active and adept part of University administration.

The fourth chapter encompasses details of faculty development trainings/workshops to nurture their teaching, research, and leadership skills. During 2022-23, 70 faculty members were benefited from faculty/staff workshops, 14 pre-service and in-service faculty members were endowed with the facility of faculty development programs (both foreign and local MS/PhD) this year.

Chapter five elaborates quick facts about discipline-wise and gender-wise student enrollment etc. Basic enrollment during 2022-23 was 2310 with 1613 male and 697 female students, respectively. The maximum enrollment of 281 students was observed in B.Sc. (Hons.) Agriculture program. Furthermore, 376 students were enrolled in M.Sc. programs, and 28 scholars started pursuing doctorate degrees. The total number of faculty reached to 148, out of which 103 possess doctorate degrees.

Chapter six (Universities Building Economies) contains information about liaisons developed by the University with local and foreign institutions/organizations like Food and Agricultural Organization of the United Nations, DICE-AFS, Syngenta Pakistan (Pvt.) Ltd., Jinhua Seed Industry, China, Evyol Group of Companies (Pvt.) Ltd., Mahmood Group, Rise AG, Nuchem, Pvt. Ltd., In this Chapter, the collaborative activities and events like Mango Festivals, Establishment of South Punjab Agricultural Forum, Establishment of Modern Mango Small Tree System, Stakeholders Dialogue on Branding and Digital Marketing of Mango, USAID South Punjab Private Sector Engagement Program, DICE Agri and Food Science Event 2022 are discussed in detail.

Strengthening of physical infrastructure plays a vital role in the development of any educational institute. On the other hand, strengthening of technological Infrastructure is also essential as it brings new opportunities and advanced means for improving access and quality of higher education.



Chapter seven provides the information regarding the developmental projects initiated by the University at main campus and Jalalpur Pirwala Experimental Farm and success stories in this regard. University has come a long way from its humble suburban beginning to its current state and its planned expansion to a new state of the art campus and MNS University of Agriculture, Multan Phase-II has also been initiated. Construction of National Crop Genomics and Speed Breeding Center, Masjid Fatima-Tu-Zahra, Female Hostel, and Sports Gymnasium is underway. Next chapter provides details of ICT infrastructure and automation services including computer labs, multimedia classrooms, digital library, PERN services, video conferencing facilities, wireless LAN, biometric attendance system, and various online systems of the varsity, New Video Conference rooms are fully equipped and functional.

Chapter nine is about “University Building Communities” that reveals information about the farming and scientific community service-oriented activities, which the Varsity considers as its obligation. University has an active policy of public service and vigorously engages the community in all its academic and non-academic activities. Some major events/activities during this year include Awareness Seminar on Lumpy Skin Disease, International Seminar on Biopesticides, Inauguration of Wellness Centre at MNSUAM, International Conference on Date-Palm and Pomegranate, Third International Conference on Smart Plant Protection, Capacity Building Workshop on Clean Cotton, Flood Relief Drive, Anti-Dengue Activities, Workshop on Stress Management at the World Peace Day, Plantation Campaigns, various World days, Seminar on the Effects of Fake News and Misinformation on Youth, Farmers Training Workshop to Maximize Wheat Productivity, Workshop on entrepreneurial potential & entrepreneurial mind set, Food Safety Awareness Session for Food Handlers in Malik Food Industries, Farmer's Field Day on Precision Agricultural Technologies, and Farmers Convention on Hybrid Wheat etc.

Besides education, Sports and co-curricular activities are helpful in developing strong personalities and instilling various traits in students. The sports events organized / participated by the University during the year 2022-23 are elaborated in Chapter ten. Whereas, Chapter eleven 'Universities Building Leadership' mentions achievements and success stories which have made the MNSUAM family proud. This chapter also features various activities carried out by different Student Societies and Clubs, established to inculcate a sense of leadership in students, under the umbrella of Directorate of Students' Affairs. The details of activities carried out by Career Development Center and Placement Bureau for providing guidance/counseling to students are also part of this Chapter. Chapter twelve provides financial information about development and non-development budget and expenses made by the University, while Chapter thirteen gives a glimpse of University's topnotch governance and meetings of various statutory bodies held during 2022-23.

Chapter fourteen tells about Office of Resource Generation and Development, its initiatives and future plans. Information regarding scholarship programs is also part of this Chapter.



During 2022-23, an amount of 39.51 million rupees was distributed by Financial Aid Office of MNSUAM among 889 students of undergraduate and postgraduate programs for financial support.

Chapter fifteen entitled 'External Linkages' specifies the MoUs/agreements signed between MNSUAM and national/international institutions/organizations for promoting R&D activities through external collaboration. During the 2022-23, the University signed 10 MoUs with international institutions, while 17 agreements were successfully executed with private and public-sector partners from Pakistan.

Health education builds students' knowledge, skills and positive attitudes about health. Health education teaches about physical, mental, emotional and social health and the final chapter, chapter sixteen has elaborated University's efforts to educate students and ensure health provisions to staff and the students. Therefore, free ambulance service, routine check-ups for the students and faculty, first aid to the students and employees of the University are the available medical facilities in the campus. Wellness Clinic has been Initiated, Public Health Society has been established and Surveillance of mosquitoes especially Dengue vectors carried out from the whole of the University, every week throughout the year.





## MULTAN: THE CITY OF SAINTS

Welcome to the city of saints; rich of culture, colors, history, and an epitome of modernization. Multan has a population around 2,106,000. It is considered to be one of the oldest cities of Pakistan and its history fades away in the mists of myth and mythology. Multan is the birthplace of renowned Sufis like Baba Farid and it is the resting place for many like Sheikh Bahauddin Zikria, Bibi Pak Daman, Shah Shams Tabrez and Shah Rukn-e-Alam. It has a significant contribution to rich Sufi culture in the subcontinent. The aforementioned Sufis preached the teachings of Islam and are considered to be the flag bearers of peace and harmony among the region. The Sufi culture of Multan is a fresh blow of air to the otherwise hot weather of the region. The shrines and mausoleums that are considered to be the identity of the city are adorned with the touch of blue and white Mongolian art, the famous blue pottery which is embedded in the culture of Multan. Famous and historically significant mosques in the city like Jamia Mosque, the first mosque to be built here by Muhammad Bin Qasim when he conquered this city, Sawi Mosque, Mosque Baqarabadi, and Mosque Ali Muhammad Khan stand in gratitude to the Creator. Taking in account the history of this city, one cannot forget to mention the famous gates of Multan known as Lohari Gate, Pak Gate, Haram Gate, Daulat Gate, Bohar Gate and Delhi Gate. Old bazars like Hussain Agahi, narrow streets that blanket these gates add to the richness of cultural heritage of this city. From Qilla Qasim fort to the Ghanta Ghar chowk, or Clock tower, there is a patch that covers the history of this city from old sufi saints to the influx of British Raj in the subcontinent.

Say two words, “Multan” and “Winters” in front of a food-lover, and the next thing you will hear will definitely be Sohan Halwa. Sohan Halwa is to winter what mangoes are to summer, except the former is not limited just to the winters. This famous sweet which has become the defining symbol of Multan is available and carried through all over the country any time of the year. When talking about the treat for the people of Multan in summers, it is the king of the fruits, the Mango. Mango orchards on the eastern side of the city blossom throughout the summer season. Out of 150 varieties of mangoes grown in Pakistan, their major production is carried out in Multan. Anwar Ratol, Langra, Dussehri, and the infamous Chaunsa, all are widely cultivated in Multan. The ripening season of Chaunsa lasts from July till late August.

Multan has the second oldest medical institute built by Sardar Abdul Rab Nishtar, known as Nishtar Hospital, which was extended to Nishtar Medical College and later upgraded as Nishtar Medical University. It has various departments and considered to be Punjab's largest hospital in terms of area. Talking about old institutes in Multan, let's not forget Bahauddin Zakariya University named after the Sufi saint Hazrat Bahauddin Zakariya. Established in 1975, BZU is one of the largest universities in Punjab. MNS University of Agriculture is another emerging institute in Multan, which is environmentally the most sustainable university in the country and ranked 1st among Pakistan. It has covered a long and toilsome journey to move from its humble suburban vicinity to the present state of the art campus. Agriculture-based research and highly qualified staff of this university is a blessing for the farmers and this institute plays a vital role in introducing modern techniques to the traditional practices in the field of agriculture. Another gigantic structure that adds to the beauty of this city is the State Bank of Pakistan's building located in the heart of the city. Neighboring some other significant structures like Multan Arts Council, Multan Chamber of Commerce, and Sports Complex, the building was completed in 1998 and is an epitome of modernity and adroit architect.



Talking about all other metropolitans of Pakistan, Multan is considered to be the most peaceful city, with a well-developed infrastructure. Big investors are now making investments in this city and it is developing rapidly as different housing societies, malls, industries, and restaurant chains are coming to Multan, taking it to the next level of development and modernization. Overall, if you want to connect to the history and enjoy the aspects of the modern world, Multan is definitely one of the best cities to visit in Pakistan.





## Muhammad Nawaz Shareef University of Agriculture

The MNS University of Agriculture, Multan (MNSUAM) is an HEC recognized higher education institution established in 2012. Within a short span of time, the University has made rapid progress in terms of expanding its academic programs, students' enrolment, physical infrastructure, campus network, and hiring highly qualified and experienced academic and administrative staff. As a matter of fact, MNSUAM is considered as one of the fastest growing academic institutions of Pakistan, which is evident in the reports and comments made by officials from HEC, NAEAC, Agriculture Department, Representatives of the Government, and local and foreign experts, who visit the varsity from time to time.

The main campus of the University is located at Old Shujabad Road, Multan, neighboring several different wings and formations of Punjab Agriculture Department positioned within a radius of 2-3 kilometers. These include Mango Research Institute, Central Cotton Research Institute, Cotton Research Station, Agricultural Mechanization Research Institute, Soil and Water Testing Laboratory, Directorate of Water Management, Agricultural Extension Wing, Pest Warning and Quality Control of Pesticides, Fisheries Department, Federal Seed Certification and Registration Department. All these offices and the University have combined into an "Agriculture Complex" with a common agenda of facilitating the farming community of the region. The University's main campus is spread on an area of 180 acres at a prime location in Multan and consists of purposefully built buildings including Academic Block, Administration Block, Girls and Boys hostels, Library, Faculty and Staff residences etc. For carrying out agricultural research activities, the University has established separate graduates block, centralized labs system, agricultural farms at the main campus as well as at Jalalpur Pirwala comprising 500 acres.

Over the years, the University has introduced several new degree programs to provide multidisciplinary education to the students with innovative approaches. The University has strengthened its teaching resources by hiring new qualified faculty through regular, TTS and IPFP appointments following a transparent and rigorous process of recruitment. The administrative offices have also been manned with qualified and experienced staff members to provide necessary support to the University for carrying out its functions. To strengthen its research and scientific pursuits the construction of a high-tech Genomic Centre is underway which will be completed by December, 2023. In addition to this the buildings of a state-of-the-art Sports Complex and a second Girls' Hostel with the housing capacity of 250 students are currently under construction. The Office of Research, Innovation and Commercialization (ORIC) is working for capacity building of the faculty for enhancing research activities. The Quality Enhancement Cell (QEC) is mandated to ensure quality teaching and research through continuous assessment for better outcomes. The Directorate of Students Affairs provides all necessary support to students with respect to their admission, selection of subjects, registration, financial support etc., whereas the Career Development Center helps them find suitable jobs after completion of their degrees. It is worth mentioning here that the University manages more than 60 percent of its final semester internships as paid internships which provide an excellent learning environment to the young graduating students. Furthermore, the overwhelming employability of MNSUAM's graduates in the private sector shows the competitive strength of the university graduates.



The University regularly conducts national and international events including conferences, seminars, workshops, and festivals. Some activities have now become the trademark of this University such as Dice-AFS, Sino-Pak International Cotton Conference, Climate Smart Agriculture Conference, Smart Plant Protection Conference, International Conference on Bee Pollination and Conservation, Spring Festival, Kisan Mela, Fish Mela, Annual Cotton Seminar and Mango Festival. The University holds the honor of securing both the National 1<sup>st</sup> and Regional 1<sup>st</sup> titles in the national Microsoft Imagine Cup 2023. The University achieved the magnanimous milestone of being ranked 1<sup>st</sup> in Agriculture category, 3<sup>rd</sup> in overall Pakistan and 101-200 worldwide by WURI for the year 2022. With a vision to highlight a positive image of our country onto the canvas of the world and lure international markets for bilateral trade, investment and business, the University is actively playing its part to explore new horizons for economic betterment of Pakistan.





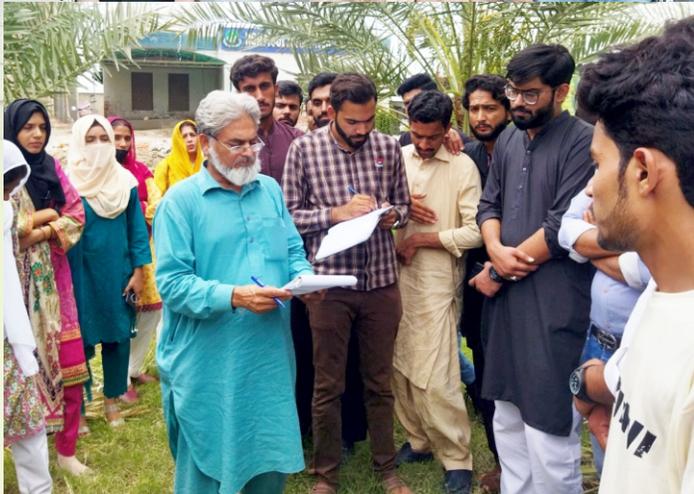
# MUHAMMAD NAWAZ SHAREEF UNIVERSITY OF AGRICULTURE MULTAN



## ACADEMIC ACTIVITIES









## CHAPTER-1

## ACADEMIC ACTIVITIES

In order to ensure production of trained human resources and to meet a wide array of needs of scientists, experts and extension workers in the rapidly growing agriculture sector, allied trades and industries, the University offers integrated teaching and research programs in agriculture and allied sciences. The University has come a long way from its humble beginning to its current state as an expanded campus with fully operational teaching Labs, research farms, and a well-equipped Graduate Labs Block. During the short span of its existence, the University has escalated its existing academic programs while offering several new degree programs to provide multidisciplinary education to the students with innovative approaches. We relentlessly strive for excellence in all aspects of education, use of modern techniques and embracing relevant innovations, exceptional campus environment, student and community services. University is progressing well in the blended education system. We have put our students' education and experience at the heart of our decision-making. To meet the modern pedagogical standards, we are progressing well in the blended learning system and citizenship education. The faculty, students, and administration are committed to fulfilling their responsibilities to achieve academic aspirations.

**1.1. Faculties & Departments**

- Faculty of Agriculture and Environmental Sciences
  - Department of Agronomy
  - Department of Horticulture
  - Department of Soil and Environmental Sciences
  - Institute of Plant Breeding and Biotechnology
    - ✓ Biotechnology
    - ✓ Plant Breeding and Genetics
    - ✓ Seed Science and Technology
  - Institute of Plant Protection
    - ✓ Entomology
    - ✓ Plant Pathology
    - ✓ Post-harvest
    - ✓ Weed Science
- Faculty of Agricultural and Bio-Systems Engineering and Technology
  - Department of Agricultural Engineering
- Faculty of Social Sciences and Humanities
  - Department of Agribusiness and Applied Economics
  - Department of Computer Science
  - Others Supporting Departments
    - ✓ Department of Agricultural Extension
    - ✓ Department of English
    - ✓ Department of Islamic Studies
    - ✓ Department of Outreach and Continuing Education



## CHAPTER-1

### ACADEMIC ACTIVITIES

- ✓ Department of Statistics
- Institute of Agribusiness and Entrepreneurship
- Center for Agricultural Sustainability in South Punjab
- Faculty of Sciences
- Faculty of Food and Home Sciences
  - Department of Food Science and Technology
  - Department of Human Nutrition and Dietetics
  - Department of Home Sciences
- Faculty of Veterinary and Animal Sciences
  - Department of Anatomy
  - Department of Animal Feed and Production
  - Department of Biochemistry and Biotechnology
  - Department of Clinical Sciences
  - Department of Fisheries and Aquaculture
  - Department of Pathobiology
  - Department of Pharmacology and Physiology
  - Department of Poultry Sciences

### 1.2. Degree Programs Offered

#### 1.2.1. Undergraduate

The undergraduate programs offered by the University with duration and requisite qualification are given below:

Name of Degree	Credit hours and duration	Academic qualification	Minimum requirement
B.Sc. (Hons.) Agriculture (with specialization in Agronomy, Food Science and Technology, Horticulture, Soil Science, Plant Breeding and Genetics, Seed Science and Technology, Biotechnology, Entomology, Plant Pathology, Agricultural and Resource	141 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical/Pre-Engineering)/ Pre-Agriculture	Minimum 50% of total marks



CHAPTER-1

ACADEMIC ACTIVITIES

Economics, Farm Management)		
B.Sc. (Hons.) Environmental Science	137 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical/Pre-Engineering) or equivalent qualification
BBA Agribusiness	132 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical/Pre-Engineering)
B.Sc. (Hons.) Agricultural and Resource Economics	138 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical/Pre-Engineering) or ICS with Economics or I.COM
BS Computer Science/BS Data Science	133 credit hours for duration of 8 semesters/130 credit hours for duration of 8 semesters	F.Sc. (Pre -Engineering)/ICS/A-level students (with Mathematics)/ F.Sc. (Pre - Medical)/ A-level students (with Biology). 1. Minimum 50% marks in intermediate 2. Reserve two (02) seats for DAE (specialized in electrical, electronics and Telecommunication) students.
		<b>Note:</b> Students of F.Sc. (Pre -Medical)/ A-level students (with Biology) must have to take deficiency courses of Mathematics of 6 credit hours within one year of their regular studies.
BS Information Technology	135 credit hours for duration of 8 semesters	1. F.Sc. (Pre -Engineering)/ICS/A-level students (with Mathematics)/F.Sc. (Pre - Medical)/A-level students (with Biology). 2. Minimum 50% marks in intermediate. 3. Reserve two (02) seats for DAE (specialized in electrical, electronics and Telecommunication) students.
		<b>Note:</b> Students of F.Sc. (Pre -Medical)/A-level students (with Biology) must have to take deficiency courses of Mathematics of 6 credit hours within one year of their regular studies.
B.Sc. Agro-Industrial Engineering Technology	138 credit hours for duration of 8 semesters	Intermediate Science F.Sc. (Pre - Engineering/Pre- Agriculture/Three years Diploma of Associate Engineering (DAE), A-Level

Minimum 50% of total marks



**CHAPTER-1**

**ACADEMIC ACTIVITIES**

BS Poultry Science	135 credit hours for duration of 8 semesters	Intermediate science (Pre-medical) Candidates having F.Sc. Pre -Engineering with 50 % marks will be eligible subject to study deficiency course in Biology BIO -301, 3(2 -1) (Essentials of Biology) Candidates having F.Sc. Pre -Agriculture with 50 % marks will be eligible subject to study deficiency course in Biology BIO -301, 3(2 -1) (Essentials of Biology)	
B.Sc. (Hons.) Animal Science	138 credit hours for duration of 8 semesters	A candidate must have passed F. Sc. (Pre - Medical) or standard equivalent examination with at least 50% marks from University or Boards with Physics, Chemistry, and Biology. Candidates having F.Sc. Pre -engineering and FSC Pre - Agriculture degree are eligible for admission, subject to qualifying the deficiency course in Biology: Essentials of Biology BIO - 301, 3(2-1).	
BS Microbiology	135 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical)	
BS Zoology	129 credit hours for duration of 8 semesters	F.Sc. (Pre-Medical)/A-level students (with Biology)	Minimum 50% of total marks
BS Biochemistry	130 credit hours for duration of 8 semesters	F.Sc. (Pre -Medical) or Equivalent	
BS Medical Laboratory Technology (MLT)	132 credit hours for duration of 8 semesters	F.Sc. (Pre -Medical) or Equivalent	
BS Public Health	129 credit hours for duration of 8 semesters	FA/F.Sc. (Pre -Medical) Pre-Engineering ) or Equivalent	
B.Sc. (Hons.) Home Economics	135 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical), A-Level Intermediate (Home Economics)	



**CHAPTER-1**

**ACADEMIC ACTIVITIES**

B.Sc. (Hons.) Human Nutrition and Dietetics	141 credit hours for duration of 8 semesters	Intermediate Science (Pre-Medical), A level,	Minimum 60% of total marks
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**1.2.2. Postgraduate**

Degree/ Discipline	Program	Duration (Semester)		Admission Criteria	Eligibility
		Minimum	Maximum		

M.Sc. (Hons.) Agronomy, Agriculture Economics, Biotechnology, Entomology, Food Science and Technology, Human Nutrition and Dietetics, Horticulture, Plant Breeding and Genetics, Plant Pathology, Soil Science, Weed Science, M.Sc. (Hons.) Postharvest Management Technology

Regular

4 6

Screening test (50%), B.Sc. (Hons.) Agri. with major in relevant field of study from any HEC recognized university/DAIs (Deficiency course will be given where necessary)

(a)CGPA = 2.5/4.00  
(b)At least 2<sup>nd</sup> Division  
(c)Entry Test

**For Agricultural Economics**

- 1.A minimum CGPA of 2.5 on a scale of 4.0 in field of B.Sc. (Hons.) Agricultural Economics  
**OR** B.Sc. (Hons.) Agriculture and Resource Economics.
- 2.A minimum CGPA of 2.50 on a scale of 4.0 in field of BBA Agribusiness and BS Agribusiness and Marketing.

**For HND**

B.S/B.Sc. (Hons.) Human Nutrition and Dietetics, B.S. Food Science and Nutrition, Doctor of Nutrition and Dietetics, B.S/ B.Sc. (Hons.) Home Economics (Food and Nutrition)



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**ACADEMIC ACTIVITIES**

**and**

B.S/B.Sc. (Hons.) Food Science and Technology/ Food Technology, B.Sc. (Hons.) Agriculture (Food Technology/ Food Science and Technology), B.Sc. (Hons.) Dairy Science and Technology/Dairy Science, B.Sc. (Hons.) Microbiology, Doctor of Veterinary Medicine, Pharm D, MBBS are also eligible for admission with deficiency courses

M.Sc. (Hons.) Seed Science and Technology	Regular	4	6	Screening test (50%) with major in Seed Science and Technology, Agronomy, Entomology, Food Science and Technology, Horticulture, Plant Breeding and Genetics, Soil Science, Biotechnology, Plant Pathology from HEC recognized university / DAIs. (Deficiency course will be given where necessary)	(a)CGPA = 2.5/4.00 (b)At least 2 <sup>nd</sup> Division (c)Entry test
M.Sc. (Hons.) Climate Change	Regular	4	6	Screening test (50%) Sixteen years of education in following disciplines: Agricultural Sciences (All majors)/ B.Sc. (Hons.) Soil and Environmental sciences/ Agri. Engineering/ Environmental Engineering/Environmental Sciences/Agri. Economics/ Food science &	(a)CGPA = 2.5/4.00 (b)At least 2 <sup>nd</sup> Division (45% Marks) (c)Entry test



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Technology/Dairy Technology/Dairy Science and Technology/DVM /Animal Husbandry/Poultry Sciences/Fisheries/Agribusiness from HEC recognized university/ DAIs. (Deficiency course may be given to students on the recommendation of the supervisory committee where necessary).

MS Computer Science	Regular	4	6	<p>1. BS (CS) 4 year degree program (Minimum 130 credit hour), or Computer Science conversion course 2 year degree program referred to as "MCS" or MSc Computer science).</p> <p>2. Candidates having Computer Engineering/ Bachelor of Science in Software Engineering/ Bachelor of Science in Information Technology/ Bachelor of Engineering (Computer and Information System)/ B.Sc. Computer System Engineering (16 year education) and MIT from a recognized institution are also eligible but have to qualify deficiency course(s) before entering in the MSCS. Deficiency courses will be decided by departmental committee</p>	<p>(a) CGPA = 2.5/4.00</p> <p>(b) First division where the GPA system is not implemented.</p> <p>(c) Entry Test</p>
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**ACADEMIC ACTIVITIES**

MS Management (Specialization in Agribusiness)	Regular	4	6	<p><b>a.</b> BBA (Agribusiness)/B.Sc. (Hons.) Agri., Agricultural Economics/Agriculture and Resource Economics, Marketing and Agribusiness Major) (four years degree programs)</p> <p><b>b.</b> MBA (Agri. Business) (two years degree program)</p> <p><b>c.</b> M.Sc. (Economics) (with deficiency courses of one semester as decided by BoS)</p> <p><b>d.</b> B.Sc. (Hons.) Agri. (all other majors)/ B.Sc. (Hons.) A.H./DVM/B.Sc. (Hons.) Food Sciences/ B.Sc. (Hons.) Agri. Engineering/B.Sc. (Hons.) (with deficiency courses of one semester to be decided by the Board of Studies of the Department.</p> <p><b>e.</b> BS Agribusiness and Marketing.</p>	<p>(a) CGPA = 2.5/4.00</p> <p>(b) At least 2<sup>nd</sup> Division</p> <p>(c) Entry Test</p>
MS Public Health	Regular	4	6	<p>• DVM (registered with veterinary council), BSc (Hons)/ BS in Animal Sciences/Human Nutrition and Dietetics/ Food Technology/ Microbiology/Biochemistry/ Zoology or</p>	<p>(a) CGPA = 2.5/4.00</p> <p>(b) At least 2<sup>nd</sup> Division</p> <p>(c) Entry Test</p>



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MS Poultry Sciences	Regular	4	6	<ul style="list-style-type: none"> <li>equivalent degree with 2.5/4.00 CGPA</li> <li>• MBBS/BDS (registered with PMDC)- (16 years) BS/B.Sc. (16 - years) in Nursing, Pharm-D or equivalent (Registered with Pharmacy Council)</li> <li>• B.Sc. Paramedic (4 - Yrs), BS Physiotherapy or equivalent.</li> <li>• At least Second Division/CGPA not less than 2.50 / 4.00.</li> <li>• B.Sc. (Hons.)/ BS Poultry Science, B.Sc. (Hons.) Agriculture Sciences with Animal Sciences as major subject, B.Sc. (Hons.) Animal Sciences or DVM (registered with veterinary council) with 2.5/4.00 CGPA or 2<sup>nd</sup> Division</li> </ul>	(a) CGPA = 2.5/4.00 (b) At least 2 <sup>nd</sup> Division (c) Entry Test
MS Fisheries and Aquaculture	Regular	4	6	<ul style="list-style-type: none"> <li>• A candidate must have BS /B.Sc. (Hons.)/ M.Sc. Zoology, Marine Sciences, Applied Microbiology, Biotechnology, B.Sc. (Hons) Animal Sciences, DVM(registered with veterinary council) or equivalent degree with minimum CGPA 2.5/4.00 or 2<sup>nd</sup> Division</li> </ul>	(a) CGPA = 2.5/4.00 (b) At least 2 <sup>nd</sup> Division (c) Entry Test



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**ACADEMIC ACTIVITIES**

MS Zoology	Regular	4	6	<ul style="list-style-type: none"> <li>A candidate must have BS/BSc (Hons)/ MSc Zoology or equivalent degree with minimum CGPA 2.50/4.00 2<sup>nd</sup> Division.</li> </ul>	(a) CGPA = 2.5/4.00 (b) At least 2 <sup>nd</sup> Division (c) Entry Test
M.Sc. (Hons.) Agricultural Engineering	Regular	4	6	<ul style="list-style-type: none"> <li>Four years Bachelor's degree in Agricultural/Civil/Mechanical/Water Resource Engineering from HEC recognized University/Institute.</li> <li>Minimum CGPA of 2.50 out of 4.0 in bachelor degree programs. Student from annual system must have minimum score of 60%. The percentage score will be considered only if the CGPA is not recorded/mentioned on the transcript.</li> </ul>	(a) CGPA = 2.5/4.00 (b) At least 2 <sup>nd</sup> Division (c) Entry Test
M.Sc. (Hons.) Agro-Industrial Engineering Technology	Regular	4	6	<ul style="list-style-type: none"> <li>Four years Bachelor's degree in "Agro-Industrial Engineering Technology, Industrial Engineering Technology, Chemical Engineering Technology, Mechanical Engineering Technology, Food Science and Technology, Energy Engineering Technology</li> </ul>	(a) CGPA = 2.5/4.00 (b) At least 2 <sup>nd</sup> Division (c) Entry Test



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ACADEMIC ACTIVITIES

and Industrial Engineering, Industrial Manufacturing Engineering, Industrial Engineering Management, Agricultural Engineering, Chemical Engineering, Mechanical Engineering, Energy Systems/Energy Engineering, Environmental Engineering, Food Engineering from HEC recognized University/Institute.

- Minimum CGPA of 2.50 out of 4.0 in four-year bachelor's degree programs. Students from the annual system must have a minimum score of 60%. The percentage score will be considered only if the CGPA is not recorded/mentioned on the transcript.

Ph.D. (Agronomy, Biotechnology, Entomology, Food Science and Technology, Human Nutrition and Dietetics, Horticulture, Plant Breeding	Regular	6	10	Subject Based Screening Test (70%), M.Sc. (Hons.) /M.Phil. in relevant subject from HEC DIAs, Subject based entry test, Deficiency courses <b>For HND</b> M.Sc. (Hons.)/M.S. Human Nutrition and Dietetics, M.Sc. (Hons.) Human Nutrition,	(a) CGPA not less than 3.00/4.00 (b) At least 1 <sup>st</sup> division
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**CHAPTER-1****ACADEMIC ACTIVITIES**

and Genetics,  
Plant Pathology,  
Seed Science  
and  
Technology,  
Soil Science,  
Agricultural  
Economics)

**and**  
M.Sc. (Hons.) Food Science  
and Nutrition, M.S/ M. Phil/  
MSc (Hons) Food and  
Nutrition, M.Sc. (Hons.)  
Food Science and  
Technology/ Food  
Technology, M.Sc. (Hons.)  
Dairy Science and  
Technology, M.Sc. (Hons.)  
Food Safety and Quality  
Management, M.Sc. (Hons.)  
Food Service Management,  
FCPS (with MPhil Equivalent  
certificate) are also eligible  
for admission with  
deficiency courses.

**1.3. Directorate of Graduate Studies****1.3.1. Mission**

The mission of the Directorate of Graduate Studies is to streamline the admission and research process of postgraduate students and provide all possible guidelines regarding course work, GS-10, synopsis and thesis preparation and submission. Moreover, to facilitate the students timely collection, approval and processing of their documents.

**1.3.2. Vision**

To enhance the quality of research, to automate the system of admission of postgraduate students and minimize the document's processing time through the use of available technology.

**1.3.3. Functions**

- To process the approval of new/revised postgraduate courses through Graduate Study Research Board (GSRB)/Board of Advanced Studies and Research (BASR).
- Processing of applications for admission to M.Sc., M. Phil./MS/M.Sc. (Hons.) and Ph.D. programs.
- Collection of course work and enrolment forms (GS/10) of postgraduate students in each semester.
- Scrutiny of the synopsis and thesis, course work and supervisory committees of M.Sc./MS/M.Sc. (Hons.) and Ph.D. students and arranging their approval by BASR.
- Scrutiny of the thesis of postgraduate students to ensure their proper format as laid down by BASR.



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- Preparation of agenda and conduct of meetings of BASR.
- Execution of the policies and decisions of BASR.

## 1.4. Graduate Resource Center

MNS University of Agriculture Multan initiated a novel initiative in the form of a Graduate Resource Center (GRC) during October 2017 after discussion and approval of the Executive Committee of the University. The GRC is an interdisciplinary platform to break the barriers between the graduate students of different subjects of agricultural and allied sciences for their scientific and professional skills developments. The GRC performs activities under the umbrella of Directorate of Graduate Studies and emphasizes on four major sections:

- a) Postgraduate research skills development
- b) Scientific/community seminars
- c) Leadership and interpersonal skills development
- d) Annual graduate research day with a slogan to "make your research visible"

## 1.4.1. Aims

The program aims to enhance the quality of graduate training to make young researchers effective intellectuals and growing leaders to cope with challenges of the agriculture market in the country and around the world.

## 1.4.2. Functions

- Graduate Resource Center activities are held every Wednesday at 9:40 a.m. in seminar Hall of the University or via online platforms like Zoom.
- Membership and participation of all PhD scholars at MNSUAM is compulsory, while all interested master or undergraduate students can participate voluntarily.
- All faculty members and scientists from South Punjab Agriculture Forum can contribute and participate voluntarily.
- The Year 2023 was rightly utilized by GRC to develop the post graduates skills and to make them able to cope with current scientific scenario and also providing them effective systems and leadership for professional learning. More than 2000 persons attended the sessions across the year.

## 1.4.3. Activities of Graduate Resource Center

## Ph.D. Thesis Defense /Synopsis Defense

Ph.D. Thesis Defense	<b>Comparative transcriptomics analysis of contrasting cotton interspecific lines for fibre traits</b> Ms. Farzana Ashraf (2017-uam-924) Ph.D. Scholar, Institute of Plant Breeding and Biotechnology, MNSUAM	01.06.2022
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## ACADEMIC ACTIVITIES

Ph.D. Thesis Defense	<b>Improving lodging resistance through <i>HvGA20ox</i> transcript abundance in barley (<i>Hordeum vulgare</i> L.)</b> Mr. Shoaib Liaqat (2018-uam-909) Ph.D. Scholar, Institute of Plant Breeding and biotechnology, MNSUAM <b>Effect of <i>TaHSP90A</i> transcript abundance on temperature stress tolerance in wheat</b> Mr. Ali Ammar (2018-uam-910) Ph.D. Scholar, Institute of Plant Breeding and biotechnology, MNSUAM	09.06.2022
Ph.D. Synopsis Defense	<b>Integrating biochemical and genomic resources for drought tolerance in cotton (<i>Gossypium hirsutum</i> L.) (Revised)</b> Mr. Muhammad Kashif Shehzad Sarwar (2017-uam-909), Ph.D. Scholar in the Institute of Plant Breeding and Biotechnology, MNSUAM	14.06.2022
Ph.D. Thesis Defense	<b>Integrated management of leaf miner (<i>Tuta absoluta</i>)</b> Mr. Muhammad Saddique (2018-uam-902), Ph.D. Scholar, Institute of Plant Protection, MNSUAM	14.06.2022
Ph.D. Thesis Defense	<b>Nanoparticles impregnated biopesticides synergetic action against whitefly (<i>Bemisia tabaci</i> Genn.)</b> Mr. Muhammad Shahid (2017-uam-902), Ph.D. Scholar, Institute of Plant Protection, MNSUAM <b>Improving phosphorus nutrition in cotton through thermo-tolerant phosphorus solubilizing bacteria and biochar</b> Mr. Suleman Haider (2018-uam-914), Ph.D. Scholar, Department of Soil and Environmental Sciences, MNSUAM	16.06.2022
Ph.D. Thesis Defense	<b>Evaluation and management of cluster bean genotypes (<i>Cyamopsis tetragonoloba</i>)</b> Mr. Shahzad Ahmad Junaid, (2017-uam-917), Ph.D. Scholar, Department of Agronomy, MNSUAM	17.06.2022
Ph.D. Synopsis Defense	<b>Integrating biochemical and genomic resources for drought tolerance in cotton (<i>Gossypium hirsutum</i> L.)</b> Mr. Muhammad Kashif Shehzad Sarwar (2017-uam-909), Ph.D. Scholar in the Institute of Plant Breeding and Biotechnology, MNSUAM <b>Genetic basis of heat stress in soybean (<i>Glycine max</i> L.)</b> Mr. Shifa Ur Rehman (2017- uam - 909), Ph.D. Scholar, Institute of Plant Breeding and Biotechnology, MNSUAM	
Ph.D. Thesis Defense	<b>Optimizing phosphorus, Zinc and soil amendments to minimize cadmium accumulation in maize crop</b> Mr. Ghulam Farid (2017-uam-916), Ph.D. Scholar, Department of Soil & Environmental Sciences, MNSUAM	20.06.2022
Ph.D. Synopsis Defense	<b>Plant beneficial bacteria inoculation for inducing heat tolerance in wheat</b> Mr. Zahra Batool (2014-uam-197), Ph.D. Scholar, Department of Soil & Environmental Sciences, MNSUAM	30.06.2022



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## ACADEMIC ACTIVITIES

Ph.D. Thesis Defense	<b>Evaluation of alfalfa germplasm and soil amendments for production &amp; quality forage on salt-affected soils</b> Mr. Muhammad Irfan Khan (2017-uam-915), Ph.D. Scholar, Department of Soil & Environmental Sciences, MNSUAM	01.07.2022
Ph.D. Synopsis Defense	<b>Hypolipidemic potential of olive oil enriched mayonnaise</b> Ms. Aliza Batool (2017-uam-907), Ph.D. Scholar, Department of Food Science and Technology, MNSUAM	07.07.2022
Ph.D. Synopsis Defense	<b>Genetic basis of heat stress tolerance and characterization of Bcl -2 associated athanogene (BAG) gene family in maize (<i>Zea mays</i>)</b> Mr. Babar Farid (2017-uam-925), Ph.D. Scholar, Institute of Plant Breeding and Biotechnology, MNSUAM	19.07.2022
Ph.D. Synopsis Defense	<b>Envirotyping of indiginous germplasm under drought x heat interactive studies in upland cotton (<i>Gossypium hirsutum</i> L.)</b> Mr. Furqan Ahmad (2017-uam-907), Ph.D. Scholar, Institute of Plant Breeding and Biotechnology, MNSUAM	21.07.2022
Ph.D. Synopsis Defense	<b>Shelf stability of tomato powder</b> Mr. Zahid Rafiq (2014-uam-245), Ph.D. Scholar, Institute of Plant Breeding and Biotechnology, MNSUAM	22.07.2022
Ph.D. Thesis Defense	<b>GA-sensitive Rht gene(s) mediated phenotypic alterations to enhance drought tolerance in wheat</b> Mr. Muhammad Arslan Khalid (2017-uam-905), Ph.D. Scholar, Institute of Plant Breeding and Biotechnology, MNSUAM	26.07.2023
Ph.D. Thesis Defense	<b>Ecofriendly management of fruit fly (<i>Bactrocera zonata</i> S.) through chemosterilant baits for mango orchards</b> Mr. Muhammad Hasnain (2018-uam-908), Ph.D. Scholar, Institute of Plant Protection, MNASUAM	24.11.2022
Ph.D. Thesis Defense	<b>Conservation method of solitary bees for commercial seed production of <i>Medicago sativa</i> L.</b> Mr. Abdul Rauf (2018-uam-904), Ph.D. Scholar, Institutes of Plant Protection, MNSUAM	15.05.2023
Ph.D. Synopsis Defense	<b>Anti-inflammatory response and food application of zein derived hydrolysates</b> Ms. Misbah Sharif (2015-uam-311), Ph.D. Scholar, Department of Food Science and Technology, MNSUAM	31.05.2023
Ph.D. Synopsis Defense	<b>Ni phytoextraction in <i>Matthiola incana</i> through chelating agents</b> Mr. Muhammad Rizwan Shah (2019-uam-2806), Ph.D. Scholar, Department of Horticulture, MNSUAM	01.06.2023
Pre-Ph.D. Thesis Defense	<b>Improving nutritional profile of hay and silage by calcium enrichment in rhode grass (<i>Chloris guayana</i> kunth)</b> Mr. Muhammad Ayaz (2018-uam-1009), Ph.D. Scholar, Department of Agronomy, MNSUAM	08.06.2023



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Pre-Ph.D. Thesis Defense	<b>Diversity and distribution of immature mosquitoes in various breeding sites of South Punjab</b> Mrs. Shafia Saba (2017-uam-912), Ph.D. Scholar, Institute of Plant Protection, MNSUAM	15.06.2023
Ph.D. Thesis Defense	<b>Evaluation and management of <i>Pectinophora gossypiella</i> resistance to <i>Bt</i> cotton</b> Mrs. Mahreen Hanif (2012-uam-80), Ph.D. Scholar, Institute of Plant Protection, MNSUAM	13.06.2023
Pre-Ph.D. Thesis Defense	<b>Agronomic biofortification of selenium and interrelation with nitrogen metabolism in wheat (<i>Triticum aestivum</i> L.)</b> Mr. Muhammad Shoaib Isamil (2018-uam-1011), Ph.D. Scholar, Department of Agronomy, MNSUAM	16.05.2023
Pre-Ph.D. Thesis Defense	<b>Agronomic biofortification of tomato for enhance nutrition and productivity</b> Mr. Naabeel Ahmad Ikram (2017-uam-923), Ph.D. Scholar, Department of Agronomy, MNSUAM	19.06.2023
Ph.D. Thesis Defense	<b>Genetic characterization and management of tobamoviruses infecting tomato crop</b> Mr. Muhammad Ammar (2021-uam-3707), Ph.D. Scholar, Institute of Plant Protection, MNSUAM	22.06.2023
Ph.D. Synopsis Defense	<b>Bacterial endophyte mediated management of <i>Phytophthora infestans</i> infecting potato</b> Mr. Muhammad Hassan (2014 -uam-27), Ph.D. Scholar, Department of Horticulture, MNSUAM	23.06.2023
Ph.D. Synopsis Defense	<b>Acclimatization and optimization of plant nutrition and post harvest practices for <i>Pepino Melon</i> cultivars</b> Ms. Asia Bibi (2021-uam-3703), Ph.D. Scholar in the Department of Horticulture, MNSUAM	04.07.2023

#### Scholarship Awareness

Webinar	<b>How to prepare yourself to get Erasmus+ Exchange Student Program</b> Mr. Saad Zafar, M.Sc. Student in Institute of Plant Breeding and Biotechnology	27.07.2022
Webinar	<b>How to prepare yourself to get Erasmus Mundus Scholarship</b> Mr. Arslan Khan, M.Sc. Student in Erasmus Mundus, France	03.08.2022
Webinar	<b>Turkish Scholarship for Master's and PhD studies and visa process</b> Dr. Muhammad Nadir Naqqash, Assistant Professor, Institute of Plant Protection, MNSUAM	17.08.2022
Webinar	<b>Application Process of Fulbright scholarship, 2023</b> Dr. Fawad Ahmad Zafar Khan -Fulbright Alumnus and Assistant Professor, MNSUAM	13.02.2023



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## ACADEMIC ACTIVITIES

## Seminar/Webinars (National)

Webinar	<b>Challenges and Prospects of Date Palm</b> Ms. Plosha Khanum, Institute of Plant Breeding and Biotechnology, MNSUAM	07.06.2022
Webinar	<b>Identification of Glaciers Lakes along China-Pakistan Economic Corridor (CPEC)</b> Dr. Muhammad Saif Ullah, Department of Agricultural Engineering	22.06.2022
Webinar	<b>World Drug Day</b> Ms. Tahmeena Yaseer and Dr. Asif Mughal	27.06.2022
Webinar	<b>Using Gene expression Facility at SINO-PAK Joint Research Lab</b> Ms. Kauser Parveen, M.Sc. Student, Institute of Plant Breeding and Biotechnology, MNSUAM	24.08.2022
Webinar	<b>Sustainable cotton production under better cotton initiative program; implications for socio-economic uplift and climate change adaptation in Punjab</b> Dr. Hafiz Muhammad Zahid, Lecturer, Department of Agribusiness and Applied Economics, MNSUAM	30.08.2022
Webinar	<b>Wellness center</b> Dr. Muhammad Umair Waqas, Public Health Focal Person and Lecturer, Department of Pathobiology, FVAS, MNSUAM	07.09.2022
Seminar	<b>Principles of Ethical Research with Humans</b> Dr. Catherine Allan, Charles Sturt University, Australia	21.09.2022
Webinar	<b>Localized Sequence Diversification Technologies for Trait Engineering In Plants</b> Dr. Haroon Butt, Research Scientist in Plant Genome Engineering and Synthetic Biology at King Abdullah University of Science and Technology	28.09.2022
Seminar	<b>Bayer's Seed Research in Pakistan</b> Mr. Usman Khan (Research Agronomist, Bayer Pakistan) Mr. Muhammad Waseem Sarwar (Testing Operation Manager) Ms. Zunaira Anam (Breeding Lead, Bayer Pakistan)	05.10.2022
Webinar	<b>Dengue Awareness</b> Dr. Unsar Naeemullah, Associate Professor, Institute of Plant Protection, MNSUAM	12.10.2022
Webinar	<b>Introduction to Outcome-Based Education</b> Dr. Muhammad Mohsin Khan, lecturer, in the Department of Agricultural Engineering, at MNSUAM	26.10.2022
Webinar	<b>Gene Silencing</b> Dr. Manzar Abbas, Assistant Professor, in the School of Agriculture, Forestry and Food Science, Yibin University, China	2.11.2022
Webinar	<b>Long-Term Weather Forecast and Management Interventions for Wheat Crop</b>	08.11.2022



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## ACADEMIC ACTIVITIES

Webinar	Department of Agronomy, MNSUAM <b>New Approaches in Fruit Breeding</b>	16.11.2022
Webinar	Department of Horticulture, MNSUAM <b>Speed Breeding of Fruit Trees</b> Dr. Muhammad Abubakar Saddique, Assistant Professor, Institute of Plant Breeding and Biotechnology, MNSUAM	30.11.2022
Webinar	<b>Basics of Endnote-Cite While You Write</b> Mr. Rahil Shahzad, Scientific Officer, Agricultural Biotechnology Research Institute, AARI, Faisalabad	14.12.2022
Webinar	<b>Assessing the Impact of Changing Climate on Maize and Wheat Productivity</b> Dr. Hafiz Muhammad Mohkam Hammad, Associate Professor, Department of Agronomy, MNSUAM	29.12.2022
Webinar	<b>Student Exchange Program-Germany</b> Miss. Saba Haider, Institute of Plant Protection, MNSUAM	04.01.2023
Webinar	<b>Guide to Coursera Courses</b> Dr. Ayesha Hakim, Assistant Professor, Department of Computer Science, MNSUAM	11.01.2023
Webinar	<b>Vegetable Grafting Against Soil Borne Disease, Salinity and Drought</b> Dr. Hafiz Nazar Farid, Assistant Professor, Department of Horticulture, MNSUAM	18.01.2023
Webinar	<b>Long-Term Weather Forecast and Management Interventions for Wheat Crop</b> Department of Agronomy, MNSUAM and Pakistan Meteorological Department (PMD) Islamabad - Pakistan	14.02.2023
Seminar	<b>Webinar on University IP Policy</b> Dr. Abid Hussain - Manager Industrial Linkages & Technology, MNSUAM	15.02.2023
Webinar	<b>Fulbright Scholarship Application Process</b> Dr. Fawad Zafar Ahmad Khan - Fulbright Alumnus and Assistant Professor, MNSUAM	13.02.2023
Webinar	<b>Synthesis and Characteristics of Clay Mineral+Biochar Composites and their Applications in Organic Contaminants Removal from Water</b> Dr. Muhammad Arif, Lecturer, Department of Soil and Environmental Sciences, MNSUAM	22.02.2023
Webinar	<b>Herbicide Resistance: Mechanisms and Management</b> Dr. Amar Matloob, Assistant Professor, Department Agronomy, MNSUAM	01.03.2023
Webinar	<b>Embryonic Growth and Post-hatch Performance of Chickens Influenced by Different Dichromatic Lights</b> Mr. Muhammad Faisal Riaz, Lecturer, Department Poultry Science FVAS, MNSUAM	15.03.2023
Webinar	<b>Introduction to Earth with special emphasis on Pakistan</b> Dr. Wazir Ahmad, Lecturer, Department Soil Science, MNSUAM	22.03.2023



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### ACADEMIC ACTIVITIES

Webinar	<b>Entomopathogenic Fungi as Alternatives to Chemical Pesticides: Prospects, Challenges, and Insights for Sustainable Agriculture.</b> Dr. Mirza Abdul Qayyum, Associate Professor, Entomology, Institute of Plant Protection, MNSUAM	29.03.2023
Webinar	<b>Dengue Awareness</b> Dr. Unsar NaeemUllah, Associate Professor, Entomology, Institute of Plant Protection, MNSUAM	04.04.2023
Webinar	<b>Case Study Development</b> Prof. Dr. Mubashir Mehdi, Director, Business Incubation and Entrepreneurship Center, MNSUAM	11.04.2023
Webinar	<b>Graduate Research Day - Video Evaluation</b> Dr. Rao Kashif, Dr. Hafeez Rehman	22.05.2023
Webinar	<b>Interpersonal Skills Development</b> Prof. Dr. Muhammad Hammad Nadeem Tahir, Director, Institute of Plant Breeding and Biotechnology, MNSUAM	07.06.2023

#### Awareness sessions

Webinar	<b>IP policy of the University</b> Dr. Abid Hussain - Manager Industrial Linkages & Technology, MNSUAM	15.02.2023
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#### 1.5. Academic Calendar (2022-23)

Sr. No.	Particulars/ Activity	Date
A	Enrollment Winter Semester 2022-2023	September 05, 2022
1.	Commencement of Classes	05-09-2022
2.	Mid-Term Examination	31-10-2022
3.	Final Term Examination	02-01-2023
	Total Duration	18 Weeks
B	Enrollment Spring Semester 2023	January 23, 2023
1.	Commencement of Classes	23-01-2023
2.	Mid-Term Examination	20-03-2023
3.	Final Term Examination	22-05-2023
	Total Duration	18 Weeks
C	Enrollment Summer Session 2023	June 12, 2023
1.	Commencement of Classes	12-06-2023
2.	Mid-Term Examination	10-07-2023
3.	Final Term Examination	22-08-2023
	Total Duration	10 Weeks



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## ACADEMIC ACTIVITIES

## 1.6. Academic Achievements

- All ongoing postgraduate programs have attained NOC from HEC
- All ongoing B.Sc. (Hons.) Agriculture programs have been accredited by National Agriculture Education Accreditation Council (NAEAC)
- Initiation of online classes through Learning Management System like Moodle, and video conferencing tools like Zoom and Google Meet for all courses in accordance with the “Online Preparedness Guidelines” of HEC and University's SoPs.
- Department of Agronomy is offering a new course “Digital Agriculture” for B.Sc.(Hons.) Agriculture 7<sup>th</sup> Semester.
- Initiation of New Postgraduate Degree Program M.Sc. (Hons.) Weed Science under the Department of Agronomy and NOC has been received to start the degree program.
- Approval of Fruit and Forest Tree Breeding Centre, MNS-University of Agriculture, Multan
- Dual Diploma Program between Department of Horticulture and Hebei Professional College of Political Science and Law.
- Short Course on Landscape Design under Department of Outreach and Continuing Education.
- Development of new Course on “New Chemistry Pesticides”
- Following new postgraduate programs were granted NOC by HEC
  - ✓ M.Sc. (Hons.) Agricultural Extension
  - ✓ Ph.D. Computer Science
- The Faculty of Social Sciences got approval from Academic Council to start MBA as a new postgraduate program.
- Approval for revision of the scheme of studies for the BBA Agribusiness program from the Board of Studies, Board of Faculty, and Academic Council.
- The FSS&H got approval from the Academic Council for the establishment of the Institute of Agricultural Economics (IAE) and the Institute of Agribusiness and Entrepreneurship Development (IAED)
- In 2022-23, following new undergraduate degree programs have been approved by Academic Council:
  - 1) BS Biotechnology
  - 2) BS Dairy Sciences
- Following New postgraduate program has been approved by the Academic Council:
  - 1) MS One Health
- Higher Education Commission has issued NOC to launch following postgraduate degree program at Faculty of Veterinary and Animal Sciences.
  - 1) Ph.D. Zoology
- NOC request to launch following postgraduate degree program has been sent to HEC for Approval:
  - 1) Ph.D. Animal Nutrition
- Curriculum of new above mentioned undergraduate and postgraduate programs have been approved



## CHAPTER-1

## ACADEMIC ACTIVITIES

- Microbiology Laboratory established at Faculty of Veterinary and Animal Sciences by Funding of Association of Biorisk Management (ABM)
- Successful completion of the Review Meetings of NAEAC for B.Sc. (Hons.) Agriculture, major Agronomy, Entomology, Food Science and Technology, Horticulture, Plant Breeding and Genetics, Seed Science and Technology, and Soil Science degree programs.
- The numbers of faculty members have been increased to 148 (103 Ph.D. and 45 Non Ph.D.) and most of which are HEC approved supervisors.

**1.7. Foreign Academic Linkages****1.7.1. Faculty of Agriculture and Environmental Sciences**

- University of California Davis, USA
- Iowa State University, USA
- Razbio Ltd., UK
- Swansea University, UK
- University of Greenwich, UK
- Hochschule Geisenheim University, Germany
- Uni kassel Versitat, Germany
- University of Bonn, Germany
- Huazhong Agricultural University, Wuhan, China
- Industrial Crop Research Institute (ICRI), Yunnan Academy of Agri. Sci., China
- HortResearch, South Africa
- College of Agriculture and Biotechnology, Zhejiang University, China
- School of Environmental Science and Engineering, Shandong University, China
- Tonglu County local/district government, Zhenjiang, China
- BGI Genomics Co., Ltd. China
- Biotechnology Research Institute Chinese Sciences of Agricultural Science Beijing, China
- Tianjin Modern Vocational Technology College, China
- Sivas University of Science and Technology Sivas, Türkiye
- Okinawa Institute of Science and Technology School Corporation, Japan
- University of Tasmania, Australia
- Australian Centre for International Agricultural Research
- National Agricultural Technology Institute Cordoba, Argentina
- Ghazi University Ankara, Türkiye
- Department of Plant Protection, Higher Educational Complex of Saravan, Islamic Republic of Iran
- Silk Road Asia Europe University Alliance (Vocational Educational)

**1.7.2. Faculty of Social Sciences and Humanities**

- Department of Agribusiness and Applied Economics is a key partner of the Punjab team in ACIAR project "Improving groundwater management to enhance agriculture and farming livelihoods in Pakistan".



## CHAPTER-1

### ACADEMIC ACTIVITIES

- Academic and research linkages with CSU and UoC for preparation and submission of ACIAR funded project "Living with Salinity"
- Charles Sturt University, Australia
- Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia
- Monash University, Australia
- Murdoch University, Australia
- University of Adelaide, Australia
- University of Canberra, Australia
- Osmaniye Korkut Ata University, Türkiye
- Selcuk University, Türkiye
- Istanbul Gelisim University, Türkiye
- Kırşehir Ahi Evran University, Türkiye
- ICBA, UAE
- Distinguished Innovation Collaboration and Entrepreneurship (DICE), USA
- Wuhan University of Technology, China

#### 1.7.3. Faculty of Agricultural, Biosystems Engineering and Technology

- Kyungpook National University, South Korea
- Universiti Putra, Malaysia
- University of Agriculture in Krakow, Poland
- Agricultural Research Center of the Ministry of Agriculture and Land Reclamation, Egypt
- Kyungpook National University, South Korea
- Universitas Sebelas Maret, Indonesia
- Kyushu University, Japan
- Yunnan University Kunming, China
- SKF Boilers and Dryers Manufacturer International, Mangalore, Karnataka, India

#### 1.7.4. Faculty of Veterinary and Animal Sciences

- Eberswalde University of Sustainable Development, Germany
- Faculty of Pharmacy, University of Copenhagen, Denmark
- Xinjiang Agricultural Vocational Technical College, China

#### 1.8. Institutional Linkages

1. Agricultural Mechanization Research Institute, Multan
2. Air University, Multan Campus
3. Ali Akbar Group of Industries
4. AMRI, Multan
5. Association of Biorisk Management, Peshawar
6. Ayub Agricultural Research Institute, Faisalabad



## CHAPTER-1

### ACADEMIC ACTIVITIES

7. Bahauddin Zakariya university, Multan
8. Bayer Crop Science
9. Best Technologies, Multan
10. Central Cotton Research Institute, Multan
11. Centre for Global Strategic Studies, Islamabad
12. COMSATS University, Islamabad
13. Cotton Research Institute, Multan
14. CropLife Pakistan, Karachi
15. Dept. of Civil Engg., NUST
16. Doaba Foundation
17. Engro Fertilizers Ltd., Pakistan
18. Evyol Group of companies
19. FAO, Pakistan
20. Fatima Fertilizers Company Ltd., Pakistan
21. Federal Urdu University of Arts, Sciences & Technology, Islamabad
22. Federation of Pakistan Chambers of Commerce & Industry, Karachi
23. Food and Agriculture Organization of the United States
24. GIFT University, Gujranwala
25. Horticulture Research Station, Bahawalpur
26. Islamia University, Bahawalpur
27. Jaffer Agro Services (Pvt.) Ltd.
28. Japan Machine Ltd.
29. Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan
30. Mango Research Institute, Multan
31. Mehran University of Engineering and Technology, Jamshoro
32. MNS University of Engineering and Technology, Multan
33. National University of Science and Technology, Islamabad
34. National Vocational and Technical Training Commission
35. NCBA&E, Multan Campus
36. Nestle, Pakistan
37. NFC Institute of Engineering and Technology, Multan
38. Nishtar Medical University, Multan
39. Noori Agrolines, Multan
40. Pakistan Crop Protection Association, Multan
41. Pakistan Institute of Development Economics, Islamabad
42. Pakistan Meteorology Department, Islamabad
43. Pesticide Quality Control Lab, Multan
44. Potato Research Institute, Sahiwal
45. Punjab Irrigation Research Institute, Lahore

**CHAPTER-1****ACADEMIC ACTIVITIES**

46. Punjab Mango Research and Development Board
47. Punjab Postharvest Research and Development Board
48. Qayyum & Company
49. Roomi Foods (Pvt.) Ltd.
50. SAWIE systems
51. Shahid Javed Burki Institute of Public Policy, Lahore
52. Soil and Water Testing Laboratory, Multan
53. Syngenta Pakistan Limited
54. The Govt. Sadiq College Women University, Bahawalpur
55. U.S.-Pakistan Centre for Advanced Studies in Energy
56. University of Agriculture, Faisalabad
57. University of Education, Multan
58. University of Engineering and Technology (UET), Lahore
59. Women University, Multan
60. Karakoram International University Gilgit-Baltistan
61. Global Climate Change Impact Study Center, Islamabad
62. Rise AG Group Pvt. Ltd, Multan Pakistan
63. World Wild Fund Pakistan
64. Pakistan Horticulture Development and Export Company

**1.9. Honors and Awards**

- Prof. Dr. Ishtiaq A. Rajwana assumed the charge as Pro Vice Chancellor, MNS-University of Agriculture, Multan on April 11, 2023
- Dr. Tanveer Ahmad, Chairman, Department of Horticulture nominated as President, Pakistan Society for Horticultural Science.
- Dr. Nazar Faried, Department of Horticulture nominated as Joint Secretary, Pakistan Society for Horticultural Science.  
Mr. Babar Farid, Lecturer Institute of Plant Breeding and Biotechnology have honor to Publish an article in Nature Genetics, one of the top peer review journal of Nature Publishing group with IF 41.307.
- Dr. Muhammad Usman Jamshaid Lecturer Soil Science received Prime Minister Flood Relief Hero Award from Prime Minister of Pakistan.
- Dr. Ayesha Hakim and Dr. Nadeem Iqbal won National and Regional titles at Microsoft Imagine Cup 2023 for their innovative projects, namely Store Karo! and AI-Based Bee Hive, which were headed by Dr. Ayesha Hakim and Dr. Nadeem Iqbal, respectively.
- Dr. Umair Sultan Earned the status of Chartered Engineer (Ceng), Engineering Council, UK (CEng. Reg. # 700085).
- Dr. Umair Sultan awarded Best Oral Presentation certificate in 1st International Precision Agriculture Pakistan Conference 22-24 September 2022 at PMAS-Arid Agriculture University Rawalpindi.

## CHAPTER-1

### ACADEMIC ACTIVITIES

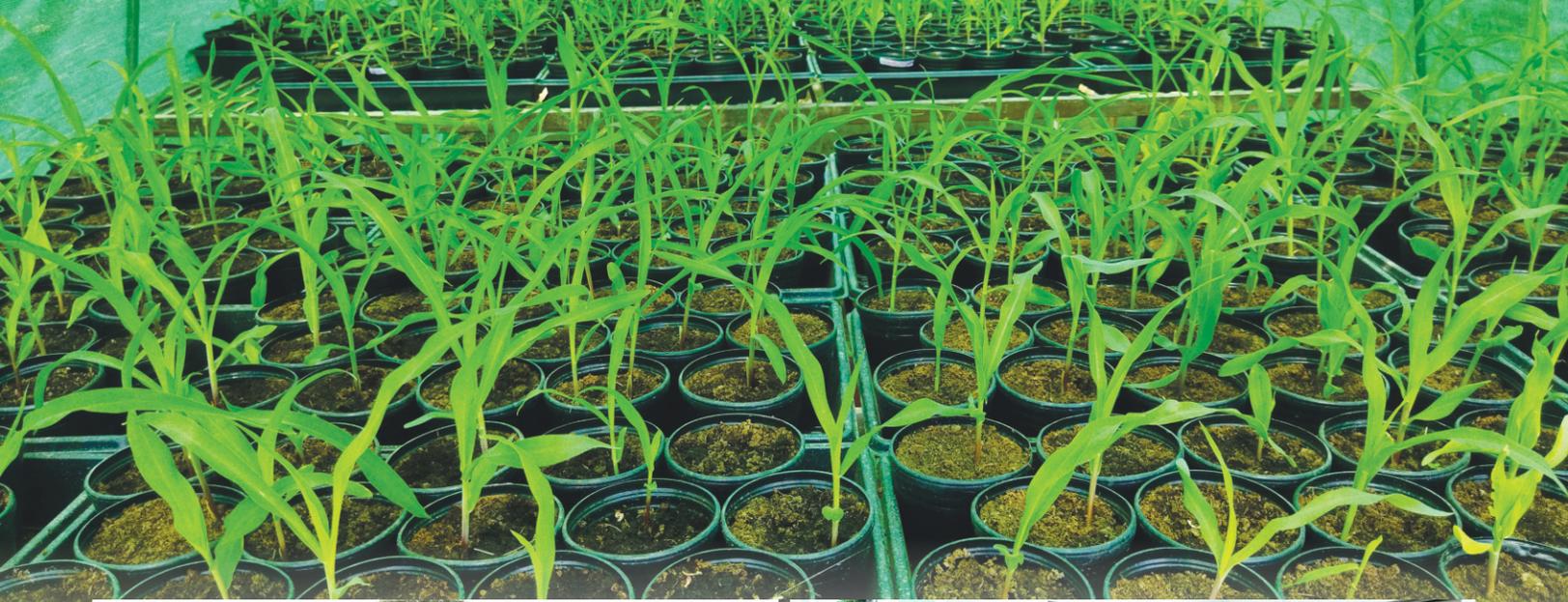
#### 1.10. Good Practices Implemented

- Faculty Student Interaction
- Class monitoring
- Curriculum revision regarding course objectives, contents and learning resources
- Outcome based learning
- Blended/Hybrid teaching
- Use of learning management system
- Discussion and visual aids for Teaching (Videos, Presentations and hands on activities)
- Module based teaching system
- Maintenance of course files
- Lecture shortage
- Strengthening of teaching labs and field infrastructure
- Engagement of undergraduate students in research activities by attaching them with postgraduate students
- Alumni database
- Career counseling sessions for students
- International seminars/conferences/workshops
- Hands-on Training of faculty and students
- Internship of B.Sc. (Hons.) 8<sup>th</sup> Semester students at private sector companies and farms





**RESEARCH  
AND DEVELOPMENT**











**CHAPTER-2****RESEARCH AND DEVELOPMENT**

The Office of Research, Innovation and Commercialization (ORIC) has been functioning since 2015 to facilitate students and faculty to support and organize research and commercialization activities at the University. The office also helps in prioritizing research and innovations according to educational, industrial, social, and economic needs in accordance with the University's vision to become a center of innovation, high-impact research and commercialization. It also facilitates intellectual property (IP) protection, implementation of operational and quality standards, and translation of research into commercialization through strong industry-academia linkages and entrepreneurship. The ORIC believes in reciprocal understanding, which is indispensable for coordination between academia and industry to uplift a standardized and well-acclaimed innovation and commercialization ecosystem.

ORIC facilitated the faculty for submission of 268 research projects to various international and national funding agencies, including PSF-NSFC, ANSO, IGNITE, BLE-Germany, PARB, FAO, DAP, PIECES, UNESCO, USAID, PERIDOT, HSF, IFS, TDF, SANDEE, UN-Habitat, PAK-UK, VTF, PUAN ASG, HEC-RTTG, RASTA 5.0, The Mohammed Bin Zayed Species Conservation Fund, ISID-BMGF, PSF-CRF, EFS-UAF, SRDB, PIF, RSTMH, ICGBE, STEG, Bill & Melinda Gates Foundation, PARC-ALP, ISESCO, FFAR and industry/private sector organizations.

This year, 20 competitive research grants worth PKR 260.134 million have been won by the faculty from various national/international funding agencies, industry/private sector and NAVTTC. The research projects worth PKR 177.383 million from international funding agencies, PKR 48.298 million from national funding agencies, PKR 25.023 million from the industry/private sector and PKR 9.43 from NAVTTC were awarded to faculty for the proliferation of scientific culture and innovative research. The execution of 58 ongoing research projects worth PKR 1040.70 million is in progress. The research activities of 10 international projects (PKR 265.76 million), 34 national projects (PKR 725.37 million) and 15 industry/private sector projects (PKR 49.57 million) are being undertaken by the faculty. Moreover, ORIC has also facilitated the faculty for the successful completion of 18 research projects worth PKR 51.118 million.

The availability of a conducive research and working environment enabled the faculty to publish 207 research articles in well-reputed national and international peer-reviewed journals and contributed as authors of 79 chapters in the books published by internationally recognized publishers. Faculty was facilitated by ORIC for filing of two patents to IPO Pakistan. On the other hand, 28 Agreement(s) of Cooperation (AoCs) have been signed with various national and international organizations and ORIC is striving for the successful implementation of these AoCs with the partner organizations in collaboration with the Director External Linkages and concerned Focal Person(s).

Similarly, ORIC has extended support to teaching departments in organizing 10 national and international conferences, 12 competitions, and 48 national and international Seminars/Webinars.



## RESEARCH AND DEVELOPMENT

The capacity building and mentoring activities including 29 faculty trainings/workshops and 27 trainings of students/researchers under the Central Lab System were carried out. Other 45 outreach, recreational/capacity building activities and civic engagement events including Mango Festivals at Islamabad, Multan and Lahore, DICE, Dunya Kisan Mela, farmer advisory and industry consultancy activities were organized for the benefit of the agroindustry, the community, and relevant stakeholders. ORIC strived to secure revenue of PKR 80.74 million from events sponsorships (PKR 65.50 million), consultancy services (PKR 3.71 million), university overhead from research grants (PKR 11.27 million) and lab analytical services (PKR 0.26 million). ORIC has also supported working with communities through 17 social action plans on multiple socio-economic opportunities, challenges, and avenues to foster their resilience.

The University has participated in various global rankings regarding Higher Education Institutions including World University Rankings for Innovation (WURI), Times Higher Education Impact Rankings, HE Higher Education Rankings and UI GreenMetric World University Rankings. MNSUAM has been ranked at (i) 51-100 amongst the top innovative universities in industrial application, crisis management, progress in fourth industrial revolution categories and 101-200 worldwide by the World's University Rankings for Innovation 2023 (ii) 2<sup>nd</sup> in Pakistan (Agriculture universities), 2<sup>nd</sup> in Pakistan (Public sector universities) and 201-300 worldwide being an SDGs engaged university under the subject category “ Climate Action” by Times Higher Education Impact Rankings 2023 (iii) 1<sup>st</sup> nationwide and the 23<sup>rd</sup> worldwide by the HE Higher Education Rankings 2023 (iv) 1<sup>st</sup> in sustainable waste management category in Pakistan, overall 4<sup>th</sup> position nationwide and 203<sup>rd</sup> worldwide as World's most sustainable University by UI GreenMetric World University Rankings 2022. MNSUAM and The Environmental Association for Universities and Colleges (EAUC) have signed 'The SDG Accord' to inspire, celebrate and advance the critical role that education has in delivering the SDGs and the value it brings to governments, businesses, and wider society.

MNSUAM participated in Green Gown Awards 2023 and submitted five projects for the award that were shortlisted. Out of 93 finalists shortlisted (from 25 countries), two winners and 14 highly commended projects were announced. The project titled 'Tree plantation through seed – A community interactive approach' submitted by Dr. Muqarrab Ali was ranked as 'Highly Commended'.



## CHAPTER-2

### RESEARCH AND DEVELOPMENT

#### 2. PROJECTS

##### 2.1. Research Projects Awarded

##### 2.1.1. International Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million PKR)	Funding Agency
1	Ground water modeling and information products for Khanewal area	Prof. Dr. Irfan Ahmad Baig	1.83	FAO
2	Digital value chain solutions for smallholders pulses farmers in Pakistan	Prof. Dr. Mubashir Mehdi	2.9	ACIAR
3	Accelerating genetic gain in wheat through hybrid breeding in Bangladesh, Ethiopia and Pakistan	Prof. Dr. Asif Ali	77.116	ACIAR
4	Sero-epidemiological, geographical, and molecular investigations of Crimean Congo haemorrhagic fever virus among cattle and tick population in Southern Punjab, Pakistan	Dr. Aziz ul Rehman	1.217	RSTMH-UK
5	Impact of COVID 19 on access to markets and/or services by smallholder small ruminant farming families in Punjab.	Dr. Muhammad Atta Ul Zia	30	ACIAR
6	Creation of new germplasm of characteristic crop and demonstration of dry farming technology	Dr. Shahid Iqbal	64.32	Shanxi Agricultural University, China

##### 2.1.2. National Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million PKR)	Funding Agency
1	Smart Traps for detection and monitoring of Flying Insect Pests (aka SmarTrapS)	Dr. Ayesha Hakim	11.16	HEC-TTSF
2	Production of high yielding and heat tolerant hybrid seed of Chili	Dr. Muhammad Abu Bakar Saddique	11.028	PARB
3	Design and development of Integrated partial automatic Potato Digger	Dr. Umair Sultan	4.88	PSF-NSLP
4	Identification and management of unknown blackening of Cotton Leaves Disease	Prof. Dr. Muhammad Ashfaq	16.53	PARB

## CHAPTER-2

### RESEARCH AND DEVELOPMENT

5	Development of indigenous low distribution manure injection machine for the enrichment of soil nutrients	Dr. Sarfraz Hashim	4.7	PSF-NSLP
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#### 2.1.3. Industry Funded Research Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million PKR)	Funding Agency
1	Development and identification of cotton materials for CLCuD resistance cotton breeding	Dr. Zulqurnain Khan	2.27	JINGHUA SEEDS Industry, China
2	Infestation assessment and ecofriendly management of house fly and common house ant in Multan	Dr. Naeem Iqbal	1.61	Nuchem
3	Establishment of true to type mango nursery certified from federal seed certification department	Dr. Sami Ullah	1.62	Mahmood Group
4	Farms in arms, rehabilitation of flood affected farmers of DG KHAN	Dr. Muhammad Ishtiaq	5.61	Evyol Group
5	Development and shelf stability of dehydrated apple snack	Prof. Dr. Umar Farooq	1.57	Mahmood Group
6	Production technology and shelf line standardization of dried mango	Prof. Dr. Umar Farooq	1.70	Green Agriculture Services
7	Ground water modeling and information products for Khanewal area	Prof. Dr. Irfan Ahmad Baig	1.83	FAO-UN
8	Establishment of R&D Lab for Mass Production of Technical Grade Biostimulant at MNS University of Agriculture, Multan	Dr. Muhammad Arsalan Khan	5.1	Rise AG
9	Promoting Regenerative Agriculture in Wheat-Rice Cropping Systems in Punjab, Pakistan	Dr. Abid Hussain	3.713	Syngenta Pakistan

#### 2.1.4. Skill Development Projects

Sr. No.	Project	Focal Person	Total Amount (Million PKR)	Funding Agency
1	Prime Minister skills development program "Skills for All" Batch-IV	Dr. Fawad Zafar Ahmad Khan	2.25	NAVTTTC
2	Prime Minister Kamyab Jawan Kamyab Pakistan Batch-III Jalalpur Pirwala Campus	Prof. Dr. Shafqat Saeed	1.63	NAVTTTC
3	Prime Minister Kamyab Jawan Kamyab Pakistan Batch-III Multan Campus	Prof. Dr. Shafqat Saeed	5.55	NAVTTTC

## CHAPTER-2

### RESEARCH AND DEVELOPMENT

#### 2.2. Ongoing Research Projects

##### 2.2.1. International Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million PKR)	Funding Agency
1	Adapting to salinity in the Southern Indus Basin	Prof. Dr. Irfan A. Baig	7.4	ACIAR
2	Developing competitive and inclusive value chains of pulses in Pakistan	Prof. Dr. Mubashir Mehdi	5.0	ACIAR
3	Genetic adaptability and water-fertilizer intelligent regulation mechanism of climate smart varieties	Prof. Dr. Asif Ali	9.2	PSF-NSFC
4	Creation of new germplasm of characteristic crop and demonstration of dry farming technology	Dr. Shahid Iqbal	64.32	Shanxi Agricultural University, China
5	Accelerating genetic gain in wheat through hybrid breeding in Bangladesh, Ethiopia, and Pakistan	Prof. Dr. Asif Ali	77.12	ACIAR
6	Collaborative capacity building for plant biodiversity research and preservation in oasis ecosystems of Pakistan	Prof. Dr. Asif Ali	15.08	DAAD
7	Digital value chain solutions for smallholders pulses farmers in Pakistan	Prof. Dr. Mubashir Mehdi	2.9	ACIAR
8	Impact of COVID-19 on access to markets and/or services by smallholder small ruminant farming families in Punjab	Dr. Atta ul Zia	30	ACIAR
9	Increasing productivity and profitability of pulse production in cereal based cropping system in Pakistan	Dr. Umair Waqas	53.52	ACIAR
10	Sero-epidemiological, geographical and molecular investigations of Crimean Congo haemorrhagic fever virus among cattle and tick population in Southern Punjab, Pakistan	Dr. Aziz ul Rahman	1.22	RSTMH-UK

##### 2.2.2. National Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million PKR)	Funding Agency
1	Improving yield, drought and salinity tolerance in wheat through GA-Sensitive dwarfing gene system	Dr. Muhammad Ali Sher	37.29	PARB

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**RESEARCH AND DEVELOPMENT**

2	Exploring the nutritional and functional properties of mango seed oil in bakery products	Dr. Muhammad Shahbaz	2.3	HEC-NRPU
3	Vegetable grafting against soil borne diseases, salinity and drought	Dr. Hafiz Nazar Farid	3.48	HEC-NRPU
4	Biofortification of fodders with selenium to improve milk and quality in dairy cattle.	Dr. Fahim Nawaz	4.14	PSF-NSLP
5	A way forward towards women entrepreneurship	Dr. Afshan Shafi	5.03	PARC-ALP
6	Design and development of indigenized compost windrow turner for the enrichment of soil nutrients	Dr. Sarfraz Hashim	10.13	PARC-ALP
7	Advancements in saline agriculture related interventions for food security	Prof. Dr. Tanveer Ul Haq	7.50	PARB
8	Enhanced alfalfa seed production through conservation of native insect pollinators	Dr. Mudassir Ali	22.31	PARB
9	Development of soybean in Pakistan to reduce the import bills	Prof. Dr. Hammad Nadeem Tahir	17.95	PARB
10	Design and development of self-propelled energy efficient multi-grain crop planter	Dr. Umair Sultan	3.90	HEC-NRPU
11	Thinking beyond the herbicide efficacy box: Appraising herbicide resistance, leaching, persistence and carryover in cotton-wheat cropping system	Dr. Ammar Matloob	5.02	HEC-NRPU
12	Potential risks of glacier lake outburst flood under climate change along China-Pakistan economic corridor (CPEC)	Dr. Muhammad Saifullah	5.23	PSF-CRP
13	Import of high value germplasm and technologies of elite exotic fruits, vegetables and medicinal crops for diversification and sustainable production in Punjab	Dr. Kashif Razzaq	4.88	PARB
14	Genetic transformation of potato (Solanum Tuberosum) with Ipomoea orange batatas (Lbor) for enhanced photosynthesis and productivity	Dr. Ummara Waheed	5.30	HEC-NRPU
15	Production of certified mango nursery for small tree system	Dr. Kashif Razzaq	6.50	HEC-NRPU
16	Role of ornamental plants to mitigate soil heavy metal pollution	Dr. Gulzar Akhtar	3.07	HEC-NRPU
17	Development and commercialization of indigenous technology for production of moringa seed oil ad food ingredient	Dr. Muhammad Shahbaz	4.05	PSF-CRP

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**RESEARCH AND DEVELOPMENT**

18	Supply chain management and value addition of jaman fruit ( <i>Syzigium Cumini</i> )	Dr. Samiullah	2.97	HEC-NRPU
19	National crop genomics and speed breeding center for agriculture sustainability	Prof. Dr. Asif Ali	450	ADP
20	Establishment of business incubation agricultural and entrepreneurship center	Prof. Dr. Mubashir Mehdi	14.46	HEC
21	Smart traps for detection and monitoring of flying insect pests (aka SmarTrapS)	Dr. Ayesha Hakim	28.66	HEC-TTSF
22	Production of high-yielding and heat-tolerant hybrid seed of chili	Dr. Muhammad Abu Bakar Saddique	11.03	PARB
23	Design and development of Integrated partial automatic potato digger	Dr. Umair Sultan	4.88	PSF-NSLP
24	Development of vaccine against Fasciolosis using excretory/secretory products: A promising vaccine candidate antigens	Dr. Asghar Abbas	10.64	HEC-NRPU
25	Sustainable bio energy development in emerging economies under global changes: Current practice, prescription, response and management	Dr. Muhammad Haseeb Raza	5	PSF-NSFC
26	Tunnel growers training of integrated disease management: An eco-friendly approach	Dr. Rana Binyamin	2.32	UAF-EFS
27	Spatio-temporal glacier variation and its influence on the water availability in Hunza Basin along the CPEC route	Dr. Muhammad Saifullah	3.5	PSF-NSFC
28	Optimizing production practices and fruit quality of pomegranate in Southern Punjab	Prof. Dr. Ishtiaq A. Rajwana	6.66	HEC-NRPU
29	Breeding Soyabean for adaptation and high yield in current scenario of climate change in Punjab	Prof. Dr. Hammad Nadeem Tahir	17.77	PARB
30	Genetic variability and molecular characterization of RNA viruses infecting cucurbits in Punjab, Pakistan	Prof. Dr. Muhammad Ashfaq	5.27	HEC-NRPU
31	Development of indigenous low distribution manure injection machine for the enrichment of soil nutrients	Dr. Sarfraz Hashim	4.7	PSF-NSLP
32	Prime Minister Skills Development Program "Skills for All" Batch-IV	Dr. Fawad Zafar Ahmad Khan	2.25	NAVTTCC
33	Prime Minister Kamyab Jawan Kamyab Pakistan Batch-III Jalalpur Pirwala Campus	Prof. Dr. Shafqat Saeed	1.63	NAVTTCC
34	Prime Minister Kamyab Jawan Kamyab Pakistan Batch-III Multan Campus	Prof. Dr. Shafqat Saeed	5.55	NAVTTCC

## RESEARCH AND DEVELOPMENT

### 2.2.3. Industrial Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million PKR)	Funding Agency
1	Establishment and propagation of miscanthus and sisal as a pulp and energy crops	Dr. Muhammad Baqir Hussain	7.93	Bulleh Shah, Lahore
2	Potential of different insecticides as soil termiticides for TIEE management of termite	Dr. Naeem Iqbal	1.55	Patron Group
3	Development and application of functional markers for seed quality based on phytohormones metabolism in cotton	Dr. Muhammad Baqir Hussain	1.20	PAC Fellowship
4	Development and identification of cotton materials for CLCuD resistance cotton breeding	Dr. Zulqurnain Khan	2.27	JINGHUA SEEDS Industry, China
5	Infestation assessment and eco-friendly management of house fly and common house ant in Multan	Dr. Naeem Iqbal	1.61	Nuchem (Pvt.) Ltd.
6	Establishment of modern mango small tree system	Dr. Abid Hussain	7.17	Fossil Energy, Mehmood Kot, Muzaffar Garh
7	Establishment of true to type mango nursery certified from federal seed certification department	Dr. Sami Ullah	1.62	Mehmood Group
8	Ground water modeling and information products for Khanewal area	Prof. Dr. Irfan Ahmad Baig	1.83	FAO
9	Farms in Arms, rehabilitation of flood affected farmers of DG KHAN	Dr. Muhammad Ishtiaq	5.61	Evyol Group
10	Promoting regenerative agriculture in wheat-rice cropping systems in Punjab, Pakistan	Dr. Abid Hussain	3.71	Syngenta, Pakistan
11	Establishment of experimental poultry shed facility for rearing of broiler birds	Dr. Atif Rehman	1.70	AFT
12	Strengthening of microbiology lab facility and capacity building for biorisk management	Prof. Dr. Muhammad Asif Raza	5.00	ABM
13	Development and shelf stability of dehydrated apple snack	Prof. Dr. Umar Farooq	1.57	Mahmood Group
14	Production technology and shelf line standardization of dried mango	Prof. Dr. Umar Farooq	1.70	Green Agriculture Services
15	Establishment of R&D Lab for Mass Production of Technical Grade Biostimulant at MNS University of Agriculture, Multan	Dr. Muhammad Arsalan Khan	5.1	Rise AG

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### RESEARCH AND DEVELOPMENT

#### 2.3. Completed Projects

Sr. No.	Project	Principal Investigator	Total Amount (Million)	Funding Agency
1	Prevalence of rotavirus and hepatitis: A virus in drinking and sewage water collected from selected regions of Southern Punjab	Dr. Aziz ul Rehman	1.00	HEC-SRGP
2	Evaluation of reproductive hormonal profile and haematology of Chinkara deer ( <i>Gazella bennettii</i> ) in Pakistan	Dr. Rana Waseem Akhtar	1.00	HEC-SRGP
3	Effect of replacing crude protein with synthetic amino acids on growth performance, haematological profile, carcass traits and nutrient digestibility in Quail, Broiler chickens and Fancy birds	Dr. Atif Rehman	1.00	HEC-SRGP
4	Design and development of indigenous solar desiccant dry system	Dr. Shazia Hanif	1.00	HEC-SRGP
5	Fruit and shoot borers of mango, <i>Mangifera indica</i> L.: A potential quarantine pest and threat to mango industry	Prof. Dr. Shafqat Saeed	3.44	HEC-NRPU
6	Molecular characterization and in vitro evaluation of chemicals against Botryosphaeriaceae species associated with mango gummosis disease in districts Multan and Muzaffargarh	Dr. Muhammad Zeeshan	1.00	HEC-SRGP
7	Development of nutritious energy dense emergency relief food products for disastrous areas of Pakistan with special reference to protein energy malnutrition (PEM)	Dr. Ambreen Naz	2.52	HEC-NRPU
8	Water conservation and improvement in soil fertility through tillage and strip cropping of legumes in spate irrigated areas of Pakistan	Dr. Khuram Mubeen	1.83	HEC-NRPU
9	Early detection and management of red palm weevil, <i>Rhynchophorus ferrugineus</i> (Oliver), a highly damaging pest of date palm ( <i>Phoenix dactylifera</i> ) in Pakistan	Dr. Khalid Mehmood	1.00	HEC-SRGP
10	Investigation of biotype and associated cytochrome p450 insecticide resistance detoxification encoding genes of cotton whitefly, <i>Bemisia tabaci</i>	Dr. Muhammad Umair Sial	0.90	HEC-SRGP

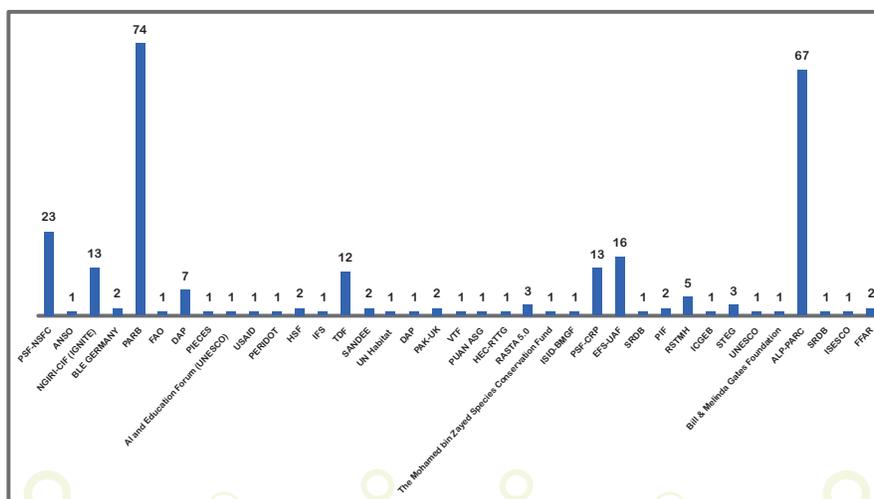


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11	Improving chickpea production on sandy soils by using biochar produced from cotton sticks at different temperatures	Prof. Dr. Tanveer - ul-Haq	2.62	HEC-NRPU
12	Genetic variability and molecular characterization of RNA viruses infecting cucurbits in Punjab, Pakistan	Dr. Muhammad Ashfaq	5.27	HEC-NRPU
13	Local development of micro plot seeder for improving efficiency of agricultural experiments	Dr. Umair Sultan	2.264	UAF-EFS
14	Development of innovative techniques for plan multiplication canopy management and value addition of Promising Ber ( <i>Ziziphus marutiana</i> ) varieties	Dr. Ambreen Naz	4.663	PARB
15	Identification of potential hazards risks of glaciers lakes along China Pakistan economic corridor (CPEC)	Dr. Muhammad Saifullah	0.3	WWF
16	Breeding Soybean for adaptation and high yield in current scenario of climate change in Punjab	Prof. Dr. Muhammad Hammad Nadeem Tahir	17.77	PARB
17	Nanostructure based biosynthetic selenium fertilizer for drought stress amelioration in wheat and functional agriculture	Dr. Fahim Nawaz	2.109	Alexander Von Humboldt Foundation Germany
18	Capacity building of seed science and technology department	Prof. Dr. Muhammad Hammad Nadeem Tahir	1.4317	Academics Without Borders USA

**Project Submission to Various Funding Agencies (2022-23)**





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#### 2.4. Facilitation for Filing of Patents

The ORIC facilitated the following faculty members in completing documentation for filing of patents

Sr. No.	Name of Faculty	Department / Institute	Innovation	National / International
1	Dr. Shazia Hanif	Agriculture Engineering	Desiccant Drying System for Grains	National
2	Dr. Naeem Iqbal	Plant Protection	An Advanced In-Ground Monitoring and Baiting Station for the Management of Subterranean Termites	National

#### 2.5. Seminars/Webinars

Sr. No.	Date	Title	Department	National / International
1.	21.07.2022	Awareness Seminar on Lumpy Skin Disease	Faculty of Veterinary & Animal Sciences	National
2.	24.08.2022	Development of Biopesticide Formulations	Institute of Plant Protection	International
3.	06.09.2022	Challenges and Opportunities for Saline Agriculture	ASSIB Project Team	International
4.	09.09.2022	World Suicide Prevention Day "Creating Hope through Action"	Senior Tutor Office	National
5.	20.09.2022	Session For Volunteers, Pension Scheme (Particularly for TTS Faculty)	Treasurer Office / Al-Meezan Investment	National
6.	21.09.2022	Enhancing Fodder Quality for Improved Animal Nutrition and Health	Agronomy/PSF-NSLP	International
7.	21.09.2022	Principles for Ethical Research with Humans	A&AE, CSU Australia	International
8.	22.09.2022	Value Chain Management: Theory and Practices	Department of Agribusiness and Applied Economics	International
9.	23.09.2022	Financial Crisis in Developing Economies and Future Challenges	Department of Agribusiness and Applied Economics	International
10.	22.09.2022	Combatting Human Trafficking and Bonded Labor	CBS/ORIC	National
11.	03.10.2022	World Heart Day	UWC/Public Health Society	National
12.	11.10.2022	What We Do at University Wellness Center (UWC)	UWC/Public Health Society	National
13.	13.10.2022	Awareness Seminar on "Breast Cancer"	FVAS	National



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14.	14.10.2022	Fruit Breeding for Food Security: A Dire Need of Time	Horticulture	International
15.	17.10.2022	Better Production-Better Nutrition-Better Health" on World Food Day	FST	National
16.	18.10.2022	Crop Type Mapping Using Satellite Remote Sensing	FVAS/ORIC	International
17.	24.10.2022	World Polio Day	Sr. Tutor/Rotary Club/Mainstream Multan	National
18.	31.10.2022	Sustainable Availability of Healthier Food/Diet in Current Climate Change Context (DICE AFS)	FST	National
19.	03.11.2022	Cyber Security Auditing and Evaluation: A Holistic, Systematic Approach	CS/NUST/Linneaus University, Sweden	International
20.	08.11.2022	Long-Term Weather Forecast and Management Interventions for Wheat Crop	Agronomy	National
21.	16.11.2022	New Approaches in Fruit Tree Breeding	Horticulture	National
22.	17.11.2022	Orientation Seminar and recruitment drive of "Agri Graduate Training Program"	CDC/Placement Bureau/JK Sugar Mills	National
23.	21.11.2022	HEC Digital Library Use	Central Library	National
24.	22.11.2022	Pathway to IT Industry	CDC/PB	National
25.	23.11.2022	Workshop/Seminar on "Sustainable Cotton Production Using Artificial Intelligence (RLCC71470070)"	CS/Uni. Of Plymouth UK	International
26.	23.11.2022	Seed Biofortification and Nutrition Security	FST/IPBB/Agri. Engg/Agahi & Harvestplus	National
27.	25.11.2022	Farmer Awareness Session on Zoonotic Infections	FVAS/NUST	National
28.	25.11.2022	Research Journals and HEC Digital Library	Chief Librarian	National
29.	01.12.2022	World AIDS Day "We Are Together in A Fight Against HIV"	Public Health Society	National
30.	01.12.2022	Climate Change and Agriculture in High Mountains: Local Perspectives from The Karakoram In Pakistan	FVAS/ORIC	International



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31.	02.12.2022	Application of Unmanned Aerial Vehicle (UAV) in Agriculture	Agri. Engineering/Tianjin Modern Vocational Technology College, China	International
32.	06.12.2022	TDF Awareness Seminar on 4th call of HEC funded TDF projects	HEC/MNSUAM/ORIC	National
33.	15.12.2022	Entrepreneurship Club	BIAEC	National
34.	04.01.2023	Water Borne Infections and Potential Remedies deliver by Director-Compliance Monitoring, Inspector-General of Water Compliance, Australian Government	PHS/ORIC/FVAS	International
35.	06.01.2023	Leadership in a disruptive & VUCA-Driven Era of Industry / Business	Treasurer Office/UAF	National
36.	11.01.2023	Heat Stress in Poultry; Endocrinology and Brain Physiology by Dr. Gregory S Fraley, Purdue University, USA	FVAS/ORIC	International
37.	17.02.2023	Medicinal Plants for Better Human Health	Plant for life Society and Department of Agronomy	National
38.	28.02.2023	Water Resources Management and Sustainable Constructed Wetland	Department of Agricultural Engineering in collaboration with WWF Pakistan & Pepsi-co	National
39.	09.03.2023	Animal Reproductive Health	Faculty of Veterinary and Animal Sciences in Collaboration with Selmore Pharmaceuticals	National
40.	14.03.2023	Long-Term Weather Forecast and Management Interventions for Wheat Crop	Department of Agronomy and Pakistan Meteorological Department (PMD) Islamabad-Pakistan	National
41.	20.03.2023	Productivity Enhancement in Animals	Faculty of Veterinary and Animal Sciences in Collaboration with Ghazi Brothers	National



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42.	20.03.2023	Seminar on Happiness, Oral Health, and Wellness	Public Health Society	National
43.	20.03.2023	International Seminar on Certified Seed Production	Institute of Plant Breeding & Biotechnology	International
44.	03.04.2023	International Webinar on CRISPR for Food Security	IPBB	International
45.	09.05.2023	International Seminar on More Crop per Drop for Growing Cotton	Department of Agribusiness & Applied Economics	International
46.	17-19.05.2023	HIV & Hepatitis	Public Health Society, FVAS, ORIC, Punjab AIDS Control Program	National
47.	20.06.2023	Prospects of Growing Soybean in South Punjab	IPBB	National

**2.6. Conferences**

Sr. No.	Date	Title	Department	National / International
1	18-20.08.2022	First World Conference on the Development of Vocational and Technical Education	MNSUAM/Tianjin Modern Vocational Training College	International
2	22-23.08.2022	International Date Palm & Pomegranate Conference	Department of Horticulture	International
3	22.09.2022	International Symposium on "Scope of Value Chain Management In Agribusiness"	Department of Agribusiness and Applied Economics	International
4	22.09.2022	Roundtable Conference on "Pulses Value Chain System in Pakistan" under ACIAR Project	Prof. Dr. Mubashir Mehdi	National
5	6-7.12.2022	Food Security and Value Chain Improvement Under Belt & Road Initiative 2022	A&AE/CAS/Pakistan Center for Research	National
6	3-4.01.2023	Smart Plant Protection	Institute of Plant Protection	International



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7	23- 24.02.2023	7 <sup>th</sup> International Horticulture Conference	Department of Horticulture	International
8	7-8.03.2023	32 <sup>nd</sup> Conference Entitled, " Food Crisis in Pakistan; Opportunities and Solution	Department of Food Science and Technology/BZU	National
9	10- 12.05.2023	5th International Academic Studies Congress "Everchanging World: Challenges and Opportunities	Department of Agribusiness and Applied Economics	International
10	19.05.2023	3rd International Conference on Bee Pollination and Conservation	Institute of Plant Protection	International

#### 2.7. Other Outreach/Recreational/Capacity Building Activities

##### 2.7.1. Competitions

Sr. No	Date	Title	Department
1	07.10.2022	Poster Competition on the eve of World Cotton Day	Institute of Plant Protection
2	20.10.2022	Education Awareness, Early Diagnosis, Social Determinants, Prevention and Signs & Symptoms of Breast Cancer	Public Health Society/UWC
3	26.10.2022	Changemaking Competition	PHEC/YES Network/BIAEC
4	14.11.2022	Diabetic Food Competition	Public Health Society
5	22.11.2022	Essay Writing Competition on the eve of Annual Anti-Corruption Day 2022	DSA/Sr. Tutor
6	23.11.2022	Painting Competition on the eve of Annual Anti-Corruption Day 2022	DSA/Sr. Tutor
7	24.11.2022	Declamation Contest on the eve of Annual Anti-Corruption Day 2022	DSA/Sr. Tutor



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8	08.03.2023	Innovation in Food Product Development	Pakistan Society of Food Scientists and Technologists(Organizer) Department of Food Science and Technology, MNS-UAM and the Institute of Food Science and Nutrition, BZU
9	16.03.2023	Plant Centric Meal Competition, Happiness Week, 2023	Department of Food Science and Technology
10	17.05.2023	Graduate Research Day - 2023	GRC
11	11.05.2023	Plant Centric Meal competition	Department of Food Science and Technology
12	07.06.2023	FYP Project Showcase” and “Poster Competition	MNSUAM

**2.7.2. Activities under Social Action Plans**

Sr. No.	Date	Title	Department
1.	10.05.2023	Positive and Negative Use of social media	ORIC
2.	12.05.2023	Plantation at The Merit School	ORIC
3.	15.05.2023	Kids Suffering with Cancer at Children Hospital Multan	ORIC
4.	16.05.2023	kindness at Gardenia Public High School with kids	ORIC
5.	16.05.2023	Educator School on "Social Crime"	ORIC
6.	16.05.2023	HIV & AIDS's Prevention at Bukhari Public School	ORIC
7.	17.05.2023	Use of Plastic Bottles for Indoor Plants" at Govt Hamid Pur School Shujabad Road Multan	ORIC
8.	18.05.2023	Pollution Free Pakistan at Sunshine School	ORIC
9.	18.05.2023	Agri Entrepreneurial Initiatives" with Youth of MNSUAM Multan	ORIC
10.	19.05.2023	Good Touch and Bad Touch among Kids" with School Going Youth	ORIC
11.	23.05.2023	Positive and Negative use of social media at Fast Grammar School Multan dated	ORIC
12.	31.05.2023	Breaking the Chain of Drug Addiction	ORIC
13.	05.06.2023	Entrepreneurial Initiative Youth as Positive Catalyst for Change." At Qaid E Azam Academy for Education Development Rangel Pure	ORIC
14.	06.06.2023	Cleanup at CITY park Multan	ORIC
15.	07.06.2023	How to Improve Negotiation Skill at Girls Hostel MNS University of Agriculture Multan	ORIC
16.	10.06.2023	Education and the Child of Kiln's Labor at Nag Shah Chowk Multan	ORIC
17.	11.06.2023	Disability is not a Hurdle	ORIC



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**2.7.3. Faculty and Staff Trainings/Workshops Organized**

Sr. No.	Date	Title	Department
1	04.08.2022	International Workshop on Climate Change and AgroMet Advisory Services	Agronomy
2	24.08.2022	Crop Management for Clean Cotton Production at JPP	Agronomy/WWF-Pakistan
3	20.09.2022	Drone Use in Agriculture	IPP
4	21.09.2022	Stress Management in Students	PO SA
5	29.09.2022	GNSS RTK T30 System	Team PSF/CRP/CONSRM-488 (Dr. M. Saifullah)
6	12.10.2022	Workshop on "E-Commerce"	CS
7	19-20.10.2022	Hands-on training on "Remote Sensing with Open-source Software"	FVAS/ORIC
8	21.10.2022	Mechanization Technology and Equipment of Corn Production Whole Process	Agri. Engineering
9	3-4.11.2022	MS Office and Graphic Designing	YES/V&AS
10	04.11.2022	International Training on "Self-Propelled Corn Harvester"	Agri. Engineering/AMRI
11	10-12.11.2022	Participatory Workshop with farmers	V&AS/ORIC/TRANSECT Project, Germany
12	20.11.2022	Mock Exercise to Demonstrate Survey and Control of Desert Locust	IPP/NUST
13	25.11.2022	Stop Burning: Convert crop Residue to Revenue at Your Farm	Agronomy/ASAB/NUST
14	14.12.2022	Effective and Timely Weed Management in Wheat	Agronomy
15	05.01.2023	Hands-on Training on "Synopsis Writing" for the Postgraduate Students of FVAS	FVAS/ORIC
16	06.01.2023	Birds Feeding	Plant for Life Society
17	10.01.2023	International Training Workshop on "Integrate Water Resources Management"	Agri. Engineering
18	10.02.2023	Digital Agribusiness Marketing in Pakistan: Challenges and Opportunities for Pulses Growers	Prof. Dr. Mubashir Mehdi/ ACIAR funded ARSF project/NARC



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19	27.02.2023	Faculty Professional Development Program (Batch-I)	OCE
20	07.03.2023	“Lab Safety” Training	Department of Horticulture, ORIC in collaboration with Engro Fertilizers
21	08-09.03.2023	Training Workshop on Development Leadership Potential through Retrospection	Department of Outreach and Continuing Education
22	09.03.2023	Identification and Description of Soil Profile	Department of Soil & Environmental Sciences
23	14-15.03.2023	Hands on Training on Genomic Analysis	Faculty of Veterinary and Animal Sciences
24	21.03.2023	In-Pond Raceways System (IPRS)	Faculty of Veterinary and Animal Sciences
25	16.03.2023	Stakeholders Workshop under ARSF 019 project	Dept. of A&AE
26	17.03.2023	One day international training workshop on "Climate Smart Water-Fertilizer Intelligent System for Cotton & Wheat"	PSF-NSFC funded project entitled "Genetic adaptability and water-fertilizer intelligent regulation mechanism of climate smart varieties".
27	28.03.2023	One day Training on " Innovation, Commercialization Process and IP Rights"	ORIC
28	22-26.05.2023	Biorisk Management	ABM
29	30.05.2023	3D Scanner and Drone Spraying Technology	Department of Agricultural Engineering & Agricultural Mechanization Research Institute (AMRI)

**2.7.4. Students Training under Central Lab System**

Sr. No.	Date	Title	Name of Trainer
1	20.10.2022 24.11.2022	Seed Germination Testing	Dr. Muhammad Amir Bakhtavar
2	04.11.2022 02.12.2022	Autoclave and Baking equipment	Mr. Muhammad Usman



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3	21.10.2022 28.10.2022	Climate and weather data analysis and interpretation relation with plant growth and development using sigma plot and R software	Dr. M. Habib ur Rahman
4	20.10.2022 22.12.2022	DNA extraction and gel documentation	Dr. Akash Fatima
5	24.10.2022	DNA Extract and PCR	Dr. Zulqurnain Khan
6	13.10.2022 27.10.2022 10.11.2022 24.11.2022 08.12.2022 22.12.2022	Kjeldhal and Soxhlet Apparatus	Dr. Shabbir Ahmad
7	26.10.2022	Microscopic Slide Preparations, and Micrometry	Dr. Unsar Naeem Ullah
	21.10.2022 28.10.2022	Tissue culture	Ms. Plosha Khanum
8	24.10.2022 31.10.2022	Measuring gaseous exchange attributes through nondestructive way by optimal utilizing CIRAS.3 instruments.	Dr. H. Nazar Faried
9	27.10.2022 03.01.2023	Postharvest Physiological parameters measuring fresh produce through gas analyzer, calorimeter, refractometer	Dr. Sami Ullah / Dr. H. Nazar Faried
10	19.20.12.2022	Sample Preparation, GC.MS operation and Analysis	Dr. Farrukh Baig / Dr. M. Asif Farooq
11	12.10.2022 09.11.2022 14.12.2022	Isolation and purification of bacteria	Dr. Ali Haider
12	03.11.2022	Labs Biosafety and health Hazards Proper use and calibration of pH meter, weighing balances Centrifuges use, maintenance and hazards	Dr. Muhammad Faisal
13	07.02.2023 07.03.2022 04.04.2022 02.05.2023 06.06.2022	Autoclave and Baking equipment	Mr. Muhammad Usman
14	16.02.2023 08.03.2023 05.04.2023 03.05.2023 07.06.2023	Kjeldhal and Soxhlet Apparatus	Dr. Shabbir Ahmad
15	22.02.2023	ELISA	Furqan Ahmad
16	22.02.2023 29.03.2023 24.05.2023	Seed Germination Testing	Dr. M. Amir Bakhtavar



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17	04- 05.04.2023	Tissue Culture and Genetic Transformation	Dr Ummara Waheed / Ms. Plosha Khanum
18	05- 06.04.2023	Laminar Flow Hood and Use of Ph Meter	Dr Ummara Waheed / Ms. Plosha Khanum
19	02.03.2022 09.03.2022	Contact tracing is a powerful public health tool to help stop the spread of an infectious disease	Dr. M. Umair Waqas
20	23.02.2023 23.03.2023 27.04.2023 25.05.2023	Polymerase Chain Reaction, Gel electrophoresis & Gel documentation system	Dr. M. Abu Bakar Saddique / Dr. Muhammad Usman
21	24.02.2023 31.03.2023 29.04.2023 26.05.2023	GC-MS	Dr. Muhammad Asif Farooq / Dr. Farrukh Baig
22	01.03.2023 03.05.2023	Spectrophotometer	Dr. Shakeel Ahmad
23	13- 14.03.2023	Isolation of bacteria, Streaking and Swabbing Protocols	Dr. Ali Haider
24	08- 09.05.2023	Morphological Identification of bacteria using Gram's Staining	Dr. Ali Haider
25	29- 30.05.2023	Disk Diffusion Test	Dr. Ali Haider
26	26- 27.04.2023	The use of Autoclave and Centrifuge Machine	Dr. Shahid Ali
27	28.03.2023 25.04.2023 30.05.2023	Insects Rearing	Dr. M. Nadir Naqqash / Dr. Farrukh Baig

**2.7.5. Celebrations / Interactive Sessions**

Sr. No.	Date	Title	Department
1	29.11.2022	International Day for the Elimination of Violence against Women-2022	MNSUAM
2	21.02.2023	Hybrid Wheat Farmers Convention	MNSUAM
3	06-07.03.2023	Inauguration of Centre for advance studies in Agriculture and Food Security as D-8 Research Center and International Conference on Food Security Challenges and Opportunities in D-8 Countries	UAF, Faisalabad
5	3-5.07.2022	Mango Festival 2022 - DHA Multan	MNS-UAM
6	09.02.2023	Precision Agriculture Festivity	MNS-UAM, ARID University



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7	23.05.2023	Interactive Session on "Applying for Ongoing Research Grants"	ORIC
8	28.07.2022	World Hepatitis Day	Public Health Society UAM
9	14.08.2022	75th Pakistan Independence Day	MNSUAM
10	07.10.2022	World Cotton Day	IPP
11	13.10.2022	Breast Cancer Awareness Day	FVAS
12	14.10.2022	World's Egg Day	FVAS
13	27.10.2022	Public Forum on the Climate Action	Agronomy
14	31.10.2022	DICE AFS-2022	MNSUAM
15	31.10.2022	Food Street and Fun Fair on the eve of DICE	FST
16	14.11.2022	World Diabetes Day	PHS/ORIC
17	15.11.2022	Kisan Convention at JPP	Agronomy
18	22-24.11.2022	Annual Anti-Corruption Day 2022	DSA/Sr. Tutor
19	24.11.2022	World Fisheries Day 2022	FVAS/ORIC
20	30.11- 05.12.2022	Winter Sports Gala 2022	Directorate of Sports
21	05.12.2022	World Soil Day 2022	SES
22	06.12.2022	Chrysanthemum Exhibition	Horticulture
23	09.12.2022	International Anti-Corruption Day	ORIC/Regional Directorate Anti-Corruption Establishment Multan Region
24	15-16.03.2023	Book Fair	Central Library of MNS- UAM
25	08.03.2023	International Women Day	MNS-UAM
26	15-20.03.2023	Happiness Week	MNS-UAM



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27	18.03.2023	Nutra Field Day(Demonstration trial)	MNS-UAM in collaboration with Directorate of University Farms
28	22.03.2023	Wildlife Conservation Day	FVAS
29	15.03.2023	Pet and Bird Show 2023	FVAS
30	15-16-03-2023	Annual Book Fair 2023	Central Library MNS-UAM
31	22.03.2023	Graduation Ceremony of Entrepreneurship Club	BIAEC
32	05.06.2023	World Environment Day 2023 Celebrations	Department of Soil & Environmental Sciences
33	19.06.2023	Father's Day	Directorate of Public Relations in Collaboration with senior Tutor Office

### 2.8 Research Linkages

#### 2.8.1 International

Sr. No.	Organization	Country	Signing Date
1	Tianjin Modern Vocational Technology College	China	28.07.2022
2	University of Kassel	Germany	01.09.2022
3	Gebze Teknik University, Kacaeli	Türkiye	03.10.2022
4	Joining the Silk Road Asia Europe Universities ( Vocational Education) Alliance	China	16.01.2023
5	Xinjiang Agricultural Vocational Technical College	China	17.02.2023
6	Agricultural Research Center (ARC) of the Ministry of Agriculture and Land Reclamation of the Arab Republic of the Egypt	Egypt	22.02.2023
7	Sivas University of Science and Technology	Türkiye	16.03.2023
8	Centre for Pesticide Suicide Prevention Queen's Medical Research institute 47 Little France Crescent Edinburgh the University of Edinburgh	UK	20.04.2023
9	Istanbul Gelisim University, Istanbul	Türkiye	11.05.2023
10	KONYA Food and Agriculture University Konya	Türkiye	11.05.2023

#### 2.8.2 National

Sr. No.	Organization	Signing Date
1	Health Services Academy, Govt. of Pakistan, Islamabad	02.08.2022
2	Faizan Global Relief Foundation	12.08.2022



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3	Evyol Group of Companies Pvt. Ltd., Multan	27.08.2022
4	Star Farm Pakistan (Pvt.) Ltd.	01.09.2022
5	Bank Islami Pvt. Ltd.	01.09.2022
6	Foster Learning	26.10.2022
7	Potato Research Institute, Sahiwal	18.11.2022
8	FertiScience (Pvt.) Ltd.	25.11.2022
9	South Punjab Hospital	24.12.2022
10	Rise AG, Pakistan	12.01.2023
11	Punjab Aids Control Program (PACP), Lahore	16.01.2023
12	World Wide Fund (WWF)- Pakistan	22.01.2023
13	CropLife Pakistan Association	17.04.2023
14	Mir Chakar Khan Rind University of Technology Dera Ghazi Khan	09.05.2023
15	Syngenta Pakistan Limited, Karachi, Pakistan	05.06.2023
16	Association for Gender Awareness & Human Empowerment (AGAHE)	06.06.2023
17	Eastern Scientific Cooperation (Pvt.) Limited	07.06.2023
18	Pakistan Horticulture Development and Export Company	20.06.2023

#### 2.9 Awards Won

During the reported year, following faculty members won national / international level awards:

Sr. No.	Title of Award/ Honor	Forum/ Conferring Authority/ Organization	Name, Designation and Department of Award Winner
1	Prime Minister Flood Hero Award	HEC and Milkar Organization	Dr. Muhammad Usman Jamshaid, Lecturer, Soil and Environmental Sciences
2	Special Prize	DICE-AFS 2022	Dr. Aamir Hussain, Assistant Professor, Computer Science
3	Associate Fellow of Higher Education Academy, UK	Advance HE, UK	Dr. Ayesha Hakim, Assistant Professor, Computer Science
3	2 <sup>nd</sup> Position in Poster Competition	International Conference on Food Security and Value Chain Improvement under Belt & Road Initiative (ICFSVC-2022)	Dr. Aamir Hussain, Assistant Professor, Computer Science
4	Associate Fellow of Higher Education Academy, UK	AdvanceHE, UK	Dr. Ayesha Hakim, Assistant Professor, Computer Science
5	Outstanding Huawei ICT Academy	Huawei Pvt. Ltd.	Dr. Ayesha Hakim, Assistant Professor, Computer Science



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6	Chartered Engineer (CEng)	Engineering Council	Dr. Umair Sultan, Assistant Professor, Agri. Engineering
7	"Microsoft Imagine Cup National Winner, 2023"	Microsoft/HEC	Dr. Ayesha Hakim, Assistant Professor, Computer Science

### 2.10 ORICs Self-Assessment Scorecards Evaluation Report (2021-22) by HEC

Higher Education Commission Islamabad introduced ORIC Policy 2021 for recognition of ORICs to enhance research quality, relevance and competitiveness and promote innovation and commercialization at HEIs. Accordingly, ORIC MNSUAM was recognized by HEC on 11.10.2021 and achieved the status of 2<sup>nd</sup> recognized ORIC at the national level and 1<sup>st</sup> recognized ORIC in Southern Punjab.

The HEC measures the performance of all recognized ORICs through a 'Self-Assessment Scorecard' on a financial year basis. For the year 2021-22, HEC-recognized ORICs were asked to furnish their performance on a scorecard having the key performance indicators under the following major aspects:

A. Human Resource & Operations	10
B. Research Excellence	45
C. Innovation & Commercialization	30
D. Sustainability & Capacity Building	15
<b>Total</b>	<b>100</b>

The Key Progress Indicators are derived from HEC's ORIC Policy 2021, which, in summary, include: ORIC human resources, infrastructure and governance, assistance/research support, research proposal submissions, joint research projects run, contract research agreements, policy advocacy & consultancy, agreements signed for collaborations, linkages established with HEIs/corporate sector, MoUs signed with HEIs, commercialization of research, IP/Research Policy status, MoUs with industries/chambers for industrial linkages, patents filed and granted, liaison with industry, revenue generated, strategic plan, workshops, training and showcasing organized.

Higher Education Commission, Islamabad evaluated the performance of all the universities across Pakistan on the basis of prescribed key performance indicators for the financial year 2021-2022. ORIC-MNSUAM has been placed in category "X" and has secured 2<sup>nd</sup> position amongst all the Agriculture Universities of Pakistan, 3<sup>rd</sup> amongst all the Public Sector Universities of Punjab and 12<sup>th</sup> amongst all the Public Sector Universities of Pakistan.

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HEC Pakistan  
ORIC Performance

Congratulations!

MNS University of Agriculture Multan  
(HEC ORIC Performance Evaluation 2022 in  
Research, Innovation and Commercialization)

- ✓ 2<sup>nd</sup> (Agriculture Universities of Pakistan)
- ✓ 3<sup>rd</sup> (Punjab Public Sector Universities)
- ✓ 12<sup>th</sup> (Pakistan Public Sector Universities)

**2.11 Revenue Generated**

ORIC has been facilitating faculty for the execution of national/international/industrial projects, commercialization activities, lab training and conduct of various events that involve revenue generation. A summary of revenue generated by ORIC from these services during the reported year is as follows:

Particulars	Revenue (Million PKR)
Sponsorships for events	65.50
ORIC Overhead from Research Projects	11.27
Consultancies provided	3.71
Lab Sample Analysis	0.26
<b>Total</b>	<b>80.74</b>



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### 2.12. Pakistan Agriculture Coalition Fellowship on Cotton Production

MNS University of Agriculture, Multan offers a variety of funding options for national students pursuing postgraduate studies, including scholarships and student assistantships. A PhD fellowship on cotton production funded by the Pakistan Agriculture Coalition is in progress.

### 2.13. Facilitation to HEC Indigenous Awardee(s)

ORIC facilitated 17 PhD awardees of HEC Indigenous.5000 Fellowships, enrolled in various departments of MNSUAM for the accomplishment of their research work through timely disbursement of funds from the Treasurer Office.

### 2.14. Facilitation to Faculty for HEC Approved PhD Supervisorship

ORIC facilitated 23 faculty members of various departments to renew/apply for HEC-approved PhD supervisorship during the reported year. Currently, the University has 76 faculty members with the status of approved PhD Supervisor from HEC.

### 2.15. Promotion of Research and Consultancy Culture

ORIC is striving hard to promote the culture of research and consultancy by creating a research ecosystem. During the reported year, nine faculty members provided consultancies to various agencies/industries e.g., Syngenta, Nuchem, FAO, RAEDC, Doaba Foundation, University College of Dera Murad Jamali, International Chinese Education Innovation Project, Pepsico, Memon Farms etc. Moreover, keeping in view the need of the local community, especially the farmers and industrialists, this University has taken the following revolutionary steps:

1. All faculty members of the University are encouraged to take part in need-based research and consultancy.
2. Students are motivated for research and consultancy in the form of paid work.
3. Liaisons are being established among the researchers and extension workers to work for a common target like the establishment of the South Punjab Agriculture Forum.
4. For the benefit of the local community, the University encourages the provision of funds from its own resources to researchers to carry out problem-oriented research.

### 2.16. Business Incubation and Agricultural Entrepreneurship Center (BIAEC)

Business Incubation and Agricultural Entrepreneurship Center (BIAEC) is aimed to initiate the business culture among the youth, including students and career professionals of South Punjab. The overall focus of this initiative is to mobilize the new generation toward economic development by launching businesses and social enterprises. The BIAEC provides excellent counseling to students. The BIAEC helps students to convert their innovative ideas into valuable businesses.



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## 2.17.1. Current developments at BIAEC

- MNSUAM BIAEC is the only registered BIC in Multan and in South Punjab, also got funding of 24 million from HEC. MNSUAM BIAEC submitted a proposal for the establishment of BIC in south Punjab and the proposal was selected among eight universities out of 35 universities in Pakistan.
- Sybrid (Private) Limited launched the Corporate Innovation Center for Agriculture and Allied Technologies (CICAAT) at the Muhammad Nawaz Sharif University of Agriculture, Multan, with the collaboration of BIAEC to promote agri-tech, business innovation and young talent in the region.
- International collaboration with DICE AFS (Agriculture Food Science).
- Business Plan competition DICE AFS 2022.
- 9 start-ups registered with SECP.
- Trademark registration of University's brands.
- Commercial linkages of the accelerating companies (Green Agriculture Services with Mehmood Group and mango clusters)
- MOUs with leading private and public sector companies.
- Establishment of Executive Cafeteria.
- Establishment of workplace for incubates.
- Partnerships with private sectors.
- Nomination of Business Incubation Center for CLDP meeting USA by HEC.

## 2.17.2. Capacity building sessions for incubates

- **Entrepreneurial Workshops**
  - Digital Marketing and Women Leadership by SMEDA
  - Mango Export Workshop by Green Agriculture Services
  - Honey Production & Business Plan by SMEDA
  - NTN & STRN registration and E Fillings of return or company registration by SMEDA
- **Domain Specialist Sessions**
  - Importance of Entrepreneurship and Personal Evaluation by Foster Learning
  - “Know Yourself” and Growth mindset by Foster Learning
  - “Self to Others” and Teamwork workshop by Foster Learning
  - Leadership and Design Thinking by Foster Learning
  - Critical thinking and “Karobar Roadmap” training session by Foster Learning
  - Crowd Sales and Business Model training session by Foster Learning
  - Guest Speaker session on “Youth Leadership and Entrepreneurship” with Brent Whelbarger
  - “Elevator Pitch and Pitch Deck Presentation” workshop by Foster Learning
- **Mentorship Sessions**
  - Business Plan Writing and Full Proposal Submission for ISF at BIAEC by Ms. Benish Sarfraz, Manager BIAEC



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- Guidelines for Pitch Presentation for Cohort-II at BIAEC by Prof. Dr. Mubashir Mehdi, Director BIAEC
- Idea Design Competition and mentorship session on Effective Pitch Presentations at Women University by Ms. Benish Sarfraz (Manager BIAEC)

#### 2.17.3. Business Competitions

- DICE AFS 2022 (31 October 2022)
- Entrepreneurship Club Pitch Presentation and Certificate Distribution Ceremony (22 February 2023)
- Cohort-II Selection (22 May 2023)

#### 2.17.4. BIAEC Startups

Sr. No.	Name of Startup	Idea	Sector / Field
1	Bytes Software Development Private Limited	IT Solutions	IT
2	Sharan Herbal and Food Supplement	Herbal Products	Herbal Products
3	AlSaif	Food market	Food market
4	Multan Fresh Honey	Beekeeping	Beekeeping
5	New Age Leaf	Vermicomposting	Vermicompost
6	Green Revolution	Agro-Services	Agro-Services
7	SmarTrapS	Agri Services & IT solutions	Agri Services & IT solutions
8	MINISOL CONSULTANTS (PVT) LTD	Consultancy Marketing, Farming and Bio-Tech	Consultancy Marketing, Farming and Bio-Tech
9	Green Agri-Tech	Agri Services including Consultancy	Agri Services including Consultancy
10	Managers	Event Management	Event Management
11	Abrish Honey	Community Service	Honey Production
12	Green Agriculture Services	Consultancy and Marketing Services	Consultancy and Marketing Services
13	Puchick	Online Platform	Online Platform
14	Uni Value Food	Marketing of development of value-added products from fruits and vegetables	Marketing of development of value-added products from fruits and vegetables
15	-	Event Management	Event Management
16	Multi-grain Flour	Food product	Food product
17	AgroMart Sevices	Services	Services
18	Uni Fresh Water	Marketing	Marketing
19	F.M Marketing Alternate Energy	Environmental Solution	Environmental Solution



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20	RS Organic Food	Food Business	Food Business
21	Garden Doctor	Horticulture Services	Horticulture Services
22	Paradise Foods and Catering	Catering	Catering
23	Organic Agri Lines	Horticulture Services	Horticulture Services
24	Smart Storage Chamber (Store Karo!)	Agro Services+ IT Solutions	Agro Services+ IT Solutions
25	Mango Trace	Agro Services+ IT Solutions	Agro Services+ IT Solutions
26	Microbiome	Bio-Pesticides production and commercialization	Bio-Pesticides production and commercialization
27	Value-added fish products	Food Business	Food Business
28	Incubator For Chicken	Hatchery Business	Hatchery Business
29	Stress Saviour Pvt. Ltd	Stress Control Consultancy Services	Stress Control Consultancy Services
30	1.50-kilowatt Triple Repulsion BLDC MVP Motor	Motor Manufacturing	Motor Manufacturing
31	Solar Drier (Fresh DRI)	Food Business	Food Business
32	Mango	Mango production and export	Mango production and export
33	Entrepreneurial Tri-hallux Automatic egg hatching and breeding control system	Hatchery Business	Hatchery Business
34	Graphic Designing Services & Coaching Services	Digital Marketing and Graphic Designing	Digital Marketing and Graphic Designing
35	Organic Moringa Powder	Organic Moringa Powder	Organic Moringa Powder
36	Mango and related products	Mango Business	Mango Business
37	Ever Fresh Online Nursery	Online Nursery Business	Online Nursery Business
38	Fielder's	Food Business	Food Business
39	Dattecs	Digital Marketing	Digital Marketing
40	Mr Meat	Meat and Food Business	Meat and Food Business
41	H.W. ENTERPRISE SMC PRIVATE LIMITED	Honey Production	Honey Production

**2.17.5. University Enterprises**



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### 2.18. University Rankings

The University has participated in various national and global rankings of Higher Education Institutions. University rankings serve a crucial purpose in the higher education landscape, offering a comprehensive evaluation of institutions worldwide. These rankings play an essential role in guiding prospective students, parents, and policymakers in making informed decisions about their educational pursuits. By providing a comparative analysis of universities based on factors like academic reputation, innovation, research output, faculty qualifications, impact on environment and society, and international diversity, rankings serve as a valuable benchmark for institutions striving to enhance their educational quality and global standing. Currently, *MNSUAM* has won accolades in the following rankings:

- World University Rankings for Innovation (WURI)
- Times Higher Education (Impact Rankings)
- HE Higher Education Rankings
- UI GreenMetric World University Rankings

#### 2.18.1. World University Rankings for Innovation 2023

The World University Rankings for Innovation (WURI) evaluates the university's real contributions to society, highlighting creative and innovative approaches of universities' research and educational programs. MNS University of Agriculture Multan Pakistan is amongst the top Innovative Universities in Pakistan. MNSUAM has been ranked for the year 2023 amongst 51-100 innovative universities of the world in various categories including industrial application, crisis management and progress in the 4<sup>th</sup> industrial revolution and 101-200 worldwide.

A certificate from WURI (World University Rankings for Innovation) ranking MNSUAM. The certificate is on a light brown background with a central image of a university building and a green field. It features the WURI logo in the top right and the MNSUAM logo in the top left. The text reads: 'The World University Rankings for Innovation (WURI) has globally ranked MNS-University of Agriculture Multan in top Innovative Universities for the Year 2023.' There are four callout boxes with globe icons, each listing a ranking category and range: '51-100 (Industrial Application)', '51-100 (Crisis Management)', '101-200 (Worldwide)', and '51-100 (Progress in the 4th Industrial Revolution)'. The bottom of the certificate includes the university name and website: 'MNS University of Agriculture, Multan www.mnsuam.edu.pk'.



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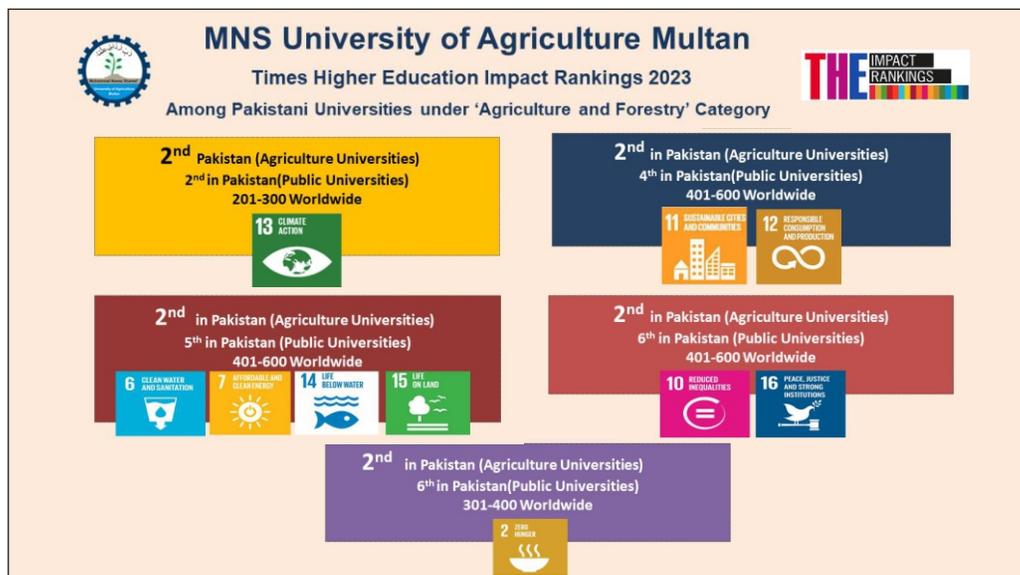


2.18.2. Times Higher Education Impact Rankings 2023

The Times Higher Education Impact Rankings 2023 announced that MNS University of Agriculture Multan Pakistan achieved the 2<sup>nd</sup> position in Public Sector Universities and 201-300 worldwide under the subject category of "Agriculture and Forestry" in SDG 13-Climate Action. The Impact Ranking uses a range of indicators to assess universities' performance in achieving the United Nations Sustainable Development Goals (SDGs). These goals encompass a broad range of issues, including poverty eradication, gender equality, clean energy, climate action, and sustainable cities, among others.



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### 2.18.3. HE- Higher Education Rankings 2023

MNS University of Agriculture Multan (MNSUAM) takes immense pride in being recognized as a top-ranking university in Pakistan based on the Higher Education (HE) Ranking on Key Performance Indicators (KPIs). MNSUAM achieved the 1<sup>st</sup> rank nationwide and the 23<sup>rd</sup> rank in the overall Ranking M4 2023. The Higher Education (HE) ranking is a tool that measures the performance of higher education institutions according to several criteria and Key Performance Indicators (KPIs) that assess specific aspects of the operation of higher education institutions.

MNS University of Agriculture Multan, Pakistan	
Ranking	23
Name	MNS University of Agriculture Multan, Pakistan
Website	<a href="https://mnsuam.edu.pk/">https://mnsuam.edu.pk/</a>
Country	Pakistan
Points	6806
Description	The Muhammad Nawas Shareef University Of Agriculture is a public university located in Multan, Punjab, Pakistan. it was established in 2012 on the initiative of chief Minister Punjab Mian Muhammad Shahbaz Sharif. The University is names after Nawaz Sharif.

### 2.18.4. UI GREENMETRIC WORLD UNIVERSITY RANKINGS

MNSUAM secured 1<sup>st</sup> position in Sustainable Waste Management and 4<sup>th</sup> rank overall at the national level and 203<sup>rd</sup> worldwide in the UI GreenMetric World University Rankings 2022. MNSUAM aims to increase awareness towards sustainability. The primary objective is to control carbon footprints and protect the natural atmosphere from drastic climate change.



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UI GreenMetric Ranked MNS University of Agriculture Multan as Pakistan's Top Ranked University in Sustainable Waste Management!

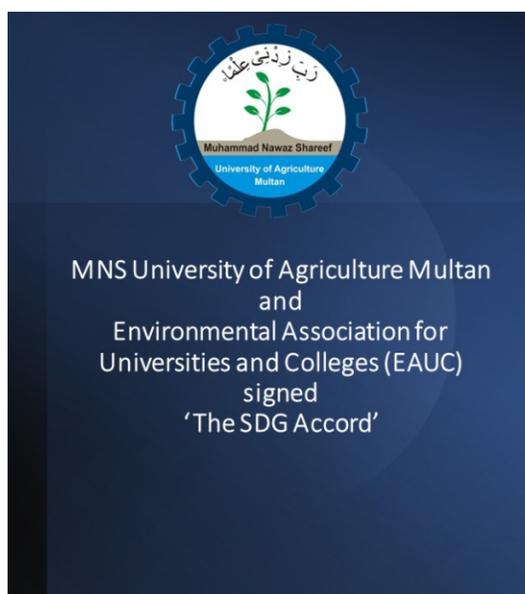


#### 2.18.5. The SDG Accord

MNSUAM and The Environmental Association for Universities and Colleges (EAUC) have signed 'The SDG Accord' to inspire, celebrate and advance the critical role that education has in delivering the SDGs and the value it brings to governments, businesses and wider society. Out of 289 (including HARVARD, Oxford, and Leeds Universities), total 21 Institutions from Pakistan sign the accord which includes nine organizations and 12 Universities (including UAF, NUST, WU, and MNSUAM) Accord Signatories recognize:

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- The indivisible and interconnected nature of the universal set of Goals – People, Prosperity, Planet, Partnership, Peace etc.
- That, as educators, we have a responsibility to play a central and transformational role in attaining the Sustainable Development Goals by 2030.



### 2.19. Miscellaneous Activities

- The university has signed its first non-exclusive license agreement with Fatima AG Solutions Limited for production, multiplication, marketing, distribution and sale of five wheat hybrids in Pakistan. Moreover, negotiations with four other industry partners including Suncrop Group, ICI, Tara Group and Fertiscience are underway for signing license agreements.
- Provision of testing and lab analysis services to researchers/farmers/industry.
- ORIC facilitated the faculty to seek travel grants and research funding from various agencies.
- Seven meetings of Ethical Institutional Review Board were held to review the research proposals with respect to ethical and biosafety/biosecurity considerations prior to submission to funding agencies.
- Three meetings of ORIC Steering Committee were held to review the progress and seek guidance from industry members for better functioning of ORIC.
- Regular fortnightly meetings of Central Lab Advisory Committee were convened for smooth working of Central Lab system.
- ORIC annual report was presented to Board of Advanced Studies and Research and subsequently approved by the Syndicate.
- Research Data Quality and Management Policy and Conflict of Interest Policy were approved from the concerned forums and have been implemented in the university.

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- The Green Gown Awards recognize the exceptional sustainability initiatives being undertaken by universities and colleges. With sustainability moving up the agenda, the Awards have become established as the most prestigious recognition of best practice in the higher education sector. MNSUAM participated in Green Gown Awards 2023 and submitted five projects for the award that were shortlisted. Out of 93 finalists shortlisted (from 25 countries), two winners and 14 highly commended projects were announced. The project titled 'Tree plantation through seed – A community interactive approach' submitted by Dr. Muqarrab Ali was ranked as 'Highly Commended'.

Green Gown  
AwardsAwarding Sustainability Excellence  
Since 2004

### Muhammad Nawaz Shareef University of Agriculture Multan, Pakistan.

Highly Commended

#### Tree Plantation through seed - A community interactive approach

Deforestation is a major factor for the low forest area in Pakistan and its effects are very devastating and can cause loss of resources. Under the prevailing low forest area conditions in Pakistan, the seeds/stones of available forest and fruit trees are being wasted. The forest trees planted, along the sides of canals, roads and fields in urban, peri-urban, and rural areas, shed their seeds around the year but due to unawareness of the community, these seeds are not properly collected, preserved and sown. Even the seeds of locally consumed fruit like mango, falsa, ber and jaman etc., are just wasted.

This project was designed to create awareness and provide hands-on training for utilizing the seeds of wild and commercial tree plantations for improving the green biomass. Through this project, a capacity of more than 2,000 persons including local community members, students and staff was built through practical demonstration of the concept. Moreover, in the available land resources, small nurseries were also prepared at the willing institutes to create concepts of volunteer services as well as entrepreneurship for global sustainability through tree plantations.

#### What the judges Thought

A Positive project for students and the local community with many benefits for all. The train the trainer programme ensures that these gains are sustainable.

#### What it Means to win

"Winning the international Green Gown Award will boost our energy to work with more dedication on societal benefit at large. It will serve as token of appreciation for thousands of the students involved, stakeholders working with us and hundreds of faculty and staff working for our green future society."

Professor Dr. Asif Ali, Vice Chancellor





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## 2.20. Publications

## 2.20.1. Journal Articles

The following research papers/manuscripts were published during 2022 -23.

Sr. No.	Paper	Authors' Name	Year	Journal	Volume	Page Number
1	Peelu ( <i>Salvadora oleoides</i> Decne.): An unexplored medicinal fruit with minerals, antioxidants, and phytochemicals.	Razzaq K, MM Sadiq, H Ashraf, A Naz, A Hussain, A Maqbool, MT Altaf, S Ullah, G Akhtar, HN Faried, M Amin, IA Rajwana, AS Khan, S Alfarraj, MJ Ansari, and A Saleem	2022	Biomed Res. Int.	2022	1-9
2	Extraction and characterization of cereal bran cell wall in relation to its end use perspectives.	Hussain M, F Saeed, M Javed, M Afzaal, B Niaz, A Imran, A Naz and M Umar	2022	J. Food Sci. Technol.	59	4615-4623
3	Sensory Acceptance of malted and un-malted barley pretzels in South Punjab sector of Pakistan.	Aziz U, A Naz, S Ahmad, MA Shehzad, R Hussain and H Tariq	2022	J. Plant Env.	4	93-100
4	Instantaneous documents authentication and verification based on robust digital signature.	Yaqub S, A Hussain, A Hakim, HAH Khalid and A Yaqub	2022	Int. J. Comput. Intell. Control	14	229-235
5	Dengue vector surveillance using acoustic signals through sequential model of convolutional neural networks.	Hasham A, A Hakim, J Jabeen and S Naseem	2022	Sukkur IBA J. Comput. Sci. Math. Sci.	6	42-48
6	Presence of selected organochlorine pesticides (OCPs) in sediments and biota of River Satluj, Pakistan: First report.	Qazi AA, M Ali, F Jabeen, R Iqbal, MA Iqbal, M Latif, Z Farooq, T Kausar, A Naz, SAA Naqvi, S Hussain, MT	2022	Braz. J. Biol.	e243905	1-8



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		Mahmood, K Malik, A Hakim, H Ullah, N Tariq and S Jalbani				
7	Effect of refrigerated storage on fillet quality of vitamin E fed rohu, <i>Labeo rohita</i> .	Iqbal A, M Fatima, SZH. Shah, M Afzal, M Batool, M Bilal, N Bano, A Khizar and S Iqbal	2022	Pak. J. Zool.	2	545-553
8	Some morphometric relationship traits of pangasius pangasius from Multan, Pakistan.	Khalid M, M Naeem, V Lal, AZ Khakwani, S Irshad, N Bano, P Riaz, S Hassan, R Khan, M Farooq and SM Azam	2022	Egypt. J. Aquat. Biol. Fish.	26	969-979
9	Exploring the effect of Jasmonic Acid for Aphids control for improving the yield of <i>Triticum aestivum</i> varieties.	Aslam H, S Mushtaq, S Maalik, N Bano, EM Eed, A Bibi, A Tahir, I Ijaz, S Tanwir and AS Khalifa	2022	PeerJ	10	e14018
10	Effect of Aloe vera gel-based edible coating on microbiological safety and quality of tomato.	Firdous N, MR Khan, MS Butt, M Ali, A Shabbir, M Din, and MF Manzoor	2022	CyTA-J. Food	20	355-365
11	Effect of inulin on organic acids and microstructure of synbiotic cheddar-type cheese made from buffalo milk.	Islam M, M Shahbaz, N Raza, U Farooq and MS Murtaza	2022	Molecules	27	5137
12	On-Tree fruit bagging and cold storage maintain the postharvest quality of mango fruit.	Nadeem A, ZFR Ahmed, SB Hussain, AEDK Omar, M Amin, S Javed, A Ali, S Ullah, K Razzaq, IA Rajwana, S Nayab, V Ziogas, SMA Eldein and AM. Mira	2022	Horticulturae	8	814



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13	Global genetic diversity and evolutionary patterns among Potato leafroll virus populations	Farooq T, MD Hussain, MT Shakeel, H Riaz, U Waheed, M Siddique, I Shahzadi, MN Aslam, Y Tang, X She and Z He	2022	Front Microbiol.	4	16
14	Characterization of diverse cotton cultivars for potassium acquisition based on morphological and physiological traits at early growth stage.	Akhtar, M.N., UI- Haq, T., Ahmad, F., Ahmed, W. and Ghaffar, A	2022	Pak. J. Bot.	55	611-626
15	Machine learning approach for classification of mangifera indica leaves using digital image analysis	Aslam T, S Qadri, SF Qadrib, SA Nawaz, A Razzaq, S S Zarren, M Ahmad, MU Rehman, A Hussain, I Hussain, J Jabeen, and A Altaf	2022	Int. J. Food Prop.	25	1987-1999
16	Efficient utilization of organic wastes effluent for nitrogen mineralization and plant growth promotion in mono-cropping soil of China	Asghar W, A Mahmood, F Iftikhar, B Ahmad, R Ullah, M Bilal, A Latif, M Arsalan, M Khan, R Latif and M Ehsan	2022	Sarhad J. Agric.	3	968-975
17	Super absorbent polymer application under suboptimal environments: implications and challenges for marginal lands and abiotic stresses	Jamal A, S Hussain, S Hussain, A Matloob, TH Awan, F Irshad, B Ai and EA Waraich	2022	Turk J. Agric. For.	46	662-676
18	A new insight in immunomodulatory impact of botanicals in treating avian coccidiosis	Rizwan HM, MK Khan, MAS Mughal, Z Abbas, RZ Abbas, ZUD Sindhu, MS Sajid, QU Ain, A Abbas, A Zafar, M Imran, AI Aqib and M Nadeem	2022	J Parasit Dis.	46	1164-1175



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		M Imran, Al Aqib and M Nadeem				
19	Evaluation of Sodium Alginate Stabilized Nanoparticles and Antibiotics against Drug Resistant Escherichia coli Isolated from Gut of Houbara Bustard Bird	Muneer A, S Kumar, Al Aqib, SR Khan, SQA Shah, I Zaheer, TU Rehman, A Abbas, K Hussain, A Rehman, M Nadeem, M Murtaza and A Waseem	2022	Oxid. Med. Cell. Longev.	2022	1-10
20	New collection of fossil remains of pigs (Mammalia: Artiodactyla: Suidae) from the Siwaliks of Pakistan	Raza T, R Yasin, K Samiullah, RM Fazal, K Hussain, A Abbas, A Rehman, HM Ishaq and M Mehmood	2022	Hist. Biol.	35	1-16
21	Ochratoxicosis in poultry: occurrence, environmental factors, pathological alterations and amelioration strategies	Tahir MA, A Abbas, M Muneeb, RM Bilal, K Hussain, AME Abdel- Moneim, MR Farag, K Dhama, SS Elnesr and M Alagawany	2022	Worlds Poul. Sci. J.	24	727-749
22	Seroprevalence and risk factor of <i>Brucella Abortus</i> in cattle (indigenous and crossbred) in district Layyah	Ikram M, A Hussain, M Kashif, MT Tunio, U Waheed, A Abbas, T Ahmad and A Rahman	2022	Adv. life sci.	9	163-168
23	Participatory surveillance of infectious and non-infectious diseases of livestock in Pakistan.	Nadeem M, MRT Ahmad, M Kashif, AZ Durrani, M Ali, A Abbas, S Imran, S Saher and SF Waheed	2022	Punjab Univ. J. Zool.	37	143-148
24	Vaccines against chicken coccidiosis with particular reference to previous decade: progress, challenges, and opportunities.	Zaheer T, RZ Abbas, M Imran, A Abbas, A Butt, S Aslam and J Ahmad	2022	Parasitol. Res.	7	2749-2763



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25	A study on the Impacts of COVID-19 on health, Economy, Employment and Social Life of People in Indonesia.	Rehman S, UE Nnabuike, A Abbas, A Rahman, U Malik, MH Effendi, K Hussain and MA Raza	2022	Adv. Life Sci.	9	340-346
26	Effect of Inulin on organic acids and microstructure of synbiotic cheddar-type cheese made from buffalo milk.	Islam M, MA Alharbi, NK Alharbi, S Rafiq, M Shahbaz, S Murtaza, N Raza, U Farooq, M Ali, M Imran and S Ali	2022	Molecules	27	5137
27	Foliar applied proline and acetic acid improves growth and yield of wheat under salinity stress by improving photosynthetic pigments, physiological traits, antioxidant activities and nutrient uptake	Khan I., I Momina, A Mahmood, M Rizwan, M Ali, MT Aslam, MS. Hanif, SA Kohli, S Negm, M Moustafa, MU Chattha and MU Hassan	9/23/2 022	Notulae. Botanicae. Horti. Agrobotanici Cluj-Napoca.	50	12820
28	Tragacanth gum coating suppresses the disassembly of cell wall polysaccharides and delays softening of harvested mango ( <i>Mangifera indica</i> L.) fruit.	Ali S, N Zahid, A Nawaz, S Naz S Ejaz, S Ullah and B Siddiq	2022	Int. J. Biol. Macromol.	222	521-532
29	Postharvest transport type influence fruit physiological, biochemical and antioxidative attributes of two cultivars of pomegranate at shelf.	Naeem U, S Ullah, IA Rajwana, K Razzaq, G Akhtar, N Faried, SB Hussain, A Naz, MA Khan, M Umair, M Qudoos and A Ali	2022	S. Afr. J. Bot.	150	361-371
30	Characterization of indigenous Phalsa ( <i>Grewia subinequalis</i> ) genotypes using morphological traits and	Amna Jamil, Kashif Razzaq, Ishtiaq Ahmad Rajwana, Ambreen Naz, Gulzar Akhtar,	2022	J. King Saud Univ. Sci.	34	102237



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	ISSR markers.	Sami Ullah, Hafiz Nazar Fariad, Syed Bilal Hussain, Yunzhou Li, Muhammad Amin, Muhammad Ali Sher, Muhammad Tanveer Altaf, Hammad Hassan, Mohamed A.A. Ahmed, Saleh Alfarraj, Mohammad Javed Ansari				
31	Dual effects of zearalenone on aflatoxin B1-induced liver and mammary gland toxicity in pregnant and lactating rats.	Wu K, S Jia, D Xue, SA Rajput, M Liu, D Qi and S Wang	2022	Ecotoxicol. Environ. Saf.	245	114115
32	Electric vehicle transient speed control based on vector control FM-PI speed controller for induction motor.	Salahuddin H, K Imdad, MU Chaudhry, MM Iqbal, V Bolshev, A Hussain, A Flah, V Panchenko and M Jasinski	2022	Appl. Sci.	12	8694
33	Spatiotemporal impact of the Covid 19 pandemic lockdown on air quality pattern in Nanjing, China.	Fei S, RA Wagon, A Husnain, A Hussain, UA Bhatti and E Elahi	2022	Front. Environ. Sci.	10	952310
34	Time series analysis and forecasting of air pollutant based on prophet forecasting model in Jiangsu Province, China.	Hussain A, Y Shang, MZ Hashmi, UA Bhatti, A Hussain, MH Bhatti, S Marjan, SU Bazai, Y Zha, MA Hussain, and Z Ahmad	2022	Front. Environ. Sci.	10	945528
35	Performing in-situ analytics: Mining frequent patterns from big IoT data at network edge with D-HARPP	Yassir M, A Haider, MU Chaudhry, MA Habib, A Hussain, E Jasinska, Z Leonowicz and M Jasiński	2022	Eng. Appl. Artif. Intell.	116	105480



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36	Varietal discrimination of Guava ( <i>Psidium Guajava</i> ) leaves using multi features analysis.	Asim M, S Ullah, A Razzaq and S Qadri	2022	Int. J. Food Prop.	26	179-197
37	Antihyperlipidemic activity of hydroalcoholic seed extract of <i>Cucumis sativus</i> L in triton X-100 induced hyperlipidemic rats.	Aftab T, AA Albegali, A Rehman, A Rashid, A Anjum, M Mohammed and H Javed	2022	World J. Microbiol. Biotechnol.	7	13-17
38	Hematological and biochemical evaluation of small ruminants naturally infected with ORF Virus in Punjab Province, Pakistan.	Hussain I, MR Khan, A Aslam, M Rabbani and A Anjum	2022	Pak. Vet. J.	42	540-546
39	Identification, molecular characterization, and pathological features of orf virus in sheep and goats in Punjab province, Pakistan.	Hussain I, MR Khan, A Aslam, M Rabbani, S Masood and A Anjum	2022	Trop. Anim. Health Prod.	55	1-10
40	Genetic identification of <i>Pectobacterium atropeticum</i> and assessment of medicinal plant extracts as an ecofriendly approach to control blackleg disease of potato.	Ali F, A Hameed, A Rehman, S Sarfraz, NA Rajput and M Atiq	2022	J Nat. Pestic Sci.	2	100015
41	Characterization of <i>Bacillus thuringiensis</i> from Cotton Fields and its Effectiveness against <i>Spodoptera litura</i> .	Asad KM, MA Mehmood, M Ashfaq, MM Ahmed, N Ahmed, M Ishtiaq, A Hameed and A Rauf	2022	Plant Prot.	6	209-218
42	Improved catalytic activity and bactericidal behavior of novel chitosan/V <sub>2</sub> O <sub>5</sub> co-doped in Tin-oxide quantum dots.	Ikram M, I Shahzadi, A Haider, S Hayat, J Haider, A Hamid, A Shahzadi, W Nabgan, S Dilpazir and S Ali	2022	RSC Adv.	36	23129-23142



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43	Chitosan/Starch-doped MnO <sub>2</sub> nanostructures served as dye degradation, bacterial activity and insilico molecular docking study	Ikram M, K Chaudhary, I Shahzadi, A Haider, S Hayat, J Haider, A Hamid, A Shahzadi, W Nabgan, S Dilpazir, S Ali and AR Butt	2022	Mat. Today Nano	20	100271
44	The enhanced photocatalytic performance and first-principles computational insights of Ba doping-dependent TiO <sub>2</sub> quantum dots.	Ikram M, MAU Haq, A Haider, A Hamid, MA Bari, I Shahzadi, SS Goumri and MB Kanoun	8/16/2022	Nanoscale Adv.	18	3996-4008
45	Molybdenum and chitosan doped MnO <sub>2</sub> nanostructures used as dye degrader and antibacterial agent.	Ikram M, S Shujait, A Haider, AHamid, J Haider, I Shahzadi, W Nabgan, M Imran and AR Butt	2022	Appl. Nanosci.	12	3909-3924
46	Formation of biocompatible MgO/cellulose grafted hydrogel for efficient bactericidal and controlled release of doxorubicin.	Shahzadi I, M Islam, H Saeed, A Haider, A Shahzadi, J Haider, N Ahmed, A Hamid, W Nabgan, M Ikram, and HA Rathore	2022	Int. J. Biol. Macromol.	220	1277-1286
47	Towards effective dye degradation and antimicrobial behavior of chitosan and C <sub>3</sub> N <sub>4</sub> -doped CdS nanoparticles.	Ikram M, H Maghfoor, A Shahzadi, A Haider, I Shahzadi, N Abid, A Hamid, J Haider, W Nabgan and AR Butt	2022	Mater. Today Commun.	33	104814
48	Photocatalytic and antibacterial activity of graphene oxide/cellulose-doped TiO <sub>2</sub> quantum dots.	Ikram M, F Rasheed, A Haider, S Naz, A Hamid, A Shahzadi, J Haider, I Shahzadi, S Hayat and S Ali	2022	Nanoscale Adv.	18	3764-3776
49	Facile synthesis of starch and tellurium doped SrO	Ikram M, A Haider, M Imran, J Haider, S Naz, A Hamid,	2022	Int. J. Biol. Macromol.	221	496-507



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	nanocomposite for catalytic and antibacterial potential: in silico molecular docking studies.	W Nabgan, M Mustajab, A Shahzadi, I Shahzadi and MA Raza				
50	Efficient Photocatalytic dye degradation and bacterial inactivation by graphitic carbon nitride and starch-doped magnesium hydroxide nanostructures.	Ikram M, F Jamal, A Haider, S Dilpazir, T Shujah, M Naz, M Imran, A Hamid, I Shahzadi, H Ullah and W Nabgan	2022	ACS Omega	44	39998-40008
51	A comparative study of sonophotocatalytic, photocatalytic and catalytic activity of magnesium and chitosan doped tin oxide quantum dots.	Moeen S, M Ikram, A Haider, J Haider, A Hamid, W Nabgan, T Shujah, M Naz and I Shahzadi	2022	ACS Omega	50	6428-6439
52	Synthesis of Al/starch co-doped in CaO nanoparticles for enhanced catalytic and antimicrobial activities.	Ikram M, A Haider, ST Bibi, A Hamid, J Haider, I Shahzadi, W Nabgan, S Moeen, S Ali, SS Goumri and MB Kanoun	2022	RSC Adv.	50	32142-32155
53	Facile Synthesis of Barium-doped Cadmium sulfide quantum dots for the treatment of polluted water: experimental and computational investigations	A Rehman, M Ikram, A Haider, MA Raza, T Shujah, M Naz, A Hamid, I Shahzadi, SS Goumri, MB Kanoun and W Nabgan	2022	ACS Omega	50	46325-46336
54	Molybdenum-doped iron oxide nanostructures synthesized via a chemical co-precipitation route for efficient dye degradation and antimicrobial performance: in silico molecular docking studies	T Shujah, A Shahzadi, A Haider M Mustajab, AM Haider, A Hamid, J Haider, W Nabgan, and M Ikram	2022	RSC Adv.	54	35177-35191



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55	Nb/Starch-doped ZnO nanostructures for polluted water treatment and antimicrobial applications: Molecular docking analysis	Ikram M, H Shahid, J Haider, A Haider, S Naz, A Hamid, I Shahzadi, M Naz, W Nabgan, and S Ali	2022	ACS Omega	43	39347–39361
56	Graphitic-C3N4/chitosan-doped NiO nanostructure to treat the polluted water and their bactericidal with in silico molecular docking analysis	Ikram, M., Haider, A., Imran, M., Haider, J., Ul-Hamid, A., Shahzadi, A., Malik, R., Nabgan, W., Nazir, G. and Ali, S.	2022	Int. J. Biol. Macromol.	227	962-973
57	Dye degradation, antibacterial activity and molecular docking analysis of cellulose/polyvinylpyrrolidone-doped cadmium sulphide quantum dots	Aqsa Rafique, Muhammad Ikram, Ali Haider, Anwar Ul-Hamid, Sadia Naz, Walid Nabgan, Junaid Haider, Iram Shahzadi	1/8/2022	Int. J. Biol. Macromol.	214	264-277
58	Z. officinale-doped silver/calcium oxide nanocomposites: Catalytic activity and antimicrobial potential with molecular docking analysis.	Mehmood Z, M Ikram, M Imran, A Shahzadi, A Haider, A Hamid, W Nabgan, J Haider and S Hayat	2022	Process Biochem.	121	635-646
59	Promising performance of polyvinylpyrrolidone-doped bismuth oxyiodide quantum dots for antibacterial and catalytic applications.	Mustajab M, M Ikram, A Haider, A Hamid, W Nabgan, J Haider, R Ghaffar, A Shahzadi, A Ghaffar and A Saeed	2022	Appl. Nanosci.	12	2621–2633
60	Facile synthesis of La and Chitosan doped CaO Nanoparticles for catalytic and Antimicrobial potential with Molecular Docking Study.	Ikram M, MA Khan, A Haider, J Haider, S Naz, A Hamid, A Shahzadi, W Nabgan, T Shujah, I Shahzadi and S Ali	2022	ACS Omega	32	28459-28470
61	Facile Synthesis of Chitosan grafted Polyacrylic Acid doped CaO nanoparticle for	Ikram M, M Saeed, J Haider, A Haider, A Hamid, A Shahzadi,	2022	Appl. Nanosci.	32	28459–28470



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	Catalytic and antimicrobial potential.	W Nabgan, A Rafique, S Dilpazir and S Ali				
62	Enhanced Photocatalytic Degradation with Sustainable CaO Nanorods Doped with Ce and Cellulose Nanocrystals: In Silico Molecular Docking Studies.	Ikram M, A Khalid, A Shahzadi, A Haider, S Naz, M Naz, I Shahzadi, A Hamid, J Haider, W Nabgan and AR Butt	2022	ACS Omega	31	27503-27515
63	Inter-Relationship between a Transcriptional Regulator of Flagella Genes cj0440c and Thiamine Metabolic Pathway in <i>Campylobacter jejuni</i> .	Shabbir MA, A Rahman, AR Khalid, N Ijaz, MT Aleem, S Ahmed, A Alouffi, W Ahmed, F Aslam, MK Maan and AH Tahir	2022	Biomed Res. Int.	2022	4539367
64	Low temperature stress-induced perception and molecular signaling pathways in plants.	Guan Y, D Hwarari, HM Korboe, B Ahmad, Y Cao, Ali M and Liming Yang	2022	Environ. Exp. Bot.	12	29
65	Identification and characteristics of SnRK genes and cold stress-induced expression profiles in <i>Liriodendron chinense</i> .	Li R, Y Radani, B Ahmad, A Movahedi and L Yang.	2022	BMC Genomics	13	43
66	OSCA Genes in <i>Liriodendron chinense</i> : Characterization, Evolution and Response to Abiotic Stress.	Ke Y; M Xu, D Hwarari, B Ahmad, R Li; Y Guan, J Chen and L Yang	2022	Forests	13	185
67	The bZIP transcription factors in <i>Liriodendron chinense</i> : genome-wide recognition, characteristics and cold stress response.	Li M, Y Li, T Min, B Ahmad, W Zhang, B Zhang, J Wang and Y Liming	2022	Front. Plant Sci.	10	42
68	Effects of <i>Bacillus amyloliquefaciens</i> LFB112 on growth performance, carcass traits, immune, and	Ahmat M; J Cheng, Z Abbas, Q Cheng, Z Fan, B Ahmad, M Hou, G Osman, H Guo and J Wang	2022	Antibiotics	10	1427



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serum biochemical response in broiler chickens.

69	Integrated analyses of the gut microbiota, intestinal permeability, and serum metabolome phenotype in rats with alcohol withdrawal syndrome.	Yang F, J Wei, M Shen, Y Ding, Y Lu, HM Ishaq, D Li, D Yan, Q Wang and R Zhang	2022	Appl. Environ. Microbiol.	87	21-34
70	Fructose metabolism and its role in pig production: A mini-review.	Xie J, S Shi, Y Liu, S Wang, SA Rajput and T Song	2022	Front. Nutr.	9	
71	Coupling biochar with microbial inoculants improves maize growth and nutrients acquisition under phosphorous limited soil.	Javeed HMR, R Naeem, M Ali, RQamar, MA Sarwar, F Nawaz, A Rehman, M Shehzad, A Farooq, H Rehman, S Khalid, K Mubeen, N Masood, AEL Sabagh	2022	Acta Physiol. Plant.	44	110
72	Silicon seed priming combined with foliar spray of sulfur regulates photosynthetic and antioxidant systems to confer drought tolerance in maize ( <i>Zea mays</i> L.).	Farman M, F Nawaz, S Majeed, HMR. Javeed, M Ahsan, KS Ahmad, M Aurangzaib, MA Bukhari, MA Shehzad and MB Hussain	2022	Silicon	14	7901-7917
73	Synergetic efficacy of amending pb polluted soil with p loaded jujube ( <i>Ziziphus mauritiana</i> ) twigs biochar and foliar chitosan application for reducing pb distribution in moringa leaf extract and improving its anti-cancer potential.	Rasool B, M Rahman, M Zubair, MA Khan, PMA Ramzani, A Dradrach, V Turan, M Iqbal, SA Khan, HM Tauqeer, M Farhad, ZA Virk and M Iqbal	2022	Water Air Soil Pol.	8	344



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74	Toxicity of different insecticides against feeding behavior of <i>bactrocera zonata</i> (Diptera: <i>Tephritidea</i> ) under laboratory conditions.	Tariq N, M Ashfaq, MA Khan, SZ Khan, MA Farooq and MR Ashraf	2022	J. Food Agric. Technol	1	11
75	Effect of slow-release nitrogenous fertilizers on dry matter accumulation, grain nutritional quality, water productivity and wheat yield under an arid environment.	Ghafoor I, MH Rahman, MU Hasnain, RM Ikram, MA Khan, R Iqbal, MI Hussain and AEL Sabagh	2022	Sci. Rep.	12	14783
76	Sub-surface drip fertigation improves seed cotton yield and monetary returns.	Singh K, P Singh, M Singh, SK Mishra, RR Iqbal, I Al-Ashkar, MH Rahman and AE Sabagh	2022	Front. Plant Sci.	11	1038163
77	Exogenous aspartic acid alleviates salt stress-induced decline in growth by enhancing antioxidants and compatible solutes while reducing reactive oxygen species in wheat.	Sadak MS, A Sekara, IA Ashkar, MH Rahman, M Skalicky, M Brestic, A Kumar, AE Sabagh and MT Abdelhamid	2022	Front. Plant Sci.	13	987641
78	Impact of climate change on agricultural production; Issues, challenges, and opportunities in Asia.	MH Rahman, A Ahmad, A Raza, MU Hasnain, HF Alharby, YM Alzahrani, AA Bamagoos, KR Hakeem, S Ahmad, W Nasim, S Ali, F Mansour and A EL Sabagh	2022	Front. Plant Sci.	13	925548
79	Warming climate and elevated CO <sub>2</sub> will enhance future winter wheat yields in North China region.	Shoukat MR, D Cai, M Shafeeque, MH Rahman, and H Yan	2022	Atmosphere	13	1275



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80	Evaluating the efficiency of coarser to finer resolution multi spectral satellites in mapping paddy rice fields using GEE implementation.	Waleed M, M Mubeen, A Ahmad, MH Rahman, A Amin, HU Farid, S Hussain, M Ali, SA Qaisrani, W Nasim, HMR Javeed, N Masood, T Aziz, F Mansour and AEL Sabagh	2022	Sci. Rep.	12	13210
81	Organic amendments and conservation tillage improve cotton productivity and soil health indices under arid climate.	Ahmad S, I Hussain, A Ghaffar, MH Rahman, MZ Saleem, MW Yonas, H Hussain, RM Ikram and M Arslan	2022	Sci. Rep.	12	14072
82	Real-time nitrogen application of rice varieties based on leaf colour chart under system of rice intensification in temperate climate.	Bhat TA, RH Kanth, B Jan, A Nazir, SA Ahanger, MS Mir, NB Naikoo, S Fayaz, KA Dar, A Gul, T Mansoor, I AlAshkar, A Kumari, MH Rahman and AEI Sabagh	2022	Agronomy	12	2229
83	Chromium poisoning in buffaloes in the vicinity of contaminated pastureland, Punjab, Pakistan.	Ghazzal M, MI Hussain, ZI Khan, MH Rahman, AAE Habeeb and HH Yang	2022	Sustainability	22	15095
84	Potential breeding strategies for improving salt tolerance in crop plants.	Afzal M, SES Hindawi, SS Alghamdi, HH Migdadi, MA Khan, MU Hasnain, M Arslan, MH Rahman and M Sohaib	2022	J. Plant Growth Regul.	42	3365-3387
85	Unveiling frequently co-occurring reasons of attitudinal acceptance of intimate partner violence against women:	Yasir M, A Ashraf, MU Chaudhry, SA Batool, SS Batool, E Jasinska, Z Leonowicz, and	2022	Int. J. Environ. Res. Public Health	19	12429



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	A behavioral data science perspective.	M Jasinski				
86	Transcriptional stages of <i>Conidia</i> germination and associated genes in <i>Aspergillus flavus</i> : An essential role for redox genes.	Li C, S Jia, SA Rajput, D Qi and S Wang	2022	Toxins	14	560
87	Cyberattacks detection in IoMT using machine learning techniques.	Tauqeer H, MM Iqbal, A Ali, S Zaman, and MU Chaudhry	2022	J. Comp. Biomed. Inform.	4	13-20
88	Deep learning for molecular thermodynamics.	Hassaan M, MU Chaudhry, and M Jasinski	2022	Energies	71	361-390
89	Smart classroom monitoring using novel real-time facial expression recognition system.	Shariqa F, J Baber, SU Bazai, S Marjan, M Jasinski, E Jasinska, MU Chaudhry, Z Leonowicz, and S Hussain	2022	Appl. Sci.	12	12134
90	Nanogold morphologies with the same surface chemistry provoke a different innate immune response: An in-vitro and in-vivo study.	Usman M, Y Sarwar, R Abbasi, HM Ishaq, M Iftikhar, I Hussain, RE Demirdogen and A Ihsan	2022	NanoImpact	28	100419
91	Exploiting credibility for sentiments: IT works!	Asmat AH, M Husnain, N Iqbal, D Ali and A Firdous	2022	J. Tianjin Univ. Sci. Tech.	55	1-9
92	An efficient methodology for the classification of invasive ductal carcinoma using transfer learning.	Younas HI, S Bukhari, F Bukhari, N Aslam, HMS Badar and N I Kajla	2022	J Biomed Inform.	4	236-250
93	Antagonistic activity and molecular characterization of isolated <i>Pseudomonas Aeruginosa</i> against <i>Pseudomonas Syringae</i> causing bacterial canker diseases in apricot.	Bibi S, MI Haq, A Riaz, R Binyamin and SI Malik	2022	Pak. J. Bot.	55	31



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94	Evaluation of <i>Triticum aestivum</i> L. germplasm against <i>Puccinia striiformis</i> and its management through botanicals.	Binyamin R, W Aziz, M Zubair, M Haider and Z Ahmad	2022	Agric. Sci. J.	4	1-12
95	Exploring the innate immunity of wheat germplasm against yellow rust of wheat.	Rauf A, MA Mehmood, M Ashfaq, Z Ali, R Binyamin and I Mushtaq	2022	Pak. J. Phytopathol.	34	245-253
96	Characterization of environmental factors conducive for brown rust development in wheat ( <i>Triticum aestivum</i> L.)	Mushtaq I, M Ashfaq, MA Mehmood, Z Ali, R Binyamin and A Rauf	2022	Pak. J. Phytopathol	24	263-280
97	Evaluation of <i>Rhizospheric-Pseudomonas</i> spp. for the management of <i>Meloidogyne incognita</i> in tomato.	Ahmed N, HA Ghramh, Q Shakeel, W Ashraf, HT Abbas, R Binyamin, A Masroor, M Raheel and Z Khan	2022	J. King Saud Univ. Sci.	35	102395
98	A machine vision approach for classification of skin cancer using hybrid texture features.	Zareen SS, S Guangmin, Y Li, M Kundi, S Qadri, SF Qadri, M Ahmad and AH Khan	2022	Comput. Intell. Neurosci.	2022	1-12
99	Post harvest application of <i>Aloe Vera</i> Gel improved shelf life and quality of strawberry. ( <i>Fragaria x ananassa</i> Duch.).	Rehman MA, A Hameed, Z Ahmad, S Ahmad, SW Ali, MI Tipu, FH Shah, T Mehmood, LD Bourquin and S Hussain	2022	Emir. J. Food Agric.	34	553-562
100	Development of Quinoa and Sorghum supplemented flat bread.	Hussnain A, S Ahmad, S Murtaza, S Iqbal, U Farooq and MS Abbas.	2022	J. Food Process Preserv.	46	e16959
101	Icariin alleviates <i>Escherichia coli</i> lipopolysaccharide-mediated endometritis in mice by inhibiting inflammation and	Shaukat A, I Shaukat, SA Rajput, R Shukat, S Hanif, S Huang, MT Aleem, K Li, Q Li, C Chen, X Zhang,	2022	Int. J. Mol. Sci.	23	10219



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	oxidative stress.	H Lv, Z Yao and L Yang				
102	A multivariate ultra-short-term wind speed forecasting model by employing multistage signal decomposition approaches and a deep learning network.	Sibtain M, H Bashir, M Nawaz, S Hameed, MI Azam, X Li, T Abbas, S Saleem	2022	Energy Convers. Manag.	263	115703
103	Epigallocatechin gallate and glutathione attenuate aflatoxin B1-induced acute liver injury in ducklings via mitochondria-mediated apoptosis and the Nrf2 signalling pathway.	Wang Y, J Wu, L Wang, P Yang, Z Liu, SA Rajput, M Hassan and D Qi	2022	Toxins	14	876
104	First emergence of lumpy skin disease in cattle in Pakistan	Rahman A, N Niaz, MA Raza, A Mehmood, S Rajpoot, M Abubakar and MZ Shabbir	2022	Transbound Emerg. Dis.	69	3150-3152
105	Identifying the constraints and opportunities for increasing pulses production and value chain development in Pakistan: A Delphi approach.	Raza MH, M Mehdi, B Ahmad, R Adhikari and MB Ahsan	2022	Agric. Sci. J.	4	74-89
106	Insights into the use of eco-friendly synergists in resistance management of <i>Leptinotarsa Decemlineata</i> (Coleoptera: Chrysomelidae).	Ullah RM, A Gokce, A Bakhsh, M Salim, HY Wu, MN Naqqash	2022	Insects	13	846
107	Amino acid profiling and SDS-PAGE analysis of protein isolates obtained from non-conventional sources.	SA M, MS Butt, MN Riaz, TF Teferra and IU Haq	2022	J. Food Qual.	2022	1-7



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108	Wastewater contaminants characterization and evaluation from Wali Muhammad Distributary, Multan, Punjab.	Raza H, T Haq, M Imran, NA Ikram and MB Shoukat	2022	J. Innov. Sci.	8	243-249
109	Optimizing iron seed priming for enhanced yield and biofortification of tomato.	Ikram NA, A Ghaffar, AA Khan, F Nawaz and A Hussain	2022	J. Plant Nut.	46	2796-2810
110	Transgenerational effects of lambda-cyhalothrin on <i>Musca domestica</i> L. (Diptera: Muscidae)	Ghramh HA, N Sadiq, MN Naqqash, AD Abid, S Shahzad, S Saeed, N Iqbal and KA Khan	2022	Sci. Rep.	12	19228
111	Toxicity and sublethal effects of diafenthiuron on life table parameters of <i>Musca domestica</i> L. (Muscidae: Diptera)	Sadiq N, MN Naqqash, MZ Khan, S Saeed and N Iqbal.	2022	Exp. Parasitol.	242	108377
112	Linking bird resistant and susceptible sunflower traits with pollinator's fauna and seed production.	Iqbal S, M Ali, FA Khan, N Iqbal, F Nawaz	2022	Sociobiology	69	1-8
113	First emergence of lumpy skin disease in cattle in Pakistan.	Rahman AU, N Niaz, MA Raza, A Mehmood, SU Rajpoot, M Abubakar and MZ Shabbir	2022	Transbound. Emerg. Dis.	69	3150-3152
114	Extracellular vesicles and exosome: insight from physiological regulatory perspectives	Waqas MY, MA Javid, MM Nazir, Niaz N, MF Nisar, Z Manzoor, SA Bhatti, S Hameed, MH Khaliq	2022	J. Physiol. Biochem.	78	573-580
115	Characterization of indigenous phalsa ( <i>Grewia subinequalis</i> ) genotypes using morphological traits and ISSR markers	Jamil A, K Razzaq, IA Rajwana, A Naz, G Akhtar, S Ullah, HN Faried, SB Hussain, Y Li, M Amin and MA Sher	2022	J. King Saud Uni. Sci.	0	102237



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116	Pre and postharvest evaluation of hydroponically grown tomato at different maturity stages.	HN Faried, Z Haider, IA Rajwana, AA Bahar, S Ahmed, S Ullah, K Razzaq, GAM Amin, A Naz, A Mehmood, and AM Athar	2022	Pure Appl. Bio.	11	704-708
117	Spatio-temporal distribution of <i>Tuta absoluta</i> (Meyrick 1917) (Lepidoptera: Gelechiidae) from Pakistan.	Sadique MM, U Ishtiaq, N Ullah and N. Faried	2022	Int. J. Trop. Insect Sci.	42	3023-3032
118	Morpho-Molecular characterization Trichoderma isolates from rhizospheric soils of vegetables in Pakistan.	Iqbal S, M Ashfaq, AH Malik, MI Haq and KS Khan	2022	Int. J. Phytopathol.	11	215-229
119	Current status, spatiotemporal dynamics and genetic recombination analysis of cucurbit aphid-borne yellows virus (CABYV) infecting cucurbits in Punjab, Pakistan.	Asad Z, M Ashfaq, MA Mehmood, AH Malik, M Ahsan, KA Khan and Z Ahmad	2022	J. King Saud Uni. Sci.	34	102255
120	First record of one genus and four species of mosquitoes (Diptera: Culicidae) from Pakistan.	Saba S, N Ullah, S Saeed, IA Rajwana and AA Khan	2022	Int. J. Trop. Insect Sci.	42	3649-3657
121	Effectiveness of native solitary bees in seed production of sesame ( <i>Sesamum indicum</i> ).	Ali M, AM Awais, A Sajjad and S Saeed	2022	Sarhad J. Agric.	38	759-1159
122	Physicochemical, microbial, and functional attributes of processed Cheddar cheese fortified with olive oil-whey protein isolate emulsion.	Shafeeqa I, MA Murtaza, GM Din, I Hafiz, MS Murtaza, S Rafique, K Ameer, M Abrar and IAM Ahmed	2022	Food Sci Nutr.	11	1247-1256



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123	Efficacy of <i>Withania coagulans</i> fruit extract as a coagulant for Mozzarella Cheese at different coagulation temperatures from curd formation to Pizza top.	Gulzar N, M Nadeem, S Rafique, A Sameen, MS Murtaza, M Ajmal and I Muqadas	2022	J. Food Process. Preserv.	46	e17167
124	Physicochemical characteristics of mixed surfactant-stabilized l. ascorbic acid nanoemulsions during storage.	Mehmood T, A Ahmed, Z Ahmad, MS Javed, HR Sharif, FH Shah, M Imran, MA Abdelgawad and MS Murtaza	2022	Langmuir	33	9500–9506
125	Prediction of RNA editing sites and genome-wide characterization of <i>PERK</i> gene family in maize ( <i>Zea mays</i> L.) in response to drought stress.	Shahid S, MASHer, F Ahmad, S Rehman, B Farid, H Raza, Z Ali, A Maqbool, S Alfarraj and MJ Ansari	2022	J. King Saud Uni. Sci.	34	102293
126	Characterization of salt tolerant wheat genotypes by using morpho-physiological, biochemical, and molecular analysis	Irshad A, R Ahmed, U Rehman, G Sun, F Ahmad, M Sher, M Aslam, M Hassan, S Qari, M Aziz and Z Khan	2022	Front. Plant Sci.	13	956298
127	Screening of induced mutants led to the identification of starch biosynthetic genes associated with improved resistant starch in wheat.	Irshad A, H Guo, S Rehman, J Gu, C Wang, H Xiong, Y Xie, S Zhao and L Liu	2022	Int. J. Mol. Sci.	23	10741
128	Characterization of Histone H3 Gene family reveals that GmHH3-3 is associated with higher seed weight in Glycine max.	Fatima C, MHN Tahir, RM Ikram, Z Khan, M Sajjad, G Qanmber, E Darwish, Z Geng, G Xiangkuo and S Rehman	2022	Front. Gen.	13	949027
129	TaGSNE, a WRKY transcription factor, overcomes the trade-off	Khan N, Y Zhang, J Wang, Y Li, X Chen, L Yang, J Zhang, C	2022	J. Exp. Bot.	73	6678-6696



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	between grain size and grain number in common wheat and is associated with root development.	Li, L Li, S Rehman, MP Reynolds, L Zhang, X Zhang, X Mao and R Jing				
130	Genome-wide characterization and sequence polymorphism analyses of cysteine-rich poly comb-like protein in Glycine max.	Nisar T, MHN Tahir, S Iqbal, M Sajjad, MA Nadeem, G Qanmber, A Baig, Z Khan, Z Zhao, Z Geng and S Rehman	2022	Fronti. Plant Sci.	13	996265
131	Structural analysis of cotton stalk puller and shredder machine.	Khan AA, U Sultan, RP Rudra, F Ehsan, M Kashif, MM Khan, S Hashim, M Zohaib and SI Ahmad	2022	Alex. Eng. J.	64	335-347
132	Multi crop high efficiency seed drill with solar hybrid seed metering: A step towards precision and sustainability.	Sultan U, AA Khan, SN Husnain, M Zohaib and N Hashim	2022	Front. Sustain. Food Syst.	6	1-10
133	Can food inflation be stabilized by monetary policy? A Quantile Regression Approach	Ali CI, S Ullah, UI Ahmed, IA Baig, MA Iqbal and A Masood	2022	J. Econ. Impact	4	205-212
134	Cross-country diffusion of the ISO Energy Management Standard: How important is the neighbourhood effect?	Masood A, S Ullah, UI Ahmed and M Arqam Iqbal	2022	FWU J. Social Sci.	16	21-35
135	Role of nutrition information in acceptance and willingness to pay for biofortified cereal food: Implications for better health and sustainable diet.	Rizwan M, A Abbas, H Xu, U Ahmed, P Qing, P He , MA Iqbal and MA Shahzad	2022	Nutrients	14	3352
136	First record of one Genus and four species of mosquitoes (Diptera: Culicidae) from Pakistan	Saba S, UN Ullah, S Saeed, IA Rajwana and AA Khan	2022	Int. J. Trop. Insect Sci.	42	3649-3657



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137	Role of foliar spray of plant growth regulators in improving photosynthetic pigments and metabolites in <i>Plantago ovata</i> (Psyllium) under salt stress-A field appraisal.	Samad A, K Shaukat, MUR Ansari, M Nizar, N Zahra, A Naz, HMW Iqbal, A Raza, V Pestic and I Djalovic	2023	Biocell	47	523-532
138	E-monitoring of student engagement level using facial gestures.	Abdullah S, A Hakim, A Razzaq and N Nadeem	2023	Sukkur IBA J. Comput. Math. Sci.	6	1-7
139	The level and distribution of selected organochlorine pesticides in water of River Satluj Pakistan	Qazi AA, M Ali, M Latif, SAA Naqvi, , S Jalbani, F Jabeen, R Iqbal, Z Farooq, MK Hamidullah, A Naz, S Hussain, MA Iqbal, A Hakim, N Tariq and T Kausar	2023	Braz. J. Biol.	83	1-7
140	Safety assessment of water purification plants of Lahore.	Majeed A, S Shahid, S Ali, and N Firdous	2023	J. Pak. Ins. Chem. Eng.	50	29-44
141	Advances in formulation, functionality, and application of edible coatings on fresh produce and fresh-cut products: A review.	Firdous N, F Moradinezhad, F Farooq and M Dorostkar	2023	Food Chem.	407	135186
142	Management of vegetable leaf miner, <i>Liriomyza</i> Spp., (Diptera: Agromyzidae) in vegetable crops	Hamza MA, M Ishtiaq, MA Mehmood, MA Majid, M Gohar, E Radicetti, R Mancinelli, N Iqbal and S Civolani	2023	Horticulturae	9	255
143	Strigolactone-mediated oxidative stress alleviation in <i>Brassica rapa</i> through upregulating antioxidant system under water deficit conditions.	Ali A, T Shah, G Haider, MI Awan, M Gohar, F Munsif and I Ahmad	2023	J. Plant Growth Regul.	42	4675-4687



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144	Exogenous application of growth regulators improves the growth and quality of <i>Dahlia variabilis</i> L.	Khan S, N Abbas, Z Hasnain, S Ullah, I Hussain, A Rais, MA Ghafoor, D Ibrar, S Irshad, M Saddique, MA Bashir, S Naseem, MM Khan and J Alkahtani	8/6/2023	Philipp. Agric. Sci.	2	186-196
145	Bioinformatics and expression analysis of trihelix transcription factor family in strawberry, and functional characterization of FvTrihelix6.	Fan J, F Jiang, H Sun, T He, Y Liu, G Jiao, B Ahmad, SAM Bokhari, Q Chen and Z Wen	2023	Horticulturae	9	633
146	New fossil remains of proboscideans from the Siwalik group of Pakistan.	Razaa T, K Samiullah, R Yasin, RM Fazal, M Waseem, S Akhter, A Abbas, S Naza, MA Bashir and IU Malik	2023	Hist. Biol.	230	1-10
147	Avian influenza (H5N1) virus, epidemiology and its effects on backyard poultry in Indonesia	Saifur Rehman, Mustofa Helmi Effendi, Adiana Mutamsari Witaningruma, Ugbo Emmanuel Nnabuikeb, Muhammad Bilal, Asghar Abbas, Rao Zahid Abbas, Kashif Hussain	2023	F1000 Res.	1	1321
148	Immunomodulatory effects of artemisia brevifolia extract against experimentally induced coccidiosis in broiler chicken.	Hussain K, A Abbas, HAH Alanazi and AMA Alharbi	2023	Pak. Vet. J.	43	333-338
149	Volatiles produced by symbiotic yeasts improve trap catches of <i>Carpophilus davidsoni</i>	Baig F, K Farnier, M Ishtiaq and JP Cunningham	2023	J. Chem. Ecol.	116	505-512



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(Coleoptera: Nitidulidae):  
An important pest of  
stone fruits in Australia.

150	Efficacy of Saccharothrix algeriensis NRRL B-24137 to suppress Fusarium oxysporum f.sp. vasinfectum induced wilt disease in cotton.	Asif R, MH Siddique, S Hayat, I Rasul, H Nadeem, M Faisal, M Waseem, S A Zakki, A Zitouni and S Muzammil	2023	PeerJ	11	e14754
151	Artemisia absinthium extract regulates expression of TGFβ1 and MYC genes and controls hepatic cancer.	Sohail J, M Zubair, K Hussain, M Faisal, M Ismail, I Haider, R Mumtaz, AA Khan and MA Khan	2023	PLoS One	18	e0284244
152	Glutathione application delays surface browning of fresh-cut lotus (Nelumbo nucifera Gaertn.) root slices during low temperature storage.	Sajid A, AS Khan, A Nawaz, S Naz, S Ejaz and S Ullah	2023	Postharvest Biol. Technol.	200	112311
153	Evaluation of chemosterility effect of different insect growth regulators on Bactrocera zonata population.	Muhammad H, S Saeed, UN Ullah and S Ullah	2023	Sci. Prog.	106	1-30
154	Analysis of enrollment criteria in secondary schools using machine learning and data mining approach.	Zain UA, T Mazhar, A Razzaq, I Haq, I Ullah, H Alasmay and HG Mohamed	2023	Electronics	12	694-200
155	Machine Vision approach for identification of four variant Pakistani rice using multi-features dataset.	Aslam T, HM Ijaz, MU Rehman, A Razzaq, SA Nawaz and S Qadri	2023	LGURJCSIT	1	35-45
156	Sentiment extraction from naturalistic audio of agricultural expert	Zaid S, A Razzaq, A Hakim, Z Ali, UI Ahmad, AU	2023	J. Biomed. Inform.	4	142-149



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	opinions.	Rehman, MAU Rehman, and S Shahid				
157	Protection-enhanced watermarking scheme combined with non-linear systems.	Hira N, MS Ullah, S Qadri, H Arshad, M Husnain, A Razzaq and SA Nawaz	2023	IEEE Access	11	33725-33740
158	Citrus canker: A persistent threat to the worldwide citrus industry-an analysis.	Subhan A, A Hameed, GMU Din, M Ikhtlaq, M Ashfaq, M Atiq, F Ali, ZU Zia, SAH Naqvi and Y Wang	2023	Agronomy	13	1112-1141
159	Estimation of biocidal potential of desert phytopowders for the management of citrus canker.	Muhammad A, K Fatima, NA Rajput, ST Sahi, A Hameed, M Usman, U Ahmad, A Sultan, S Iqbal and A Nawaz	2023	Sains Malays.	52	757-770
160	Yeast expressed hybrid peptide CLP Abridged pro-inflammatory cytokine levels by endotoxin neutralization.	Junhao C, B Ahmad, MA Raza, H Guo, M Ahmat, X Wei, L Zhang, Z Li, Q Cheng, J Zhang, J Wang, D Si, Y Zhang and R Zhan	2023	Microorganism	11	131
161	Determinants of food security in Nigeria: empirical evidence from beneficiaries and non-beneficiaries rice farmers of the Kano River Irrigation Project.	Abdulazeez HW, A Ali, SA Abdulwahab, HA Raza, HZ Mehmood and AB Sannoh	2023	Front. Sustain. Food Syst.	7	1-11
162	Quality attributes and biochemical changes in white and colored table grapes as influenced by harvest maturity and ambient postharvest storage.	Khalil U, IA Rajwana, K Razzaq, U Farooq, BA Saleem and JK Brecht	2023	S. Afr. J. Bot.	154	273-281
163	Enhancement of salinity stress tolerance in lettuce ( <i>Lactuca sativa</i> L.) via foliar application	Hassan S, Z Khalid, M Ahsan, S Naz, A Nawaz, R Ahmad, K Razzaq, SM	2023	Plants	12	1115



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	of nitric oxide.	Wabaidur, C Jacquard, I Siric, P Kumar and SA Fayssal				
164	Salicylic acid-mediated physiological and biochemical alterations to confer drought stress tolerance in Zinnia ( <i>Z. elegans</i> ), Asteraceae.	Gulzar A, F Nawaz, M Amin, M A Shehzad, K Razzaq, N Faried, Y Sajjad, A Farooq, A Akram and S Ullah	2023	Bot. Sci.	4	977-988
165	Impact of different integrated pest management modules on pest infestation, pesticide residue and yield in mango fruits	Muhammad AF, MJ Arif, MD Gogi, B Atta and A Nawaz	2023	J. Innov. Sci.	5	72-82
166	Leaf wettability and leaf angle affect air-moisture deposition in wheat for self-irrigation.	Sadia H, Z Ali, MAB Saddique, S Merrium, M Arslan and MH Rahman	2023	BMC Plant Biol.	23	115
167	Modelling, mapping and monitoring of forest cover changes, using support vector machine, kernel logistic regression and naive bayes tree models with optical remote sensing data.	Aqil T, Y Jiango, Q Li, J Gao, L Lu, W Soufan, KF Almutairi, MH Rahman	2023	Heliyon	9	e13212
168	Current approaches for modeling ecosystem services and biodiversity in agroforestry systems: Challenges and ways forward.	Rehman MH, HEI Ahrends, A Raza and T Gaiser	2023	Front. For. Glob. Change.	5	1-28
169	Optimum zinc fertilization and sowing date improved growth, yield components, and grain zn contents of bread wheat under different tillage systems.	Ijaz H, M Ijaz, SU Allah, A Sattar, A Sher, A Nawaz, A Ghaffar, MH Rahman, S Ahmad, I Rasheed, O Nasif and MJ Ansari	2023	J. Soil Sci. Plant Nutr.	23	2344-2353



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170	Morpho-physiological and biochemical response of wheat to various treatments of silicon nano-particles under drought stress conditions	Muhammad ASR, B Zulfqar, R Iqbal, MN Muzamil, MU Aslam, F Muhammad, J Amin, HMU Aslam, MA Ibrahim, M Uzair and MH Rahman	2023	Sci. Rep.	13	2700
171	Zinc nanoparticles (ZnNPs): High-fidelity amelioration in turnip ( <i>Brassica rapa</i> L.) production under drought stress.	Jia L, S Zafar, A Javaid, S Perveen, Z Hasnain, M Ihtisham, A Abbas, M Usman, AH Sappah and M Abbas	2023	Sustainability	15	6512
172	Enhancing crop production and water conservation through IoT-based smart irrigation systems.	Durdana R, M A Jamil, HMS Badar, MDA Awan, MU Chaudhry and NI Kajla	2023	J. Comp. Biomed. Inform.	5	96-104
173	Blockchain and Big data to revolutionize archaeological photogrammetry (AP): A safe and effective method.	Fatima B, S Ilyas, L Rehman, HB Gill, K Kanwal and NI Kajla	2023	J. Comp. Biomed. Inform.	4	249-268
174	CT-based automatic spine segmentation using patch-based deep learning.	Syed FQ, H Lin, L Shen, M Ahmad, S Qadri and S Khan	2023	Int. J. Intell. Syst.	2023	1-14
175	Frequency-based deep-fake video detection using deep learning methods.	Mubasher HM, H Ghous, S Qadri, SA Nawaz and A Anwar	2023	J. Comp. Biomed. Inform.	4	41-48
176	Detection of fake videos using convolutional generative method.	Hamid G , M H Malik, S Qadri, N Ahmad and S U Rehman	2023	J. Comp. Biomed. Inform.	4	8-17
177	Nanoparticles assisted regulation of oxidative stress and antioxidant enzyme system in plants under salt stress.	Muhammad Z U R, S Anayatullah, E Irfan, S M Hussain, M Rizwan, M I Sohail, M Jafir,	2023	Chemosphere	314	1-10



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		T Ahmad, M Usman and H F Alharby				
178	Physical, biochemical and phytochemical quality variations in grapes treated by exogenous application of gibberellic acid.	Khalid U, IA Rajwana, K Razzaq, U Farooq and BA Saleem	2023	Erwerbs- Obstbau.	2023	1-14
179	Genome editing in cotton: Challenges and opportunities.	Zulqurnain K, S H Khan, A Ahmed, MU Iqbal, MS Mubarik, MZ Ghouri, F Ahmad, S Yaseen, Z Ali, AA Khan and T Azhar	2023	J. Cotton Res.	6	1-21
180	Foliar humic acid and salicylic acid application stimulates physiological responses and antioxidant systems to improve maize yield under water limitations.	Adnan A, F Nawaz, S Majeed, M Ahsan, KS Ahmad, G Akhtar, MA Shehzad, HMR Javeed and M Farman	2023	JSFA Rep.	3	119-128
181	Evaluation of haematological, serum biochemical and oxidative stress parameters in cattle naturally infected with lumpy skin disease virus.	Aziz UR, MF Shahid, MZ Iqbal, AA Channa, M Rasheed, M Adnan, R Mahmood, HM Ishaq, HURA Khera, K Hussain and MA Raza	2023	Trop. Anim. Health Prod.	55	184
182	A paradigm shift towards beneficial microbes enhancing the efficiency of organic and inorganic nitrogen sources for a sustainable environment.	Haji M, S Fahad, S Saud, S Hassan, W Nasim, B Ali, HM Hammad, HF Bakhat, M Mubeen, AZ Khan, K Liu, MT Harrison, H AbdElgawad and MAA Maksoud	2023	Land	12	680
183	Bio-fortification of two wheat cultivars with iron and zinc through their soil and foliar application in salt-factored soil: growth,	Tayyaba N, MM Iqbal, S Fahad, J Akhtar, M Saqib, S Alamri, MH Siddiqui, S Saud, JZK Khattak, S Ali,	2023	J. Plant Growth Regul.	29	1-19



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	ionic, physiological, and biochemical modifications.	S Hassan, T Nawaz, HM Hammad, J Banout, C Wu, D Wang, R Datta, S Danish and W Nasim				
184	Impacts of COVID-19 pandemic on environment, society, and food security	Hafiz MH, HMF Nauman, F Abbas, R Jawad, W Farhad, M Shahid, HF Bakhat, AA Farooque, M Mubeen, S Fahad, and A Cerda	2023	Environ. Sci. Pollut. Res.	45	1-12
185	Effect of silicon fertilization on eggplant growth and insect population dynamics.	Hafiaz FB, N Bibi, HM Hammad, GM Shah, S Abbas, HM Rafique, AKSH Mohamed and MM Maqbool	2023	Silicon	15	3515-3523
186	Zeolite amendment reduces lead accumulation and improves growth and yield in tomato plants irrigated with sewage water.	Rashid J, A Nawaz, S Ejaz, S Ali, M S Saleem and HM Hammad	2023	Environ. Sci. Pollut. Res.	30	41970-41982
187	Early Detection and Classification of Rice Brown Spot and Bacterial Blight Diseases Using Digital Image Processing	Junaid I, I Hussain, A Hakim, S Ullah and HM Yousuf	2023	J. Comp. Biomed. Inform.	4	98-109
188	Bio-pesticides as an ecofriendly management of Whitefly, Bemisia tabaci Mitotype Asia II.	Owais H, MA Qayyum, S Saeed, UN Ullah and M Ali	2023	Int. J. Trop. Insect Sci.	43	547-560
189	Characterization of Azadirachta indica synthesized silver nanoparticles and its toxicity against Dusky cotton bug, Oxycarenus hyalinipennis Costa (Hemiptera: Lygaeidae)	Muhammad J, UN Ullah, WS Khan, S Saeed, MA Qayyum and MA Khan	2023	Int. J. Trop. Insect Sci.	43	463-473



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190	Water-assisted-mechanical activation of copper pyrometallurgical tailings for molybdenum leaching and selective removal of environmentally-hazardous elements.	Huihui Z, G Liu, C Zhou, M Arif, M Sun, Y Chen, Y Liu	2023	Sep. Purif. Technol.	310	1-8
191	Role of biostimulants (ascorbic acid and fulvic acid) to synergize Rhizobium activity in pea ( <i>Pisum sativum</i> L. var. Meteor).	Atif K, M Mushtaq, M Arif and S Rashid	2023	Plant Physiol. Biochem.	196	668-682
192	Quantitative characterization and magnetic separation of copper pyrometallurgical tailing for molybdenum and copper pre-concentration and cleaning of environmentally hazardous elements.	Huihui Z, G Liu, C Zhou, Y Chen, M Arif, M Sun, Y Liu, H Wang	2023	J. Ind. Eng. Chem.	122	210-220
193	Alleviation of Cd stress in maize by compost mixed biochar.	Ashfaq AR, S Hussain, B Hussain, KS Baig, MS Tahir, GS Hussain, T Zarei, S Danish, M N Akhtar, S Fahad, S Ali, AA Hatamleh, MAA Dosary, M Saleem and R Datta	2023	J. King Saud Univ. Sci.	34	1-12
194	Thermal plasticity and cotton production enhancing attributes of phosphate solubilizing bacteria from cotton rhizosphere.	Suleman H S, M B Hussain, Z A Zahir, T U Haq and A Matloob	2023	J. Soil Sci. Plant Nutr.	22	3885-3900
195	Cost of mental illness and depression in developing countries: A case study of Pakistan	Tahira S, MA Iqbal, F Jamil, MH Raza and A Nazir.	2023	J. Educ Soc. Stud.	3	84-94



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196	Do crop diversity and livestock production improve smallholder intra-household dietary diversity, nutrition and sustainable food production: Empirical evidence from Pakistan.	Muhammad W, X Li, I Jamil, AHM S Islam, Q Abbas, MH Raza and M Eliw	2023	Sustain. Food Syst.	7	1-16
197	A critical review of whitefly ( <i>Bemisia tabaci</i> gennadius) cryptic species associated with the cotton leaf curl disease.	Afzal M, S Saeed, H Riaz, M Ishtiaq and MH Rahman	2023	J. Innov. Sci.	9	24-43
198	Anticancer, antioxidant, ameliorative and therapeutic properties of kaempferol.	Muhammad S, M Imran, SA Alsagaby, H Naeem, WA Abdulmonem, M Hussain, MA Abdelgawad, AHE Ghorab, MM Ghoneim, ME Sherbiny, AV Atoki and CG Awuchi	2023	Int. J. Food Prop.	26	1140-1166
199	Exogenous application of salicylic acid improves physiological and biochemical attributes of morus alba saplings under soil water deficit.	Zikria Z, F Rasheed, N Mushtaq, MU Khan, M Mohsin, MA Irshad, M Summer, Z Raza, and O Gailing	2023	Forests	14	236
200	The influence of pruning intensity on physical and biochemical fruit attributes of pomegranate.	Ghulam M, IA Rajwana, HN Faried, TU Haq and MA Bashir	2023	Erwerbs-Obstbau.	65	1-11
201	Diversity and molecular characterization of cucumber mosaic cucumovirus (CMV) subgroup II infecting Spinach ( <i>Spinacia oleracea</i> ) and Pea ( <i>Pisum sativum</i> ) in	Ahsan M, M Ashfaq, H Riaz, Z Khan, Z Hamzah and Z Asad	2023	Braz. J. Biol.	83	e245865



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Pothwar region of Pakistan						
202	Current status and distribution of major RNA viruses infecting onion and garlic crops in Punjab, Pakistan.	Muhammad ZH, M Ashfaq, H Riaz and S Saeed.	2023	EJFA	35	1-8
203	Deducing methodology of prophetic Hadith (PBUH) by the companion (Deductive Study)	Abdul H, R Ahmad and R Jabeen	2023	Al-Uswah Res. J.	3	13-30
204	Drought susceptibility index; a preferred criterion in screening for tolerance in soybean.	Zafar MZ, MHN Tahir, M A Bakhtavar, E Darwish, MA Khan, Z Khan, C Fatima, A Aftab, SU Rehman and U Rehman	2023	J. Biores. Manag.	10	75-83
205	Impact of seed priming and compost application on yield and growth attributes of cluster bean in salinity stress.	Shahzad AJ, M Ali, A Matloob, TU Haq and MM Iqbal	2023	Pak J Bot.	55	14
206	Fruit thinning improves pomegranate fruit quality by activating physical, physiological, biochemical and bioactive attributes	Gjulam M, IA Rajwana, HN Faried, TU Haq and MA Bashir	2023	Pak J Bot.	55	1-11
207	First record of <i>Trilocho varians</i> (Bombycidae: Lepidoptera) from Pakistan.	Ramzan M, UN Ullah, S Saba, MM Khan, U Faheem, AU Rehman, NA Maan and W Hassan	2023	J. Innov. Sci.	9	61-64

2.20.2. Books/Book Chapters Published

Sr. No.	Book/Chapter Title	Editor's Name	Author's Name	Year	Publisher
1	Bioactive compounds from multifarious natural foods for human health.	Suleria HAR, MR Goyal and HB Ain	Shakir S, S Ahmad, A Naz and N Raza	2022	Apple Academic Press



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2	Functional genomics in cotton	Khan Z, Z Ali and AA Khan.	Ahmad F, A Fatima, P Khanum, S Rehman, MABakar Saddique, MA Khan and Z Khan	2022	CRC Press
3	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Waheed U, S Shabir, F Mazhar, M Rehman, HA Qureshi and N Iqbal	2022	CRC Press
4	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Nadia Iqbal, Farzana Akbar, Ummara Waheed and Saghir Ahmad	2022	CRC Press
5	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Saddique MAB, Z Ali, MA Sher, B Farid, F Ahmad, and SF Arshad	2022	CRC Press
6	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Shah FS, MA Bhatti, AA Khan, IA Baig, MHN Tahir, F Ahmad and MA Bakhtavar	2022	CRC Press
7	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Ahmad F, A Fatima, P Khanum, S Rehman, MAB Saddique, MA Khan and Z Khan	2022	CRC Press
8	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Saddique MAB, Z Ali, MA Sher, B Farid, F Ahmad and SF Arshad	2022	CRC Press
9	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Shah FS, MA Bhatti, AA Khan, IA Baig, MHN Tahir, F Ahmad and MA Bakhtavar	2022	CRC Press
10	Cotton breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Khan Z	2022	CRC Press
11	Cotton Breeding and Biotechnology	Khan Z, Z Ali and AA Khan.	Mehdi M, MH Raza and M Azeem	2022	CRC Press
12	Improvement of Plant Production in the Era of Climate Change	Fahad S, M Adnan and S Saud.	Ghaffar A, MH Rahman, S Ahmad, G Haider, I Ahmad, MA Khan, J Hussain, S Ahmad, M Afzaal, S Fahad and A Ahmad	2022	CRC Press



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13	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Mubeen K, N Sarwar, M Shehzad, A Ghaffar and M Aziz	2022	Springer Nature
14	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Matloob A, K Jabran, M Farooq, A Khaliq, F Aslam, T Abbas, Ehsanullah, U Zaman, S Irshad and BS Chauhan	2022	Springer Nature
15	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Hussain MB, SH Shah, A Matloob, R Mubaraka, N Ahmad, I Ahmad, T Haq and MU Jamshaid	2022	Springer Nature
16	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Farooq O, N Sarwar, HM Aatif, M Ali, AA Khan, MM Iqbal, MZ Manshaa, and S Ahmad	2022	Springer Nature
17	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Sarwar N, A Rehman, M Dawood, O Farooq, K Mubeen, A Wasaya, M Shehzad and S Ahmad	2022	Springer Nature
18	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Mubeen K, N Sarwar, M Shehzad, A Ghaffar and M Aziz	2022	Springer Nature
19	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Wasaya A, AY Tauqeer, N Sarwar, A Rehman, K Mubeen, K Rajendran, A Hadifa and AEL Sabagh	2022	Springer Nature
20	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Khuram Mubeen K, A Ghaffar, M Aziz, N Sarwar and M Shehzad	2022	Springer Nature
21	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Hussain MB, SH Shah, A. Matloob, R Mubaraka, N Ahmed, I Ahmad, TU Haq and	2022	Springer Nature



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22	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	MU Jamshaid Iqbal Z, MN Sattar and MN Naqqash	2022	Springer Nature
23	Modern Techniques of Rice Crop Production	Sarwar N, A Rehman, S Ahmad and M Hasanuzzaman.	Hussain MB, SH Shah, A Matloob, R Mubaraka, N Ahmed, I Ahmad, T Haq and MU Jamshaid	2022	Springer Nature
24	Plant Stress Mitigators	Choudhary DK, A Vaishnav and SS Arya.	Mahmood A, H Bardak, D Bozdoan, T Yamaguchi, A Hamed, R Kataoka and OC Turgay	2022	Springer
25	Plant Stress Mitigators: Types, Techniques and Functions	Ghorbanpour M and MA Shahid.	Ali S, MA Anjum, S Ullah, S Ejaz, A Nawaz, S Hussain and G Khaliq	2022	Elsevier Science
26	Animal Health Perspectives	Abbas RZ, A Khan, P Liu and MK Saleemi.	Abbas A, Z Rani, RZ Abbas, K Hussain, F Siddiqui, A Rehman, B Ahmad, MA Raza, JA Khan, R Yasin, SA Rajput, W Zaib, T Rehman, MM Ayaz and HRA Khera	2022	Unique Scientific Publishers
27	Animal Health Perspectives	Abbas RZ, A Khan, P Liu and MK Saleemi.	Hussain K, MAT Rana, A Abbas, JA Khan, A Rehman, R Yasin, K Samiullah, B Ahmad, A Haider, M Ayaz, W Zaib, MU Waqas and MA Raza	2022	Unique Scientific Publishers
28	Animal Health Perspectives	Abbas RZ, A Khan, P Liu and MK Saleemi.	Rani Z, A Abbas, T Akhtar, Z Saeed, RZ Abbas, HA Zaheer, HRA Khera and M Mohsin	2022	Unique Scientific Publishers
29	Animal Health Perspectives	Abbas RZ, A Khan, P Liu and MK Saleemi.	Habib M and A Rahman	2022	Unique Scientific Publishers
30	Animal Health Perspective	Abbas RZ, A Khan, P Liu and MK Saleemi.	Rahman A and MA Raza	2022	Unique scientific Publishers



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31	Soybean Improvement, Physiological, Molecular and Genetic Perspectives	Wani SH, NR Sofi, MA Bhat and F Lin.	Ali A, Z Ahmed, R Maqbool, K Shahzad, A Hameed, FS Awan, AI Khan, ZH Shah, Z Ali, H Alsamadany and M Bilal	2022	Springer
32	Soybean Improvement Physiological, Molecular and Genetic Perspectives	Wani SH, NR Sofi, MA Bhat and F Lin.	Aslam S, A Munir, HMA Aslam, SH Khan and A Ahmad	2022	Springer
33	Green Nanomaterials as Potential Antimicrobials	Haider A, M Ikram and A Rafiq.	Haider A, M Ikram and A Rafiq	2022	Springer
34	Remote sensing in veterinary sciences	Rahman A, JA Khan and MA Raza.	Rahman A, JA Khan and MA Raza	2022	Unique Scientific Publishers
35	Trends in Plant Disease Assessment	Haq I and S Ijaz.	Shakeel Q, RT Bajwa, I Rashid, HMU Aslam, Y Iftikhar, M Mubeen, G Li and M Wu	2022	Springer
36	Trends in Plant Disease Assessment	Haq I and S Ijaz.	Aslam HMU, H Riaz, N Killiny, X Zhou, LS Thomashow, NT Peters and AK Chanda	2022	Springer
37	Fundamentals of Agriculture	Khalid MN and I Amjad.	Mehmood HZ, MN Khalid and I Amjad	2022	Vital Biotech Publication
38	Input Use Efficiency for Food and Environmental Security	Swaroop RBR and MA Hossain.	Sabagh AEL, MSI Akbar and H Rahman	2022	Springer, Singapore
39	Challenges in agro-climate and ecosystem	Saifullah M, SB Mickovski and G Tardio.	Saifullah M, SB Mickovski and G Tardio	2022	Intech open
40	Functional Cereal and Cereal Foods	Bangar SP, CD Lal and AK Siroha.	Patil PJ, M Usman, A Mehmood, S Ahmad, J Haider, C Zhang, C Teng and X Li	2022	Springer
41	Mass Spectrometry in Food Analysis	Nollet LML and R Winkler.	Islam S, D Thangadurai, R Hospet, Z Khoje, L Prakash, M David, N Bedi, N Bhagat, U	2022	CRC Press



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			Farooq, K Hayat, J Sangeetha, A Hussain and ZZ Chowdhury		
42	Trends and Innovations in Food Science	El-Samragy Y.	Batool A, U Farooq, A Shafi and Z Khan	2022	Intech open
43	The CRISPR/Cas Tool Kit for Genome Editing	Ahmad A, SH Khan and Z Khan.	Khan Z, A Razzaq, A Muneer, M Siddique, U Iqbal, MA Raza and T Sattar	2022	Springer Nature
44	Sustainable Management and Utilization of Sewage Sludge	Rajput VD, ANYH Singh, JSK Singh and T Minkina.	Ahsan M, A Younis, F Ramzan, U Tariq, M Nafees, F Nawaz, G Akhtar, A Akram and A Ramzan	2022	Springer Nature
45	Biostimulants for Crop Production and Sustainable Agriculture	Hasanuzzaman M, BH Nowak, T Islam and M Fujita.	Nawaz N, S Majeed, M Farman, MS Sheteiwy, A Al-Mamun, M Nawaz and G Neumann	2022	CABI
46	Microbial Biostimulants for Sustainable Agriculture and Environmental Bioremediation	Inamuddin, CO Adetunji, MI Ahamed and T Altalhi.	Raheel M, A Riaz, MNA Malghani, S Ali, Q Shakeel, HM Aatif, Z Mansha and F Nawaz	2022	Taylor and Francis
47	Remote Sensing and GIS Integration in Veterinary, Agricultural & Health Sciences	Raza MA.	Raza MA	2022	Unique Scientific Publishers
48	Remote Sensing & GIS Integration in Veterinary, Agricultural & Health Sciences	Raza MA.	Rahman A, JA Khan, C Raab, RZ Abbas and MA Raza	2022	Unique Scientific Publishers
49	Advances in Integrated Pest Management Technology	Tanda AM.	Nawaz A, M Sufyan, M Tayyab, A Ejaz, MA Qayyum, M Waseem, MD Gogi, MJ Arif, A Munawar and WW Zhou	2022	Springer
50	Microbial Biocontrol: Food Security and Post Harvest Management	Kumar A.	Yasin M, A Khan, MA Qayyum, A Aqueel, A Rehman, S Ali, S Rubab and F Saleem	2022	Springer



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51	Vegetable Breeding a Practical Guide	.	Ali A, Z Ali, MAB Saddique and T Safdar	2022	
52	In Cereal Diseases: Nanobiotechnological Approaches for Diagnosis and Management	Elsalam KAA and HI Mohamed.	Saddique MAB, S Zafar, Z Ashraf, MA Muneer, B Farid and S Shabeer	2022	Springer
53	In Cereal Diseases: Nanobiotechnological Approaches for Diagnosis and Management	Elsalam KAA and HI Mohamed.	Asad Z, M Siddique, M Ashfaq, Z Khan	2022	Springer
54	Mulching in Agroecosystems	Akhtar K, M Arif, M Riaz and HWang.	Mubaraka R, MB Hussain, H Tariq, M Qayyum and I Tariq	2022	Springer
55	Phytoremediation biotechnological strategies for promoting invigorating environs	Bhat RF, FMP Tonelli and K Hakeem.	Riaz U, T Athar, U Mustafa and R Iqbal	2022	Springer
56	One Health Triad	Aguilar-Marcelino L, Abbas RZ, Khan A, Younus M and Saeed NM	Rahman A, MAB Shabbir, SA Rajput, M Habib, N Bano, A Anjum, N Niaz, N Shafi and MA Raza	2023	Unique Scientific Publishers
57	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Tahir MA, K Hussain, A Abbas, A Haider, B Ahmad, A Ramzan, M Muneeb, S Shafqat, A Rehman, MU Waqas, R Yasin and MA Raza	2023	Unique Scientific Publishers
58	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Rajput SA, A Rahman, RM Shahbakht, RW Akhtar, A Anjum, A Ali, A Abbas, B Ahmad, JA Khan, MA Raza and A Shaukat	2023	Unique Scientific Publishers
59	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Ashiq HT, B Khan, A Anjum, R Sultan, W Zaib, M Ashiq, S Tariq, T Mehreen, MA Raza, JA Khan,	2023	Unique Scientific Publishers



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			IA Khan, SA Rajput and RM Shahbakht		
60	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Rahman AZ, MAB Shabbir, SA Rajput, M Habib, N Bano, A Anjum, N Niaz, N Shafi and MA Raza	2023	Unique Scientific Publishers
61	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Tahir MA, K Hussain and MU Waqas	2023	Unique Scientific Publisher
62	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Waqas MU, I Chaudhary and K Hussain, A Abbas, A Rehman, B Ahmad, MA Raza, JA Khan, A Haider, A Anjum, W Zaib and HRA Khera	2023	Unique scientific publisher
63	One Health Triad	Khan A, RZ Abbas, LA Marcelino, NM Saeed and M Younus.	Zaib W, K Hussain, Q Amin, RM Shahbakht, A Abbas, S Imran, R Sardar, MU Waqas, MA Raza, JA Khan, HRA Khera and S Tariq	2023	Unique scientific publisher
64	Green Sustainable Process for Chemical and Environmental Engineering and Science	Altalhi IT.	Siddique MH, F Maqbool, T Shahzad, M Waseem, I Rasul, S Hayat, M Afzal, M Faisal and S Muzammil	2023	Elsevier
65	Sustainable Agriculture in the Era of the OMICs Revolution	Prakash CS, S Fiaz, MA Nadeem, FS Baloch and A Qayyum.	Sarfraz S, F Ali, A Hameed, Ahmad and K Riaz	2023	Springer
66	Sustainable Agriculture in the Era of the Omics Revolution	Prakash CS, S Fiaz, MA Nadeem, FS Baloch and A Qayyum.	Ali F, S Sarfraz, A Hameed and Z Ahmed	2023	Springer



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67	Thermal processing of food products by steam and hot water unit operations and processing equipment in the food industry	Jafari SM, Gorgan and DV Ourense.	Rehman A, T Qunyi, A Karim, A Noreen, S Ahmad, M Usman and SM Jafari	2023	Elsevier
68	Unit operations and processing Equipments in food industry	Jafari SM, Gorgan and DV Ourense.	Karim A, A Rehman, Z Lianfu, A Noreen, S Ahmad, M Usman, SM Jafari	2023	Elsevier
69	Mushrooms: Nutraceuticals and Functional Foods	Pandita D. and A Pandita.	Batool A, U Farooq, A Shafi, N Abbas, Z Rafiq, and Z Khan	2023	CRC Press
70	Waste problems and management in developing countries	Riaz U, S Iqbal and M Jamil.	Riaz U, S Iqbal and M Jamil	2023	CRC press
71	Landscape Designs	Akhtar G and MA Khan.	Akhtar G and MA Khan	2023	MNS-University of Agriculture Multan
72	Locust Outbreaks: Management and the World Economy	Riaz U, KR Hakeem	Qayyum MA, M Yasin, W Wakil, D Hunter, MU Ghazanfar and M Wajid	2023	Taylor and Francis
73	Locust Outbreaks: Management and the World Economy	Riaz U, KR Hakeem	Qayyum MA, S Saeed, N Iqbal, A Khan, UN Ullah, H Riaz, M Ishtiaq, M Fiaz, MU Sial, AB Siddique and MA Mehdi	2023	Taylor and Francis
74	Locust Outbreaks Management and the World Economy	Riaz U, KR Hakeem	Riaz U, KR Hakeem, H Aziz and S Farooq	2023	Taylor and Francis
75	Potato Production Worldwide	Alalican ME, A Bakhsh and K Jabran.	Naqqash MN	2023	Academic Press
76	Natural Food Preservatives	Bhattacharya S and HHA E Salama.	Qaisrani TB, MM Qaisrani, M Shahbaz and KA Khan	2023	Jenny Stanford Publishing
77	Natural Food Preservatives	Bhattacharya S and HHA E Salama.	Shahbaz M, J Ali, U Farooq, S Murtaza, N Raza, A Liaqat, and TB Qaisrani	2023	Jenny Stanford Publishing

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78	Starch based nanomaterials for food packaging perspectives and future prospectus.	Nayik G and AH Dar.	Shahbaz M, H Naeem, S Murtaza, N Huda, M Tayyab, A Hamza and U Momal	2023	Elsevier
79	Ultrasound and Microwave for Food Processing: Synergism for Preservation and Extraction	Nayik GA, MM Ranjha, XA Zeng, S Irfan and SM Zahra.	Murtaza S, M Shahbaz, A Murtaza, A Sameen, U Farooq, FH Shah, H Naeem and MJ Ansari	2023	Elsevier





# QUALITY ASSURANCE

# QUALITY ASSURANCE





## CHAPTER-3

# QUALITY ASSURANCE

### 3.1. Quality Enhancement Cell

MNS University Agriculture Multan, established Quality Enhancement Cell (QEC) in March 2016 for quality assurance in teaching and other academic activities to meet international standards of higher education. The main focus of QEC is the implementation of quality assurance policies of HEC and monitoring the degree programs being offered by the University, to promote outcome based learning. This helps in developing a mindset among the faculty and students for the promotion of academic excellence. The QEC at MNSUAM is helping and guiding the academic Departments in accreditation of undergraduate programs from respective councils and obtaining NoCs for postgraduate programs from the HEC. The QEC notifies similarity index of synopses and theses before submission to the respective offices. Furthermore, the QEC also organizes seminars and training workshops for the faculty and students for their awareness regarding standards and procedures of quality assurance. The QEC also arranges internal and external quality assessment at various levels in coordination with accreditation councils and HEC to ensure and maintain quality standards.

### 3.2. Functions of QEC

The QEC at MNS University of Agriculture performs the following functions:

- 1) Capacity building of faculty, through seminars and trainings, for the preparation of Self-Assessment Reports (SARs) of the academic programs by various departments.
- 2) Preparation of SARs by Program Teams and evaluation by Assessment Teams.
- 3) Accreditation of undergraduate programs from respective Accreditation Councils.
- 4) Preparation of University Portfolio Report (UPR) and conducting Institutional Performance Evaluation, and preparation of implementation plan accordingly.
- 5) Conduct of Postgraduate Program Review and coordination with academic Departments / Institutes for compiling the information.
- 6) Conduct the meetings of Departmental Technical Review Committees for annual review of TTS faculty.
- 7) Training of Program Teams to perform various roles in the respective departments.
- 8) Hybrid/Blended Learning.
- 9) Preparation of curriculum for Outcome Based Education (OBE).

During 2022-23, the detail of various activities of QEC is as follows:

### 3.3. Course and Teacher Evaluation Proforma

With the objective of improving the course contents and teaching for a conducive classroom environment, feedback of students is collected in the form of HEC Course and Teacher Evaluation Proformas at the end of each semester. Feedback from the students for Course and Teacher Evaluation was obtained through an online system. Following is the detail of number of Courses for which this information was collected during the year under consideration:



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Sr. No.	Semester	Number of Courses	
		Undergraduate	Postgraduate
1	Winter 2022-23	342	108
2	Spring 2023	295	103

### 3.4. Visit of Accreditation Councils For Accreditation of Various Program

The QEC helps and guides the Institutes/Departments in preparing documents and making other necessary arrangements for the visit of Accreditation Inspection Committee (AICs) of Accreditation Councils. The QEC acts as a bridge between the teaching departments and Accreditation Councils. During the year 2022-23, accreditations visits of AICs of different councils were arranged for various programs in the University as per following detail:

Sr. No.	Disciplines/Programs	Accreditation Council
<b>B.Sc. (Hons.) Agriculture</b>		
1.	Biotechnology	National Agriculture Education Accreditation Council (NAEAC)
2.	Plant Pathology	
3.	Poultry Sciences	
4.	Fisheries and Aquaculture	
5.	Human Nutrition and Dietetics (HND)	
6.	Information Technology	National Computing Education Accreditation Council (NCEAC)
<b>B.Sc.</b>		
7.	Agro Industrial Engineering Technology	National Technology Council (NTC)

### 3.5. NOCs to Initiate Postgraduate Degree Programs

University is expanding and offering new MS, M.Sc. (Hons.) and Ph.D. degree programs after getting NOCs from the HEC for launching new postgraduate degree programs.

During 2022-23, the NOC cases were submitted to the HEC for initiating following degree programs:

- MS Zoology
- M.Sc. (Hons.) Agricultural Extension
- M.Sc. (Hons.) Energy System Engineering
- M.Sc. (Hons.) Remote Sensing and GIS
- Ph.D Zoology
- Ph.D Computer Science
- Ph.D Agricultural Engineering



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### QUALITY ASSURANCE

The NOCs were obtained from HEC for the following postgraduate degree programs:

- MS Zoology
- M.Sc. (Hons.) Agricultural Engineering
- M.Sc. (Hons.) Agro-Industrial Engineering Technology
- M.Sc. (Hons.) Weed Science
- M.Sc. (Hons.) Human Nutrition Dietetics (HND)
- M.Sc. (Hons.) Agricultural Extension
- M.Sc. (Hons.) Energy System Engineering
- Ph.D Human Nutrition Dietetics (HND)
- Ph.D Agricultural Economics
- Ph.D Zoology
- Ph.D Computer Science

#### 3.6. Departmental Technical Review of TTS Faculty

To create a spirit of competition and target based assessment, the MNSUAM promotes hiring young faculty as Assistant Professor on TTS. The meetings of DTRC, for assessing annual performance, mid-probationary review, and Tenure Review of the TTS faculty, were held during the year under report as per following detail:

##### 3.6.1. Annual Review

Sr. No.	Institutes/Departments	Faculty Members	No. of Cases
1	Agronomy	5	9
2	Food Science and Technology	1	2
3	Soil Science	3	3
4	Biotechnology, (IPBB)	1	1
5	Plant Breeding and Genetics (IPBB)	4	4
6	Entomology, (IPP)	4	6
7	Plant Pathology, (IPP)	3	4
8	Horticulture	4	11
10	Agricultural Engineering	4	9
11	Computer Science	5	5
13	Agricultural Extension	1	1
14	Veterinary and Animal Sciences	3	4
<b>Total</b>		<b>38</b>	<b>59</b>



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#### 3.6.2. Mid-Probationary Review

Sr. No.	Institutes/Departments	Faculty Members	No. of Cases
1	Agricultural Extension	1	1
2	Computer Science	1	1
<b>Total</b>		2	2

#### 3.6.3. Tenure Review

Sr. No.	Institutes/Departments	Faculty Members	No. of Cases
1	Agronomy	3	3
2	Horticulture	1	1
<b>Total</b>		4	4

#### 3.7. Self-Assessment of Programs

Program Teams (PTs) of Institutes/Departments prepare SARs and submit to QEC, Assessment Teams (ATs) conduct the assessment and submit report to QEC. The Departments/Institutes prepare and submit implementation plans to QEC based on the findings of ATs. Assessments of SARs, preparation of implementation plans and executive summary of the following undergraduate and postgraduate Programs were completed during this year:

Sr. No.	Programs	SARs Prepared by PTs	SARs Assessed by ATs	Implementation Plan	Executive Summary
<b>Faculty of Agriculture and Environmental Sciences (FAES)</b>					
1.	Plant Breeding and Genetics	✓	✓	✓	✓
2.	Seed Science and Technology	✓	✓	✓	✓
3.	Entomology	✓	✓	✓	✓
4.	Food Science and Technology	✓	✓	✓	✓
5.	Home Economics	✓	✓	✓	✓
6.	Horticulture	✓	✓	✓	✓
7.	Agronomy	✓	✓	✓	✓
8.	Soil Science	✓	✓	✓	✓
9.	Climate Change	✓	✓	✓	✓
10.	Environmental Sciences	✓	✓	✓	✓
<b>Faculty of Social Sciences and Humanities (FSSH)</b>					
11.	Computer Science	✓	✓	✓	✓
12.	Information Technology	✓	✓	✓	✓
13.	Data Science	✓	✓	✓	✓
14.	Agricultural Economics	✓	✓	✓	✓



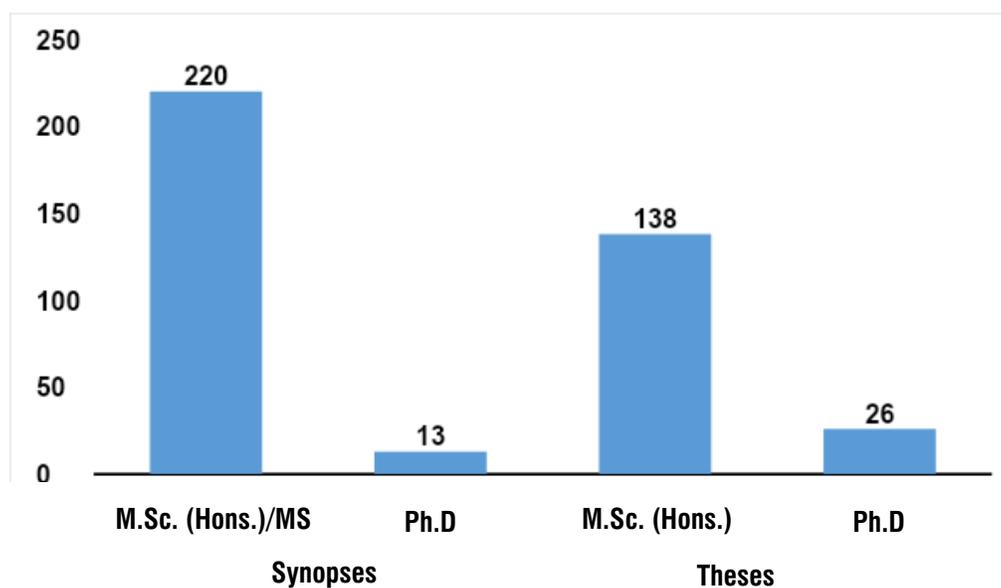
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15.	Farm Management	✓	✓	✓	✓
16.	Agricultural and Resource Economics	✓	✓	✓	✓
17.	Agriculture Economic	✓	✓	✓	✓
18.	BBA Agribusiness	✓	✓	✓	✓
19.	Management Agribusiness Specialization	✓	✓	✓	✓
<b>Faculty of Veterinary and Animal Sciences (FVAS)</b>					
20.	Zoology	✓	✓	✓	✓
21.	Animal Sciences	✓	✓	✓	✓
22.	Microbiology	✓	✓	✓	✓
<b>Faculty of Agricultural Biosystems Engineering and Technology (FABSET)</b>					
23.	Agro Industrial Engineering Technology	✓	✓	✓	✓

#### 3.8. Plagiarism/Similarity Index Checking for Postgraduate Synopses/Theses

For maintaining and assuring the quality, similarity index/plagiarism checking of postgraduate research synopses and theses is mandatory at MNS-UAM and only those documents are accepted which have similarity index within permissible limits as defined by HEC. The QEC provides services for checking similarity index of synopses/theses and papers/articles submitted for travel grant to different funding agencies. During the year 2022-23, the number of synopsis and thesis of MSc(Hons)/MS and PhD students is presented in the following figure.





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**3.9. Internal Institutional Performance Evaluation (IPE)**

In order to improve quality of HEIs, faculty development, excellence in learning research, and improving access, Higher Education Commission (HEC) has made internal/external Institutional Performance Evaluation (IPE) mandatory for HEIs. During the report period a committee constituted by the Vice Chancellor, comprising Prof. Dr. Shafqat Saeed, Dean, FAES; Prof. Dr. Irfan Ahmed Baig, Dean, FSSH; Prof. Dr. M. Ashfaq, Subject Expert; and Dr. M. Farooq, Director, QEC, BZU conducted Internal IPE at MNS University of Agriculture, Multan on March 24 & 27, 2023, for assessing the overall performance of the University regarding academic, administrative and other matters. The QEC prepared and submitted updated UPR (University Portfolio Report) according to the HEC IPE manual that consisted of the following eleven standards:

- Mission and Goals
- Planning and Evaluation
- Organization and Governance
- Integrity
- Faculty
- Students
- Institutional Resources
- Academic Programs and Curricula
- Public Disclosure and Transparency
- Assessment and Quality Assurance
- Student Support Services

The internal IPE team reviewed all the standards thoroughly and prepared the IPE report. The team also interacted with the Vice Chancellor, Registrar, Treasurer, Heads of Academic and Administrative Departments, faculty members and students. The committee also visited labs, classrooms, and other infrastructure facilities during Institutional Performance Evaluation (IPE). The committee, in its meeting with the Vice Chancellor presented important findings during the IPE.

**3.10. Internal Postgraduate Program Review (PGPR)**

The Internal Postgraduate Program Review (PGPR) was conducted on March 27-28, 2023, at MNS University of Agriculture, Multan. For this purpose, the Vice Chancellor constituted a committee comprising Prof. Dr. Shafqat Saeed, Dean, FAES; Prof. Dr. Irfan Ahmed Baig, Dean, FSSH; Prof. Dr. M. Ashfaq, Subject Expert; and Dr. M. Farooq, Director, QEC, BZU. Institutes/Departments prepared PGPR dossiers as per requirement on the templates provided by HEC. The Evaluation Committee thoroughly reviewed the Postgraduate Program Review (PGPR) dossiers and conducted meetings with the Chairperson/Directors. The committee also met with the Vice Chancellor, Directors/Chairpersons, Director ORIC, Director QEC, Controller Examination, and Director Graduates Studies. The committee presented the findings in its meeting with the Vice Chancellor.



## CHAPTER-3

# QUALITY ASSURANCE

### 3.11. Trainings/Workshops Organized

Quality Enhancement Cell conducted following capacity building training/seminars for the faculty and students to assure quality in the academic programs at the university.

1. Role of Program Teams in Quality Assurance and Preparation of SARs
2. Interpersonal Skills Development
3. Faculty Professional Development Training Programs
4. Introduction to Outcome Based Education
5. Consultative sessions with TTS faculty for reviewing and revising the TTS performance Evaluation Proforma
6. Ethics in Scientific Writing

### 3.12. Impact of Quality Assurance

Quality Enhancement Cell is responsible to prepare the assessment reports at the end of the semester and to achieve this target, QEC got filled the evaluation forms by relevant students/employer/faculty/alumni, to prepare all reports including course evaluation, teachers evaluation, faculty survey, survey of graduate students, and employer survey. The results of the assessment report have increased the quality of education, students' satisfaction and improved the performance of the faculty members. Overall impact of Quality Assurance is as under:

1. The steps taken in terms of Quality Assurance by the QEC has created awareness among the students and teachers related to competitiveness at national and international level.
2. The steps taken towards standardization have created seriousness at teaching and teachers are using innovative and ICT based approaches for making learning more effective.
3. The process of assessing strengths, weaknesses and potential of the different programs introduced is taking route at the institutional level.
4. Efforts regarding the observance of minimum criteria for admissions and research have resulted positive outcomes at departmental level.
5. An analytical and comparative tendency to learn from the top institutions (HEIs) in the country and outside the country has started and will yield positive results.
6. Efforts to find high place in the University rankings within and outside the country have been undertaken.
7. Putting the different processes in proper order has been prioritized at University level.
8. Monitoring and Evaluation has become an integral component of each ongoing project.

#### 3.12.1. Impact towards the Higher Education

- Institutionalization of quality assurance
- Information systems for HEC (Ranking, Faculty Evaluation etc.) Internationalization (Linkages, Ph.D. scholarships, Post-docs, Student Exchange, Conferences, Professional advanced Trainings, Plagiarism checking etc.)

E-Procurement System (EPADS)

&  
PPRA Rules for The Professional  
of Universities Situated  
in South on 26-12-20

Keynote Spea

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**FACULTY  
DEVELOPMENT**



# FACULTY DEVELOPMENT





## CHAPTER-4

### FACULTY DEVELOPMENT

The University has a policy for capacity building of its all employees with special emphasis on faculty development. The University regularly organizes a number of seminars and workshops in collaboration with QEC/ORIC for the professional development of young faculty. Moreover, the faculty members also participate in a number of trainings funded and organized by other organizations/agencies. These training programs focus on teaching and research methodologies and awareness on prevailing HEC/University rules and regulations.

#### 4.1. Objectives

- Promote human resource development as an integral part of the MNSUAM strategic plan.
- Foster an environment of organizational and individual lifelong learning.
- Design, develop and implement programs and trainings/workshops that provide new knowledge, new skills, innovative thinking, and motivation, thereby contributing to significant improvements in the University's services and processes.
- Promulgate workplace harmony, effectiveness, and job satisfaction by providing programs that encourage appreciation of and sensitivity toward all persons.

#### 4.2. Faculty development programs (MS/ PhD local + Foreign)

Sr. No.	Faculty Member	Designation	Department	Program	Name of University	Country
1	Mr. Manan Aslam	Lecturer	AB&AE	Ph. D.	Jiangsu University	China
2	Mr. Asif Mahmood Arif	Lecturer	IPP	Ph.D.	UAF	Pakistan
3	Ms. Saima Rasheed	Lecturer	IPBB	Ph.D.	UAF	Pakistan
4	Mr. Azher Khan	Lecturer	English	Ph.D.	IIUI	Pakistan
5	Mr. Muhammad Arslan	Lecturer	Climate Change	Ph.D.	Uni. of Bonn	Germany
6	Mr. Muhammad Rizwan	Lecturer	Agronomy	Ph.D.	Uni. of Bonn	Germany
7	Mr. Qamer Mahmood	Lecturer	FV&AS	Ph.D.	Ghent University	Belgium
8	Ms. Aisha Arshad	Lecturer	FV&AS	Ph.D.	Uni. of Veterinary Medicine	Vienna
9	Mr. Shoaib Nasir	Lecturer	AB&AE	Ph. D.	Foreman Christian College University, Lahore	Pakistan
10	Mr. Adnan Altaf	Lecturer	Computer Science	Ph. D.	Jiangsu University	China



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### FACULTY DEVELOPMENT

11	Engr. Shahzad Ahmed	Lecturer	Agricultural Engineering	Ph. D.	Southern University of Science & Technology	China
12	Engr. Muhammad Kashif	Lecturer	Agricultural Engineering	Ph. D.	University of California	USA
13	Mr. Waqar Zaib	Lecturer	Pathobiology	Ph. D.	University of Ghent	Belgium
14	Ms. Amina Irfan	Lecturer	Zoology, Wild Life & Fisheries	Ph. D.	University of Cambridge	United Kingdom

#### 4.3. Returned Scholars

Sr. No.	Name of Faculty	Program	Name of University
1	Mr. Muhammad Arif	Ph.D.	University of Science & Technology, China

#### 4.4. Faculty and Staff Trainings/Workshop Organized

Sr. No.	Training	Duration		Organization	Trainee
		From	To		
1	Transforming the Indus Basin with Climate Smart Agriculture and Water Management	25-07-2022	25-07-2022	NARC, Islamabad	Dr. Shazia Hanif, Assistant Professor
2	Transforming the Indus Basin with Climate Smart Agriculture and Water Management	25-07-2022	25-07-2022	NARC, Islamabad	Dr. Habib ur Rehman, Lecturer
3	Incubation Management Training	28-07-2022	29-07-2022	National Center for Bioinformatics Auditorium at Quaid-I-Azam University Islamabad	Ms. Benish Sarfraz, Manager, BIAEC
4	Management Skills for Library Professionals	19-08-2022	21-08-2022	University of Peshawar	Dr. Ambreen Naz, Chief Librarian
5	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Prof. Dr. Nasir Nadeem, Chairman, AB&AE
6	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Naeem Iqbal, Assistant Professor
7	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Mirza Abid Mehmood, Lecturer
8	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Aziz ul Rehman, Assistant Professor



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**FACULTY DEVELOPMENT**

9	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Rana Waseem Akhtar, Assistant Professor
10	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Riffat Yasin, Assistant Professor
11	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Ayesha Hakim, Assistant Professor
12	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Abdul Razzaq, Assistant Professor
13	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Muhammad Ishtiaq, Assistant Professor
14	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Hasan Riaz, Assistant Professor
15	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Mudssar Ali, Assistant Professor
16	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Muhammad Baqir Hussain, Assistant Professor
17	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Fahim Nawaz, Assistant Professor
18	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. M. Asif Shehzad, Assistant Professor
19	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Mohsin Nawaz, Assistant Professor
20	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Sarfraz Hashim, Assistant Professor
21	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Nighat, Assistant Professor
22	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. M. Arslan Khan, Lecturer
23	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Sehrish Ijaz, Lecturer
24	Researchers Capacity Building Program Training	01-08-2022	04-08-2022	HEC Islamabad	Dr. Hafiz Muhammad Usman Aslam, Lecturer
25	Workshop on peace and tolerance	02-09-2022	03-09-2022	Shaoor Foundation, Islamabad	Mr. Muhammad Nadeem Ayub, Director (HR)
26	Workshop on peace and tolerance	02-09-2022	03-09-2022	Shaoor Foundation, Islamabad	Dr. Rasheed Ahmed, Lecturer



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27	Python Coding on ET Remote Sensing	20-09-2022	21-09-2022	FAO, Islamabad	Dr. Shazia Hanif, Assistant Professor
28	Python Coding on ET Remote Sensing	20-09-2022	21-09-2022	FAO, Islamabad	Dr. Muhammad Saifullah, Assistant Professor
29	Crop mapping training under FAO-GCF project	17-10-2022	20-10-2022	FAO, Islamabad	Dr. Muhammad Imran, Assistant Professor
30	Crop mapping training under FAO-GCF project	17-10-2022	20-10-2022	FAO, Islamabad	Dr. Shazia Hanif, Assistant Professor
31	BIC Directors/Managers Training Program	10-11-2022	12-11-2022	HEC Islamabad	Prof. Dr. Mubashir Mehdi, Director, BIC
32	BIC Directors/Managers Training Program	10-11-2022	12-11-2022	HEC Islamabad	Ms. Benish Sarfraz, Manager, BIAEC
33	International Training Workshop on 'Crop Yield Estimation and Water Accounting using Remote Sensing'	10-01-2023	12-01-2023	UAF	Dr. Mohsin Nawaz, Assistant Professor
34	International Training Workshop on 'Crop Yield Estimation and Water Accounting using Remote Sensing'	10-01-2023	12-01-2023	UAF	Dr. Habib ur Rehman, Lecturer
35	DAAD Alumni Seminar	17-01-2023	28-01-2023	University of Kassel, Witzenhausen, Germany	Prof. Dr. Muhammad Asif Raza, Coordinator FV&AS
36	Introduction to Monitoring Evapotranspiration with Pywapor	23-01-2023	26-01-2023	Food and Agriculture Organization (FAO)	Dr. Shazia Hanif, Assistant Professor
37	Introduction to Monitoring Evapotranspiration with Pywapor	23-01-2023	26-01-2023	Food and Agriculture Organization (FAO)	Dr. Muhammad Saifullah, Assistant Professor
38	Training workshop on Intellectual Property and Patent Filing	21-02-2023	21-02-2023	Punjab Higher Education Commission (PHEC)	Prof. Dr. Juanid Ali Khan, Principal Officer (ORIC)
39	Training workshop on Intellectual Property and Patent Filing	21-02-2023	21-02-2023	Punjab Higher Education Commission (PHEC)	Dr. Abid Hussain, Manager, University Industrial Linkages & Technology
40	National Faculty Development Program (NFDP)	30-01-2023	17-02-2023	Higher Education Commission (HEC)	Dr. Muhammad Abu Bakar Siddique, Assistant Professor



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**FACULTY DEVELOPMENT**

41	National Faculty Development Program (NFDP)	30-01-2023	17-02-2023	Higher Education Commission (HEC)	Dr. Shoaib ur Rehman, Assistant Professor
42	National Faculty Development Program (NFDP)	20-02-2023	10-03-2023	Higher Education Commission (HEC)	Dr. Hafiz Muhammad Usman Aslam, Lecturer
43	National Faculty Development Program (NFDP)	02-03-2023	22-03-2023	Higher Education Commission (HEC)	Dr. Akhtar Hameed, Assistant Professor
44	National Faculty Development Program (NFDP)	02-03-2023	22-03-2023	Higher Education Commission (HEC)	Ms. Umrah Zafar, Lecturer
45	Training on revised HES proforma and upcoming ranking of HEIs	20-03-2023	24-03-2023	Higher Education Commission (HEC)	Prof. Dr. Juanid Ali Khan, Principal Officer (ORIC)
46	Training on revised HES proforma and upcoming ranking of HEIs	20-03-2023	24-03-2023	Higher Education Commission (HEC)	Dr. Mehar Iftikhar Ahmad, Manager Research Development
47	Training on Newly Developed PCD-Online System	06-03-2023	09-03-2023	Higher Education Commission (HEC)	Mr. Zulfiqar Ali Tabassum, Controller of Examinations
48	Training on Newly Developed PCD-Online System	06-03-2023	09-03-2023	Higher Education Commission (HEC)	Engr. Hafiz Abu Mazhar Ahmad, Dy. Controller of Examinations
49	Training on Affiliated Colleges Proforma	20-02-2023	22-02-2023	Higher Education Commission (HEC)	Ms. Aisha Bibi, Dy. Registrar (Academic)
50	Training on Affiliated Colleges Proforma	20-02-2023	22-02-2023	Higher Education Commission (HEC)	Mr. Muhammad Waseem, Data Entry Operator
51	Conflict & Stress Management	28-02-2023	28-02-2023	Shaoor Foundation	Dr. Mirza Abdul Qayyum, Associate Professor
52	Conflict & Stress Management	28-02-2023	28-02-2023	Shaoor Foundation	Dr. Mirza Abid Mehmood, Lecturer
53	Conflict & Stress Management	28-02-2023	28-02-2023	Shaoor Foundation	Dr. M. Usman Jamshaid, Lecturer
54	Conflict & Stress Management	28-02-2023	28-02-2023	Shaoor Foundation	Dr. Rasheed Ahmad, Assistant Professor
55	Conflict & Stress Management	28-02-2023	28-02-2023	Shaoor Foundation	Ms. Umrah Zafar, Lecturer



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56	National Faculty Development Program (NFDP)	02-03-2023	22-03-2023	Higher Education Commission (HEC)	Dr. Akhtar Hameed, Assistant Professor
57	National Faculty Development Program (NFDP)	02-03-2023	22-03-2023	Higher Education Commission (HEC)	Ms. Umrah Zafar, Lecturer
58	Training on Newly Developed PCD-Online System	06-03-2023	09-03-2023	Higher Education Commission (HEC)	Mr. Zulfiqar Ali Tabassum, Controller of Examinations
59	Training on Newly Developed PCD-Online System	06-03-2023	09-03-2023	Higher Education Commission (HEC)	Engr. Hafiz Abu Mazhar Ahmad, Dy. Controller of Examinations
60	Transforming the Indus Basin with Climate Resilient Agriculture and Water Management	13-03-2023	17-03-2023	Food and Agriculture Organization (FAO)	Dr. Muhammad Saifullah, Assistant Professor
61	Transforming the Indus Basin with Climate Resilient Agriculture and Water Management	13-03-2023	17-03-2023	Food and Agriculture Organization (FAO)	Dr. Muhammad Mohsin Khan, Lecturer
62	Training on revised HES proforma and upcoming ranking of HEIs	20-03-2023	24-03-2023	Higher Education Commission (HEC)	Prof. Dr. Juanid Ali Khan, Principal Officer (ORIC)
63	Training on revised HES proforma and upcoming ranking of HEIs	20-03-2023	24-03-2023	Higher Education Commission (HEC)	Dr. Mehar Iftikhar Ahmad, Manager Research Development
64	2 <sup>nd</sup> International Conference on Horticulture- 2023 schedule at Lalitpur, Nepal	02-04-2023	05-04-2023	Nepal	Dr. Tanveer Ahmad , Associate Professor
65	Capacity Building Program "Improving the Financial Autonomy of the universities through improvement in Governance and revenue enhancement"	04-05-2023	07-05-2023	Higher Education Commission (HEC)	Mr. Imran Mahmood, Registrar
66	Mega Agri Awareness Seminar	25-05-2023	25-05-2023	Bank Al-Falah, Multan	Mr. Abd Ur Rehman, Lecturer

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67	New Technology of Tropical Agriculture for Developing Countries	06-06-2023	30-06-2023	Ministry of Commerce, China.	Dr. Amar Matloob, Assistant Professor
68	New Technology of Tropical Agriculture for Developing Countries	06-06-2023	30-06-2023	Ministry of Commerce, China	Dr. Sami Ullah , Assistant Professor
69	Representative Agricultural Pathways (RAPs) for sustainable food productions	18-06-2023	30-06-2023	Eberswalde University, Germany	Prof. Dr. Muhammad Ashfaq, Subject Expert
70	Representative Agricultural Pathways (RAPs) for sustainable food productions	18-06-2023	30-06-2023	Eberswalde University, Germany	Prof. Dr. Irfan Ahmad Baig, Dean, FSS&H





**ACCESS**



**CHAPTER-5**

**ACCESS**

**5.1. Basic Enrolment during 2022-23**

Sr. No.	Program Offered	Male	Female	Total
1	Livestock Assistant Diploma (LAD)	374	00	374
2	B.Sc. (Hons.) Agriculture	241	40	281
3	B.Sc. (Hons.) Environmental Sciences	10	14	24
4	B.Sc. (Hons.) HND	2	32	34
5	B.Sc. (Hons.) Home Economics	3	29	32
6	B.Sc. (Hons.) Agri. & Resource Economics	6	5	11
7	BBA Agribusiness	63	28	91
8	BS Computer Science	159	56	215
9	BS Information Technology	188	60	248
10	BS Data Science	44	17	61
11	B.Sc. AIET	26	2	28
12	B.Sc. (Hons.) Poultry Sciences	17	0	17
13	B.Sc. (Hons.) Animal Sciences	19	2	21
14	BS Microbiology	34	56	90
15	BS Zoology	22	52	74
16	BS Biochemistry	28	74	102
17	BS Public Health	20	38	58
18	BS Medical Laboratory Technology (MLT)	101	44	145
19	M.Sc.	245	131	376
20	Ph.D.	11	17	28
<b>Total</b>		<b>1613</b>	<b>697</b>	<b>2310</b>

**5.2. Data of M.Sc. (Hons.) and Ph.D. Student Enrolment**

**5.2.1. M.Sc. (Hons.)/ MS Enrolment during 2022-23**

Sr. No.	Program Offered	Eligible Candidates	Admitted (Male)	Admitted (Female)	Total Admissions
1	Agronomy	23	20	1	21
2	Agri .Business	6	1	2	3
3	Agri. Economics	10	7	2	9
4	Agricultural Engineering	8	6	1	7



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### ACCESS

5	Agro Industrial Engineering Technology (AIET)	5	3	2	5
6	Biotechnology	27	9	12	21
7	Climate Change	18	10	4	14
8	Computer Science	50	22	15	37
9	Entomology	24	15	4	19
10	Fisheries and Aquaculture	18	9	6	15
11	Food Science & Technology	57	18	24	42
12	MS Human Nutrition and Dietetics	17	5	9	14
13	Horticulture	24	17	5	22
14	Plant Breeding & Genetics	24	19	2	21
15	Postharvest Management Technology	0	0	0	0
16	Public Health	55	31	15	46
17	Plant Pathology	14	6	4	10
18	Poultry Science	15	12	1	13
19	Soil Science	29	19	7	26
20	Seed Science and Technology	8	8	0	8
21	Weed Science	3	0	0	0
22	MS Zoology	26	8	15	23
<b>Grand Total</b>		<b>461</b>	<b>245</b>	<b>131</b>	<b>376</b>

#### 5.2.2. Ph.D. Enrolment during 2022-23

Sr. No.	Program Offered	Eligible Candidates	Admitted (Male)	Admitted (Female)	Total Admissions
1	Agronomy	1	1	0	1
2	Agri Economics	5	4	0	4
3	Biotechnology	5	0	3	3
4	Entomology	0	0	0	0
5	Food Science and Technology	3	1	2	3
6	Horticulture	5	1	4	5
7	Human Nutrition and Dietetics	5	0	4	4
8	Plant Breeding & Genetics	5	2	0	2
9	Plant Pathology	4	2	2	4
10	Soil Science	2	0	2	2
11	Seed Science and Technology	0	0	0	0
<b>Grand Total</b>		<b>35</b>	<b>11</b>	<b>17</b>	<b>28</b>



**CHAPTER-5**

**ACCESS**

**5.3. Number of Students Passed Out during 2022-23 (Undergraduate)**

Sr. No.	Degree Program	Total Enrolled	Male	Female	Pass Out
1	Livestock Assistant Diploma	129	129	0	89
2	BS Computer Science	99	88	11	76
3	BS Information Technology	52	48	4	38
4	BBAA	58	44	14	46
5	Agri. Economics	35	28	7	21
6	Agronomy	42	40	2	42
7	Biotechnology	12	10	2	8
8	Entomology	53	44	9	53
9	Food Science & Technology	50	24	26	48
10	Horticulture	43	33	10	43
11	Plant Breeding and Genetics	39	30	9	37
12	Plant Pathology	31	27	4	30
13	Seed Science	33	31	2	33
14	Soil Science	42	32	10	42
15	Agro Industrial Engineering	40	35	5	32
16	Poultry Science	46	45	1	36
17	Fisheries	27	16	11	20

**5.4. Number of Students Passed Out during 2022-23 (Postgraduate)**

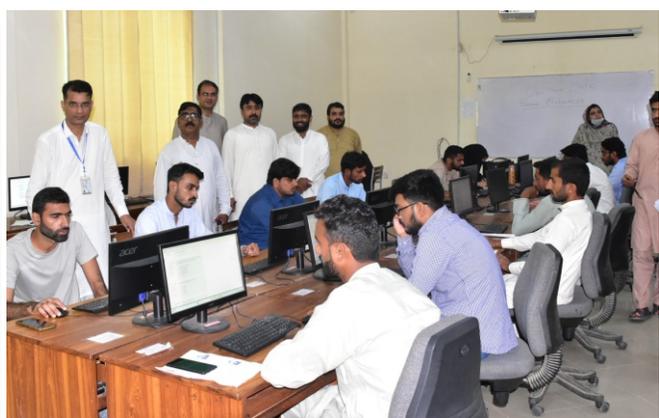
Sr. No.	Degree Program	Male	Female	Pass Out
1	M.Sc. (Hons.) Agronomy	7	1	8
2	M.Sc. (Hons.) Agri. Economics	2	0	2
3	M.Sc. (Hons.) Biotechnology	0	13	13
4	MS Computer Science	14	12	26
5	M.Sc. (Hons.) Entomology	13	3	16
6	M.Sc. (Hons.) Food Science & Technology	18	15	33
7	M.Sc. (Hons.) Horticulture	10	7	17
8	M.Sc. (Hons.) Plant Breeding & Genetics	6	3	9
9	M.Sc. (Hons.) Plant Pathology	12	5	17
10	M.Sc. (Hons.) Seed Science & Technology	0	0	0
11	M.Sc. (Hons.) Soil Science	9	3	12
12	M.Sc. (Hons.) Climate Change	6	5	11
13	Ph.D. Agronomy	1	0	1
14	Ph.D. Entomology	2	0	2
15	Ph.D. Horticulture	2	0	2
16	Ph.D. Plant Breeding & Genetics	1	2	3
17	Ph.D. Soil Science	1	0	0

**CHAPTER-5**

**ACCESS**

**5.5. Full-time Faculty Members**

Sr. No.	Designation	Male	Female	Total
1	Professor	12	-	12
2	Associate Professor	11	01	12
3	Assistant Professor	55	10	65
4	Lecturer	43	16	59
5	<b>Grand Total</b>	<b>121</b>	<b>27</b>	<b>148</b>
6	<b>Ph.D. Faculty</b>	<b>92</b>	<b>11</b>	<b>103</b>





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# SOUTH PUNJAB PRIVATE SECTOR ENGAGEMENT FORUM

Multan September 14-15, 2022



**USAID**

منجانب امریکی عوام



Muhammad Nawaz Shareef  
University of Agriculture  
Multan

## UNIVERSITIES BUILDING ECONOMIES









## CHAPTER-6

# UNIVERSITIES BUILDING ECONOMIES

### 6.1. University-Industry Linkages

MNSUAM is taking a qualitative leap forward by developing strong linkages with agro-based industries through general support, collaborative need based research and new business incubators. The purpose of the collaboration with various local and foreign organizations and industries is to ensure the training of our faculty members and young scholars in interdisciplinary research projects and methods. MNSUAM is actively looking forward to foreign collaborations and funding for its faculty development program and research projects. MNSUAM has also been in regular liaison with various industries and the corporate sector since its establishment in 2012.

### 6.2. Farmer Advisory Services

MNSUAM in pursuit of its moral obligation and national commitments to serve the farming community and launched farmer advisory services that consist of daily crop and weather advisory and other relevant information. Farmer advisory services are ensuring demand driven and need based agro-technology transfer to farmers with different farming backgrounds. Developing a sound linkage between academia-industry and the farming community to have a demand-driven agenda for research is University's top priority. By accelerating the diffusive process of innovative agro-technology, the gap between potential and actual yield can be abridged and our farmer advisory service is one such step towards this great milestone.

### 6.3. South Punjab Agricultural Forum

This forum comprises stakeholders from public and private sectors including Pakistan Central Cotton Committee, Central Cotton Research Institute, Cotton Research Station, Agricultural Mechanization Research Institute, Mango Research Institute, Soil and Water Testing Laboratory, Directorate of Water Management, Agricultural Extension Wing, Pest Warning and Quality Control of Pesticides, Federal Seed Certification and Registration Department, Floriculture, Pakistan Crop Protection Association, etc. The agenda is to establish a platform for research and coordination mechanism development among MNSUAM, public sector sister research organizations, and the private sector to strengthen the overall agriculture sector. The South Punjab Agriculture Forum has now been established where all the agriculture-related departments will be working in collaboration to boost the agro-based economy of the country.

### 6.4. Industrial Project - Development and Identification of Cotton Materials for Cotton Leaf Curl Disease (CLCuD) Resistance Cotton Breeding

The Development and Identification of Cotton Materials for cotton leaf curl disease (CLCuD) resistance Cotton Breeding is an International Industrial Project funded by Jinghua Seed Industry, China. Cotton is an important source of natural fibre and playing a pivotal role in people's wellbeing and economy of the country and society. The cotton supplies clothes, edible oil, and many other daily necessities to us. It is also the second important oil producing crop in the world. Global consumption of cotton products is growing rapidly but world cotton production is not increasing because of biotic and abiotic stresses.



## UNIVERSITIES BUILDING ECONOMIES

Pakistan is the fourth largest producer, consumer, and third largest cotton in the world, as cotton and its related products contribute to almost 10% of the country's GDP and are key components (up to 55%) of Pakistan's foreign exchange earnings. In Pakistan, affected by biotic and abiotic stresses, the growth, production, and quality of cotton decrease significantly. Among biotic reasons, CLCuD is the most devastating factor that reduces cotton yield and productivity. Because of this disease, Pakistan has suffered a loss of almost 7 million bales of cotton costing almost 75 billion rupees since 1988. The production of cotton has also been badly affected by CLCuD in the last decade. In this co-development project, MNSUAM and Xinjiang Jinghua Seed Industry will jointly identify the resistance to CLCuD of cotton, develop disease resistant, high-yielding, and high-quality cotton varieties in Pakistan. The intellectual property rights of the crop varieties selected by using Jinghua Seed Industry germplasm resources belong to Jinghua Seed Industry, and the varieties selected by ordinary germplasm belong to both parties.

### 6.5. Industrial Project - Infestation Assessment and Ecofriendly Management of House Fly and Common House Ant in Multan

Houseflies and ants are mostly found in hospitals, households, foodservice establishments, and animal sheds. The housefly is a notorious insect-pest on both large farms and households worldwide. It is a key transmitter of more than 100 pathogens causing various diseases in humans and animals like diarrhea, anthrax, cholera, ophthalmia, bacillary dysentery, typhoid, and tuberculosis. On the other hand, ants cause damage to food items both indoors and outdoors, and their sting can cause severe skin allergies. The ants are also known as mechanical vectors of many pathogens, like pathogenic bacteria (*Bacillus cereus*, *Clostridium perfringens*, and *Escherichia coli*) and other microorganisms. Houseflies and ants are commonly managed using synthetic insecticides that can cause serious health hazards to humans, animals, and other non-target organisms. In the current project, the effectiveness of safer bio-rational insecticides and natural plant extracts will be tested for the management of houseflies and ants.

#### Objectives:

1. To explore the population of houseflies and ants in different habitats
2. To find out the eco-friendly products for the management of houseflies and ants

### 6.6. Industrial Project - Production Technology and Shelf Life Standardization of Dried Mango

This project has been funded by Green Agriculture, Multan. The main objective of this project is the standardization of dehydration process technology for various mango varieties and the shelf life stability study of dried mango.

## UNIVERSITIES BUILDING ECONOMIES

### 6.7. Industrial Project - Establishment of True to Type Mango Nursery Certified by the Federal Seed Certification Department

This project is funded by industry (Mahmood Group). The main objectives of this project are to establish a mango nursery unit certified by the “Federal Seed Certification Department, raise true-to-type, healthy, and disease free mango plants, and build the capacity of staff.

### 6.8. Industrial Project - Farms in Arms, Rehabilitation of Flood Affected Farmers of DG Khan

Heavy monsoon rains during June to September 2022 in Pakistan damaged Agricultural crops, houses, and displaced millions of people. Flooding and landslides destroyed houses, roads, infrastructure, and bridges. According to reports, 33 million people were affected by these devastating floods in Pakistan. Around 8 million people are living in sheds and tents due to displacement. These floods have completely swept away the food and cash crops like rice, sugarcane, cotton, fodder, and vegetables grown in these areas. Farmers have also lost their livestock and properties. In Punjab province, badly hit areas are Rajanpur and Dera Ghazi Khan. The situation remained alarming for weeks after the flood disaster. Stagnant water always serves as a breeding site for infectious diseases like diarrhea, typhoid, and vector-borne diseases like malaria and dengue fever, and thousands of flood affected people are getting ill or vulnerable to these hazards as well as their livestock.

Since many areas of Dera Ghazi Khan District are also affected by monsoon rains and flood water from hill torrents and river flow, a corporate social responsibility project by two collaborating organizations, i.e., MNS University of Agriculture Multan, and Industrial Partner, Evyol Group of Companies (Pvt.) Ltd., was started with the following objectives.

#### Objectives:

- Survey for the assessment of losses caused by floods to Kharif crop of selected farmers in the area situated in DG Khan
- Provision of agricultural inputs for Rabi crops, i.e., seed, fertilizer, pesticides or any other, by industrial partner on credit basis
- Purchasing of wheat produce on prescribed rates by industrial partner at the end of rabi season
- Technical support for crop production and protection of wheat crops to enhance crop yield by project team of MNS University of Agriculture Multan
- Awareness sessions regarding public health issues, protection from mosquito borne -diseases and livestock health care
- Promotion of kitchen gardening: Provision of vegetable seed packets / nursery to farmers

## UNIVERSITIES BUILDING ECONOMIES

### 6.9. Industrial Project - Development and Shelf Stability of Dehydrated Apple Snack

This industrial project to produce dried apple snacks is funded by Mahmood Group, Multan. The main objectives of this project are the development of apple snacks through dehydration/drying techniques, the establishment of an entrepreneurship model, and reducing post-harvest losses of apple fruit.

### 6.10. Industrial Project - GROUNDWATER MODELLING and Information Products for KHANEWAL AREA

This project is funded by the Food and Agricultural Organization of the United Nations. Through this project, the models are to be developed for eventual handover to the Punjab Irrigation Department of the target area in Khanewal District.

### 6.11. Industrial Project - Promoting Regenerative Agriculture in Wheat-Rice Cropping Systems in Punjab, Pakistan

This Industrial project is funded by Syngenta, Pakistan to establish Regenerative Agriculture in Wheat - Rice Cropping Systems. The main objectives of this project are;

1. To emphasize the importance of regenerative agriculture as a game-changer in transforming/innovating farming practices and ensuring high yields while promoting environmental and soil sustainability.
2. To prepare the end-to-end guidelines of regenerative agriculture on rice-wheat cropping systems that optimize best management practices with the usage of Syngenta products and services covering all aspects.
3. Capacity building of farmers and Syngenta's field forces about regenerative agriculture.

### 6.12. Industrial Project - Establishment of R&D Lab for Mass Production of Technical Grade Biostimulant at MNS University of Agriculture, Multan

The main objective of the project is to explore the beneficial microbes, their identification, testing, multiplication, and preservation. Total Budget estimated for this project is 5.020 million PKR (equipment cost = 3.420 + operational cost = 1.600). After completion of the project, the equipment costing Rs. 3.420 million will remain in the joint laboratory and will be the property of MNSUAM. This facility will be used for research and development in collaboration with Rise AG. The final outcome of the project i.e., product of this project will be shared with Rise AG as per IP policy of university (05 - 20% share of the scientists on per pack sale). Two students will also complete their M.Sc. research in this project.

### 6.13. Industrial Projects/ Grants/ Funding/ Support etc.

Sr. No.	Title	Funding Agency	Award Amount (Million PKR)	Current Status
1	Development and Identification of Cotton Materials for CLCuD Resistance Cotton Breeding	Jinghua Seed Industry, China	2.271	Ongoing



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2	Infestation Assessment and Ecofriendly Management of House Fly and Common House Ant in Multan	Nuchem, Pvt Limited	1.610	Ongoing
3	Production technology and shelf life standardization of dried mango	Green Agriculture Services	1.695	Completed
4	Establishment of true to type mango nursery certified from federal seed certification department	Mahmood Group	1.530	Completed
5	Farms in Arms, Rehabilitation of Flood Affected Farmers of DG Khan	Evyol Group	5.610	Ongoing
6	Development and Shelf Stability of Dehydrated Apple Snack	Mahmood Group	1.569	Ongoing
7	Ground water modelling and information products for Khanewal area	---	1.830	Ongoing
8	Promoting Regenerative Agriculture in Wheat-Rice Cropping Systems in Punjab, Pakistan	Syngenta Pakistan	3.713	Ongoing
9	Establishment of R&D Lab for Mass Production of Technical Grade Biostimulant at MNS University of Agriculture, Multan	Rise AG	5.100	Ongoing
<b>Total cost</b>			<b>24.928</b>	

#### 6.14. Patents Filed

Sr. No.	Name of Lead Inventor	Title of Invention	Type of Invention	Key Scientific Aspects
1	Dr. Shazia Hanif, Assistant Professor, Department of Agriculture Engineering	Desiccant Drying System for Grains	Product	This invention allows the drying of grains/fruits/vegetables at low temperatures, which reduces the quantitative and qualitative losses of agricultural produce. The drying system consists of: (i) a desiccant wheel, (ii) a heater for process air heating, (iii) drying bin/structure and (iv) a heater for regeneration of the desiccant wheel.
2	Dr. Naeem Iqbal, Assistant Professor, Institute of Plant Protection.	An Advanced In-Ground Monitoring and Baiting Station for the Management of Subterranean Termites	Product	This TermiHack is used for both trapping and baiting purposes. It contains mango wood and paper based cellulose materials that are not present in any existing station/trap. Moreover, the current monitoring and bait station are effective for all types of termites

**CHAPTER-6****UNIVERSITIES BUILDING ECONOMIES****6.15. Consultancy Contracts Executed through ORIC with Industry, Commerce or Government****6.15.1. Consultancy: Expert Consultation workshop provided to FAO – United Nations, Titled “Quinoa is New Paradigm of Climate and Nutrient Dense Crops for Mainstreaming and Integration in the Transition towards a Resilient and Sustainable Agri-Food System”**

Expert Consultation workshop provided to FAO – United Nations. The main objectives of this consultancy service was to introduce importance of quinoa into food crop systems, to highlight the value chains from farm to fork, quinoa should be promoted as functional food with intentions for diversification of the cropping system and extensive public awareness for quinoa crop integration with local foods this consultancy was provided by Dr. Shahid Iqbal, Assistant Professor, IPBB.

**6.15.2. Consultancy: Capacity Building/Training on ISO 17025 to Nuchem (Pvt.) Ltd.**

This Consultation Training was provided by Dr. Umair Riaz, Assistant Professor, Department of Soil and Environmental Sciences. Key Deliverables out of the Consultancy Contract includes: Basic Quality Management Concepts, ISO 17025 Standard, Normative references, General requirements ISO 17025, Clause 6 and 7 (Resource Requirements) Risk Assessment in CABs, Root Cause Analysis, Internal Audit Techniques, Management Requirements and Exercise on NCs raise, removal, CAs, NC Closing from 17-01-2023 to 18-01-2023.

**6.15.3. Consultancy: Training For New Entrant Agriculture Officers/Farm Managers - RAEDC, Vehari**

Training for New Entrant Agriculture Officers/Farm Managers was provided to RAEDC, Vehari by Dr. Muqarab Ali, Assistant Professor, Department of Agronomy. Dated, 10/03/2023.

**6.15.4. Consultancy: Strengthening of Resilience of Flood-Affected Communities in District RajanPur (Punjab-Pakistan) - Doaba Foundation**

Kitchen Gardening Training provided by Dr. Hafiz Nazar Faried, Assistant Professor, Department of Horticulture for the resilience of the affected households against the impacts of the flood to strengthen (vegetable, kitchen gardening) from 16-03-2023 to 18-03-2023.

**6.15.5. Consultancy: Tunnel Farming, waterlogged Soils reclamation - Memon Farms, Nosheroferoz, Sindh**

Consultancy service for Tunnel Farming, waterlogged Soils reclamation provided by Dr. Hafiz Nazar Faried, Assistant Professor, Department of Horticulture and Dr. Muqarab Ali, Assistant Professor, Department of Agronomy to Memon Farms, Nosheroferoz, Sindh, From March 19 to 20, 2023.

**CHAPTER-6****UNIVERSITIES BUILDING ECONOMIES****6.15.6. Consultancy: ISO 9001:2015 Quality Management System Training - Global Standard Services**

This consultancy service for training was provided by Dr. Umair Riaz, Assistant Professor, Department of Soil and Environmental Science to Global Standard Services on March 29, 2023.

**6.15.7. Consultancy: Higher Education Going Global, Chinese Language and Business Cooperative Project with Pakistani Universities in Pakistan**

Consultancy services to create linkage/partnerships required by Prof Dr. Zhang Yudong, Principal International Chinese Education Innovation Project and Prof. Dr. Muhammad Asif Raza, Chairman Department of Pathobiology is providing consultancy from 10/04/2023 for Six Months.

**6.15.8. Consultancy: Development of Agriculture Research Farm in Newly Established Campus - University College of Dera Murad Jamali, Naseer Abad**

Training for development of agriculture research farm in newly established campus provided by Dr. Mohkum Hammad, Associate Professor, Department of Agronomy, 22/05/2023 to 23/05/2023.

**6.15.9. Consultancy: Molecular Biology Lab Techniques (PCR, RT-PCR) – PepsiCo Pakistan**

Training and Technical Discussion on PCR, qRT-PCR, EUSA and Capacity Building of PepsiCo Pakistan staff on Molecular Biology Techniques provided by Dr. M. Asaf Khan, Associate Professor. Dr. Shoaib ur Rehman and Dr. Zulqarnain Khan, Assistant Professor of the Institute of Plant Breeding and Biotechnology. 21/06/2023 to 22/06/2023

**6.16. Developing Business Networks and Community Outreach in Mango Sector**

Sixth Annual Multan Mango Festival was organized from July 3-5, 2022, at DHA Arena Multan. The theme of the festival was “Developing Business Networks and Community Outreach”. Minister of State for Interior, Mr. Abdur Rehman Kanju inaugurated the festival, aimed at promoting the “King of Fruits.” Addressing the inaugural, the Minister said such festivals provide platform to the farmers, industry, businessmen, and academia to work in close collaboration for overall betterment in the sector. He hailed the administration of the varsity for playing an important role to strengthen the linkages between key players especially for increasing mango exports. He was delighted to see such an immense and wonderful diversity of mangoes in this festival. He also appreciated the efforts of MRI, DHA and mango growers for their contributions in the efforts of the university. Many dignitaries including Senator, Rana Mehmood Ul Hassan; VC Bahuddin University Multan, Dr. Mansoor Akbar Kundi; VC Cholistan University, Dr. Sajjad Khan; DG Multan Development Authority, Mr. Qaiser Saleem,; Deputy Commissioner, D.G. Khan, Muhammad Anwar Baryar; progressive mango growers, Ms. Rabia Sultan, Major Tariq Khan and Syed Zahid Hussain Gardezi; Chairman Kisan Ittehad, Mr. Khalid Khokhar; Mr. Asif Majeed, Dr. Shafeeq Patafi, Rana Mushtaq and Rana Khaleel from Agro-based industries were present at the inaugural session.



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Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNSUAM thanked all the stakeholders and participants. He said that University regularly organizes such activities for not only mango growers but also for other important crops, fruits and vegetables to provide opportunity to farmers and industry to strengthen the overall agriculture sector of Pakistan. Brig. Mr. Shoaib Anwar Kiyani, Project Director DHA congratulated the University, MRI and DHA management to organize this event successfully and conferred to provide his support in the future too.

Various festive activities including indoor games, kids' mango eating competition, face painting, kids fancy dress walk, mango drawing, puppet show, magic show, mascots, camel dance, Cholistani cultural and music show and traditional drum beating were part of the festival. A competition on 'Mango Dish Making' was organized by the Department of Food Science and Technology wherein students from different educational institutes, housewives and restaurants' staff participated and prepared various mango dishes with unique recipes. A comical poetry recital was also part of the second day's activities, which was well received by the audience. The event was open for local communities and families to visit the exhibition and get information on different mango varieties and participate/attend the festive activities.

More than 100 stalls were arranged by growers, exporters, processors, nursery owners, fertilizer companies/dealers, pesticide companies, banks and several other organizations/firms etc. for the visitors and general public whereas more than 300 indigenous and exotic mango cultivars being grown in Punjab region were displayed on stalls. Overall, this event provided a valuable opportunity for awareness, branding and networking in mango production, supply and value chain. The stakeholders of mango industry were brought together across the country under a single roof and discussions were made to overcome prevailing challenges, identify crucial gaps, and explore options to improve the value and net income of the mango supply chain.

**6.17. Stakeholders Dialogue on Branding and Digital Marketing of Mango**

The rising trend of online marketing is demanding to work out the possibilities using these opportunities for fresh fruits and other crops. A stakeholder meeting regarding branding and digital marketing of mango was organized during the Mango Festival 2022. Mr. Ali Iqbal from Sybrid Pvt. Ltd. Islamabad which is collaborating partner of MNSUAM shared his experiences about challenges and opportunities of digital marketing of mango in Pakistan. He indicated that digital marketing is best solutions for direct marketing of fresh fruits like mango to the high value customers. He also briefed about the sales, procurement, inventory management and other operational issues in digital marketing and explained about maintaining the relationship and process definition from grower to the customer. Progressive grower Ms Rabia Sultan appreciated the role of the university in leading and organizing the training events for the farming community. Mango Growers Association President Syed Zahid Hussain Gardezi emphasized the adoption of innovative practices in post-harvest technologies. Dr Ayesha Hakim, Assistant Professor, Department of Computer Science, briefed about AI-based quality check of mango based on camera identification.



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MNSUAM Vice Chancellor, Prof. Dr. Asif Ali said the mango industry has a potential to move forward in the international export market. He said there were several challenges to reach the export market but they could excel forward with a hardworking and learning attitude. He said the growers should become a part of mango supply chain management and youth was the future of farming business. Young mango growers showed lot of interest in this digital marketing and appreciated MNSUAM in taking lead in this innovative idea.

### 6.18. Consultative session on Climate Change related Mango Production Challenges

A consultative session with the farming community under the title of "Climate Change and Mango Production Challenges" was conducted during the Mango Festival 2022. The session was chaired by Mr. Syed Hussain Jahanian Gardezi, (Minister for Agriculture, Punjab) and the other distinguished guests were Member Provincial Assembly Punjab, Mr. Abdul Haye Dasti; Additional Secretary Task Force Mr. Imtiaz Ahmad Warraich; Progressive Grower and Entrepreneur Ms. Rabia Sultan; MNSUAM Vice Chancellor, Prof. Dr. Asif Ali, (T.I) along with progressive growers, and industry stakeholders. Mr. Shahzad Zafar, Senior Scientist, MRI, talked about the impact of climate change on the mango crop. He overviewed the mango production, varieties, and cultivation area in Pakistan. Among mango varieties, Sufaid Chaunsa, Chaunsa SB, Malda, and Azeem Chaunsa were more severely affected by climate change. Deshaping has been reported in multiple mango varieties due to heat waves in March and April 2022. Fruit size has decreased in Anwar Retail and about 40-50% yield losses have been estimated. Also, the fruit setting suffered due to water shortage. The fruit drop was observed due to the over-application of water in some areas. The use of mulches is good for conserving water. The mango should not be irrigated with more than 16 -17 irrigations. It is better to initiate flowering early to get the button stage fruit during the expected heat wave duration. Small tree system was also discussed, and it was declared as the future of the mango crop. Dr. Abid briefed about the attack of fruit borer on mango. He also briefed about the scale insect attack on the mango crop as it is a quarantine pest. Additional Secretary Task Force Mr. Imtiaz Ahmad Warraich appreciated the University and research organizations who took action in organizing this consultative session with farmers. He informed that there had been an increase of 33 days in the summer months. He said that global warming is a universal issue and we all need to combat this issue. Progressive Grower Ms. Rabia Sultan argued that University has effectively highlighted the mango issues. She shared her mulching experience in mango orchard and its role in increasing the beneficial fauna and boosting plant vitality. Member Provincial Assembly Mr. Abdul Haye Dasti said that our mango has a unique taste. The issues of the mango growers need to be resolved on a priority basis. An effective outreach would be helpful in educating the mango farmers.

Vice Chancellor, Prof. Dr. Asif Ali (T.I) stressed to develop value-added products of the mango such as mango pulp which has more cash value than the raw mango. He said that the small tree system is a way forward for commercial mango cultivation. Nursery system is another important commercial segment for a profitable business along with the small tree system. The growers are always on top priority for us.



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The survey of the mango farmers will be conducted this year to identify the main problems faced this year and to develop recommendations.

Speaking on the occasion, Mr. Syed Hussain Jahanian Gardezi appreciated the University for leading academic and outreach sessions during the Mango Festival. He said that the mango cultivation should be organized and professionally managed. Mango has a huge potential to contribute in Pakistan's economy and there are excellent mango growers who are getting good production, he further added. To add value, other preserved products like pickles, mixes, and squash, dry mango should be made with the immature fruit drop. Modern irrigation system and mulching should be adopted. Climate change and water scarcity are big challenges. Efficient water use is the need of time.

### 6.19. Annual Mango Festival – Centaurus Mall, Islamabad

Mango Festival was organized at the Centaurus Mall, Islamabad as a continuation of the 5<sup>th</sup> year collaborative event from July 22-24, 2022. The event was organized in collaboration with Mango Research Institute, Multan. The major purpose of the festival was to showcase diversity of mango varieties, promote business potential, and value addition in Mango Sector and to brand Multan as "the Mango Capital" of the country. The chief guest of the inaugural ceremony was President Azad Kashmir, Barrister Sultan Mehmood Chaudhary. Mirza Muhammad Afridi, Deputy Chairman Senate was guest of honour. Other dignitaries, Mr. Muhammad Nawaz Khan, DG research Punjab; Dr. Abid Qaiyum Suleri, Executive Director SDPI; Prof. Dr. Asif Ali (T.I), Vice-Chancellor, MNSUAM and Mr. Irfan Ul Haque, GM Centaurus Mall graced the inaugural ceremony. After the inauguration, Barrister Sultan Mehmood Chaudhary flanked by others visited the mango varietal display stalls and addressed the press conference. He stressed the importance of agricultural commodities especially mango in the economy of the country. He admired the MNSUAM for organizing these impactful events and emphasized on continuity of these kinds of festivals. The Deputy Chairman Senate appreciated the efforts of academic and research institutes as well as Centaurus Mall for organizing this wonderful event as a source of information as well as entertainment for people from all walks of life. He extended his support for future collaborations and invited Vice-Chancellor, MNSUAM to collaborate on different projects for the promotion of agriculture in tribal areas of Pakistan. An overwhelming public response was received owing to highly attractive, entertaining, and business-oriented activities. The event was open for local communities and families to visit the exhibition and get information regarding more than 60 mango varieties displayed on 13 stalls. More than 30 stakeholders including growers, exporters, and processors displayed their mangoes and their products on stalls. Approximately, 30,000 people visited and participated in the mango festival.

### 6.20. Mango Festival at Lahore

Mango Festival was jointly organized by MNSUMA University of Agriculture, Multan, and DeSom Services Club, Lahore, from July 17-19, 2022, in partnership with progressive mango growers and exporters.



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The Festival's objectives were to showcase varietal diversity, mango value addition and Pakistan's export potential. Members of the DeSom Services Club praised MNSUAM's and growers' efforts to raise awareness about the importance of mangoes. About 3000 families of registered members of DeSom Club visited mango diversity stalls displaying 150 mango varieties. The closing ceremony of this event was held on July 19, 2022. The efforts of MNSUAM for arranging the successful event in DeSom were recognized at the closing ceremony. Overall, this event provided a wonderful opportunity for mango production, supply, and value chain awareness, branding, and networking.

### 6.21. USAID South Punjab Private Sector Engagement Program

A two-days discussion Forum on South Punjab Private Sector Partnership was organized on September 14-15, 2022 by United States Agency for International Development (USAID) in collaboration with Chambers of Commerce and industry of South Punjab and MNS University of Agriculture, Multan to unleash the private sector investment opportunities in key sectors in South Punjab. The Private Sector Forum was designed in collaboration with the USAID; the Chambers of Commerce and Industry in Multan, Sahiwal, Bahawalpur, Rahim Yar Khan, Khanewal, D.G. Khan, Layyah and Vehari; and the Punjab Board of Investment and Trade. The first day of the Forum focused on textiles and agriculture, while the second day focused on energy and technology. Ms. Kanwal Bokarey, USAID Pakistan was the moderator of this forum.

In the inaugural session, Mr. William K. Makaneole, American Consulate General, USAID Mission Director, Prof. Dr. Asif Ali, Vice Chancellor MNSUAM, Khawaja Muhammad Hussain, Chairman Chamber of Commerce Multan, representative of chambers of commerce of South Punjab, Industry representatives and progressive growers were present. On this occasion, William K. Makaneole said that it was his pleasure that he was present there that day in the emerging university of South Punjab which has made a prominent place in a short span of time, and he proclaimed to be happy that day's seminar was conducted at MNSUAM. We all know that South Punjab has immense economic potential. Empowering South Punjab's economy will not only help the local population, but it will also have a positive spillover impact on the Pakistani economy as a whole, he further added.

Syed Naveed Qamar, Federal Minister of Commerce, joined the session online and welcomed private sector investment in the textile sector and stated that the current government is making a policy to facilitate investors in this sector by reducing taxes. On this occasion, USAID Mission Director Mr. Reed Aeschliman said that Private sector engagement is one of the key priorities for USAID in Pakistan, and we engage with the private sector in multiple ways to address development challenges in the country. The USAID will play its role for the improvement of the textile industry. Pakistan's textile industry is very important for the textile needs of the world and the decline of this industry will affect the whole world.

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Syed Hussain Jahanian Gardezi, Minister for Agriculture the Government Punjab was the chief guest of Agriculture sector forum. He said it is the need of the time to develop academia industry linkages for sustainable growth of agriculture in Pakistan. Prof. Dr. Asif Ali apprised the forum regarding challenges and opportunities in the agriculture sector in South Punjab. He said that the university has developed a sectoral plan for the development of the agriculture sector in South Punjab. If we want to achieve sustainable growth in agriculture we need to focus on specialization and diversification, vertical expansion and value addition in the agriculture sector. He emphasized on the development of entrepreneurial forums with the collaboration of US-Pakistan diaspora which can provide sustainable business models in South Punjab. Mr. Asif Majeed, Dr. Shafeeq Pitafi, Mr. Mohsin Gardezi, Mr. Ahsan Rasheed, Mr. Mumtaz Khan Manais, Mr. Imtaiz Warraich, Major Tariq Khan, Mr. Asif Hayat Tipu, USAID representatives, Prof. Dr. Shafqat Saeed, Prof. Dr. Mubashir Mehdi and other distinguished guests were participated in this seminar. Syed Hussain Jahnian Gardezi appreciated the USAID initiatives and said that Seven different projects we presented by the industry and growers in this session. Syed Hussain Jahanian Gardezi also inaugurated the Academic Block of the MNSUAM at the end of the discussion forum.

Dr Musadaq Malik, Minister for Energy and Petroleum was the chief guest of the energy sector forum and he joined the session online. He explained about energy supply and demand and briefed on various projects. He added that a lot of work needs to be done in the energy sector in Pakistan. Pakistan has very low carbon footprints but is one of the most affected countries due to climate change and reiterated that Pakistan will meet its energy needs soon. Dr. Musadaq Malik showed deep interest to see the development of MNSUAM in the Biogas energy project. The importance of technology such as IT based solutions were highly acknowledged by the participants in each sector of Pakistan. It was decided that USAID will provide support to Pakistani business ideas to develop linkages with silicon valley in the USA.

Mr. Reed Aeschliman USAID Mission Director said that USAID has been working with the Pakistan government and business community for the last 75 years, and we are working for the linkage development, ideas development, financing, and capacity building of the stakeholders. This engagement forum is organized to mitigate industry concerns regarding renewable energy production and build a consensus between the government, investors, and developers.

In the end, he thanked the administration of MNS University of Agriculture, Multan for hosting such seminar.

### 6.22. Kicking Off Wheat Sowing Campaign and DICE Agri and Food Science Event 2022

MNS University of Agriculture Multan, in collaboration with DICE, USA, successfully organized the 3<sup>rd</sup> Distinguished, Innovation, Collaboration and Entrepreneurship (DICE) Agriculture and Food Sciences & DICE Mega Innovation & Entrepreneurship Event 2022. Hundreds of students from 30 universities of Pakistan participated, and over 90 business models were presented at the event.

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The idea behind the event was to motivate academia, industry, government, entrepreneurs, and expatriates to join a common platform to showcase innovations and technologies, share knowledge and collaborate with each other for the rapid development of innovative products necessary for the economic development of the country. The main objectives of the competitions were to foster a culture of innovation and entrepreneurship in the country. Plant Centric Meal Competition, NIB Shark Session, Cultural Festivity, and Gala Dinner were the allied activities associated with this mega event. Around 15 stalls of different industries and business firms were set up at the event. Machinery and Technology Display was also arranged. Many students and families visited the stalls and appreciated the students' efforts. Students' projects were evaluated on the basis of innovation, services to community and several other variables. Winning business ideas were awarded with seed money to expand their businesses for the betterment of communities.

Mr. Hussain Jahanian Gardezi, Provincial Minister for Agriculture, Punjab inaugurated the event. The Honourable Minister emphasized the importance of engaging university students to assist the Agriculture Department in wheat sowing campaign. He showed his commitment to all possible support to the farmers to increase their wheat production. During his address, he congratulated the MNSUAM and DICE administration for organizing this program. He said that Innovation in agriculture and food sciences is the need of time to ensure food security through healthy diet. He said Universities are engines of research and promotion of innovation and entrepreneurship through such activities. There is a need to guide the people about modern agriculture and agribusiness so that we can play a significant role in the development of the country. In this regard, I think that MNSUAM is proving to be very helpful by providing a platform to universities across the country. MNSUAM Vice Chancellor, Prof. Dr. Asif Ali (T.I) ensured that faculty and students of the university will make all out efforts to achieve the wheat production targets in South Punjab. He further said that the DICE platform aimed at developing an entrepreneurial ecology. University provides a conducive environment for entrepreneurial activities to equip the students with the required skills to promote culture of business and entrepreneurship in agriculture. We have succeeded in making this mega event a regular annual activity and through this platform we have brought the universities and the industry together so that they can use each other's ideas and play their best part in solving the economic problems of the country.

Secretary Agriculture (South Punjab), Dr. Faisal Zahoor said that the Government is focusing on Agriculture to ensure food security in the country through integrated efforts. He further added that the Agriculture Department is creating awareness among farmers to tackle the issue of climate change. DG Agriculture, Dr. Anjum Buttar said that the Agriculture Department has achieved its target of wheat cultivation, which is a good sign for Pakistan where food security is an issue due to erratic rains and floods. DG Research Dr. Nawaz Maiken said that the Agriculture Research Wing is actively working to develop new crop varieties which are vital to promoting sustainable agriculture in the country. Dr. Khurshid Qureshi, CEO, DICE said, an era of climate change, it has become a huge challenge to feed the increasing population.



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He said countries like Pakistan have to develop local technologies to overcome such challenges in a sustainable way. Several dignitaries including VC, Bahauddin Zakriya University Multan Prof. Dr. Mansoor Kundi, VC, Cholistan University of Veterinary and Animal Sciences, Prof. Dr. M. Sajjad Khan, CEO, GAINS, Ms. Farah Naz etc. participated in this event.

### 6.23. Workshop on E-commerce and Online Earning Skills

E-Commerce has evolved in to an established industry and holds a prominent position in future skill development and the digital arena. Skilled youth can play a decisive role in strengthening Pakistan's digital economy. In this backdrop, a workshop was organized by the Department of Computer Science on October 12, 2022 under the patronage of Prof. Dr. Asif Ali (T.I), Vice Chancellor. Mr. Usman Akhtar (CEO, Brakley Learning) was the Resource Person. Brakley Learning founded in 2020 is Pakistan's first start-up with a sole focus on skills development and capacity building within the E-Commerce and digital arena. Dr. Salman Qadri (Chairman, CS) delivered the welcome note for the respectable guests and the attendees. Prof. Dr. Irfan Ahmad Baig (Dean, FSS&H) presented the vision of the University and talked about the initiatives and projects taken by the University regarding E-commerce and relevant domains. Mr. Usman Akhtar enlightened the audience with the prospects and potential markets of E-commerce. He equipped the students with new business ideas and skills needed to enter the ecommerce and freelance markets. Further, he addressed the questions raised by the attendees. Prof. Dr. Asif Ali delivered the closing remarks and emphasized the attendees for skills and capacity building. He specially motivated the students and youth to actively participate in the E-commerce and freelance markets for professional development and country's economic growth.

### 6.24. Extending Collaboration with Rafhan Maize

A delegation of MNSUAM visited Rafhan Maize Products Company Ltd. Faisalabad along with Vice Chancellor Professor Dr. Asif Ali (T.I) on November 27, 2022. The main purpose of the delegation's visit was to develop mutual relations between the MNS University of Agriculture, Multan and Rafhan Maize. While talking about Rafhan Maize, Mr. Khalid Aziz informed that three plants of Rafhan Maize are working in Pakistan. Rafhan Maize is the largest Corn refiner in the country and has positioned itself as the supplier of first choice for many consuming industries in Pakistan. He also informed about the problems faced in the cultivation of Maize. Mr. Shafiq talked about the problems of aflatoxins. He provided information about the Aflapak product that Rafhan Maize is working on. Mr. Safdar addressed the delegation about the products manufactured by Rafhan Maize. Prof. Dr. Asif Ali said that research activities are being promoted in the university as per the need of the agro-based industry. He added that MNSUAM will collaborate with Rafhan Maize on various aspects like maize cultivation, SmarTrap, to control Fall Armyworm, dryers for drying maize kernels and use of starch in food technology. On this occasion, Dr. Abid Hussain, Dr. Shazia Hanif, Dr. Shabir Ahmed, Dr. Fawad Zafar Khan, Mr. Babar Farid and other people from Rafhan Maize were also present.



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### **6.25. Meeting of Cotton Revival Committee**

Cotton Revival Committee-MNSUAM, held a meeting on 12 Dec 2022, presided by the Vice Chancellor Prof. Dr. Asif Ali (T.I), in which cotton's Early Sowing farmers were invited. Commemorating the endeavors of MNSUAM, Syed Fakhur Imam stressed on considering food security as the pivotal element in all the fore coming suggestions. Prof. Dr. Asif Ali had a constructive dialogue on various suggestions of farmers and foregrounded the fact that in the light of farmers' shared experiences and exhortations, the University wants to propound SMART future suggestions to the government. He reinforced that MNSUAM is and will always untiringly strive for the betterment of farmers and will keep on projecting their issues on administrative levels. Majority of the farmers suggested in favor of harvesting the Triple Gen Cotton variety. The idea of harvesting variable crops along with cotton was also constructively discussed in the meeting. Chief Executive PARB, Dr. Abid Hussain, Ch. Shahzad Sabir, Prof. Dr. Iqbal Bandeeshah, Prof. Dr. Irfan Ahmad Baig, Prof. Dr. Shafqat Saeed, Dr. Rana Binyamin, Dr. Umar Ijaz, Dr. Mohammad Ishtiaq, Furqan Ahmad, Dr. Rafique Shahid and a number of key farmers attended the meeting.

### **6.26. Digital Agribusiness Marketing In Pakistan: Challenges and Opportunities for Pulses Growers**

A Workshop entitled “Digital Agribusiness Marketing in Pakistan: Challenges and Opportunities for Pulses Growers” was jointly organized by MNSUAM, NARC and UAF under ACIAR funded project entitled Digital Value Chain Solutions for Smallholders Pulses Farmers in Pakistan on February 10, 2023 at Social Sciences Research Institute, National Agricultural Research Centre (NARC), Islamabad at the eve of World Pulses Day. The ACIAR funded project entitled Digital Value Chain Solutions for Smallholders Pulses Farmers in Pakistan is being run by MNSUAM. Approximately 50 participants joined the workshop, out of which more than 25 were pulse growers from Punjab and KPK, academicians from MNSUAM, UAF, UAP, CUI, researchers from SSRI (PARC) and industrial partners from Concave Agri. Dr. Burhan Ahmad shared his experiences during the Pulses Value chain Project with the participants stressing upon the need of digital marketing tools for direct access of farmers to the consumers and high end markets. Prof. Dr. Mubashir Mehdi shared the results of consumer oriented research regarding online purchase of agricultural products especially pulses' products, concluding that there is a lot of potential in the branding and digital marketing of pulses. Mr. Ali Iqbal, CEO, Concave Agri. shared details about their online advisory platform to farmers, which assists in market information, purchase of inputs, sale of outputs and how farmers can connect with these platforms. The farmers showed willingness to join this venture with high quality produce for getting better returns. Acknowledging the importance of digital marketing and its benefits for farming community, farmers agreed to participate in the project activities. Concave Agri. agreed to provide necessary training to farmers regarding digital platforms. It was decided that an MoU will be signed between farmers and industrial partners in near future.



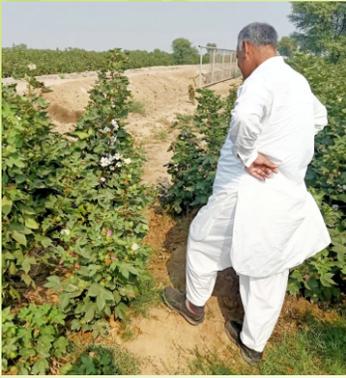
# STRENGTHENING OF PHYSICAL INFRASTRUCTURE













## STRENGTHENING OF PHYSICAL INFRASTRUCTURE

Physical infrastructure plays a vital role to develop any educational institution of the world. There are many factors which affect quality of education and research but a conducive environment is the most important factor for consideration. A lot of efforts have been made to develop the infrastructure in a way to achieve the objective for provision of congenial environment to the students, faculty and administration of this university.

The detail of the projects undertaken to improve and strengthen infrastructure of MNS University of Agriculture, Multan are as under:

### 7.1. On-Going Annual Development Program

#### 7.1.1. Provision of Basic Facilities at Muhammad Nawaz Shareef University of Agriculture, Multan

Development Project amounting to Rs. 1356.378 million has also been approved for the FY 2023-24, funds amounting to Rs.200 million have been allocated for current financial year with implementation period of 36 months by Higher Education Commission (HEC) Islamabad. The project proposal includes the Undergraduate lecture block & Teaching Labs, Central Library (FF), Boys Hostel with Capacity of 350 students, Girls hostel with capacity of 350 students, Multipurpose Hall with capacity of 700 students, Faculty Hostel, External Development & landscaping, Lab equipment for the newly established faculty of veterinary & Animal science and faculty of Agri. & Bio system Engineering, Furniture & fixture, IT equipment and allied external services.

During Financial Year 2022-23 the tender was called for the pre-qualification of consultant and EOI Books was also received and evaluation of profile is in progress.

The major objectives of the proposed project are as under:

- i. The introduction of programs that are attractive for enrollment as well as marketable in the local environment shall make it convenient for the target population.
- ii. To provide better education, teaching, training and research in fields of Veterinary & Animal Sciences and Agricultural & Bio-Systems Engineering. The trained 6000 professionals will contribute to the scientific advancement in the agriculture sector, especially in the South Punjab.
- iii. Impart the latest developments in agriculture curriculum, teaching methodologies and lab standards as well as promoting effective R&D. Engage students with farmers through internship programs and launch productivity enhancement campaigns.
- iv. To provide best research & teaching facilities to 3000 students and 25 teachers in the FA&BE and FV&AS.
- v. Take regional farming to the next level through transforming traditional agriculture knowledge based agriculture like precision agriculture.
- vi. Develop a trained and skilled workforce having a focus on innovation, value addition and entrepreneurship, capable of employing knowledge inputs for the rapid and sustainable development of Pakistan.

## **STRENGTHENING OF PHYSICAL INFRASTRUCTURE**

### **7.1.2. Strengthening of Muhammad Nawaz Shareef University of Agriculture, Multan**

An ADP Project titled “Strengthening of MNS-University of Agriculture Multan” at a cost of Rs.646.600 million was approved during FY 2022-23 with the Gestation period of 36 months. The project proposal includes the Girls Hostel with Capacity of 250 students each, Sports Gymnasium, Overhead Water Tank with 1.5 cusec turbine (50000 Gallons), ICT Equipment & Networking, Student Buses and Furniture & Fixture.

An amount of Rs. 109.087 million was released during FY 2022-23 and Rs. 109.087 million has been 100% consumed for Civil Work The physical progress of scheme is as under:

- 1) Female Hostel: Excavation and footing concrete work completed and shuttering of column work is in progress.
- 2) Sports Gymnasium: Excavation work completed, footing concrete work in progress.

In Female hostel, its output focus on residential facilities will be provided to 250 female students in each semester and a comfortable environment for studies and its purpose of targeting the conducive learning environments provided to the female students.

In Sports Gymnasium, its output focus on the facility will produce a healthy, trained and skilled workforce around 6000 students and its purpose of targeting to produce healthy and skilled environments.

The major objectives of the proposed project are as under:

- i. To provide better opportunities of higher education to the students of Southern Punjab as well as better educational facilities in agriculture may attract students from other districts of the province.
- ii. Develop a trained and skilled workforce having a focus on innovation, value addition and entrepreneurship, capable of employing knowledge inputs for the rapid and sustainable development of Pakistan.
- iii. To provide a better and conducive learning environment to the students through proposed sports, hostel and transport facilities.

### **7.1.3. National Crop Genomics and Speed Breeding Center for Agriculture Sustainability**

An ADP Project of Rs. 450.00 million for “National Crop Genomics and speed breeding Center for agriculture Sustainability” at MNS-University of Agriculture Multan was approved during FY 2021-22 with the execution period of 36 months and revised to the tune of Rs. 472.920 million during F.Y. 2022-23 with same Gestation Period.

During FY 2021-22 An amount of Rs. 122.920 million was released and out of which Rs. 79.854 million has been consumed for Civil Work and amount to Rs.43.066 million has been consumed for procurement lab equipment, Furniture and Chemical. The civil work of the foundation has been completed.

During FY 2022-23 an amount of Rs. 250.00 million was released and out of which Rs. 156.470 million has been consumed for Civil Work.



## STRENGTHENING OF PHYSICAL INFRASTRUCTURE

The outcome of the project will be the sequenced genome of wheat (12 varieties) and cotton (40 varieties) that will be used for developing markers for important traits. Moreover, faculty members, students & researchers from sister organizations will get benefits from training workshops, seminars and capacity building programs. Its main purpose is to improve agriculture productivity through using genomics tools and ultimately enhancing profitability of farmers.

The proposed project “National Crop Genomics and Speed Breeding Centre for Agriculture Sustainability” will help the agriculture Sector in achieving its aims of provision of quality food and improve income of the formers through competitive economic farming.

The main objective of NCG&SBC is to explore the genomic information and historic genetic background of major crops; wheat and cotton, with possible fast track solutions of the issues including insect/pest complex, climate change and produce quality to ensure food security in the country in particular and in the region in general. The specific objectives are:

1. Acquisition, maintenance, and characterization of germplasm for genetic purity – a base for genotyping.
2. Genome sequencing of indigenous germplasm to explore genomic information.
3. Upgrading and accelerating conventional breeding through integration of genomics.
4. Capacity building of Human Resource in new Genome/Genetic Techniques.

### 7.1.4. Construction of Masjid Fatima-Tu-Zahra at Muhammad Nawaz Shareef University of Agriculture Multan

The competent authority decided to construct Central Mosque for 3000 person's capacity having covered area of 23000 Sq Ft consisting of one Prayer Hall, One Veranda, Two side rooms, 2 Nos Ablution area and Library with the estimated cost of Rs. 93.00 million. The drawing/design of the mosque is prepared by M/S Mirza Nasir Associates in a Turkish Style. In this connection, the University requested for donation to construct the Mosque and Rs. 10.99 million was collected from donations. The scheme was approved by the competent authority in FY 2021-22 amounting to Rs. 91.043 (M) with the execution period of 24 months. During FY 2021-22 the physical progress of project the Masjid Hall completed up to roof Level.

During FY 2022-23, the estimate was revised from Rs.93.00 million to Rs.98.31 million with the execution period of 24 months. Up to June 30, 2023 total funds amounting to Rs.76 million has been Utilized. The structure work has been completed and finishing work is in progress.

The main role of this foundation provides a welcoming and spiritual environment where community members pray with peace of mind and a sense of belonging.

## **STRENGTHENING OF PHYSICAL INFRASTRUCTURE**

### **7.2. Completed Annual Development Programs**

The University has completed some important development projects consisting of basic infrastructure of the University. The project wise brief introduction of scope is as under.

#### **7.2.1. Establishment of MNS University of Agriculture, Multan Phase-II**

One ADP Project of Rs. 1510.243 Million was approved with the execution period of 48 months up to June 30, 2019. Due to less funding in FY 2018-19, the time/cost overrun. Consequently, the scheme was revised at a cost of Rs. 1746.258 million and the project execution period also extended for one year (Up to June 30, 2020). An amount of Rs. 1743.989 million has been consumed till June 30, 2020. Project activities have been 100% completed including 22 and other allied activities within the stipulated period.

An amount of Rs. 1333.438 million was allocated for the construction of physical infrastructure i.e. Academic Block, Administration Block, Boys Hostel, Girls Hostel, Faculty Hostel, Residences, Boundary Wall and Allied External Services.

The MNS University of Agriculture, Multan awarded the contract of all civil work modules and the construction work on all University buildings has been completed. An amount of Rs. 1333.438 million was released up to FY 2019-20 for the civil works and out of which Rs. 1333.429 million has been consumed. University Boundary Wall of 12,145 Rft (running feet), Building of Administration Block, Academic Block, Boys Hostel, Girls Hostel, Faculty Hostel, Residences, Motor Vehicle Shed, Overhead Reservoir, Water Supply, Sewerage, Roads and other External Services have been completed.

Under the project, an amount of Rs. 189.295 million was released for the procurement of Lab and ICT Equipment up to FY 2019-20 from which Rs. 189.202 million has been consumed and 760 equipment have been procured and established twenty-four labs.

An amount of Rs. 39.745 million was released for the procurement of Furniture & Fixture up to FY 2019-20. The necessary furniture & fixtures have been procured and established the classrooms, hostels, and guest house.

An amount of Rs. 49.304 million has been provided under Farm Development and other components. The university leveled the 500 Acres of barren land at Jalalpur Pirwala and constructed a 4816-meter-long Water Course for irrigation purposes. The University converts this barren land into the research/experimental stations and it is very useful for research students and faculty members to perform research activities.



## **STRENGTHENING OF PHYSICAL INFRASTRUCTURE**

### **7.2.2. Provision of Fresh Irrigation Water and Other Basic Infrastructure Facilities at Jalalpur Pirwala (JPPW) Farm of MNSUAM**

Another ADP Project of Rs. 170.00 million for fresh irrigation water and other basic infrastructure facilities at JPPW Farm of MNSUAM was approved with the execution period of 24 months (2019-20 to 2020-21).

The major objective of the project is to provide fresh water for irrigation to bring 250 acres of land under cultivation, which cannot be brought under cultivation as the canal water is too short to meet the requirement and groundwater is highly brackish. The project aims at providing some infrastructure which is missing at present, but is essentially required at the farm for research and experimentation for the graduate as well as postgraduate students and faculty members.

Other components of the project include provision of sheds for farm machinery and implements, farm animals, farm produce and stores for the inputs. Establishment of training halls for capacity building of the farmers is also one of the project objectives. The project objectives are elaborated as below:

- i. Installation of two turbine tube wells near the bed of River Chenab for sweet/fresh water supply for irrigation along with underground conveyance system to meet canal irrigation water shortage during Kharif season and to meet demand of Rabi season.
- ii. Construction of sheds for keeping of agricultural machinery and farm animals for prolonged life of implements and safety of farm animals.
- iii. Construction of stores for inputs and sheds for farm produce for bulk purchase of inputs and safety of the farm produce.
- iv. Construction of training halls for capacity building of the farmers and other stakeholders.

An amount of Rs. 170.00 million was released up to FY 2020-21 and the same has been consumed to carry out the Civil Work including laying of 9 KM pipeline for irrigation water, animal shed, input store, implement shed, training hall and boundary wall. Furniture and Fixture has also been procured for the training hall.

### **7.2.3. Construction of Central Library at MNS University of Agriculture, Multan**

The Honorable Minister (Caretaker) for Agriculture, Sardar Tanveer Ilyas Khan donated Rs. 20.00 Million from his own pocket during his kind visit to MNSUAM and 10.00 Million were also contributed by the University from its own sources for the Construction of Central Library (Ground Floor) having a covered area of 10,450 Sq Ft. The construction work of the library has been completed and an amount of Rs. 29.986 million is disbursed for the Central Library Building up to date.

The University Library and Collection Services provide fundamental support for students, researchers and staff, complementing academic activities. Libraries are collections of books, journals, periodical publications, including magazines, scholarly journals, books published as part of a series and other sources of recorded information.



## CHAPTER-7

**STRENGTHENING OF PHYSICAL INFRASTRUCTURE**

Library is an essential part of the University which is the main source of learning for students as well as faculty members. Library provides a learning environment for students to achieve their goals and keep in touch with books to build the nation. The primary function, of course, is research. Students and professors alike use libraries to research their topics for papers, thesis, books, papers, journals, etc. Number of books available has increased over the years as under:

Sr. No.	Financial Year	Books
1	2016-17	2976
2	2017-18	4436
3	2018-19	5009
4	2019-20	5350
5	2020-21	5384
6	2021-22	5471
7	2022-23	5543

Other achievements pertaining library during 2022-2023 are as under;

- Started system for user count on departmental basis online database utilization
- Facilitate to the university community by providing them remote access to electronic resources through e-repository.
- Better infrastructure
- HEC databases subscription to facilitate borrowers in their respective field of research.
- Provide Hands-on training sessions on “How to access HEC Digital Library” to the university students/ researcher/faculty.
- Initiated Library Magazine in soft form available on university website
- Held two days Annual Book Fair of the University on the eve of “Happiness Week”

**7.3. University Farms**

MNS University of Agriculture, Multan has two research farms at Chak 84-M, Jalalpur Pirwala and Main campus at Mouza Rangeel Pur, Multan, the first one comprises of 500 acres and the later has 170 acres of land (64 Acres under cultivation for different crops while rest under building and lawns). These farms provide the students an opportunity to get practical training in various disciplines of agriculture. These farms also serve as demonstration centers for the students, provide basic infrastructure for conducting the research and also serve as Model Farms for the farming community. A summary of development works done at the Farms, is being given below:



## STRENGTHENING OF PHYSICAL INFRASTRUCTURE

### 7.3.1. Agricultural Farm, Jalalpur Pirwala

- After the bulldozer work on 500 acres land of University Farm Jalalpur Pirwala, and after laser leveling the major challenge was to cultivate this saline sodic soil with brackish underground water. However, the challenge has been accepted and a whole 500 acres of land have been utilized.
- Orchards of different fruit plants like citrus, phalsa, jaman, pomegranate, berry, mango, guava and date palm are also proposed on 100 acres. Furthermore, organic farming on 25 acres of newly developed land is also under consideration.
- The canal system at Jalalpur Pirwala is non-perennial and canal water is available only for six months from mid-April to mid-October every year. To improve the efficiency of canal water, the mogha was shifted toward the head and a 1730 feet paved water channel was constructed. Furthermore, to meet water requirements in winter and as per need in summer, two electric mounted water turbines have also been installed to fetch the fit for irrigation water from 6 km away and crops are being irrigated with this sweet water.
- After the addition of 100 more acres in Rabi season 2022-23, now 354 acres of land is under annual crops, 40 acres under orchards, 50 acres under forestry, 25 acres under organic farming, 5 acres as fallow land (Bees, Pollinators etc.), 25 acres under infrastructure (Buildings, Roads, Water Channels, and Ponds etc.) and 1 acre is kept as unlevelled to depict the initial picture of the farm.
- During Rabi season, major crops were wheat, barley, raya and lucerne, whereas, during Kharif season, major crops grown are cotton, millet, guar and sorghum and jantar. Further, sesbania has also been sown for green manuring, to add the organic matter into the soil.
- About 42,000 plants of various tree species like gum Arabic, lebbeck, Indian lilac, Indian beech tree, moringa, pomegranate, guava, jujube, fig etc. have been planted on roadside, alongside the water channels and in specific belts with higher level of salinity, which now are growing up and have started giving a greener look to the premises.
- About 5,500 fruit tree plantations including Citrus, Jajuba, Jaman, Pomegranate and Falsa were successfully done.
- About 14000 plants of Guava, Jaman and Jajuba have been planted on 25 acre land collaboration with WWF.
- Furthermore, successful adaptability trials for olive have also been done and 10 Acres of plantation under drip irrigation system is under progress.
- Fish farming is ongoing.
- A project for construction of livestock shed, input and output stores and seed stores, farmers training halls and machinery shed has also been completed.
- A ten years strategic plan of University Farms Jalalpur Pirwala has been set and implementation has been started.

## STRENGTHENING OF PHYSICAL INFRASTRUCTURE

### 7.3.2. Agricultural Farm, Main Campus, Multan

- In Mouza Rangeel Pur, Multan at main campus 180 acres of land were allotted to the University, out of which 60 acres are under University Farm while the rest is for campus and other constructions. The land was encroached by the illegal occupants. All the land has been possessed and is under cultivation.
- In C-block, 39 acres of land is under cultivation. The major crops during growing season 2022-23, were wheat, cotton, Maize, chickpea, soybean, berseem and sorghum etc.
- High-Tech structures like hydroponic system, floppy sprinkler irrigation system, greenhouse/s, containment/quarantine facility and tunnels have been constructed in C-block area.
- One fish pond and other water cleaning ponds in C-block have also been constructed.
- Small tree mango system, citrus block and Kitchen gardening units have also been established.
- A botanical garden of 2 acres is also proposed in C-block, wherein different plants will be planted in the coming seasons.
- A wheat farmer's field day was also organized for demonstration of the hybrid wheat and other advanced wheat lines developed by the University.
- In collaboration with private industries like Bayer Pakistan (Pvt.) Ltd, ICI (Pvt.) Ltd., Fatima Group (Pvt.) Ltd and Engro Fertilizers Pvt. Ltd. research trials on cotton are ongoing. Furthermore, in future both firms will develop infrastructure for students' learning centre.
- During the year 2022-23, an income of 48.236 million from both Farms was achieved against a target of 40.000 million and the amount was deposited in the University account.



## CHAPTER-7

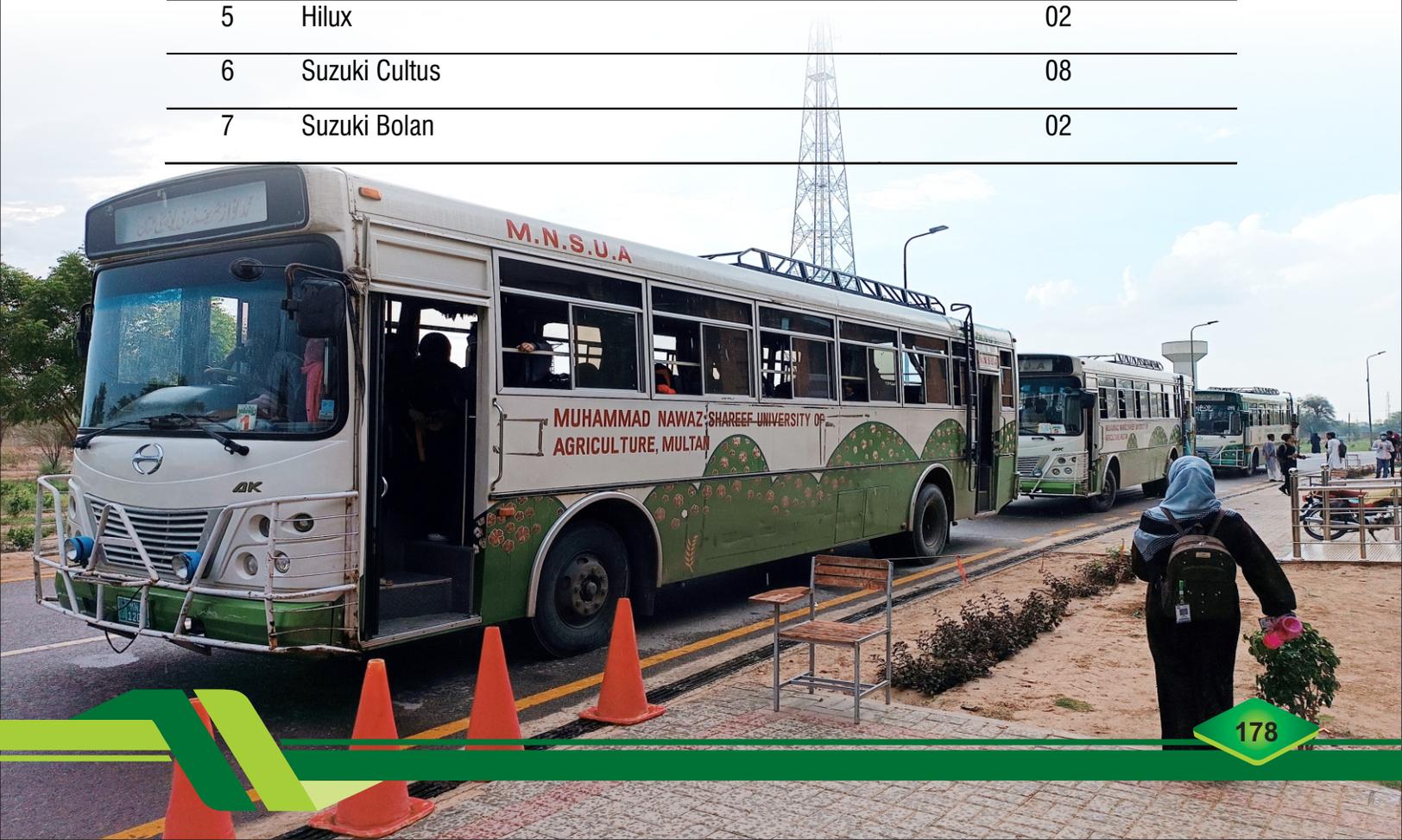
### STRENGTHENING OF PHYSICAL INFRASTRUCTURE

#### 7.4. Transport Office MANSUAM

MANSUAM transport fleet consists of six spacious buses and one coaster which provides comfortable, secure and in time facility of pick and drop to almost all corners of the city through well-defined routes system. The transport office is committed to improve its services in the coming years with progressive increase in the number of buses and vehicles. Two new vehicles have been purchased during June 2023, whereas three more buses purchase has been proposed in upcoming budget 2023-24. To facilitate the students coming from distant areas, and arrange the official tours, field trips and study tours. Transport office also provide appropriate transport in any emergency to the boarder students.

##### 7.4.1. Motor Pool Fleet

Sr. No.	Vehicles	Quantity
1	Buses	06
2	Coaster	01
3	Hi Roof	02
4	Toyota Corolla	02
5	Hilux	02
6	Suzuki Cultus	08
7	Suzuki Bolan	02





**STRENGTHENING OF  
TECHNOLOGICAL INFRASTRUCTURE**



## CHAPTER-8

**STRENGTHENING OF TECHNOLOGICAL INFRASTRUCTURE**

The Directorate of Information Technology (DIT) is focused on delivering a wide range of high-quality IT Services throughout the campus to all academicians, staff, and students. Providing a smart and robust environment is the main aim of the DIT, where everyone has easy access to all IT services around the clock. DIT also ensures a secure, reliable, and efficient IT environment where optimized results can be attained. The Directorate of IT played a pivotal role in realizing the vision and mission of the MNS University of Agriculture, Multan, by strengthening the ICT Infrastructure and facilities. There were two major streams of development.

- ICT Hardware Infrastructure
- ICT Software Services

**8.1. ICT Hardware Infrastructure****8.1.1. Core Cisco Catalyst 2960 XR Switches**

IP Core was upgraded to Catalyst 2960-X switches to provide high routing, switching, and security features.

**8.1.2. Cisco 3504 WLC Setup**

For Campus Wi-Fi services for staff and students, the Cisco Wireless LAN Controller 3504 was deployed. This centralized WLC provides a secure, high performance Wi-Fi internet experience.

**8.1.3. Cisco SG350 Series Switching Setup**

The Directorate of IT deployed Cisco SG350 Series Switches are next-generation managed switches that offer excellent performance, rich features, and ease of use. With support for Layer 2 and Layer 3 features, advanced security, routing, and energy-saving technology, they deliver a solid foundation for business applications today and in the future.

**8.1.4. Network Security Update Fortigate-200E**

The FortiGate 200E series next generation firewall was deployed at the University. Firewalls provide high protection against cyber threats with high-powered security processors for optimized network performance, security efficacy, and deep visibility. Fortinet's Security-Driven Networking approach provides tight network integration for the new generation of security.

**8.1.5. Update License for Fortinet 200E Firewall Security**

There was an urgent need to purchase a license for properly deploying all features and security benefits from the firewall, so a license for the first year has been purchased from the university budget.



## **STRENGTHENING OF TECHNOLOGICAL INFRASTRUCTURE**

### **8.1.6. IP Unified Communication Panasonic KX-NSX2000**

As one of the world's biggest manufacturers of consumer electronic goods, Panasonic may be better known for its televisions than its telephones. However, the Japanese multinational giant is nothing if not diverse in its product range, and business communication hardware is just one of the many strings to its considerable bow.

### **8.1.7. Dahua IP Security System Setup**

The university has upgraded its IP Security system, consisting of more than 200 IP PoE cameras covering all campus areas, ensuring the safety of the staff and students. A well-equipped control room has been established for monitoring.

### **8.1.8. Computer Labs**

Four new computer labs have been established in the new Faculty building. The Latest software is installed, which facilitates the students to work in a comfortable and safe environment. One of these labs has been provided with high-performance computing facilities for senior students conducting research.

### **8.1.9. Fiber Optic Backbone Links**

All buildings at the University have been linked by fiber optic cable. This service provides high speed network services to the staff and students.

### **8.1.10. New Video Conference Rooms Setup**

There are four video conference rooms for staff and students. One more video conference room is being developed for meetings with Foreign Visitors and Governments. These rooms are equipped with Multimedia, an LED TV, a sound system, and internet facilities.

### **8.1.11. Multimedia classrooms**

The university has arranged multimedia in every classroom to provide excellent facilitation to students. Multimedia Projectors are providing a facility for diverse teaching and learning in classrooms. These projectors key features are picture execution, determination, long light life, item versatility, brilliance, PC associations, and calm activity. Moreover, 50 projectors were installed to ease the students in learning.

### **8.1.12. Video Conferencing Room Solutions**

The university has arranged a high-definition Video Conference System for official online meetings, national and international webinars, and conferences. The video conference system provides participants with smooth and natural audio-visual effects and a comfortable and immersive experience for teleconferencing.

**CHAPTER-8****STRENGTHENING OF TECHNOLOGICAL INFRASTRUCTURE****8.1.13. Digital Outdoor Displays (SMDs)**

There are digital display devices installed at different locations of the university that display information in a digital format on large screens. There will be a prompt display of information/announcements regarding current events/activities.

**8.1.14. Installation of UPS in 110 Seminar Hall**

It was deemed necessary for proper electricity backup in Room 110, so we have installed a new UPS for Room 110. For uninterrupted conferences and online seminars, it has been installed.

**8.2. ICT Software Services****8.2.1. Webinar/Meetings**

The Directorate of IT has been supporting the faculty and students in conducting online meetings/webinars using Cisco WebEx Enterprise, Zoom Meeting, and Microsoft Teams. Especially during COVID-19, this really helped the University conduct online classes and meetings. Hundreds of meetings/conferences/webinars (national and international) have been conducted successfully during the year.

**8.2.2. Microsoft Dynamics 365 Implementation**

The Directorate of IT started the implementation of the world-renowned ERP solution using Microsoft Dynamics 365. This ERP would greatly enhance the financial operations, procurement, inventory, and procurement of the University.

**8.2.3. (A) PERN Update**

The university upgraded the PERN services contract from P1 to P2, which enhanced the internet bandwidth from 150 Mbps to 200 Mbps, and faculty and student licenses, including MS Office 365 and MS Windows OS.

**8.2.3. (B) Newly Installed WATEEN Connection**

The university also engaged a new ISP Connection from Wateen Telecom of 150 MB Fiber Optic for Backup of the second internet source that is running properly to avoid any inconvenience.

**8.2.4. Website Update**

The Directorate of IT is managing the official website as well as launching project-related websites for faculty and students. The university's official website was updated from WordPress to Joomla, a free and open-source content management system. Web links to various online systems have been uploaded to university websites.



## CHAPTER-8

# STRENGTHENING OF TECHNOLOGICAL INFRASTRUCTURE

### 8.2.5. Kaspersky-Virus

The Directorate of IT purchased Kaspersky Endpoint Security Cloud Plus anti-virus software for protecting against a wide variety of threats, including other types of malicious software, such as keyloggers, browser hijackers, Trojan horses, worms, rootkits, spyware, adware, botnets, and ransomware.

### 8.2.6. LMS System Update

During the COVID-19 pandemic, the Directorate of IT, with the support of the Department of CS, deployed the Moodle LMS System and Google Classroom hosted on local servers and conducted online classes and online entry tests for the second time. This facility greatly added value to the automation of the University and provided uninterrupted education facilities to students and faculty.

### 8.2.7. Google G-Suite Services

All staff and students have access to Google's Corporate G Suite services. These services consist of Email, Word, Excel, PowerPoint, and unlimited Google Drive. All students were provided G-Suite accounts this year, which greatly enhanced their productivity and collaboration. These services are being managed by the Directorate of IT.

### 8.2.8. Online Systems

- Admission System (<http://admission.mnsuam.edu.pk>)
- Faculty Information System (<https://fis.mnsuam.net/>)
- Development of web-based system for Agricultural Sciences Journal (ASJ) <https://asj.mnsuam.net/>
- Developed a web site for International Conference on Climate Smart Agriculture (<http://mnsuamcsa.com/>)
- Development of online Student and Course feedback System (<https://qec.mnsuam.net/>)
- Development of weather portal (<https://weather-data.mnsuam.edu.pk/>)
- Developed a complaint system (<https://complaints.mnsuam.edu.pk/>).
- Developed Job Portal System (<https://eportal.mnsuam.edu.pk/>).
- Developed a cotton Internship Mobile Application (<https://agri-internship.mnsuam.edu.pk>)



**UNIVERSITIES  
BUILDING COMMUNITIES**











## UNIVERSITIES BUILDING COMMUNITIES

### 9.1. Awareness Seminar on Lumpy Skin Disease

Faculty of Veterinary and Animal Sciences, MNSUAM organized a one-day awareness seminar on Lumpy Skin Disease (LSD). Dr. Sabtain Bhatti, Director L&DD South Punjab; Dr. Muhammad Imtiaz Additional Director, Multan; Dr. Rao Sabir Ali, Additional Director Headquarters; Dr. Salma Naz, Deputy Director, and various field veterinarians and students attend this seminar. President Livestock Breeder and Dairy Farm Association, Multan Nawab Nadeem Ud-din Khan, Malik Farooq Ahmad, Chaudhary Abu Sufian, Mian Ahmad Awan Bodla, and Muhammad Yasin Khan also attended this seminar. Prof. Dr. Asif Ali (T.I), Vice Chancellor lauded this much needed seminar and suggested arranging such events in the future. He said that LSD is an emerging threat to the world and it is spreading rapidly in Pakistan. He urged to provide disease diagnostic and treatment services to the farming community. He hoped FVAS researchers will play their lead role to curb this deadly disease which is hampering the development of the livestock sector in Pakistan. Speakers delivered lectures on socio economic impact, diagnostic tools, clinical management, disease reporting mechanism, world situation, and innovative solution for the eradication of LSD. Prof. Dr. Muhammad Asif Raza, Coordinator, FVAS, highlighted the factors that cause the introduction, cause and spread of this disease and explained the research done for the disease treatment. It causes fever, nodules on the skin and can also lead to death, especially in animals that have not previously been exposed to the virus. Dr. Saadullah, Disease Investigation, and Control Officer L&DD, Multan described the diagnosis and control of the disease. He also emphasized timely vaccination and control of vector-like ticks, flies, and mosquitoes. Nawab Nadeem Ud-din President Farmer Association highlighted the importance of vaccination programs to control Lumpy skin disease to students and the audience. Dr. Ali Haider, Assistant Professor Department of Clinical Sciences, FVAS presented a detailed presentation on the Introduction, Etiology, and Transmission of disease. He also elaborates on the treatment protocols and prevention methods for Lumpy Skin Disease. Dr. Imtiaz delivered his views and the awareness campaign carried out by the L&DD. Prof. Dr. Junaid Ali Khan, Director ORIC, Prof. Dr. Shafqat Saeed, Coordinator, Faculty of Agriculture and Environmental Sciences, and a large number of faculty and students attended the event.

### 9.2. Seed Ball Plantation Drive

The Plants for Life Society started the Monsoon Plantation Campaign on August 1, 2022 with 5000 seed balls of indigenous flora including various fruits and forest trees around the campus premises. On this occasion, Prof. Dr. Asif Ali (T.I) said that the University Plantation Drive is in full swing this season too. He further said that the varsity along with the local community is planting more and more trees for a Clean and Green Pakistan. Dr. Muqrab Ali, University faculty member and activity organizer stated that seeds of indigenous plants were collected from Multan and seed balls making process was carried out in the university by members of Plant for Life Society. More than 100 seed ball packets were distributed among the community to motivate and lead this campaign in their respective areas. In addition, the participants were exposed to the practical skills related to the preparation of seed balls and its use so that the community can plant abundantly in the current rainy season in the vacant areas. Ms. Palosha Khanum, Dr. Shazia Hanif, Ms. Misbah Sagheer and a large number of staff and students participated in this activity.



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### 9.3. MoU signed with Health Services Academy- Govt. of Pakistan

Faculty of Veterinary and Animal Sciences, MNSUAM and Health Services Academy- Government of Pakistan, Islamabad (HAS) signed a memorandum on August 2, 2022 for mutual cooperation in the field of Public Health. This includes collaborative research projects, co-supervision of M.Phil. students, sharing research facilities, exchange of faculty and students for capacity building, serving the community and exploring more areas of mutual interest. This joint venture aims to promote the well-being and healthy life style among the vulnerable communities through the behavioural modification. Dr. Muhammad Umair Waqas, Lecturer, Department of Pathobiology, MNSUAM, has taken this initiative of collaboration with HSA for the students of MS Public Health program. The University is keen to establish liaisons with national and international organizations having potential for capacity building and holding a strong background in research and outreach. Health Services Academy, Govt. of Pakistan, in 2018 became the first-Degree Awarding Institute (DAI) of Public Health Sciences in Pakistan. Over the years, HSA has succeeded in higher learning and research in niche areas of public health. The institution is globally recognized as a key player in public health field. HSA takes pride in advocating the better health through the concept of prevention. This MoU will provide opportunity for mutual learning to both institutions. Moreover, this will provide opportunities for students of both institutions to develop skills in the field of public health.

### 9.4. Socio-Economic Benefits of Weather and Climate Services in Pakistan

The MNS-University of Agriculture Multan in collaboration with ICIMOD and PMD organized a knowledge-sharing workshop on "Socio-economic Benefits of Climate Change and AgroMet Advisory services in Pakistan" on August 4, 2022. Miss Mandira Singh Shrestha, Program Coordinator Climate Services from ICIMOD, Marta Bruno Soares from the University of Leeds, and Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNS-UAM were the guest of honors. Other distinguished participants include Asma Jawad Hashmi, Director PMD, Zaheer Ahmad Babur, Director NWFC, PMD, Muhammad Ismail, ICIMOD, Dildar Hussain Kazmi, PMD, Farmers, and other key stakeholders of weather and climate services from government agencies and ministries. The main aim of the workshop was to identify the socio-economic benefits of weather and climate services, particularly focusing on cotton and wheat farmers in the Punjab and Sindh provinces where rising temperatures, more frequent flooding, and prolonged droughts have threaten the system productivity, profitability and sustainability. Prof. Dr. Asif Ali welcomed all the participants and emphasized for addressing the problem of climate change on the agriculture sector. The participants of the workshop shared the findings of the multiple projects conducted in different regions of the country and discussions were made on how to make the agro-met advisories offered by PMD more effective, and identify areas where farmers need support to adopt the advisories. An exclusive farmer panel discussion session was conducted to get feedback from the progressive farmers on improving weather climate services in Pakistan. The workshop was concluded with the firm determination to create strong nexus of communication between all major stakeholders for timely provision of climate and weather data to farmers.



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This will specifically enhance the farmers' risk management capabilities which may boost crop production. Prof. Dr. Irfan Ahmad Baig, Dean, Faculty of Social Sciences and Humanities, MNSUAM concluded the seminar by thanking all the participants and inviting them to collaborate on future endeavors.

**9.5. Youm-i-Esthesal Kashmir Observed at MNSUAM**

Third anniversary of annexation of Kashmir as Yaum-i-Istehsal (Day of Exploitation/Kashmir Siege Day) was observed at MNSUAM in the form of a solidarity walk on August 5, 2022 with full enthusiasm to express whole-hearted support of the Pakistani nation to struggle of Kashmiri people for their inalienable right to self-determination under the UN resolutions. Youm-i-Esthesal Kashmir was observed against revocation of Article 370 and 35-A and continuous victimization of Kashmiris by the Indian government. Solidarity walk was joined by large number of students and faculty members. Speaking on the occasion, Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNSUAM said we have very close religious and cultural relationship with Kashmiris and condemn all kinds of brutal acts with them. He further said that the Kashmir dispute must be handled according to the UNO charter. He expressed that the issue of Kashmir is the bone of contention between Pakistan and India, which requires understanding of the human cause for its pragmatic solution. The revoking of article 370 and 35-A is another condemnable Indian act to subjugate the rights of Kashmiri people. The participants strongly condemned Indian atrocities on innocent Kashmiris struggling for their right to freedom. Prof. Dr. Asif Raza, Prof. Dr. Nasir Nadeem, Dr. Salman Qadri, Mr. Imran Mahmood, Mr. Muhammad Rafeeq Farooqi, Dr. Mirza Abdul Qayyum, Dr. Abdul Razzaq, Dr. Mirza Abid Mehmood, Dr. Usman Jamshaid, Mr. Riaz Ahmad Haraj, other staff and students participated in the walk.

**9.6. Visit of Bakhbar Kissan Delegation**

A delegation of Bakhbar Kissan visited MNSUAM on August 10, 2022. The purpose of this visit was to get experience from the innovative research projects at University. Bakhbar Kissan is an IT company that advises farmers about agricultural issues, including weather, crop and livestock advisory, commodity price updates and disaster forecast and amangement. Mr. Rizwan Khan led the Bakhbar delegation. The team met with the MNSUAM Vice Chancellor Prof. Dr. Asif Ali (T.I.). The Vice-Chancellor appreciated the efforts of Bakhbar Kissan and highlighted that the University is working on making farmers more aware and well informed. Dr. Kashif Razzaq briefed the delegation about the smart tree system and its benefits. The mango nursery was also visited. Dr. Ayesha Hakim briefed about the smart trap and its different components. Mr. Usman briefed about the working of the mango drying project to extend the shelf life of mangoes. The team visited the drying facility and observed all the processes involved. Mr. Nabeel A. Ikram briefed about the kitchen gardening and biofloc fish production unit. The team of Bakhbar Kissan was briefed about the benefit- cost ratio and the production technology in the biofloc system. Mr. Muhammad Usman Khan briefed about hydroponic production. Dr. Zulqarnain Khan briefed the delegation about the working of Central Lab System.

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The team also visited the Business Incubation Centre (BIC), where Mr. Asif Hayat Tipu briefed the delegation about the working of BIC. In the end, Dr. Fawad Zafar A. Khan thanked the delegation for visiting MNSUAM. The Bakhbar Kissan team appreciated the MNSUAM and showed interest in developing collaboration with the University in the near future.

### **9.7. Celebration of International Youth Day**

International Youth Day was celebrated at MNSUAM on August 12, 2022. This day is celebrated to raise awareness regarding issues that are faced by the world's youth. This day is marked to recognize efforts of the world's youth in enhancing global society. It also aims to promote ways to actively engage them for positive contributions to their communities. Hall Warden, Dr. Mirza Abdul Qayyum said that the engagement and participation of youth is essential to achieve sustainable human development. Efforts are needed to raise awareness about the importance of youth civic engagement and its benefits to the individual and to society, including for sustainable development as well as resilience and wellbeing. Speaking on the occasion the speakers and student participants highlighted the Youth power as a recognized force in the world today. The youth are filled with tremendous energy and towering ambitions. They can be utilized as a constructive force by any nation, they concluded.

### **9.8. Independence Day Celebrations & Plantation Drive**

Pakistan's 75<sup>th</sup> Independence Day Celebrations ceremony along with Kashmir Solidarity Day was held on August 14, 2022 at the main campus of the University. The Vice Chancellor, Prof. Dr. Asif Ali (T.I), inaugurated the event by hoisting the flag of Pakistan following the national anthem. The students and officials were especially invited to attend the ceremony. The participants recited the Holy Quran and prayed for prosperity of our motherland and liberation of Kashmir. Later on, tree plantation campaign was held near the Admin Block and Sardar Tanveer Ilyas Khan Library of the Varsity. A large number of faculty members and students from MNSUAM participated in this campaign and planted numerous trees. Prof. Dr. Asif Ali said that tree plantation and green belts are our priority in Multan and we will strive hard to turn Multan green. He added that trees are an essential component of existence of life on earth. We are well aware of the significance of trees, and are fulfilling our moral obligation by planting as many trees as we can. He urged all teachers, staff and students of the University to plant trees as a fulfillment of their national duty. The important aspect of the event was the active community mobilization through involvement of religious school children of the Multan city. Over five hundred plants were distributed among the children with an aim to create awareness about cleaner and greener environment.

### **9.9. International Seminar on Biopesticides**

The Institute of Plant Protection, MNSUAM organized an international seminar on Development and Biopesticide formulation on August 24, 2022. Well-known biopesticide specialists from CAB International, Dr. Belinda Mary (Global Team Leader Plantwise) along with Dr. Keith Andrew (Global Team Manager Plantwise) and Dr. Naeem Aslam (Country Coordinator Plantwise, Pakistan) were the guest speakers.



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Academia and officials from different departments of MNSUAM, and Pest Warning and Quality Control of Pesticides participated in the seminar. Dr. Belinda Mary delivered a detailed lecture on basics of biopesticides, potential sources and merits and demerits for their application under the field conditions. Success stories of Green Muscle project using *Metarhizium Fungus* as biopesticide for the control of Locust in Africa and other countries with the factors involved were discussed. She highlighted the importance of modern technologies for the application of control measures such as satellite, GIS, pest radars and UAVs for the pest forecasting and effective delivery of pest and disease control products to the end users and for the field applicants. Dr. Keith Andrew a pathologist briefed about the new horizons of biopesticides and use of biotechnology for the persistent biocontrol of pests in prospect of global climate challenge. Dr. Naeem Aslam briefed about the facilities, literature and other source materials provided by CABI. Prof. Dr. Shafqat Saeed, Coordinator, FAES gave an overview about the research activities related to biopesticide development and ongoing trials. Collaboration in the field of development, formulation, and application of biopesticides was mutually agreed. Souvenirs of Appreciation were presented to the honorable guests by Prof. Dr. Shafqat Saeed on behalf of Vice chancellor. Afterwards, the delegation visited the Central Lab System of MNSUAM and also planted trees.

### 9.10. Inauguration of Wellness Centre at MNSUAM

Public Health Society, MNSUAM has established the Wellness Centre at A-block of the University. On August 16, 2022, this Centre was inaugurated by the Vice Chancellor, Prof. Dr. Asif Ali (T.I). A prayer was offered on this occasion to make this Centre a source of welfare for students, staff and faculty of University as well as for the surrounding community. The Centre aims to promote the well-being and healthy lifestyle through behavioural modifications. The philosophical force behind this Centre is to promote the concept of prevention over the treatment. The Centre also hopes to identify the vulnerable population at earliest possible to protect from grave consequences. The services available at the centre are eye test, blood pressure and pulse rate measurements, saturated oxygen measurement, haemoglobin, uric acid, cholesterol and diabetes test, body temperature, mental health counselling services, nutritional recommendation, preventive advices and many more. These tests are key indicators to identify the people at risk of developing the serious ailments such as cardiac arrest, heart attacks, stroke, diabetes, anaemia, kidney failure, obesity, high blood pressure, and other serious ailments. The Public Health society feels that it is their responsibility to work for the better health of the society and University, therefore, it was very important to create a setup where the University employees and society members could benefit in terms of making better health choices. Sustainable Development Goal 3 seeks to ensure health and well-being for all, at every stage of life. This goal aims to improve the life of every human being through the concept of prevention, health promotion, nutritional interventions and screening. WHO has advised that students of all ages must have easy access to health services, therefore, MNSUAM has established this Wellness Center. The Center will further strive to foster a healthy, caring University community that will be beneficial to the intellectual, emotional and physical development of students and staff.



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### 9.11. International Conference on Date-Palm and Pomegranate

Department of Horticulture, MNSUAM organized two days international conference on date-palm and pomegranate on August 23-24, 2022. The conference participants included national experts of date-palm and pomegranate fruit from KPK, Punjab, Baluchistan and Sindh, international experts from Egypt, Afghanistan, UAE and China as conference resource persons and speakers, while representatives of Agriculture Department Punjab; both from research and extension, university teachers, farmers and students participated in the conference. The conference also included an exhibition of date-palm and pomegranate fruit, nursery plant and stalls of value added products. First day of the conference was dedicated to date-palm, while, during the second day of the conference, pomegranate fruit production, plant protection and postharvest handling was shared with the conference participants. The chief guest of the inaugural session was Prof. Dr. Asif Ali TI, Vice Chancellor MNSUAM. In his inaugural address, he highlighted the nutritional and economic importance of both fruits. He emphasized on date-palm experts and scientists to focus on R & D related to date palm breeding and mechanization. Dr. Atiq Alizai, Assistant Professor, Department of Horticulture, Gomal University DI Khan highlighted the economic importance of date-palm for Pakistan's economy and stressed on proper postharvest handling of date-palm fruit. He also demanded that fruit processing unit facility should be installed in the core production areas of date palm fruit in whole country. Dr. Summar Abbas Naqvi, Associate Professor, Institute of Horticultural Sciences, University of Agriculture Faisalabad highlighted biodiversity in date-palm cultivars of Pakistan and pointed that keeping in view high genetic variability within country's date-palm cultivars can provide a basic source for plant breeding and developing the new elite varieties. Dr. Kashif Raza, Senior Scientist Horticulture, Date-palm Research Sub-station Jhang was of the view that there is lack of research within the country on male date palm and stressed to identify elite cultivar of male date-palm for effective pollination, productivity and fruit quality. Mr. Mostafa Magdy Sroor, Farm Manager, Linah Farms, Bahariyah Oasis, Egypt discussed the date-palm production technology and management in Egypt. Mr. Qasim Qureshi, progressive grower, Al-Qasim Fruit Farm, Dera Ghazi Khan revealed that propagules of elite date-palm cultivars including 'Medjool', 'Duglet Noor', 'Ajwa' etc. are available at the farm and we are striving hard to disseminate the technology to vicinity by promising the suckers of these date palm varieties. Second day of the conference started with a concluding seminar of a NRPU project 10561 'Optimizing production practices and fruit quality of pomegranate in Southern Punjab' being run by Principle Investigator Prof. Dr. Ishtiaq A. Rajwana, Professor Department of Horticulture, MNSUAM. He presented the overview of the project and revealed that the overall objective of the project was to develop integrated crop management practices for pomegranate growers of South Punjab. Further, he shared the findings of the project that causes of decline of pomegranate industry from South Punjab included biotic factors bacterial blight disease, improper canopy management and abiotic factors of nutrient deficiency. These can be managed by integrated approach of pruning, proper nutrition and disease control by suitable bactericides. Dr. M. Amin, Associate Professor, Department of Horticultural Sciences, The Islamia University of Bahawalpur emphasized that pomegranate grower can get good profit through proper supply chain management; proper fruit harvesting, sorting, grading and marketing.



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Dr. Syed Esmail Emran, Associate Professor, Forestry and Horticulture Department, Balkh University, Afghanistan presented the dynamics of pomegranate production in Afghanistan. He showed his interest to collaborate with pomegranate scientists of Pakistan. In his concluding remarks, Prof. Dr. Din Muhammad Zahid, Chairman, Department of Forestry, Bahauddin Zakariya University Multan appreciated the efforts of the MNSUAM to organize such events for Knowledge exchange and ideas sharing on such forum. He emphasized on the need E-marketing and branding of the Pakistani fresh fruit and vegetables to get more value within local and foreign markets. At the end of the conference gifts were distributed as token of appreciation among the distinctive guests, speakers and exhibitors by Prof. Dr. Shafqat Saeed, Dean FA&ES, MNSUAM.

### 9.12. Capacity Building Workshop on Clean Cotton

A Farmers Training Workshop was organized with the support of World Wild Fund on the topic of agricultural measures to achieve clean cotton at Jalalpur Pirwala Experimental Farm of MNSUAM on August 24, 2022. The workshop started with a field visit wherein the participants were briefed about the cotton rehabilitation program and other activities. About 75 participants learnt about cotton picking, integrated control methods and identification of friendly and hostile pests, effective use of agricultural pesticides and crop management during monsoon rains. Addressing the participants of the workshop, Dr. Abdul Ghaffar, Chairman, Department of Agronomy and Director, University Farms said that MNSUAM always adheres to the policy of solving the agricultural problems of farmers on a priority basis. As the cotton is in its last developmental stages and the ginning high quality of cotton depends mostly on its picking, pollution-free clean ginning is essential for its storage and processing. All possible measures should be undertaken in this regard. A mechanism should be made so that the farmers can get compensation for clean cotton in terms of better price. Also, pay wages to the pickers keeping in mind the cleanliness and hygiene of the cotton and do not make the quantity the only criterion, he added. Dr. Muhammad Ishtiaq informed the participants that the cotton planted on the research farm by the University has been sprayed only once so far, and this crop is also free from insect pest attack and diseases. He said that with the use of botanical sprays, PB ropes and insect traps, there has been a significant reduction in chemical spraying on crops. He advocated the effectiveness of IPM and encouraged the farmers to adopt this method. Dr. Amar Matloob said that weeds exert adverse effects on the cotton crop. Their timely eradication is very important, for this the integrated use of chemical and non-chemical methods is necessary. Dr. Muqqrab Ali said that Pakistan ranks fifth among the cotton producing countries in the world in terms of production and ranks first for contaminated cotton production. In this regard, training workshops for women cotton pickers in the field are being organized where they are informed about better practices for clean cotton picking, pesticides related hazards and occupational health safety issues. He imparted training about clean picking, storage and transportation and issued a set of guidelines to farmers advising them to ensure cotton picking without any contamination to get a good price from the market. He said farmers should begin picking cotton only when 50 percent of the bolls are opened in a field. Similarly, picking should be done after 10:00 am so that there is no dew or moisture.



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Mr. Fawad Safian, Correspondent WWF Pakistan highlighted the ongoing project regarding cotton keeping in mind the environmental impacts and way forward. He covered the components and principles of improved cotton production system. He said that cotton should always be stored in dry, clean and ventilated warehouses. The harvested produce should be covered with a plastic sheet and that needs to be removed after rain. Never pick wet cotton as such cotton gets hot in the store. Cotton changes color and seed germination is also affected. At the end of this workshop, the questions of the participants were answered. Dr. Hafiz Mohkham Hamamd expressed his gratitude and thanked all the organizers and sponsors of this workshop. A large number of farmers, private companies and representatives of agricultural institutions, faculty and students participated in the workshop.

**9.13. Flood Relief Drive: Moral Obligation being Served with Passion**

Under the special instructions of Vice Chancellor, Prof. Dr. Asif Ali (T.I), MNSUAM organized relief, public health and livestock health camps to help the flood victims in Muzaffargarh and Dera Ghazi Khan. These camps were organized in the flood-affected areas of Mauza Lalpur on the west bank of river Chenab in Muzaffargarh and Vidor hill torrent affected areas such as Basti Mamori, Khosa, Kumhar wala of Dera Ghazi Khan. In this regard, with the help of teachers, staff and students relief materials were collected for the flood victims in the shape of medicines, clothes, drinking water, gas cylinders and food items, including rice, ghee, sugar and were delivered to the affectees in a transparent manner to maintain their dignity. Public Health Society of Agricultural University Multan under the supervision of Dr. Umair Waqas gave medicines after diagnosing the disease. Dr. Hafeez ur Rehamn Khera led the livestock health camp for providing veterinary services, vaccine, animal nutrition and strategy to rescue livestock farming community animals from different diseases in flood-affected areas. Finally, the Rover Scouts of University under the leadership of Dr. Umer Ejaz, Dr. Amir Bakhtavar and Dr. Khuram Mubeen distributed ration bags made with the financial support of the university community to the affected families. Dr. Tanvir Ahmad, Dr. Amar Matloob, Dr. Kashif Hussain, Dr. Abid, and Dr. Usman Jamshed also participated in the relief activities. Prof. Dr. Asif Ali said these are unprecedented times as during this year, the destruction of Monsoon rains and floods is much more than the flood of 2010. Millions of our brethren have come under the open sky, where they desperately need our compassion and help, he added. He further added that there is a severe shortage of medicines and food items in the affected areas, which was likely to cause more loss of life, so we all should actively participate in this good work. He said the MNSUAM would use all its resources for this great cause.

**9.14. Agreement of Cooperation with Faizan Global Relief Foundation**

MNSUAM and Faizan Global Relief Foundation signed an Agreement of Cooperation on August 12, 2022. It was agreed upon that both institutions will work together to make Pakistan greener and will strive for afforestation. Dr. Tanvir Ahmed, Chairman, Department of Horticulture from MNSUAM and Muhammad Rashid, Supervisor, Multan City on behalf of Faizan Global Relief Foundation affixed their signatures on the agreement.



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On this occasion, Prof. Dr. Shafqat Saeed, Dean, FAES, Dr. Mohkum Hammad, Director, External Linkages, Dr. Kashif Razaqq, Dr. Gulzar Akhtar, Dr. Bilal Ahmed, Muhammad Usman, Ms. Syed Anam Masood Bukhari, Ms. Shafa Nayab, and representatives of Faizan Global Relief Foundation were present.

### **9.15. Anti-Dengue Activities**

Last week (22-08-2022 to 27-08-2022) of August 2022 was observed as Dengue week and a series of activities were performed. The activities were organized by Dr. Unsar Naeem-Ullah, Associate Professor, Entomology, Institute of Plant Protection, MNSUAM. On every working day, a comprehensive survey for mosquito larvae was conducted in the whole campus and water from potential breeding sites for Aedes larva, like AC buckets, water coolers, water dispensers, bird pots, leaky taps and pots etc. was poured out. By delivering information about Dengue and mosquitoes to the public, canvass for message dissemination can be expanded manifold. Therefore, MNSUAM distributed pamphlets containing information about dengue fever, symptoms, vector mosquito recognition and its potential breeding sites, to visitors that came for admission and road passers. All roof tops of the university were cleaned by the Directorate of Estate Care of the University. At Jumma prayer, Dr. Unsar Naeem Ullah delivered an awareness talk in the mosque of MNSUAM. He informed the audience about symptoms and cure of Dengue fever, and management practices for controlling the vector. It was followed by an awareness walk and distribution of Dengue pamphlets.

### **9.16. Adapting to Salinity in the Southern Indus Basin: Delegation from Australia and ICBA, Dubai**

A high level delegation from Australia and International Centre for Biosaline Agriculture (ICBA), Dubai, consisting of Prof. Dr. Edward Barrett-Lennard, Dr. Michael Mitchell and Dr. Asad Sarwar Qureshi visited ASSIB Project Bright Spots in Muzaffargarh and Jalalpur Pirwala, Multan. The international team of scientists visited the ongoing research trials on salinity management in crops and orchards under the ASSIB project. The team also met with the fish farming community in Muzaffargarh, and various options were discussed to promote fish and shrimp farming in the area. While taking to the media, Dr. Michael Mitchell said that the best part of the story is that people are coming to the farm of Haji Arif and taking the ideas of his experiments to another farm, and then that farmer receives visitors, and those visitors use interventions at their farm, and it is spreading, so if this continues to happen, then a lot of areas in Pakistan that are affected by salinity can become productive again. This is not about getting rid of salinity but about living with salinity. Dr. Mitchell emphasized that the project is seeking to counter a long tradition of top-down approaches to research and agricultural extension in Pakistan – implementing an approach that relies on the co-generation of knowledge with affected communities about living with salinity. Prof. Dr. Edward Barrett-Lennard added that they are impressed by the quality of research carried out in the challenging time like this. Our team is operating in a multi-disciplinary way, and we are seeing good outcomes on the ground and we are optimistic that we can turn this early success into a long term program and be able to work collaboratively with farmers in the future.



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The visit was in connection with the ASSIB project which aims to develop and investigate adaptation options and strategies with those farming families who are managing and living in salinity affected agricultural landscapes in the southern Indus Basin. In Pakistan, irrigated agriculture adds approximately 15 million tonnes of salt annually to the Indus Basin, with salinity currently affecting over 6.67 million hectares of land across the country. Increased dependence on marginal quality groundwater due to unreliable surface water supplies is accelerating the extent and severity of land salinization. Developing options to improve the productive use of salinity affected lands will improve Pakistan's overall land and water productivity, increase resilience to climate change, and improve the livelihoods of some of the most impoverished farming families. On September 6, 2022, a student's seminar was organized by the Department of Soil and Environmental Sciences at campus, where Dr. Michael Mitchell from the Charles Sturt University, Australia shed light on improving water management using social-ecological systems research, whereas Dr. Edward Barrett-Lennard from Murdoch University, Australia spoke about the salinity management options. Dr. Edward discussed the challenges and opportunities in reclamation and adaptation of saline soils by incorporating the experience of Murray-Darling basin of Australia. Dr. Asad Sarwar Qureshi from ICBA, Dubai delivered a comprehensive talk on smart farming for food and nutritional security in marginal environments. Dr. Tanveer-ul-Haq, Chairman, Department of Soil and Environmental Sciences briefed about the successful experiments in Jalalpur Pirwala and Muzaffargarh. Prof. Dr. Shafqat Saeed, Dean, FAES mentioned the steps taken by the university for saline agriculture. MNSUAM Vice Chancellor, Prof. Dr. Asif Ali (T.I) appreciated the collective efforts of the multidisciplinary team and emphasized on conducting problem solving research in collaboration with the farming community so that they can observe and compare the impacts of the research or interventions developed through research. He added that MNUSAM has worked with many funding agencies but projects funded by ACIAR had revolutionary impacts on the ground. He thanked Australian delegate for visiting MNSUAM. The delegation also visited MNSUAM Labs facilities, hydroponics, and research farms at Multan. The visit ended on September 7, 2022, with a field trip to the progressive mango farm of Mr. Malik Jahanzeb Khan Dharala in Tatay Pur, Multan. The second delegation visited MNSUAM from September 17-21, 2022, comprising Dr. Catherine Allan (Professor – Environment and sociology Charles Sturt University, Australia), Dr. Sandra Heaney Mustafa (Senior Lecturer – Canberra University) interacted with community at the bright spots of the project.

### 9.17. Creating Hope through Action

An awareness seminar was organized on September 9, 2022 at the eve of International Day for Suicide Prevention by the Hostel Management, Young Students Peace Society, and Public Health Society. Dr Mohsin Abbas Psychologist, Dr Rizwan Mushtaq, Neuro Psychiatrist and Mohammad Zahid Zahoor, Director Roshni Foundation participated as keynote speakers. "Creating hope through action" is the triennial theme for the World Suicide Prevention Day from 2021-2023. This theme is a reminder that there is an alternative to suicide and aims to inspire confidence and enlighten-all of us. During the event, it was discussed that there is increasing trend of suicide in the society and its responsible factors and drivers are increasing day by day.



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The speakers stressed the need to create hope among people and encourage them to celebrate successes. Suicide is not a solution to any problem, the speakers emphasized. Dr. Rizwan reiterated his personal experiences on this occasion and emphasized that we must encourage those people who consider suicide as a solution to escape from the hardships of life. Vice Chancellor, Professor Dr. Asif Ali (T.I), while talking to the seminar urged the students to find more reasons and opportunities to be happy. We should learn to celebrate successes as well as failures because every failure is a prelude to success. Failures also lead to success, as one should learn from failures and develop further strategies to learn from their mistakes. We will have to understand reality, as it could help us make wise decisions, he further added. Later on, in the Friday sermon, societal and Islamic aspects of the suicide were discussed while reviewing this social aspect. The prevention of these factors will have to be adopted in the social revolution in Pakistan. The Vice Chancellor appreciated the organizers particularly Prof. Dr. Muhammad Ashfaq, Principal Officer Students Affairs, Hall Warden Dr. Mirza Abdul Qayyum, Superintendent Madam Plosha Khanum, Assistant Superintendents, Dr. Shazia, Sidra Jameel and Ms. Misbah Sagheer, and Focal person, Public Health, Dr. Umair Waqas. On this occasion Prof. Dr. Shafqat Saeed, Dr. Unsar Naeemullah, Dr. Usman Jamshed, Dr. Umair, Dr. Farrukh Baig, Dr. Asif Farooq, Engineer Farrukh, Dr. Mirza Abid Mehmood and a large number of students were present.

### 9.18. Workshop on Stress Management at the World Peace Day

A stress management workshop was organized on September 21, 2022 at the MNS University of Agriculture under the umbrella of Young Students Peace Society, Public Health Society and Directorate of Student Affairs. The guest speaker Dr Imran Shareef is the senior psychologist at DHQ Hospital Muzaffargarh, and a well-known motivational speaker as well. The guest speaker made it very clear that depression, anxiety, stress, distorted body image, misery, loss or any major change in our lives may affect our mental and emotional health. Most of the time it is very hard of us to determine if we are facing depression, anxiety or any other emotional and mental health issue. Furthermore, he elucidated to the audience that we all feel a little work stress. However, if this stress is prolonged over a period of time it may lead to detrimental health problems. The main objective of the workshop was to make students aware of the importance of their mental and emotional health. Disturbance in emotional health might cause high blood pressure, ulcers, chest pain and various physical symptoms. The seminar provided students with an opportunity to look into their own strengths and use them to excel in life. At the end, souvenir was presented to Dr Imran. Dr Umair Waqas, Lecturer, Public Health discussed how to combat stress through self-management and what are the key dynamics of self-management for catering stress. At the event, Professor Dr. Shafqat Saeed, Dr. Abdul Razzaq, Dr. Mohsin Khan, Ms. Palosha Khanum and Ms. Misbah Sagheer were also present along with a large number of students and the rest of the faculty members.



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### 9.19. MNSUAM and Environment Protection Department Launched Plantation Campaign

On September 18, 2022, Department of Soil and Environmental Sciences, MNSUAM launched a plantation campaign in collaboration with Environment Protection Department (EPD), Multan in which Deputy Director EPD Multan Mr. Misbah-ul-Haq Lodhi was the chief guest. Handing over 1500 plants of neem and other species to the Chairman of Department of Soil and Environment Prof. Dr. Tanveer-ul-Haq, he said that we are very happy that we are contributing to the green and clean Pakistan vision of MNSUAM. He especially thanked the Vice-Chancellor of MNSUAM, Prof. Dr. Asif Ali (T.I). He added that the environment-friendly efforts of MNSUAM are being appreciated not only in Pakistan but also all over the world. This is the reason that the MNSUAM has been ranked first in Pakistan and 250<sup>th</sup> worldwide in the UI Green Matrix as sustainable university. On this occasion, Prof. Dr. Tanveer-ul-Haq thanked the EPD and said that MNSUAM always strive to protect the environment and even now, wastewater is treated by methods like constructed wetlands and bio-filtration. Projects are underway for composting organic waste and smog-causing crop residues, and clean ground water and improve air quality. Similarly, the Department of Soil and Environmental Sciences has conducted plantation drives not only in spring but also in monsoon and now in autumn. A large number of faculty members and students of the Department participated and planted saplings on this occasion. Finally, prayers were offered for the prosperity and security of Pakistan.

### 9.20. Principles for Ethical Research with Humans

An international seminar on Principles for ethical research with humans was organized by the Department of Agribusiness and Applied Economics on September 21, 2022. It was chaired by Vice Chancellor, Prof. Dr. Asif Ali (T.I). The international guest speaker was Professor Dr. Catherine Allan from Charles Sturt University, Australia. Speaking on this occasion, she said that ethical values are very important in research. Only transparent research can give correct results. She explained that all the research involving human participants should be conducted in accordance with four fundamental ethical principles: respect for persons; beneficence; justice; and respect for communities. The Nuremberg Code of 1947 was the first international code of research ethics. Another early code was the Helsinki Declaration, adopted by the World Medical Association at its meeting in Helsinki, Finland in 1964, she added. She urged that the education in research ethics is essential for all scientists and researchers as it equips them to assess, interpret and apply ethical principles in different situations. Prof. Dr. Asif Ali said that ethical values are very important in research, especially where the research involves human beings. He further said that ethical values should be in accordance with the customs, rituals and norms of the society and formal permission should be obtained.



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### 9.21. Plantation Drive

The Department of Soil and Environmental Sciences, MNSUAM in collaboration with Coca Cola Beverages, District Government and Environment Protection Department Multan initiated a plantation drive on September 22, 2022 in which Commissioner Multan, Engineer Aamir Khattak was the chief guest. On this occasion, he met the MNSUAM Vice Chancellor, Prof. Dr. Asif Ali (T.I) and the higher management of the university and appreciated the environment-friendly efforts of the university. On this occasion, he formally started the plantation campaign by planting trees. While addressing the seminar, he said that plantation campaigns are going on everywhere, but the responsibility with which the MNSUAM has taken care of plants and their maintenance is remarkable and admirable. On the occasion, he thanked all the stakeholders, especially MNSUAM, Coca-Cola, Environment Protection Department Multan, and the students of the university. On this occasion, Vice Chancellor Professor Dr. Asif Ali while appreciating the efforts of the Department of Soil and Environmental Sciences said that the Department has truly taken responsibility for the environmental stewardship. Prof. Dr. Asif Ali said that MNSUAM is the number one environmentally sustainable University in Pakistan which is an honor. The University's job is not only to make societies aware of climate change, but also to contribute to the country's development by adopting modern research. The Department of Soil and Environmental Sciences is actively organizing various events and providing guidance on the environmental issues. On this occasion, faculty members of the Department of Soil and Environmental Sciences, Mr. Muhammad Nasir from Coca Cola, Muhammad Hameer, Dr. Saima from Women University and a large number of students participated and planted saplings.

### 9.22. Energy Conservation and Plantation Drive under Green Youth Movement Society

Youth is the country's future driving force and has a significant share of Pakistan's population. Training the youth, making them passionate and enthusiastic about prosperous and sustainable Pakistan is the responsibility of the Government and Higher Education Institutes. On the Vision of the Prime Minister, the MNSUAM has established a Green Youth Movement (GYM) society to bring positive energy and encouragement to the country's future workforce. The inaugural ceremony of the GYM was held on September 22, 2022, and Prof. Dr. Asif Ali (T.I.) inaugurated the GYM. He said it's our responsibility to challenge and engage our youth in the right direction. This kind of society plays a vital role in character building, decreasing stress, and engaging students in nation-building. He further added that the MNSUAM always provides diverse platforms to engage students according to their strengths and passion. Dr. Shazia Hanif briefed that GYM has five thematic leads, and MNSUAM has chosen Energy Conservation Drive and Plantation Drive. This society has a highly motivated team, and students govern it under the guidance of faculty. Today the GYM has organized two activities under energy conservation and plantation drive. Under energy conservation activity, Dr. Shazia Hanif, Energy Leader, conducted two activities: utilization of solar thermal and solar PV in agriculture. She briefed that the energy conservation and utilization of clean and green energy is the UN's 7th sustainable development goal. Moreover, we will train our students regarding energy audit, building energy conservation, load calculation, and designing and installing solar systems.



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These master trainers will conduct awareness seminars in the community. Dr. Muqarrab Ali led the plantation drive, and the students did the plantation. The students took a keen interest in performing activities.

### 9.23. SINO-PAK Joint Research Laboratory Inauguration

MNS-University of Agriculture Multan is working on cotton research in collaboration with Chinese experts. Development of SINO-PAK Joint Research Laboratory is one of these tremendous efforts. SINO-PAK Joint Research Laboratory was established at MNSUAM in collaboration with Biotechnology Research Institute, Chinese Academy of Agricultural Sciences and Jinghua Seed Industry, China. In this laboratory, research work on cotton, wheat, and soybean is in progress. Beijing Research Institute, China is always at the forefront in this cooperation. A large-scale project is being worked on with them. In this project, validation of crop models and use of climatic data for various regions and farmers of Pakistan and China will be worked on. Jinghua Seed Industry funded a research project entitled “Development and Identification of Cotton Materials for CLCuD Resistance Cotton Breeding”. The laboratory was inaugurated by Prof. Dr. Asif Ali, on behalf of Prof. Dr. Khalid Mahmood Khan, President, Pakistan Academy of Science, Islamabad. On September 23, 2022, Jinghua Company has signed a MoU with MNSUAM and BRI, CAAS, China. The focal persons for this MoU are Dr. Zulqurnain Khan from MNSUAM, Mr. Li Huaxin from Junghua Seeds and Prof. Zhang Rui from BRIL, CAAS, China. The vision is to develop virus free cotton varieties and improved seeds for other crops. Representatives of Jinghua Seed Company and members of MNSUAM along with Vice Chancellor, Prof. Dr. Asif Ali (T.I) participated in the inauguration ceremony. The Project Coordinator SINO-PAK Joint Research Program, Dr. Zulqurnain Khan, updated that under this MoU, a cotton breeding station will be established at MNSUAM by Jinghua Seed Company, China. Dr. Umar Akram, Dr. Shoaib ur Rehman and Mr. Furqan Ahmed are working as team members in the project. On this event, Director, IPBB, Prof. Dr. Hammad Nadeem Tahir said that research is the first and foremost priority of this institute Such laboratories are very important for Master and PhD students where they can work on innovations and China has always been supportive in this regard.

### 9.24. Prospects of Kitchen Gardening

MNSUAM in collaboration with Department of Agriculture Extension, Jalalpur Pirwala organized a one day awareness seminar on "Prospects of Kitchen Gardening " on September 27, 2022 at the Govt. Associate College Jalalpur Pirwala for 100 participants. The event focused on prospects of kitchen gardening and its promotion through vegetable nursery and seed kits, vegetable nursery supply system, nutrient management for a kitchen garden and significance of "grow healthy, eat healthy". This seminar enabled the students and college staff to understand the benefits of kitchen gardening and techniques of vegetable production at household level. Later on healthy seedlings of winter vegetables along with seed kits of winter vegetables were distributed among staff and students for the promotion of kitchen gardening. Prof. Abdul Shakoor Shakir, Principal, Govt. Associate Collage, Jalalpur Pirwala appreciated the efforts of MNSUAM for promotion of clean vegetable production at household level.



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### 9.25. MNSUAM Joins Hands with BankIslami for Bike Financing

An Agreement of Cooperation signing ceremony was held between MNSUAM and BankIslami Pvt. Ltd. on September 1, 2022. Under the umbrella of this agreement, employees of the university will be able to get a Honda Atlas motorcycle on easy installments under Islamic banking. Prof. Dr. Asif Ali (T.I), Vice Chancellor on behalf of MNSUAM and Muhammad Shoaib Rizwani (Divisional General Manager) on behalf of BankIslami signed the Agreement of Cooperation. On this occasion, Professor Dr. Asif Ali said that all the resources are being utilized for the welfare of the employees of the university. He further said that the motorcycle given in easy installments under the Islamic Bank will bring convenience to the employees. Muhammad Shoaib Rizwani informed that through bike financing, employees of MNSUAM, be it male or female, can solve their transportation and mobility issue and can purchase bikes or scooty on very affordable monthly installments under shariah compliant financing scheme of BankIslami. On this occasion, Jawad Rahman (Corporate Head Multan) from BankIslami, while Kashif Ali Khan (Regional Manager) from Honda Atlas, Muhammad Rafiq Farooqi (Treasurer), Muhammad Asif Nawaz (Additional Treasurer), Dr. Mohkum Hammad, Major Safdar Hussain, Mirza Abdul Qayyum, Azim Afzal and Rana Ali Zia from Agriculture University Multan were present.

### 9.26. Flood Rehabilitation Camp and Allied Activities

MNS Agricultural University organized a weekly flood rehabilitation camp in the flood affected areas of Dera Ghazi Khan. In the second phase, work is being done to restore agriculture in the flood-affected areas. Full guidance is being provided to the flood-affected farmers along with vegetable and crop seeds. Vegetable seeds and saplings were also given for kitchen gardening. A large number of women and children affected by the epidemic were prescribed treatment and received free medicines at the public health camp. Most of the people who came to the camp were suffering from skin diseases and diarrhea, especially the children. Livestock Medical Camp was also organized by the Veterinary Hospital of MNSUAM to tackle flood-spread small animal fever, diarrhea, flatulence, wound worms, acidosis, ringworm, allergy, indigestion and internal worms in large animals. Treatment was provided and free medicines were distributed. The administrative affairs of the camp were handled by Dr. Tanveer Ahmad, Dr. Usman Jamshed, Dr. Ali Haider, Dr. Umair Waqas, Muhammad Ishtiaq, Dr. Umair Sultan, Dr. Umar Ejaz and the university scouts.

### 9.27. Seminar on Sustainable Availability of Healthier Food /Diet in Current Climate Change Context

Department of Food Science and Technology, in collaboration with GAIN organized a seminar on "Sustainable Supply of Food under Changing Climatic Conditions" on the eve of DICE-AFS 2022. The Chief Guest, Mr. Syed Hussain Jahania Gardezi said that sustainable food production for ever increasing population is a need of the time. He said the role of agricultural scientists is very important in this regard. The speakers including Ms. Farrah Naz, Choudhary Faiz Rasool, Prof. Dr. Mubashir Mehdi, Dr. Muhammad Abdul Saboor, Engr. Mahmood Riaz, Mr. Munawar Husain, Prof. Dr. Umair Arshad, Dr. Rao Wali Muhammad, Mubarak Ali Sarwar, Secretary Agriculture South Punjab, and Prof. Dr. Shafqat Saeed spoke



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about the sustainable production and supply chain of food commodities under changing climatic conditions. Speakers stressed on the adoption and promotion of production and dietary diversity to cope with climate change conditions. A roadmap to a healthy & sustainable food production and supply chain system a whole chain approach should be followed, they concluded.

### 9.28. Seminar on the Eve of World Heart Day

Public Health Society in collaboration with the Faculty of Veterinary and Animal Sciences, Department of Food Sciences and ORIC, MNSUAM organized a one day seminar on world heart day on October 3, 2022 to highlight the importance of prevention to reduce the burden of cardio-vascular diseases (CVDs). Prof. Dr. Mubashir Mehdi and Prof Dr. Junaid Ali Khan were the chief guests. Dr. Arif Malik and Dr. Muhammad Umair Waqas were the keynote speakers of this event. CVDs are the major cause of mortality globally, contributing more than 20 million deaths annually. The seminar also shed light on the importance of early diagnosis, primary prevention and surveillance to counter the morbidity of CVDs. Dr. Umair Waqas also mentioned that lifestyle modification is an important tool to avoid the onset of CVDs. Dr. Arif Malik mentioned different types of CVDs and how the early diagnosis improves the prognosis of CVDs. Prof Dr. Mubashir Mehdi and Prof Dr. Junaid Ali Khan appreciated the effort of the Public Health Society for highlighting the important issue that is affecting the global population. Souvenirs and Certificates were distributed at the end of the seminar.

### 9.29. Seminar on the Eve of World Teacher's Day

A seminar on "World Teacher's Day" was held on October 4 2022, under the auspices of the Department of Public Relations and the Directorate of Student Affairs. The seminar was presided over by the Dean, FAES, Prof. Dr. Shafqat Saeed; while, the guest speaker was Mufti Liaqat Ali Ameen Mustfai. Prof. Shafqat Saeed appreciated the students' gesture of honoring their teachers. He expressed that such initiatives of students' engagement will definitely send a positive message to the outside community in line with the vision of the University. Teachers are also guides who play an important role in transforming students into responsible citizens. They serve selflessly and help us reach our destiny. The contribution of teachers towards nation building can never be undermined. Parents give birth to a child whereas teachers shape their life and character and make their future bright. Through their continuous efforts, teachers let us know the importance of education in our life. It is the job of the teachers to bring out the hidden talents in the students. The professional skills of teachers will be improved through their capacity-building so that students could be given quality education. Mufti Liaqat Ali Ameen acknowledged that no development is possible without teachers and I wish that every teacher should be a star teacher. He added that the Holy Prophet Hazrat Muhammad (Peace Be Upon Him) was the greatest teacher in the whole world. There is no such example of a person who changed the lives of people by guiding them to the right path.



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### 9.30. Poster Competition held to Mark World Cotton Day

World Cotton Day was observed at the MNSUAM on October 07, 2022. In this regard, a poster competition among postgraduate students was held to raise awareness to the farmers and scientific community regarding problems related to cotton crop and their possible research solutions. The students presented their research work in the form of informative posters. Mr. Saqib Ali Ateel, Secretary Agriculture, South Punjab graced the event. He visited the posters and appreciated the students for valuable work on hot issues pertaining to cotton crop. Around 75 posters were presented and each student was given a five-minute time slot to present his/her poster in front of the audience followed by a brief question-answer session. He said that with the use of botanical sprays, PB ropes, and insect traps, there has been a significant reduction in chemical spraying on crops. He advocated the effectiveness of IPM and encouraged the farmers to adopt this method.

### 9.31. World Egg Day Celebrated at MNSUAM

World Egg Day was observed on October 8, 2022 by the Faculty of Veterinary and Animal Sciences, MNSUAM. World Egg Day is celebrated to make people aware of the nutrients present in eggs and inform them about the benefits of its consumption. Prof. Dr. Asif Ali (T.I) said that eggs must be considered as an essential part of our dietary intake. He said that eggs are a high-value food and it also decreases the risk of many diseases. Egg consumption can help against malnutrition which is a global problem. He appreciated the organizers for such a wonderful event and congratulated Prof. Dr. Asif Raza and his team. Commendable stalls were set up by the students adorned by egg shell models, egg dishes and other value added products. The event was made colorful by vivacious and enthusiastic participation of students.

### 9.32. Seminar on the Impacts of Social Media

An awareness seminar was organized by the Office of Senior Tutor and Hall Warden Office on October 11, 2022. Mr. Raja Ziaul Haq, CEO Youth Club was the keynote speaker. The event was organized by Young Students Peace Society to make students aware of the pros and cons of social media, social responsibility. Addressing the audience, Raja Zia-ul-Haq said that there is no doubt that social media has fundamentally transformed the world into a global village. Although social media has made it easier for people to connect, yet it can also cause negative effects on mental health and overall well-being. People who avoid social media can spend more time browsing the internet, working, cleaning and doing further productive jobs. Raja Zia concluded his talk by saying that while spending time on social media, make sure what impact it has on your world and hereafter. Hall Warden, Dr. Mirza Abdul Qayyum while talking to the students said that social media has rapidly changed our time spending, way of thinking and political affairs. However, there is a need to consider the nitty gritty of using social media. Considering social media as a social responsibility, it should be used on the basis of facts and truth, the harms of its excessive use can be avoided in any case. Dr. Usman Jamshaid, Senior Tutor, Dr. Nighat Raza, Dr. Shehbaz, and a large number of students were present on this occasion.



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### 9.33. Breast Cancer Month

Public Health Society, MNS-UAM observed breast cancer month in October as directed by World Health Organization (WHO) to highlight the importance of early screening and diagnosis of breast cancer. Breast cancer is predominantly a female gender disease; however, it also affects the males. It is also the second leading cause of death among women. Public health society created awareness among the students to counter this disease of terminal nature. The society has conducted the breast cancer-based charts competition. More than 200 handmade charts were received from the students. The winners of the competition were presented with certificates and cash prizes. Moreover, the pink cake cutting ceremony was also conducted at the University. Pink is a colour of hope and has been assigned to the Breast cancer to encourage the hope against this disease. The pink colour depicts that the human race is together in a fight against this terminal disease and hopeful to win the war through early screening, behavioural modification and addressing the risk factors. The society also distributed the pink ribbons as a sign of hope. Human pink ribbon, pink tree and pink wall were also created per the guidelines of WHO, Pakistan to the society. Lastly, the Public Health Society conducted the seminar at the University to create awareness among the university students and staff to highlight the important constructs and concepts of this ailment. The well-known oncologists from Multan were invited to the seminar who presented their work on breast cancer. The whole October month was dedicated to the breast cancer awareness activities by the Public Health Society, MNSUAM.

### 9.34. MNSUAM Celebrated World Food Day

World Food Day is an international day celebrated every year worldwide on October 16 to commemorate the founding of the United Nations Food and Agriculture Organization in 1945. World Food Day 2022 was organized by the Department of Food Science and Technology on the theme, “*Safe food today for a healthy tomorrow -Climate Change Threats to Food Security*” to promote global awareness and action for those who suffer from hunger and to highlight the need to ensure healthy diets for all. The Vice Chancellor, Prof. Dr. Asif Ali (T.I) presided over the ceremony. The purpose of observing the day was to increase awareness of the need to alleviate hunger from the world. While addressing the participants, Prof. Dr. Asif Ali elucidated the different components of the theme for the celebration, noting that the contribution to change lies with people. He encouraged the participants to be actively involved in shaping the food systems since the way food is produced, cooked and preserved are integral parts of how the agricultural food systems work. He laminated that we have fallen prey to different diseases because of unhealthy and imbalanced diets. We should consume a variety of food instead of a monotonous diet. Natural food is always a source of a physically strong body and many diseases have emerged due to unnatural and imbalanced diets. He further mentioned that we have left our traditional diets like gram, corn-flour bread, millet etc. which were full of energy and healthy nutrients. He urged that we must revive our traditional foods and avoid processed food to remain healthy and active. He also said that food diversity is essential for mitigating the issue of malnutrition. Additional Secretary Agriculture, Mr. Imtiaz Ahmad Warraich educated the participants on the importance of balanced nutrition and advised them to reduce the uptake of processed foods. He announced an alarming situation regarding an increase in diabetic patients in recent years.



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He also informed the audience about the importance of different food ingredients, their nutritive value and effects on the human body. Muhammad Umair Hanif, DG Punjab Food Authority said that 2.5 billion tons of food is wasted in the world every year adding that every person in the world has the basic right to be provided with food according to his/her choice. He emphasized that people must avoid junk food; particularly children should be encouraged to eat more vegetables and fruits instead of artificially processed edibles. Mr. Ehtisham ul Haq informed the participants about the importance of a healthy and balanced diet. He further said that we are professionally and morally bound to avoid wastage of food and it is our duty to preserve additional and left-over food technically and to supply it to poor and deserving people. He urged that such activities should be included in the curriculum for the students to better understand the importance of a balanced diet. Mr. Saif ur Rehman said that to stop wastage of fruits and vegetables, food processing industry should play its due part by developing value added products. Dr. Umar Farooq (Chairman, FS&T) said that collective efforts are desired to fight the challenges of the hunger in the society. Participants were offered free testing of milk, spices and turmeric samples by Punjab Food Authority. A large number of students and faculty members were also present at the event.

### 9.35. Qirat and Naat Club Organized Mehfil-E-Milad

MNSUAM organized a "Mehfil-e-Milad" under the auspices of Qirat and Naat Club of the Varsity with religious zeal and passion in connection with the month of Rabi-ul-Awal which marks the birthday of Holy Prophet Hazrat Muhammad (PBUH). Students, faculty members and administrative staff from various Departments of the University participated in the event with great reverence and enthusiasm to pay tribute to the Holy Prophet (PBUH). They enlightened the audience on calmness and peace, highlighting various aspects of the life and teachings of the Holy Prophet (PBUH). The participants recited Naat in their impressive and soulful voices. Melodious voices of the students held the audience spellbound and made the Mehfil more spiritual and a source of enlightenment. While addressing the audience, Prof. Dr. Asif Ali urged the students to follow the teachings of Prophet Muhammad (Peace Be Upon Him) for true success. Dr. Nadeem Ahmed, Incharge of Qirat and Naat Club offered special prayers for unity of Muslim Ummah, peace and stability of Pakistan, and independence of Jammu and Kashmir.

### 9.36. Crop Type Mapping using Satellite Remote Sensing

International Seminar on "Crop Type Mapping using Satellite Remote Sensing" organized by Faculty of Veterinary and Animal Sciences, MNS University Multan, in collaboration with TRANSECT/ University for Sustainable Development, Eberswalde, Germany, on October 18, 2022. Dr. Christoph Raab, Senior Scientist, from Eberswalde University for Sustainable Development, Eberswalde, Germany, was the keynote speaker of this Seminar. Speaker added information about Remote Sensing – Precision Agriculture, and the overall accuracy matrix in agriculture, deforestation, crop type mapping using satellite remote sensing. Prof. Dr. Shafqat Saeed, Dean Faculty of Agriculture & Environmental Sciences Chaired the occasion.



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The objective of the Seminar was to integrate Geoinformation systems (GIS) and remote sensing in the field of agricultural, to advocate the recent advances in the emerging field of GIS and remote sensing which will help for epidemiological studies of any disease outbreak, plant health, and vitality in agriculture, and livestock. The event was concluded with the words of Principal Officer ORIC/ Chairman, Department of Pharmacology and Physiology, Prof. Dr. Junaid Ali Khan, who encouraged the faculty and students to understand the exciting field of GIS and remote sensing.

### 9.37. World Polio Day

The Office of the Senior Tutor, MNSUAM, Rotaract Club, BZU and Rotary Club, Multan Cantt jointly organized a ceremony to mark 'World Polio Day' on October 24, 2022. Mr. Salman Mubarak, CEO Fazl-ur-Rehman Hospital was the Chief Guest. The aim of celebrating this day was to raise awareness among youth regarding anti-polio campaign so that they may educate people to keep away from this dangerous disease. Mr. Salman briefed that polio is a critical disease for present and future generations and it needs to be uprooted. He urged the youth to play an active role in eliminating this crippling disease and asked them to take part in all activities to create awareness and vaccination. He disclosed that his hospital is organizing awareness seminars at different places to contribute to the creation of a healthy society. Members from Rotary Club while addressing the seminar advocated that timely vaccination can save our generations from this deadly disease. Dr. Usman Jamshaid, Senior Tutor elaborated that Pakistan is one of those countries where polio has been controlled to a great extent in Pakistan and by the grace of Almighty Allah, the disease will be eradicated soon. We need to work together with utmost dedication to prevent our coming generations from disability. To mark the event, a polio walk was also organized in which a large number of students and faculty participated.

### 9.38. Seminar on the Effects of Fake News and Misinformation on Youth

On October 31, 2022, Young Students Peace Society organized a seminar on "Effects of fake news and misinformation on youth". It is essential to understand the impacts of fake news on our society. The problems like false interpretation and fake news are very misleading and sometimes these lead to drastic effects. Famous Journalists Mr. Razi Uddin Razi and Mr. Kashif Rizwani joined the talk as Guest Speakers. They discussed the key drivers and impacts of the fake news and disinformation on the society and especially on our youth. Both speakers highlighted the role of the media, its responsibility to assess and evaluate the health of news. People depend on the media for vital information enabling them to make informed decisions, and it is the responsibility of the media to ensure transparency in reporting. The rapid spread of Fake News and disinformation online can have profound consequences. Examples include Distrust in the media, undermining the democratic process, platforms for harmful conspiracy theories and hate speech. Stories that are not true and that intentionally mislead readers have caused growing mistrust among people. Online disinformation has created or amplified challenges regarding access to credible information, political polarization, manipulation of social media conversations, trust in the news media, health-related information, and hate speech. They concluded that our responsibility is not to spread fake news and misinformation that may affect the lives of many.



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While talking, Hall Warden, Dr. Mirza Abdul Qayyum said that we have seen many examples of fake news of many well-known artists and players. He further added that fake news made Iblees as Satan and brought man from heaven to earth. While considering the youth, the importance of fake news is even more critical. We as a teacher should critically investigate every post coming from social media. Islam empowers us to inquire about every piece of information before spreading it. Dr. Unsar Naeem-Ullah thanked the guest speakers and Accountability Lab as partner of the event.

### **9.39. Change Making Competition in Collaboration with YES Network, and Punjab Higher Education Commission**

The inaugural session of the change-making competition among students of MNSUAM was organized on October 26, 2022. The event was organized in collaboration with Youth Engagement Services (YES) Network Pakistan and Punjab Higher Education Commission to empower young entrepreneurial minds. The purpose of the event was to discuss issues and highlight possibilities for students to concurrently improve social and economic aspects of society while continuing their academic pursuits. Prof. Dr. Asif Ali said that the incubation of students' raw business ideas for change-making is part of the university's vision and we are utilizing maximum resources to make this happen. He further added that entrepreneurial training must be part of students' learning curriculum along with university formal education. Mr. Ali Raza Khan, CEO, YES Network, talked about how students can express their innerness to bring change in society and how young people can convert their raw ideas to practical businesses with a minimum investment of resources. He distributed the seed money (2000 Rs. / team) among 53 student teams of the university to generate social and economic impact on society through their ideas. At the end of the session, Prof. Dr. Mubashir Mehdi thanked the participants and distributed the souvenirs among the guests. He closed with the aim that students will effectively use the seed money to create an impact.

### **9.40. Public Forum Calls Upon World to Write Off Pakistan's Debts after Disastrous Floods**

A public forum called upon the world to cancel Pakistan's debts owing to rain-induced ruinous floods the country underwent due to climatic changes recently. It was held under the theme of "A call for climate Action" to foster an open dialogue with civil society members, academicians, journalists, district government, and NGOs, allowing them to share their views and proposals ahead of the climate action and debt swap for nature. The event was jointly organized by Doaba Foundation and Agronomy Department on October 27, 2022. Indus Consortium and Grow Green Network member and Manager Programs Doaba Foundation Mr. Javed Iqbal proposed that the multilateral development banks and finance institutions should cancel the external debt of Pakistan. Ms. Shumaila Roohi, UNOCHA representative of Punjab said that floods had increased the transmission of water- and vector-borne diseases in the country, especially in the flooded areas, adding "this is high time that all the developed countries should come forward and join hands with Pakistan to tackle the situation."

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Representative of the Disability Inclusive Community Development Persons organization Muhammad Hussain said that the share of Pakistan is less than one percent in GHG emissions and carbon footprints, but it falls into the top 10 vulnerable countries to climate impacts across the world. Vice Chancellor, Prof. Dr. Asif Ali (T.I) stressed that "we are facing the unexpectedly high monsoon rainfalls and recurring droughts" under climate change scenario. He laminated that Pakistan's food security is among the non-traditional security threats. He underlined the need to act collectively and contribute personally. Mr. Ameer Hussain, Additional Deputy Commissioner Revenue Multan, said millions of people across the country are at risk or are already facing energy and water crises, as well as food insecurity, as a result of lower-than-expected agricultural production owing to climate shocks, increased insecurity, and higher food costs. MNSUA Assistant Professor, Dr. Khuram Mubeen underscored the need for the development of research systems to manage hill torrent rainwater efficiently, improve agricultural and livestock productivity and reduce the impact of land erosion and sediment load on a sustainable basis. He further urged to develop an early warning and prediction system in hill-torrent-affected areas across the country to reduce the rain floods adversaries in the future. Later, the participants signed a charter of demand and appealed for climate justice by debt swap for nature, spending the funds on rehabilitating flood-affected people.

**9.41. Agri. Student Engagement in Wheat Campaign**

The Final Year Students of the MNS University of Agriculture, Multan, are participating in the Wheat Productivity Enhancement Campaign to guide the farming community about modern trends and experts' recommendations of Punjab Government to increase the per acre yield of the wheat crop. The students of the University's Faculty of Agriculture and Environmental Sciences will be sent on a three-week visit to the villages for this purpose. The students will travel with the Punjab Agriculture Extension Department officials and staff during the provincial government's wheat campaign in order to inform farmers about new research and technology for increasing the per acre production of wheat. A training workshop will be organized to inform them about modern wheat production technology. Addressing the students, Vice Chancellor, Prof. Dr. Asif Ali (T.I), said that the campaign to grow more wheat should be carried out with hard work and devotion as it is a service to the country and the nation. The students were motivated to undertake the Wheat Campaign and embrace the challenge of food security to contribute to the national cause positively.

**9.42. Inauguration of Wheat Sowing and Agri. Student Engagement in Wheat Campaign**

Punjab Agriculture Minister Syed Hussain Jahanian Gardezi inaugurated the sowing of wheat campaign along with Vice Chancellor Professor Dr. Asif Ali (T.I) and Director General Agriculture Extension, Punjab Dr. Anjum Ali Butter on November 1, 2022. Agri. Experts, farmers, academic staff and large number of students attended the event. Speaking on this occasion, Syed Hussain Jahanian Gardzi said that the government is taking all possible measures to make agriculture profitable, ensure food security and increase per acre production that will help alleviate poverty at the grassroots level and open new avenues for economic growth. He said the increase in wheat production is the need of the hour which can be increased through hard work, attention, and modern production technology.



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He appreciated the efforts of the University in wheat cultivation campaign. The Final Year Students of the MNS University of Agriculture, Multan participated in the Wheat Campaign to guide the farming community about modern trends and experts' recommendations of the Punjab Government to increase the per acre yield of the wheat crop. The students were sent on a three week visit to different villages for this purpose. Punjab Agriculture Extension Department officials and staff coordinated with the university for logistic arrangements during the campaign. A training workshop was also organized in which students were updated about the modern wheat production technology of Govt. of Punjab. Addressing the students, Vice Chancellor, Prof. Dr. Asif Ali (T.I.), said that the campaign to grow more wheat should be carried out with hard work and courage as it is a service to the country and the nation. The students were motivated to undertake the Wheat Campaign and embrace the challenge of food security to contribute to the national cause positively.

### 9.43. Long-Term Weather Forecast and Management Interventions for Wheat Crop

A webinar “Long-Term Weather Forecast and Management Interventions for Wheat Crop” was organized by the Department of Agronomy, MNSUAM with the collaboration of the Pakistan Meteorological Department Islamabad on November 8, 2022. MNSUAM Vice Chancellor, Prof. Dr. Asif Ali (T.I) said that long-term weather forecasts and agro-advisory are crucial for better crop management, particularly wheat. Last year, wheat production was reduced by 1.1 Million Tons, possibly due to heatwaves in March and April 2022, and the country is still importing wheat to fulfill the requirements. Lower wheat production is a serious threat to food security and changing climate but particularly the increasing frequency of climate extremes are real threats and challenges to the sustainable production of the agriculture sector. Early planning and management according to weather forecasts is crucial to get a better yield and production. Director, Forecasting Division, Dr. Zaheer Ahmad Babar presented the long-term weather forecast from November, 2022 to January 2023 and mentioned that the multi-climate model ensemble predicts normal to below normal rainfall while the temperature is also expected to remain near normal during this winter till the end of January 2023. Dr. M. Habib-ur-Rahman emphasized the application and use of climate data from a multi-climate model ensemble approach to develop an accurate and reliable weather forecast for long-term periods. Dr. Abdul Ghaffar, Chairman, Department of Agronomy, MNSUAM, presented the result of modern technologies developed and tested the previous year for better sowing, irrigation and fertilizer management under climate extremes. Dr. M. Arslan, Assistant Professor, Institute of Plant Protection presented the modern approaches to control diseases in wheat crop due to changes in climatic conditions. Prof. Dr. Shafqat Saeed, Dean, FAES urged the need for climatic information for climate-smart insect pest management. Prof. Dr. Muhammad Ashfaq also highlighted the findings of a previous project related to climate change and showed that 51% of farmers are using weather information services and information provided by PMD. It was concluded that if climatic conditions remained near normal, then the country would meet the target of wheat production, and it would ensure food security and helpful for farmers' livelihood.



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### 9.44. Wheat Productivity Enhancement Campaign and Wheat Seed Distribution Drive

MNSUAM organized a wheat productivity enhancement campaign and wheat seed distribution drive among flood affected farmers of Basti Mamuri, Dera Ghazi Khan on November 9, 2022. Prof. Dr. Asif Ali (T.I) VC, MNSUAM and Prof. Dr. Kamran VC, Ghazi University graced the event with their presence. Prof. Dr. Asif Ali (T.I) said that farmers are playing a key role in food security of Pakistan. Current floods have devastated the agriculture of Pakistan, particularly in the south region. To facilitate the flood-affected farmers, MNSUAM has made a comprehensive plan and free of cost, quality seed of wheat is being distributed among 200 flood-affected farmers. In addition, agricultural inputs for 145 acres of contract farming in flood-affected regions are also being provided by the MNSUAM through Farms in Arms Project (Industry-academia Project). The experts of MNSUAM are providing consultancy to the farmers voluntarily. He further added that we are blessed that we are working for the welfare and rehabilitation of flood affected farmers and we are committed that we will help to increase the per acre yield of the farmers. During the event, vegetable nursery for kitchen gardening was also distributed among the farmers. Prof. Dr. Kamran, VC, Ghazi University, acknowledged the effort and services of MNSUAM and said that Ghazi University would support MNSUAM in this noble cause. Prof. Dr. Shafqat Saeed, Dean, FAES briefed about the Wheat Campaign and said that students of MNSUAM are working as internee in different districts of South Punjab for the national drive of wheat campaign. The staff of Department of Agriculture extension, DG Khan was also present at the event to provide expert advice to the farmers. The event was attended by Mr. Mehr Abid Ali, Director, Agriculture Extension DG Khan, Mr. Qasim Qureshi, Dr. Tanveer Ahmed, Dr. Mohkum Hammad, Dr. Khuram Mubeen, Dr. Umar Ejaz, Dr. Usman Jamshaid and large number of scouts and volunteer students.

### 9.45. World Diabetes Day

The Public Health Society, MNSUAM organized a seminar and food competition on World Diabetes Day, November 14, 2022. The purpose of the seminar was to create awareness about diabetes and diabetes management among the participants. Through this public awareness event, MNSUAM aims to contribute towards the global objective of highlighting the importance of regular exercise, weight loss and healthy eating habits, not only for controlling diabetes but also its prevention. This event was primarily targeted at those individuals, including children and young adults, who are at high risk of developing this disorder later in life. The Vice Chancellor Prof. Dr. Asif Ali (T.I), highly appreciated the efforts made by the public health society, especially by the convener of society, Dr. Umair Waqas for improving the health and lifestyle of the people. He also told the participants that the key to good health is a good diet and an active lifestyle. The chief guests of the seminar Prof. Dr. Ijaz Ahmad Masood and Dr. Asim, also shared their valuable insight regarding diabetes. The guest speakers highlighted the importance of early detection, lifestyle and behavioral modification for the management of diabetes.



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### 9.46. Farmers Training Workshop to Maximize Wheat Productivity

A Farmers Training Workshop was organized at Jalalpur Pirwala Farm of MNSUAM on November 14, 2022. The purpose of holding this event was to educate the farmers about modern wheat production technology and to encourage them to grow more wheat. The workshop showcased the significance of climate smart stewardship for wheat production and assessed the associated challenges and their pragmatic solutions. The event was presided over by the MNSUAM Vice Chancellor, Prof. Dr. Asif Ali (T.I) and covered informative presentations/lectures by subject experts followed by interactive discussion, Q&A session, and field demonstrations focusing on production scenarios, improved wheat germplasm, wheat pathology, physiology, and quality. Speakers urged that there is an urgent need to increase the production of wheat by three maunds per acre to meet the national demand. To achieve this goal, MNSUAM and Punjab Government are running the wheat campaign in full swing. MNSUAM, in collaboration with different government and private organizations, is organizing events to promote the agriculture sector in the south Punjab. The experts observed that timely sowing, mechanization, good land preparation, use of quality seeds and other inputs, integrated nutrient management and weed control are important to enhance per acre production of wheat. Prof. Dr. Asif Ali while addressing the event said that we have to work together to make crop production successful by adopting modern techniques and embracing innovations. Wheat production needs to be increased to cope with climate change. The government is subsidizing fertilizers and seeds to promote wheat cultivation. Farmers should take advantage of this and cultivate more wheat. He lauded the Agriculture Department and the students of MNSUAM for actively participating in the wheat campaign.

### 9.47. New Approaches in Fruit Breeding

An international webinar entitled "New Approaches in Fruit Breeding" was organized by Department of Horticulture, MNSUAM on November 16, 2022. The webinar focused on breeding of grapes and guava. Prof. Dr. Asif Ali (T.I), VC MNSUAM welcomed the invited speakers and highlighted the importance of fruit breeding in Pakistan. He added that significant work is needed in Pakistan regarding improving fruits through breeding; MNSUAM is striving to fulfill this deficiency. He further told the audience that grapes production started in South Punjab years ago but is now on the verge of declining because of the lack of research in this sector. Dr. Arif Atak from Türkiye explained the latest trends in grapevine breeding and discussed the breeding of grapevine breeding in Türkiye especially under the changing climatic scenario. He explained that with the changing climate and increased population, the demand for grapes is increasing worldwide. Dr. Muhammad Usman from University of Agriculture, Faisalabad informed the house regarding the breeding of guava in Pakistan. He said that guava is a highly nutritious fruit but climate change is adversely affecting its production potential. Dr. Muhammad Abu Bakar from MNSUAM discussed the latest fruit breeding techniques that can result in speed breeding shortening the time span required for the development of new variety. At the end of the webinar, Dr. Tanveer Ahmad, Chairman, Department of Horticulture thanked all the speakers and participants for actively participating in the webinar. He hoped that this activity will result in joint research projects with clear objectives in the near future. The experts from Türkiye, China, India and Afghanistan attended this webinar.



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### 9.48. Seminar on Solar Energy

A seminar on the Utilization of Solar Energy in Agriculture and Hands-on training on the Operation and Maintenance of Solar dryers were organized by the Green Youth Movement Society (GYM) and the Department of Agricultural Engineering on November 18, 2022. Dr. Tanveer Ahmad, Dr. Muqarab Ali, Dr. Shakeel Ahmad, Dr. Shazia Hanif, Engr. Dr. Sarfraz Hashim, Engr. Dr. Mohsin Khan and a large number of students participated in the event. The event created awareness among students regarding the use of solar thermal energy in agriculture and the hands-on practice of using solar desiccant dryers. Engr. Farrukh Ehsan briefed the participants about the applications of solar energy in agriculture worldwide. He elaborated the methods for effective utilization of solar energy. Engr. Shazia Hanif gave an overview of the newly developed Indigenous Solar Desiccant Drying System. She briefed students on the necessity and role of solar drying in the modern world. She emphasized the need for food security and how the modern world in which food scarcity is increasing can be compensated by using modern drying technologies like solar dryers as they are a cheap and practical resource. Mr. Mukhtar Hussain Mujahid, Ms. Yashfeen, and Ms. Areesha delivered hands-on training on the operations and maintenance of the Solar Dryer. Ms. Areesha and Ms. Yashfeen instructed the students on preparing fruit for drying. Meanwhile, Mr. Mukhtar explained the functions and maintenance factors of the Solar Dryer and how the data analysis can be done. Engr. Sarfraz Hashim concluded the event with his kind remarks. He appreciated the effort and determination of the team behind the event. He encouraged the students to be change-makers by providing high-value contributions through their work in the community.

### 9.49. Webinar on Digitalization in Industry and Society

An international webinar on "Digitalization in Industry and Society: An Applied Research Perspective" was organized by the Department of Computer Sciences on November 7, 2022. Dr. Arianit Kurti, who works as an Associate Professor in the Department of Computer Science and Media Technology addressed the participants. He is also the Head of the Department of Informatics at Linnaeus University, Sweden. MNSUAM Vice Chancellor, Prof Dr. Asif Ali (T.I) expressed his views and emphasized on the industrial linkages and urged MNSUAM and Linnaeus University to initiate joint research projects. Dean, Faculty of Social Science and Humanities highlighted the importance of connecting with industry. He introduced the ongoing research projects at the MNSUAM and proposed collaborations with Linnaeus University. Chairman Department of Computer Science offered the vote of thanks. Distinguished faculty members and research students participated in the seminar and gained awareness.

### 9.50. Third International Conference on Smart Plant Protection

Institute of Plant Protection, MNS University of Agriculture organized a two-day International Conference on January 03-04, 2023. The International Conference on Smart Plant Protection provided insight into innovations and advances in Plant Protection, aiming to protect plant resources from the invasion and infestation of plant pathogens, insect pests, and weeds. The conference provided a collection of innovative ideas and recent research undertaken by students, academia and industrialists, world over.



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A pool of thought-provoking opportunities enabled networking and provided opportunities for collaborations and alliances on plant protection; stimulated and facilitated discussions and dialogues between stakeholders like scientists, researchers, and practitioners, including policymakers, business, civil society, and farmers. The conference committee received more than 200 research abstracts out of which 50 presenters presented their research work at the conference. The inaugural session was glorified by the presence of Honorable Chief Guest Dr. Ghulam Muhammad Ali, Chairman Pakistan Agricultural Research Council (PARC). Dr. Faisal Zahoor, Secretary Agriculture graced as Chief Guest in the closing session. The conference was valued by the participation of Keynote Speakers from all technology developed countries. The conference addressing the much-needed areas of research, ended with plenty of appreciation. In the closing remarks, Prof. Dr. Muhammad Ashfaq, the Director of the Institute of Plant Protection, expressed gratitude to the organizing team for successfully hosting this event, benefiting all stakeholders in the agriculture sector. He also presented recommendations for academia researchers and industry professionals. Appreciating the University for its consistency in organizing the smart plant protection conference for the last few years, Dr. Faisal Zahoor, Secretary Agriculture South Punjab ensured that all the recommendations presented in the conference will be converted into future research projects. The recommendations of the conference will be presented in local language as Science for Farmers in the coming days.

### 9.51. Workshop on entrepreneurial potential & entrepreneurial mind set

A workshop was organized by the Directorate of Business Incubation Centre in MNS – University of Agriculture, Multan. The main objective of this workshop was to highlight the entrepreneurial potential of young students and to promote their entrepreneurial mind set. The Business Incubation Centre started this program, which will continue for the period of two months. In this program students will acquire basic business knowledge and the skills of doing business successfully. Foster Learning has collaborated with the university to provide the best training to the youth so that they can implement their business ideas. The chief guest of the ceremony, Vice Chancellor Prof. Dr. Asif Ali (TI) said that the university is ambitious to promote entrepreneurship among students, and today's event is also a link in the chain of achieving the same objective. Instead of focusing on jobs, our young students will do their businesses and create employment opportunities for others. Consequently, the country's economy can flourish in a better way. Prof. Dr. Mubashir Mehdi, Director of Business Incubation Centre, thanked all the honourable guests and highlighted the features of the program.

### 9.52. Seminar on AIDS Awareness

An awareness seminar was organized by the Faculty of Veterinary and Animal Sciences and the hostel administration in MNS Agricultural University. The awareness seminar was presided over by Vice Chancellor Prof. Dr. Asif Ali (T.I). The guest speaker was Kashif Kamran. Addressing the awareness seminar, Prof. Dr. Asif Ali said that it is our social responsibility to spread awareness about the prevention and spread of this disease. In such situations, students play a key role.



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He further stressed that the victims of this disease should be encouraged by the society in accepting it instead of being worried so that they can live the rest of their lives in a better way as a good citizen. Guest speaker Kamran Kashif narrated interesting incidents. He linked AIDS to "Volcano" and explained simple ways to avoid AIDS such as not using used syringes and blades etc. He further said that AIDS is a disease that has always been hidden from us and the society. Its existence is doubted as a myth. It paralyzes the human immunity and human defense system. In Pakistan, this disease is not as common as in African countries and India. On this occasion, Dr. Umair Waqas said that AIDS was known in 1981. Do. Use a new syringe every time. Avoid carvings on the body. Always ask the barber to use a new blade. In the end, informative dramas about AIDS were presented. An AIDS patient was also invited to the seminar, who narrated his story and said that patients of this disease can lead a happy life like those of other diseases. Prof. Dr. Muhammad Asif Raza thanked the participants. On this occasion, Dr Michael Spies form TRANSECT, Germnay; Dr. Mirza Abdul Qayyum, Dr. Unsar Naeem Ullah, Ms. Palosha Khanum, Ms. Somiya Ambreen, a large number of faculty and students were also present.

### 9.53. Seminar on International Day of Persons with Disabilities

A Seminar on International Day of Persons with Disabilities was organized in MNS University of Agriculture Multan by Students Affairs, Accessibility Committee and Mainstream Multan. Disabled students of the university participated as special guests in the function. Mr. Nadir Khan (Mainstream/ILC/HANDS), representative of persons with disabilities, said in his address that the definition of disability needs to be redefined. He further said that disability is not only the name of physical deficiency, even a normal person cannot reach the destination without a ride. Special people use a special ride or wheelchair etc. to live a normal life. Society should give them respect and status like normal people. Disabled player Mr. Ahmed Yar shared his life experiences that how with hard work and courage he managed to become an international player despite his disability and held high the flag of Pakistan in different countries. Dr. M Usman Jamshaid, Senior Tutor told the participants that MNSUAM is providing the best special facilities to the disabled students. Moreover, the university is providing free education and accommodation to the disabled students and also special counseling.

Prof. Dr. Asif Ali (T.I) said that in today's era disabled people are not a burden on the society at all rather they are playing key roles in the construction and development of the society. Inauguration of the Football World Cup by Ghanim Al-Mustafa, a child without legs, has convinced the whole world that physical disability does not create any kind of obstacle in a human's development. Dr. Khawaja Kashif, Ms. Madiha Gohar, Hamza, Mohsin Qasid Ali and students of various departments were also present on this occasion.

### 9.54. Flood Relief and Rehabilitation activities of MNSUAM

MNSUAM played a significant role in Flood Relief and Rehabilitation activities at Hill torrent affected area of DG Khan. In addition to Ration drives, Public Health Camps, Veterinary Camps, practical steps for agricultural rehabilitation were also conducted by distributing 200 Wheat seed bags, vegetable nursery plants and arranging agricultural inputs for 130 acres.

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The service was acknowledged at Higher Forums. Scout Mr. Qasid Ali and Focal Person Dr. Muhammad Usman Jamshaid of MNS Agriculture University Multan were awarded by Prime Minister Flood Hero Award at Prime Minister House. The award was presented by the Ministry of Youth Affairs and HEC to 50 outstanding volunteers from across the country for providing exceptional flood relief services. Prof. Dr. Asif Ali (T.I) expressed his happiness and said that the students of our university are always at the forefront in community services. The university acknowledged all donors, particularly Rotary Club Multan Cantt. for their generous support.

### 9.55. Seminar on Water borne infections and potential remedies-MNSUAM

Public Health Society MNSUAM in collaboration with ORIC and Faculty of Veterinary and Animal Sciences arranged an awareness Seminar on waterborne infections and potential remedies. The event was led by Vice Chancellor Prof. Dr. Asif Ali (T.I.) with Dr. Tariq Rana (Director Compliance Monitoring, Inspector general of water compliance, Australian Government) as the guest speaker. Prof. Dr. Asif Ali highlighted the importance of water in our daily lives and its current situation in Pakistan. He said knowledge and literate behavior is the first step required, in order to protect oneself from diseases caused due to polluted water. Guest speaker Dr. Tariq Rana shed light on the diseases that are caused due to polluted water and their remedies. He also highlighted the fact that Punjab does not have proper sewage disposal system in some areas. Sustainable development goals regarding precautionary measures against waterborne infections were also shared. According to him there are not only economic and social but also some political and technological hurdles in the provision of clean water. Different advanced methods to clean water were also discussed. During the event, MNSUAM-Public Health Society role in community work was also appreciated along with their first year annual report. Convener of Public Health Society Dr. Muhammad Umair Waqas, Prof. Dr. Irfan Baig (Dean of faculty of social sciences) and Prof. Dr. Junaid Khan also attended the event.

### 9.56. Training Workshop on Kitchen Gardening

MNS-University of Agriculture Multan in collaboration with ACIAR-ASSIB organized a capacity building session for farmers of Project Bright Spot-2 Dera Habbat. The workshop provided training about advanced vegetable nursery raising techniques and management of kitchen garden under saline conditions to 14 participants. The focus of the workshop was hands on training of participants regarding growing media preparation, filling of multipot trays, sowing of Tomato, Pumpkin, Cauliflower and luffa seeds and management of tomato, bell pepper, fenugreek, pakcho and broccoli plants in pots with the aim to promote clean vegetable production at house hold level. This training enabled the participants to understand the advanced techniques for raising of vegetable nursery, vegetable transplanting methods, nursery hardening, root pruning of vegetable nursery and management strategies of plants in a kitchen garden. Mr. Syed Ali member SOFT team said that People who eat fruits and vegetables as part of their daily diet have a reduced risk of many chronic diseases and kitchen gardening is the only option which provide us healthy and chemical free vegetable production.



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### 9.57. World Education Day

On the occasion of World Education Day, a seminar was organized by the Directorate of Public Relations and Senior Tutor Office at MNS Agricultural University, which was presided over by Prof. Dr. Asif Ali (T.I) the vice chancellor, MNSUAM and the guest speaker was Raziuddin Razi. On this occasion, Prof. Dr. Asif Ali (T.I), conveyed that in today era, there is an exigent requisite to impart equal significance to both training and education. The main purpose of education is to create means of welfare and service for society and humanity. He added that education is the foundation of a nation which helps people to become good human beings along with procuring employment. But the tragedy is that despite being rich in natural resources, Pakistan has a very low literacy rate. There is a need to improve the environment and teaching strategies during primary education, because these two factors can lead children towards becoming progressive citizens. Guest speaker Raziuddin Razi said that earlier teachers were free in research and curriculum development and the government was trying to “facilitate rather than interfere” in institutions, but now, in comparison, educational institutions are forced to follow the government curriculum. Dr. Salman Qadri, Dr. Abdul Qayyum, Dr. Mohammad Shahbaz, Dr. Nighat Raza, Dr. Usman Jamshaid, Dr. Palosha Khanum along with other faculty members and students were present on the occasion.

### 9.58. Kashmir Camaraderie Walk-MNSUAM

Kashmir Camaraderie Walk was organized by MNSUAM on Kashmir Day to express solidarity with the people of Indian occupied Kashmir. The walk commenced from Sardar Tanveer Ilyas Khan Library. Addressing the procession, Prof. Dr. Asif Ali (T.I), Vice Chancellor MNSUAM, expressed the notion of today's peaceful world is just a simulation as Kashmiris are still victims of oppression, abuse and are still deprived of their basic right of freedom. The United Nations has an unfinished agenda in the form of sieged Kashmir. Realizing its responsibility, Pakistan continues to raise its voice at various forums of the United Nations. It is high time that all the countries and nations of the world raise a united voice against the violence, oppression and abuse that are being perpetrated in Kashmir. Prof. Dr. Asif Ali (T.I), foregrounded that the love of Kashmiris for Pakistan is an open secret and the Sardar Tanveer Ilyas library in our university is a living embodiment of that love.

### 9.59. Farmer's Field Day on Precision Agricultural Technologies

A Farmer's Field Day on "Precision Agricultural Technologies" was jointly organized by MNS University of Agriculture, Multan, PMAS Arid Agriculture University, Rawalpindi (PMAS-UAAR), and Fatima Fertilizers (Pvt.) Ltd. on February 09, 2023 (Thursday), at the Sports Ground, MNSUAM. Mr. Hussain Jhanian Gardezi, Ex-Minister of Agriculture Punjab, graced the event as the chief guest. Prof. Dr. Shafqat Saeed the Dean FAES, on behalf of the Vice Chancellor MNSUAM, extended a warm welcome to all the participants, especially progressive growers, and the chief guest for sparing time out of their engrossing schedules for the event. He also expressed his gratitude to the Vice Chancellor of PMAS Arid Agriculture University on consolidating this event, showcasing the research activities of both universities for the farmers of South Punjab.



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He also highlighted the benefits of using precision agriculture technology such as the variable application rates based upon intra-field variability, ecofriendly use of pesticides, pest monitoring digitally via mobile phone, and high efficiency irrigation system with automation capability. He mentioned that the use of sprayer in tractor for spraying or foliar application of fertilizers, equally distributes the spray according to the crop requirement that eventually not only saves the cost but also conserves the resources. The major aim of the Farmer's Field Day was to introduce the farmers of South Punjab with the state-of-the-art and modern precision agricultural technologies developed by the Center of Precision Agriculture, PMAS AAUR. On this occasion, the scientists and researchers from the department of Agricultural Engineering, MNSUAM and PMAS AAUR displayed various precision agriculture machines and projected models at the event's gateway and physically demonstrated Drone Spray, satellite Mapping, Precision Orchard Spray and Auto Steering Tractor. A multitude of progressive growers, farmers, manufacturers, media representatives, faculty members, and students attended the Field Day.

### 9.60. Farmers Convention on Hybrid Wheat

A Farmers Convention focusing on Hybrid Wheat was jointly organized by MNSUAM and Fatima Fertilizer on 21st February 2023. The convention saw huge participation from farmers, stakeholders, personalities from different walks of life and national and international scientists. Speaking at the convention, Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNSUAM, highlighted the pivotal role of hybrids in increasing wheat production. He expressed that hybrids are very popular and successful in maize, which give good yield to farmers every year. The challenges that are being faced by food security can be positively met through increasing yields from hybrid wheat. He articulated his delectation on the signed collaboration between MNSUAM and Fatima Group which will help in mass production of Hybrid Wheat seed, conveying that MNSUAM has always involved industry in agricultural research and outreach. Australian scientist, Dr. Richard Trethowan notified that Hybrid Wheat is being seen as an important crop not only in Australia but globally, stressing that wheat diseases can be significantly reduced with the adaptation of hybrid varieties. The Australian scientist congratulated the scientists of the MNSUAM for achieving the productivity and profitability of hybrid wheat. He conveyed that increasing farmers' access to hybrid wheat seed is an important aspect that needs attention. Prof. Dr. Muhammad Ashfaq (Director, Institute of Plant Protection) highlighted that farmers can increase wheat production by reducing wheat rust, presenting multiple strategies for controlling wheat rust, one of which is the cultivation of Hybrid Wheat as it is highly beneficial for reducing wheat rust. Emphasizing the future and importance of Hybrid Wheat in food security, Mr. Naseerullah Khan from Fatima Group, accentuated that with Hybrid Wheat, Pakistan can not only meet its domestic wheat requirements but can also export it. Progressive farmers, Syed Fakhar Imam and Mr. Khalid Khokhar, commended MNS University of Agriculture, Multan and Fatima Fertilizer for organizing Hybrid Wheat Convention. Acquainting with the importance of hybrid wheat, Dr. Abid Mehmood, CEO, PARB conveyed that Hybrid Wheat is an important milestone towards food security. The participants specially the farmers appreciated the services of the University and expressed positive thoughts regarding planting Hybrid Wheat in the future.



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### 9.61. International Conference on Horticulture

A two-day international conference was conducted at MNS Agricultural University in collaboration with the Department of Horticulture, MNSUAM and Pakistan Society for Horticultural Science on February 23-25, 2023. The conference was attended by Prof. Dr. Aman Ullah Malik as the chief guest. More than 250 research papers were presented in the conference by researchers from ten countries. On this occasion, Dr. Aman Ullah enlightened the farmers comprehensively about modern technologies in agriculture such as drone spraying, use of digital gadgets and weather forecasting tools. Addressing the event, Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNSUAM articulated that in future use of fertilizers and pesticides having minimum residues in the harvested produce should be encouraged. It is a rule especially in horticulture to use disease-resistant planting materials because the better the nursery or seed, the better a plant will grow. Also, if such fruit crops are dried and sold to the market after value addition and branding, the farmers can get better income. He further urged the need of using indigenous seeds and plants because their performance is better than exotic seeds. He supplemented that it is possible to increase the production of fruits and vegetables through modern research in horticulture. Mr. Abdul Ghaffar Grewal, Director, Mango Research Institute professed that the scion should be taken from a healthy plant since it is the foundation of mango orchards. He added that if the nursery is damaged, the plant will not grow properly, which increases the risk of disease. Prof. Dr. Ghulam Markhand informed that high quality dates are grown in Sindh and Pakistan is the sixth largest producer of dates in the world. Unfortunately compared to our production, the export is very low. If the government provides the facility of post-harvest handling of the fruit to our date palm growers, the economy can be strengthened. Mr. Kashif Islam, a prominent progressive farmer, stressed the need of developing integrated business models and focused marketing systems with special emphasis on value addition and supply chain for the timely and proper access of fruits and vegetables to the consumers. Dr. Tanveer Ahmad, Chairman Department of Horticulture, concluded the conference by extending his note of appreciation for all the participants and sponsors.

### 9.62. Seminar on Medicinal Plants for Better Human Health

A seminar titled Medicinal Plants for Better Human Health was organized by Plant for Life Society and Department of Agronomy, MNSUAM on February 17, 2023. The event was presided over by Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNSUAM. On this occasion, Professor Dr. Shazia Anjum, Director, Cholistan Institute of Desert Studies, Islamia University, Bahawalpur offered detailed information to the participants about the scientific basis of cultivation of medicinal plants and preparation of basic medicines. Highlighting the benefits of medicinal plants, she further elaborated that how Pakistan's medicinal plants can be exported globally and can assist in stabilizing the State's foreign currency reservoirs. Dr. Tauseef Sultan, Chairman, Department of Human Nutrition, Bahauddin Zakariya University, informed about the results of the project, Restoration of Medicinal Plants in Thal Area. Dr. Jameel Anwar Ghorri and Rana Muhammad Abbas briefed about a project related to mass cultivation of medicinal plants on modern scientific basis and their use in industry. Professor Dr. Shafqat Saeed, articulated the ongoing research and outreach activities pertaining medicinal plants at MNSUAM. Moreover, recommendations on domestic use of medicinal plants in daily modern life were proposed.



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In his closing remarks, Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNSUAM stressed that the profitable cultivation of medicinal plants will only be possible through proper value addition and effective supply chain.

### **9.63. Food Safety Awareness Session for Food Handlers in Malik Food Industries**

A Food Safety Awareness Training Session was organized by Department of Food Science and Technology, MNSUAM at Malik Food industries on February 24, 2023. A team from Department of Food Science and Technology consisting of Dr. Muhammad Shahbaz, Associate Professor, Dr. Nida Firdous, Assistant professor and Mr. Muhammad Usman, Lecturer facilitated the training session at Malik Food industries. The training focused on food safety protocols during handling, preparation, storage and transportation of food products. After completing the training session, questions from food business operators and handlers about technical issues were addressed with technical solutions to problems. The training session addressed the grievances and challenges of business operators and guided them about alternative advanced techniques and safety protocols being used and how to manage skilled human resource in the industry. Team from FST MNSUAM visited the food plant and addressed loopholes in processing as well. Total 15 participants belonging to different departments of industry were trained. Department of Food Science and Technology, MNSUAM is planning to conduct such training sessions regularly to maintain active linkages with food industry.

### **9.64. Spring Flower Festival 2023**

Department of Horticulture, MNS University of Agriculture Multan organized Spring Flower Festival from February 23-25, 2023. Spring flower festival was inaugurated by Prof. Dr. Asif Ali (T.I), Vice Chancellor, MNS University of Agriculture Multan, Prof. Dr. Muhammad Ramzan, Vice Chancellor, Emerson University Multan and Prof. Dr. Muhammad Asif Raza, Coordinator of Veterinary and Animal Sciences, MNS University of Agriculture Multan. Different institutions, private organizations and gardeners from Cantonment Board Multan, Emerson University Multan, Department of Horticulture, BZU, Multan, Floriculture Research Institute Multan, The City School, Multan, Beacon House School, Multan, Multan Junior School, Department of Estate Management, MNSUAM and Department of Horticulture, MNSUAM participated and presented their stalls in the festival. The distinguished guests enjoyed the flamboyant flower walk and appreciated the wonderful stalls presented by different organizations. The festival continued till February 25, 2023. Divergent groups of visitors attended this event and enjoyed a lot.

### **9.65. Training Workshop on Weeds Management**

A hands-on training workshop on weed management was organized on February 27, 2023 by Department of Agronomy, MNSUAM. The aim of the workshop is to create awareness about the economic and ecological significance of weeds and the usefulness of effective weeds and timely weed management in field crops. The event covered informative expositions by subject experts followed by interactive discussion, Q&A session on said topic, and a field demonstration.



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The participants underwent intensive interactions and learning experiences. About 50 participants were trained about innovative weed management practices with special reference to sustainable weed management in a changing climate. Various aspects of weed management like weed related issues in cotton-wheat cropping system, non-chemical weed management, need and action plan for integrated weed management, herbicide resistance and its detection, identification of weed plants and seeds, selection of herbicides considering crops, weeds and soil structure, spray machine calibration and determination of herbicide dose, comparative assessment of costs and benefits of various weed control methods, safe use of pesticides and control of invasive weeds like parthenium were discussed. Dr. Amar Matloob and Dr. Khuram Mubeen imparted practical training to the participants. Afterwards, a question-answer session was held, in which experts briefly answered the questions of farmers and students. The participants also visited Experimental Farm of MNSUAM and witnessed innovative weed management practices and satisfactory weed control leading to healthy crop stands.

### 9.66. Seminar on International Women Day

A seminar endorsing Women Empowerment was organized at MNSUAM to celebrate International Women Day on March 8, 2023. Prof. Dr. Asif Ali (T.I), Vice Chancellor MNSUAM shared that prosperity of women is actually the prosperity of the society. Women cannot and should not be ostracized from nation's progress. He added that mothers play a key role in making good human beings. No nation can progress in the world until its women stand side by side with men. Iram, CEO Gift Mix graced the event as Guest Speaker and elaborated that the background of International Women Day is an avid proof of the fact that the atrocities that befell women are not confined to any religion, cast and country rather they are perpetuated worldwide. Women are deprived of the societal status that they deserve. She further stressed the point that women need to prove their metal in the society through education and make it crystal clear for everyone that they are not less than men in any field. Dr. Ayesha Hakeem and Ms. Shafa Nayab shared that the female students studying in MNSUAM are earning recognition for Pakistan at both national and international fronts. The seminar culminated with the solemn pledge of promoting the education of girls in Pakistan as well as justifying the rights of women in a good way.

### 9.67. Training Workshop on the Use of Soil Survey Techniques

A comprehensive training on various techniques of soil surveying was organized by the Department of Soil and Environmental Sciences, MNSUAM in collaboration with Soil Survey of Punjab on March 9, 2023. The resource persons for this training were Dr. Mohammad Atiq-ur-Rehman and Dr. Tassaduq Saleem from the Soil Survey of Punjab. Prof. Dr. Tanveer-ul-Haq, Chairman, Department of Soil and Environmental Sciences, welcomed the facilitators, students, farmers, and all the guests from various institutions of the Agriculture Complex. In his preliminary speech, he shared that according to the vision of Prof. Dr. Asif Ali (T.I), Vice Chancellor MNSUAM, the Department of Soil and Environmental Sciences has always worked for the capacity building of farmers, students, and the community. This training is another step pursued in this regard. He further expressed that soil survey is an important factor in agriculture, and with its help, it is possible to save resources in agriculture.



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Initiating the training with a presentation, Dr. Muhammad Atiq-ur-Rehman briefed about soil surveying and its importance. He highlighted that MNSUAM is one of the few universities that is working closely with farmers and industry. After his presentation, there was a detailed question and answer session in which the students and other attendees actively participated. In the second session of the training, a soil profile was dug, and the participants were given practical training. At the end of the training, both guests were thanked and awarded with shields. On this occasion, the faculty of the Department and the resource persons from the Soil Survey reiterated that they would work together to solve the soil problems faced by the farming community.

### 9.68. Conference on Constitution, Democracy and Our Responsibilities

A conference on the topic of Constitution, Democracy and Our Responsibilities was organized at MNSUAM on March 10, 2023. The event was graced by Former Caretaker Chief Minister of Punjab Prof. Dr. Hasan Askari Rizvi as the guest of honor. Addressing the conference, he elaborated that moderation is a democratic value and extremism is its opposite. Rights and responsibilities are always interrelated in society. Where there are rights, there are also responsibilities. The freedom given in a democracy is within the constitutional framework. Democracy is nurtured by constitutional power, democratic values and culture. Forbearance is the foundational stone of democratic culture. Disagreement must be tolerated; the opinion of others must be respected as Diversity is the strength of any society. Therefore, it is important to respect the rights of religious and social minorities in accordance with the constitutional framework. In his presidential address, Prof. Dr. Asif Ali (T.I), Vice Chancellor MNSUAM foregrounded that social and religious tolerance are elemental constituents of MNSUAM's curriculum which broaden the Mental horizons of male and female students at the university and enable them in moving forward with a positive mindset. Dr. Rashid Ahmed expressed that the first stage of social change is mental and psychological change. Young people have to practice academic discourse and dialogue. Mr. Abbas Rasheed, Chief Executive Sahi, commemorated the management of MNSUAM for facilitating the course on socio-religious tolerance. Prof. Dr. Irfan Ahmed Baig, Prof. Dr. Nasir Nadeem, Dr. Salman Qadri, Dr. Shakeel Ahmed, Dr. Muhammad Arif, Dr. Madiha Gohar, Dr. Usman Jamshed along with a large number of students were present on this occasion.

### 9.69. Seminar on Fundamentals of Blockchain Technology and Its Applications

A Seminar on Fundamentals of Blockchain Technology and Its Applications, organized by Department of Computer Science (DOCS) was conducted at MNSUAM on Friday March 10, 2023. Commencing with the recitation of verses from the Holy Quran, Dr. Hira Nazir, Assistant Professor DOCS, welcomed and introduced the Guest Speaker Dr. Amir Ali to the audience. Sharing his knowledge with the audience, Dr. Amir Ali highlighted that Blockchain is a digital ledger that keeps a record of all transactions taking place in a peer-to-peer network. All information transferred via Blockchain is encrypted and every occurrence is recorded, meaning that the information cannot be altered. Elaborating its applications, he explained that Blockchain technology can provide greater security by storing passwords and other data on a decentralized network instead of a centralized server.



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Additionally, it offers protection against data tampering since a Blockchain is practically immutable. The talk was followed by an extensive, informative and interesting question answer session. The session capped Dr. Abdul Razzaq Assoc. Prof. DOCS, on behalf of the Chairman capped the session by extending his token of appreciation to the guest speaker in the form of shield.

### 9.70. Happiness Week

The Directorate of Student Affairs and State Management at MNSUAM organized a week-long event called & Happiness Week from March 15-20, 2023. The purpose of this week was to provide opportunities for people who are trapped in the monotony of the life to be happy. This week-long event started as a brand program for students, faculty, and staff like a festival. The Vice-Chancellor of the university, Prof. Dr. Asif Ali (T.I.), inaugurated the week with pleasure and delight. While explaining the aims and objectives of this week Prof. Dr. Asif Ali (T.I.), Vice Chancellor MNSUAM shared that one pivotal reason of the honor and international recognition enjoyed by MNSUAM is the happiness and contentment of its students and teachers as happiness is the basic right of every human being. At MNSUAM, we believe that keeping our faculty and students blissful is one of our chief responsibilities, as the epitome of happiness is that other people are at peace because of you. On the first day of this week, a Book Fair including 15,000 books, handicraft exhibition made by students and a food street was organized. Open mic laughter for faculty and students rejoiced the atmosphere. The Bird and Domestic Animals Show including chickens, pigeons, parrots, peacocks, pheasants and other birds, rare breeds of cats and dogs entertained the visitors. Public Health Camp provided good health tips for the visiting guests. An umpiring and coaching course for basketball and Ring ball was also the part of the Happiness Week and energized the fields with matches. On the occasion of Happiness Week, Literary Club organized the 2<sup>nd</sup> Rozan-e-Mushaira in which guest poets as well as students of MNSUAM recited their verses in Urdu, Saraiki and Punjabi, adding an inter-lingual flair to Happiness Week, which was liked and applauded by the audience openly. Sports remained an integral part of the weeklong celebrations where everyone had a chance to burn their calories. Cricket team of MNSUAM defeated the cricket team of Emerson University by 13 runs.

E-gaming competitions evoked the cyber spirit among students. The week ended with a Poster Competition and a Seminar on Happiness, Oral Health, and Wellness. Addressing the event, Dr. Saira and Dr. Qumreen Fatima, discussed human health, the importance of oral hygiene and the necessary measures that a healthy person should pursue. In the end, certificates and prizes were awarded to the students who secured prominent positions in the competitions held during this week. A cake was cut to mark the end of the week and it was reiterated that such quality entertainment would continue every year. In his concluding remarks, Prof. Dr. Asif Ali (T.I.), Vice Chancellor MNSUAM, opined that in today's busy life, the philosophy of being happy has become even more important, where happiness can be likened to a state of mind that can be enhanced by a combination of sports, recreational events, and cultural activities. The week got wrapped up with plenty of reasons to be happy and grateful.



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### 9.71. Workshop on Skill Development in Young Food Professionals

A one-day training workshop titled Skill Development in Young Food Professionals, organized by Department of Food Science and Technology was conducted at MNSUAM on March 20, 2023. The workshop aimed to maximize the professional capacity among the youth. Addressing the event, Prof. Dr. Asif Ali (T.I), Vice Chancellor MNSUAM, encouraged youth to highlight their personal potential to succeed in all the fields of life. He foregrounded the significance of skill development by expressing that when done right, skills development can reduce un- and underemployment, increase productivity, and improve standards of living. Helping people develop and update their skills makes economic sense. Mian Sajid Hameed who is a consultant, trainer, gap analyst and mentor of youth facilitated the training workshop. He deliberated on independence, mental capacity and self-reliance to the students and also shed light on the opportunities and difficulties faced by young students in practical field. He expressed that there is an immense need to improve cognitive, socio economical, technical and digital skills among young professionals. The session was attended by 200 students from Department of Food Science and Technology. Prof. Dr. Umar Farooq, Dr. M. Shahbaz, Dr. Shamas Murtaza, Dr. Shabbir Ahmad, Dr. Sibte - Abbas, Dr. Unsar Naeem Ullah along with other faculty members joined the event. Certificates were distributed among the students at the end of the session.

### 9.72. Awareness Walk on World Water Day

The Department of Agricultural Engineering, MNS University of Agriculture Multan, celebrated World Water Day on March 22, 2023, and organized an awareness walk on accelerating change to solve the water and sanitation crisis. The event was led by Dr. Sarfraz Hashim, chairman Department of Agricultural Engineering. Addressing the participants, Dr. Sarfraz Hashim focused on the need for sustainable water management, and foregrounded various solutions that can be employed for the effective management of water resources. More than 100 participants joined the walk and prepared posters highlighting the importance of water conservation and the issue of water scarcity. Dr. Mohsin Nawaz briefed the audience about the importance of water conservation, the current state of water resources in the country and the challenges and opportunities for improving water resources management. He shared that we could not deny the importance of water in agriculture and other fields of life. We can save water for future generations if we use the available water efficiently. The purpose of the awareness walk was to highlight the ever-increasing water-related issues. The society of engineers and technologists of MNSUAM arranged this awareness walk to show their commitment to preserving our water resources.

### 9.73. Seminar on Philosophy of Worship and its Effects on Social Life

A Ramadan seminar titled, "Philosophy of Worship and its Effects on Social Life," was organized by Social Scientist Society and Department of Islamic Studies at MNSUAM on March 30, 2023. Dr. Asim Qureshi from University of Education graced the event as the chief guest. Addressing the audience, Dr. Asim shared that three major areas of religion that come to the fore after accepting the beliefs of Islam are Worship, affairs and ethics. The prevailing social system is one that widens the division between religion and the world due to which the social effects of worship are no longer visible.



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Thus, those who stand in unison before Almighty Allah (Glory be to Him), feel discriminated from each other on the basis of social imbalance and hence violate each other's rights. While the purpose of prayer was to avoid obscenity, denial and rebellion. The presence of these things in the society is a sign that the worshipers are not interested in the societal manifestation of their faith. That is why it was said in Surah Al-Ma'un that such worshipers will perish who are oblivious to the purpose of prayers. Those who do not pay attention to social ethics. Likewise, the purpose of fasting is to create a society based on pious people. In Holy Quran, piety relates to justice. Hence it is the responsibility of every Muslim to ensure justice in all spheres of social life, so that a civilized and balanced society can be formed. Likewise, Zakat ensures the circulation of wealth in society, enabling people to stand on their own feet by sharing resources. Hajj is a manifestation of the unity of the nations of the world without discrimination. The bliss and mercy of Almighty Allah can only be attained by establishing a society based on the principles of justice, peace and coexistence. If we look at the practical system of worship, it creates order and equality in the society. Our beloved Prophet Muhammad (peace and blessings be upon him) said that there are no Muslims among us who betray, lie, break promises, speak ill of words, support oppression, confirm lies, do not show compassion to the young and do not respect the elders. On this occasion, Dr. Rashid Ahmed expressed that it is a sad fact the collective morals of the society have no longer remained of significance in today's society. Therefore, the Muslims of today have a greater responsibility to recognize the true spirit of worship and establish their society on the best principles. Mr. Manan Aslam hosted the seminar. Dr. Umar Ejaz, Mr. Abdul Rehman along with other faculty members, students and the officials of the society Ms. Ramsha, Mr. Abdul Rehman, Mr. Muhammad Hamza, Mr. Mohsin Raza, Mr. Faisal, Mr. Ramis, Mr. Huzaifa and Mr. Abdullah participated in the event.

### 9.74. Plantation Drive at Jalalpur Pirwala

A Plantation Drive was organized at Jalalpur Pirwala Farm by MNS-University of Agriculture with the support of Engro Fertilizer on April 4, 2023. In the afforestation campaign, the inevitability of trees was foregrounded by associating the survival of humans with the survival of trees. During this period guava, jamon and other plants were planted. On this occasion, Dr. Muqarab Ali, Coordinator Plantation expressed that under the visionary leadership of Vice-Chancellor Prof. Dr. Asif Ali (T.I.) and with the support of WWF, a Model Plantation Block covering 50 acres and containing 31000 trees has been established in Jalal Pur Pirwala Campus. Moreover, the Spring Plantation is in full swings at the Multan Campus also. MNSUAM and Engro Fertilizer reiterated their commitment to actively participate in the plantation drive in Jalalpur Pir Wala and other areas to play their role to the full in preventing climate change. Representatives from industry and faculty members, including Mr. Nasir Khatak, Mr. Saifullah Khan, Mr. Mohsin Khan and Mr. Yasir Khurshid from Engro Fertilizer, Prof. Dr. Abdul Ghaffar, Dr. Mehmood Alam, Mr. Muhammad Abid along with a huge number of students from MNSUAM participated in the Plantation drive.



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### 9.75. MNSUAM'S Community Outreach School Faculty Professional Development Training Session- Community Outreach, MNSUAM

A successful Professional Development Training Session was conducted for primary and secondary school teachers at Army Aviation School Multan by Department of Outreach & Continuing Education, MNSUAM on April 6, 2023. Facilitated by Ms. Aimen Batool and Ms. Bakhtawar Rana, the training aimed to empower secondary school teachers with better teaching skills and methodologies to ensure quality education in schools. Dr. Rana Binyamin, Chairperson, Department of Outreach, MNSUAM appreciated the initiative of providing professional development opportunities to the teachers of Army Aviation School, Multan. He highlighted the need and significance of hands on training sessions in ensuring quality education and nurturing skilled workforce for the future. The Training Session received positive feedback from the participants, who thanked them for the valuable knowledge and skills imparted during the session. The training is expected to have a direct impact on the quality of education in schools of Multan, ultimately benefiting students and the wider community. Pursuing the vision of its worthy Vice-Chancellor Prof. Dr. Asif Ali (T.I.), the university is committed to its mission of serving the community through education and outreach initiatives. The University will continue to play its role in the professional development of teachers and educators.

### 9.76. Training Session on Kitchen Gardening- DHA, Multan

MNS-University of Agriculture Multan, organized a capacity building session for DHA Multan Parks and Horticulture team regarding advanced vegetable nursery raising techniques and management of kitchen garden for 10 participants. The training targeted hands on training of participants regarding growing media preparation, filling of multipot trays, sowing of tomato, pumpkin, cauliflower and luffa seeds and management of tomato and broccoli plants in pots with the aim to promote healthy vegetable production at house hold level. This training enabled the participants to understand the advanced techniques for raising of vegetable nursery, vegetable transplanting methods, nursery hardening, root pruning of vegetable nursery and management strategies of plants in a kitchen garden. The University also provided 900 seedlings of various summer veggies for establishment of kitchen gardens at DHA Multan. Col. Asad Khan Laghari, Director DHA Multan Parks and Horticulture team said that people who eat fruits and vegetables as part of their daily diet have a reduced risk of many chronic diseases and kitchen gardening is the only option which provide us healthy and chemical free vegetable production.

### 9.77. International Plant Appreciation Day

World Plant Appreciation day was celebrated on April 13, 2023 at MNS University of Agriculture Multan by Plant for Life Society. An Art gallery and plant exhibition was also organized by PLS on this occasion. Plant for Life Society made homemade yellow plant hugs using waste material to highlight the love of plants. Indoor plants of various species were planted using organic fertilizers.



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Vice Chancellor Prof. Dr. Asif Ali (T.I.) expressed that Indoor plants play an important role in decorating homes, for aromatic purposes and purifying the pollutants in the rooms and he encouraged the students to play active role in grassroots promotion and to dedicatedly continue their duty to highlight the practical importance of plants in our society. Plant lovers throughout the city gathered to express their appreciation for these oxygen machines. Finally, the Plant for Life Society distributed about more than 100 free plants to civil society on this occasion.

### 9.78. International Labor Day Seminar

A seminar on the eve of International Labor Day was organized by the Directorate of Public Relations, and the Directorate of Estate Management on May 1, 2023, at MNSUAM. Addressing the event, Prof. Dr. Asif Ali (T.I.), Vice Chancellor of MNSUAM, highlighted the heart-wrenching financial and social disparity between the laborer and other societal classes, which has widened to the extent that laborers struggle to earn a meager livelihood with their salaries, while the businessmen/industrialists spend the equivalent of their laborers' one month's salary on a single meal. He added that this current situation has had a profound impact on the economy, with workers being the most affected. Prof. Dr. Asif Ali emphasized the need for social security laws to implement labor rights in Pakistan, which would uplift their livelihoods. He stated that worker's happiness is related to country's progress. He further highlighted that it is the moral obligation for the laborers to perform their duties honestly, and likewise, it is the duty of owners to fully pay the wages of laborers. Dr. Unsar Naeem Ullah stressed the indispensability of exchanging goods and skills with one another to effectively run the system of harmonized social life. He emphasized that no one can fulfill all their needs or accomplishes everything alone; instead, we need the support of others and must work mutually for each other. At the end of the seminar, the gardeners, financial workers, and security personnel of the university, along with the Vice Chancellor, faculty, and staff, took part in a walk to commemorate the International Laborers' Day.

### 9.79. Seminar on World Book Day

A seminar was organized at MNS University of Agriculture to commemorate World Book Day. Mr. Shakir Hussain Shakir, while addressing the event, expressed concern about the younger generation's decreasing interest in reading books, despite books being valuable companions in life's struggles. He emphasized that reading books, especially those related to history and general life, not only improves one's personal life but also equips individuals with practical insights for success. Mr. Shakir advised the youth to develop the habit of book reading. Additionally, he firmly disagreed with the claim that the love for books would diminish by the end of this century, believing instead that books and the passion for reading would endure indefinitely.

Prof. Dr. Asif Ali (T.I.), Vice Chancellor of MNSUAM, highlighted that reading a book opens a new way of living for individuals. He acknowledged the digital advancements that enable online book reading. Each time a person opens a book, they enter a gateway to a new world.



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Prof. Dr. Asif Ali also mentioned the Garrison Library in Pakistan, which stands as one of the country's finest libraries, serving as a gift to the citizens of Multan. He expressed his belief that awareness seminars like this would promote readership among the youth. The seminar was attended by notable individuals, including Prof. Dr. Mubasher Mehdi, Mr. Zulfiqar Ali Tabassum, Dr. Ambreen Naz, Dr. Unsar Neem Ullah, Dr. Mirza Abdul Qayyum, Dr. Usman Jamshed, Dr. Wazir Ahmed, and a large number of students.

### 9.80. Seminar on Mother's Day

Addressing a seminar organized by the Directorate of Public Relations at MNSUAM to celebrate Mother's Day, Vice Chancellor Prof. Dr. Asif Ali (T.I) expressed that a mother's love is the best example of sincerity and loyalty. He linked a mother to a tree, whose dense shade remains unwavering. Dr. Asif Ali further emphasized that the greatness of mothers is recognized in every religion and culture. While every day is Mother's Day, the purpose of celebrating this day is to honor and highlight the glory of mothers.

During the event, Dr. Ambreen Naz, Dr. Ayesha Hakeem, Dr. Nighat Raza, and Dr. Madiha Gohar shared their views, highlighting their new role of motherhood and the selfless love of mothers involved in raising kids and shaping their future. They emphasized how mothers sacrifice their own comfort and desires for the education and well-being of their children, always concealing their sorrows. Ms. Aimen Batool expressed her perspective that a mother is the most valuable and greatest treasure in the universe, and her love and compassion cannot be fully expressed in words.

The event was attended by the MNSUAM Registrar Mr. Imran Mehmood, Treasurer Mr. Rafiq Farooqi, Senior Tutor Dr. Usman Jamshaid, Dr. Umar Ijaz, Mr. Asif Nawaz, Ms. Hafiza Tahira Gul, Ms. Anam Bukhari, Dr. Sehrish Ejaz, Ms. Shafa Nayab, and large number of students. People from various walks of life also graced the occasion with their presence.

### 9.81. Training Session on Provision of First Aid and Bleeding Control

A training session focusing on the provision of First Aid and Bleeding Control was conducted at MNSUAM in collaboration with Rover Scouts Unit, Rescue 1122, Rotaract Club, and Public Health Society, MNSUAM. The session was part of the Pakistan LifeSaver Program and was attended by 80 students and scouts. The main objective of the training was to equip the students with the skills to administer first aid in emergency situations, enabling them to save precious lives.

Dean, Faculty of Social Sciences and Humanities, Prof. Dr. Irfan Ahmed Baig appreciated the efforts of the organizers and emphasized the importance of such training sessions to empower the young generation to play a constructive role in emergencies. Mr. Zahid Hussain and Mr. Muhammad Imran from Rescue 1122 provided training on bleeding control and conducted an open mic session to address students' queries. Dr. Usman Jamshaid, Dr. Amir Bakhtawar, Dr. Umair Waqas, Dr. Umar Ijaz, along with other faculty members and a large number of students, were present at the training session.



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### 9.82. Martyrs' Day commemoration

A solidarity walk, alongside a commemoration event, was organized by the students, teachers, and scholars of MNSUAM as a testament to their camaraderie with Pakistan's forces and martyrs. Pakistan, a land acquired and preserved through the blood of martyrs, became a subject of mockery among global spectators due to the violent incidents on May 9. Exploiting the uncertainty stemming from political turmoil, certain unpatriotic elements targeted sensitive national sites, memorials, martyrs, and properties during this state of political instability. The entire nation was left stunned and immersed in profound grief by this situation. Understanding the gravity of the circumstances, a decision was made to commemorate May 25 as Martyrs' Day. MNSUAM took up the responsibility and led the main event at Ghanta Ghar Chowk, Multan. The students, teachers, and staff of MNSUAM organized a series of engaging activities, including a Solidarity Walk, impassioned speeches, patriotic songs, and candle lighting, all to pay tribute to the blood of martyrs. It was emphasized that the honor of our motherland's security forces, and the sacrifices of our martyrs will be staunchly defended in every possible way.

### 9.83. International Conference on Bee Pollination & Conservation

The International Conference on Bee Pollination & Conservation, held on May 19, 2023, under the umbrella of Institute of Plant Protection, MNSUAM, offered valuable insights into the current state of bee pollination and conservation, with a special emphasis on native social and solitary bees. The event provided a platform for thought-provoking discussions and networking opportunities, fostering collaborations and alliances among various stakeholders, including scientists, researchers, practitioners, policy makers, businesses, civil society, beekeepers, and farmers. The conference spurred discussions on innovative research ideas aimed at exploring the diversity of pollinators in different regions and devising effective conservation strategies for their protection. The conference's main themes focused on Bee Diversity, Crop Pollination, Bee Conservation, and Beekeeping. Representatives from several countries, including Pakistan, India, China, USA, Brazil, Morocco, Saudi Arabia, Senegal, Uganda, Slovenia, and Burkina Faso, participated in the event, contributing to its global significance. The Chief Guest, Mr. Saqib Ali Ateel, Secretary of Agriculture for South Punjab, graced the occasion. Additionally, the conference featured five prominent Keynote Speakers who shared their expertise. Dr. Kit Prendergast, a native bee scientist, conservation biologist, and zoologist from Curtin University, Australia; Casey T Burns, a Conservation Biologist and Co-coordinator of the IUCN Wild Bee Specialist Group, representing the Wildlife and Threatened & Endangered Species Program Lead for the Bureau of Land Management (BLM) in Alaska, USA; Dr. Gholamhosein Tahmasbi, a Professor of Entomology specializing in Honeybee biology and ethology at the Animal Science Research Institute of Iran; DP Abrol, an expert in the field of Entomology and former Dean Faculty of Agriculture at Sher-e-Kashmir University of Agricultural Sciences & Technology in Jammu; and Prof. Dr. V. P. Uniyal, a Senior Professor & Scientist-G (Former) from the Wildlife Institute of India, Dehradun, Uttarakhand, India, enriched the conference with their invaluable contributions. In his closing statements, Professor Dr. Muhammad Ashfaq, the Director of the Institute of Plant Protection, emphasized the importance of beekeeping, presented the conference's recommendations, and commended the conference for fostering awareness and collaboration towards a more sustainable future for pollinators and their supporting ecosystems.



**SPORTS**





## CHAPTER-10

### SPORTS

Sports play a significant role in individual and societal development, contributing to various aspects of personal well-being and social cohesion. Sports are much needed in the context of development of the leadership skills in the students. Sports activities are meant to provide quality fitness and conclusive environment that inspires participants to engage in competitive events on various levels, institutional and national. Main goal of sports activities is to provide plenty of opportunities to students to keep them healthy with desirable character and remarkable personality traits. The Directorate of Sports in University Development is an integral part of the university system that focuses on fostering physical fitness, promoting sportsmanship, and encouraging a healthy and active lifestyle among students. The Directorate of Sports has been providing sports facilities to the male, female students and faculty. The Directorate has developed a system to encourage the students for participating in different sports activities. Collaboration with experts of different games in order to provide the best training facilities to the students is the part of its professional devoir. The sports activities are geared to provide wide participation in intramural activities (within the students), extramural activities (among various faculties of the university) and inter-tertiary or varsity sports activities in national sports events. Teams for Cricket, Football, Volleyball, Table Tennis, Badminton, Hiking and athletics are actively participating in the supporting events in the country.

The supporting committee consists of following members

Prof. Dr. Irfan Baig  
Mr. Muhammad Arqam Iqbal  
Mr. Qaisar Javed

Convener Sports  
Director Sports  
Sports Coach

Sr. No.	Sports Activities	Venue	Male	Female	Date
1.	Pakistan Peace Captains Cricket League (Boys)	BZU	18	-	28-07-2022
2.	Pakistan Peace Captains Cricket League (Girls)	BZU	-	24	06-08-2022
3.	Rebdull Cricket League	BZU	25	-	20-10-2022
4.	Participated in HEC Intervarsity Table Tennis Championship Zone J	Khwaja Fareed University of Engineering and Information Technology, RYK	8	-	28-10-2022
5.	Participated in HEC Intervarsity Badminton Championship Male Zone J	Emerson University Multan	5	-	10-11-2022

## CHAPTER-10

### SPORTS

6.	Organized Winter Sports Gala 2022-23	MNSUAM	120	86	01-12-2022
7.	Participated in HEC Intervarsity Football Championship Zone J	IUB, Bahawalpur	22	-	23-12-2022
8.	Organized All Pakistan HEC Football Championship 2022-23	MNSUAM	160	-	26 to 30-12-2022
9.	Organized HEC Intervarsity Basketball Championship Zone J	MNSUAM	55	-	12-01-2023
10.	Manager HEC Football National Team in Pakistan Football Federation Challenge Cup 2023	Lahore	25	-	17 to 23-1-2023
11.	Participated in All Pakistan HEC Badminton Women Championship 2022-23	Women University, Multan	-	15	25-02-2023
12.	Floodlight Football Ramzan Cup	Emerson University, Multan	19	-	13-04-2023
13.	Manager HEC Women Cycling National Team in National Games 2023	DHA Lahore	-	45	15-05-2023





**UNIVERSITIES  
BUILDING LEADERSHIP**











## CHAPTER-11

## UNIVERSITIES BUILDING LEADERSHIP

**11.1. Faculty Leadership (Awards and representation in government policy making committees, memberships on various councils, etc.)**

- The MNSUAM is a member of various governing bodies of Higher Education Commission, i.e. the Vice Chancellors' Committee Meeting, MS leading to the Ph.D. Program, Curriculum Revision Committees, Quality Assurance Committees, etc.
- The university is also contributing to the District Government Task Force for Anti-Adulteration, and Anti-Dengue Campaign.
- The university is actively involved in policy making regarding mango fruit fly, mango post-harvest management, supply and value chain management of mango and major vegetables, Punjab Cotton Control Act 1966, pink bollworm management, cotton missions, monitoring and evaluation of field activities of Agriculture Extension Department, etc.
- Prof. Dr. Shafqat Saeed (Institute of Plant Protection) is a member of Cotton Technical Advisory Committee, Punjab.
- Prof. Dr. Shafqat Saeed (Institute of Plant Protection) and Dr. Muhammad Ishtiaq (Assistant Professor, Institute of Plant Protection) are the members of Cotton Protection Advisory Board, Punjab.
- Dr. Hammad Nadeem Tahir (Institute of Plant Breeding and Biotechnology) is a member of Oilseed Research and Development Board, Punjab.
- Prof. Dr. M. Hammad Nadeem Tahir (Institute of Plant Breeding and Biotechnology), is a member of Institutional Performance Evaluation (IPE) Committee constituted by HEC for Salim-Habib University Karachi.
- Prof. Dr. M. Hammad Nadeem (Institute of Plant Breeding and Biotechnology), is HEC nominee for Plagiarism Standing Committee of Sir Syed University of Engineering and Technology (SSUET), Karachi.
- Dr. Muhammad Saifullah (Assistant Professor, Agri. Engineering) is a member of the Board of Study of the department of agriculture engineering, KFUEIT. He is also an external reviewer for the QEC Department of Agriculture Engineering, KFUEIT.
- Dr. Sarfraz Hashim (Assistant Professor, Agricultural Engineering) is a member of the Board of Study of the Department of Agricultural Engineering, BZU Multan. He is also a member of the Committee to conduct entry test of graduate studies of agricultural engineering, BZU Multan
- Dr. Umair Sultan (Assistant Professor, Agri. Engineering) is a member of National Curriculum Revision Committee (NCRC)-HEC of Energy Systems Engineering degree program.
- Dr. Sarfraz Hashim (Assistant Professor, Agri. Engineering) is a member of National Curriculum Revision Committee (NCRC)-HEC of Agro-industrial Engineering Technology degree program
- MNSUAM's Business Incubation and Agricultural Entrepreneurship Center (BIAEC) has been approved by the Higher Education Commission under the leadership of Prof. Dr. Mubashir Mehdi.
- Prof. Dr. Irfan Ahmad Baig (Dean, Faculty of Social Sciences and Humanities) was awarded a letter of appreciation and acknowledgment for organizing the roundtable discussion on "Food security vis-à-vis sustainable Agriculture in Pakistan: Policy Outcomes and Prospects" from the Center for Global and Strategic Studies (CGSS), Islamabad.



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- Prof. Dr. Muhammad Ashfaq (Institute of Plant Protection) is a member of the Survey Committee for Cotton Crop at Agriculture Department, South Punjab.
- Prof. Dr. Muhammad Ashfaq (Institute of Plant Protection) is a member of Board of Studies of Department of Plant Pathology, at the Islamia University of Bahawalpur.
- Prof. Dr. Umar Farooq, Coordinator, Faculty of Food and Home Sciences, is a member of Scientific Panel of the Punjab Food Authority.
- Dr. Ayesha Hakim and Dr. Nadeem Iqbal won National and Regional titles at Microsoft Imagine Cup 2023 for their innovative projects, namely Store Karo! and AI-Based Bee Hive, which were headed by Dr. Ayesha Hakim and Dr. Nadeem Iqbal, respectively.
- Dr. Umair Sultan Earned the status of Chartered Engineer (CEng), Engineering Council, UK (CEng. Reg. # 700085), dated April 17, 2023.
- Dr. Umair Sultan was awarded Best Oral Presentation certificate at the 1<sup>st</sup> International Precision Agriculture Pakistan Conference 22 -24 September 22–24, 2022, at PMAS-Arid Agriculture University Rawalpindi.
- Dr. Tanveer Ahmad, Chairman, Department of Horticulture, was nominated as President, Pakistan Society for Horticultural Science.
- Dr. Nazar Faried, Department of Horticulture, was nominated as Joint Secretary, Pakistan Society for Horticultural Science.
- Mr. Babar Farid, Lecturer, Institute of Plant Breeding and Biotechnology, has the honor to Publish an article in Nature Genetics, one of the top peer review journals of Nature Publishing Group, with IF 41.307.
- Dr. Muhammad Usman Jamshaid, Lecturer in Soil Science, received the Prime Minister Flood Relief Hero Award from the Prime Minister of Pakistan on December 5, 2022.

**11.2. Directorate of Student Affairs**

The Directorate of Students Affairs has the mandate to facilitate and maintain services including admissions, welfare, sports, health care, guidance, scholarships, financial aid, and hostel accommodation. The Directorate of Student Affairs has the mission to offer a variety of services, programs, and activities to support and encourage the intellectual, personal, social, and cultural development of students. The Directorate has made all necessary arrangements, starting from the first admission inquiry to the last day at the Campus. The Directorate is also involved in checking the political or unlawful activities of the students. The Directorate also conveys the student's problems to higher administration to facilitate the students. The Directorate not only concentrates on curricular and co-curricular, but is also profoundly concerned with the career building and financial assistance of the students.

The Directorate provides students different opportunities to take part in sports/games. It also provides them different platforms for the development of their literary and artistic potential. The purpose of all such activities is to provide students with a conducive environment during their academic years in the University.

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This office functions as a friend and guide for students and is proving a bridge between administration and students to address their genuine problems.

Following Societies/clubs have been established to provide platform to the students for showcasing their skills and talent

1. Qirat and Naat Club (QNC)
2. Islamic & Social Learning Forum
3. Literary Club
4. MNS-UAM Debating Club
5. Music Club (Mossigala Beats)
6. MNS-UAM Art and Dramatic Society (MADS)
7. Media Club (Naqash Media)
8. Young Students Peace Society (YSPS)
9. Rotaract Club of MNS-UAM
10. Plant for Life Society (PLS)
11. Cleanliness and Environment Volunteer Force
12. Agri-Tourism Club
13. Character Building Society (CBS)
14. Blood Donation and Screening Society
15. Coding Hawk Society
16. Interfaith Harmony Club
17. Public Health Society
18. Society of Engineers and Technologists (SET)
19. Cyber Security Society
20. Rover Scout Unit
21. Agriculture Volunteers (AV)

Different activities conducted by MNSUAM student Clubs and Societies are presented below:

**11.2.1. Celebrations of National/International Days**

- 75<sup>th</sup> Anniversary of Pakistan Celebrated by different Clubs and Societies (14-7-2022)
- Breast Cancer Awareness seminar organized by Public Health Society (13-10-2022)
- World AIDS Day seminar organized by Public Health Society (1-12-2022)
- Black Day Army Public School by Rotract Club (16-12-2022)
- World Wetland Day Seminar by SET (2-2-2023)
- Debate Competition by MNS-UAM Debating Club on Kashmir Solidarity Day (05-02-2023)
- Drama Performance by MADS on Kashmir Solidarity Day (05-02-2023)
- International Women's Day by Public Health Society (8-3-2023)
- Walk at World Water Day by SET (22-3-2023)

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- Seminar at Pakistan Resolution Day by Literary Club (23-3-2023)
- World Tuberculosis Day by Public Health Society (27-3-2023)
- Seminar and Visit Culture Diversity on World Heritage Day by Rotract Club and YSPS (Interfaith Harmony Culture Diversity) (18-4-2023)
- Debate Competition on Labor Day by MNS-UAM Debating Club (1-5-2023)
- Seminar on World Food Safety Day (May 7, 2023)
- Celebrate Pakistan Martyrs Day (25-5-2023)
- Seminar and Poster Competition on World Environment Day by PLS (5-6-2023)
- Celebration World Food Safety Day (7-6-2023) by conducting a food safety awareness seminar

**11.2.2. Inter-Faith Harmony and Peace Promoting Activities**

- Mehfil-e-shah-e-khobaan is organized by QNC (7-7- 2022)
- Seerat Un Nabi Seminar Organized by QNC and CBS (5-10-2022)
- Musical Session “Peace Through Music” organized by Mossigala Beat (18-03-2022)
- Happiness Week by STO and Participation by all Clubs and Societies ( 15-20-3-2023)
- Istaqbal e Ramadan Seminar (23-3-2023)
- Aftar Dinner at Edhi Village Old Home and Orphanage Center, organized by Rotract Club (11-4-2023)
- Empathy for the ill A Social Action Project was done in collaboration with Rotract Club, Naqash Media and YSPS (17-5-2023)

**11.2.3. Capacity Building and Wellbeing**

- Plantation Drive with Honda at Old Shujabad Road, organized By PLS (28-7-2022)
- Miyawaki Urban Forest Establishment by PLS (7-8-2022)
- Seminar on Effect of Social Media on Society, organized by YSPS (11-10-2022)
- Workshop on bird feeding organized by PLS ( 6-1-2023)
- HEC Intervarsity Basketball Men's Championship (13-1-2023)
- National seminar on medical plants for better human health organized by PLS (17-1- 2023)
- Hope is a Pillar of Faith Seminar organized by Rotract Club (15-3-2023)
- 4<sup>th</sup> South Punjab Debate Competition organized by MNS-UAM Debating Club (16-3-2023)
- E-gaming Competition organized by Naqash Media (20-3-2023)

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- Skill Development for Young Food Professionals (20-3-2023)
- Interactive Session on Leadership and Entrepreneurship Seminar
- Happiness , Oral Health and Wellbeing seminar organized by Public Health Society (19-3-2023)
- Photo Editing Workshop by Naqash Media (24-3-2023)
- Hands on training of students on qualitative survey techniques (9-12 May, 2023), January, March, April and June by World Health Organization (WHO)

**11.2.4. Social Drives and Volunteer Work**

- Plantation Drive with Pharmaceutical Company at Mikawaki Garden organized by PLS (23-9-2022)
- Plantation Drive at Mulberry Court, organized by PLS (4-10-2022)
- Plantation drive by Plants for Life Society MNSUAM at Miyawaki Urban Forest (17-9- 2022)
- Social Action Plan Combat Human Trafficking And Bounded Labor Organized by CBS (19-11-2022 )
- Social Action Plan Insdad e Insani Sodagari wa Bandhi Mazdori Organized by CBS (21-11-2022)
- Social Action Plan "Child Abuse" Organized by CBS (24-11-2022)
- Green Pakistan Plantation Drive by Rotract Club of MNS-UAM
- Training awareness session conducted in different industries related to maintenance of food safety and hygiene practices (22-2-2023) Malik Food Industries
- Spring Plantation Drive, "Plant Trees To Save The World," Organized By PLS And Green Youth Moment (13-4-2023)
- Consultative session with cheese manufacturing unit for economical cheese production (4-5-2023)
- Plantation For Pollinator Preservation By Green Youth Moment Club (18-5-2023)
- Hepatitis, HIV Seminar And Free Testing Organized By Public Health Society (17-18, 5-2023)
- Holistic Nutrition Camp for wellbeing of Humans (23-5-2023)

**11.2.5. Art, Literature and Culture**

- Mazahiya Mushaira by Literary Club ( 4-07-2022)
- Adabi Baithak on Meer Taqi Meer by Literary Club (19-07-2022)
- Adabi Bethak Organize By Literary Club (2<sup>nd</sup>-11- 2022)
- Drama Performance MADS on Kashmir Solidarity Day (05-02-2023)
- Cultural night at 7<sup>th</sup> International Conference Spring Festival, organized by MADS and Mosigala Beats (23-24-2-2023)

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- Cultural night at Happiness Week, organized by MADS and Mossigala Beats (16-2-2023)
- Mushaira at Happiness Week, organized by Literary Club (16-2-2023)
- Cultural night at Academic Studies Congress 2023, organized by MADS and Mossigala Beats (10-5-2023)

**11.2.6. Entrepreneurial and Professional skills**

- Diabetic Food Competition Organized By Health Public Society (1-11-2022)
- Nursery Raising And Composting Workshop Conducted By Agriculture Volunteers (4-1-2023)
- Energy Conservation And Renewable Energy Poster Presentation Competition By Green Youth Movement Club (7-3-2023)
- One day workshop on “Skills development for young Professionals” by Mian Sajid Hameed (consultant, trainer, gap analyst, teacher, mentor) (20-3-2023)

**11.2.7. Awards, Participations and Services**

- Participation of Cyber Security Society MNSUAM in Pakistan Cyber security Challenge (19-07-2022)
- Participation of Cyber Security Society MNSUAM in Ignite National Technology Fund meeting (20-07-2022)
- Team MNS-UAM awarded the Prime Minister Flood Relief Hero Award for providing flood relief and Rehabilitation Support In the Hill Torrent Based Flood Affected Region of DG Khan (5-12-2022)
- 1<sup>st</sup> Position in all Pakistan Photography Competition ( Research and Click Category) in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)
- 2<sup>nd</sup> Position in all Pakistan Script Writing Competition in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)
- 1<sup>st</sup> Position and Team Trophy in all Pakistan Policy Making Competition in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)
- 1<sup>st</sup> Position and Team Trophy in all Pakistan Radio Buzz Competition in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)
- 1<sup>st</sup> Position in all Pakistan Radio Drama Competition (Humorous) in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)
- 1<sup>st</sup> and 2<sup>nd</sup> Positions and Team Trophy in all Pakistan Business Ideas Competition in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)

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- 2<sup>nd</sup> Position in all Pakistan Script Writing Competition in Lyallpur Art and Literary Festival Faisalabad (UAF) (6-9,3-2023)
- 1<sup>st</sup> Position in coding competition held in NUML Multan (3-5-2023)
- 2<sup>nd</sup> Position in poster designing competition held in NUML Multan (3-5-2023)
- Nation and Regional Winner in Microsoft Imagine Cup 2023 by Computer Science Department

**11.3. Activities of Rover Scouts Unit, MNS University of Agriculture Multan, 2022-23**

- Rover Scouts Unit rendered services at the Mango Festival 2022 held at DHA Multan.
- Rover Scouts Unit rendered services at the admission desk of MNS University of Agriculture Multan to serve and help the applicants
- Rover Scouts Unit actively participated in flood relief activities in DG Khan region during July and August
- Mr. Qasid Ali, Senior Rover Mate, Rover Scouts Unit, got the Prime Minister Flood Hero Award for his hard work and efforts during flood relief work
- Mr. Muhammad Hamza Bilal participated in 28th National Deosai Plain Summer Hike for Rover Scouts held on August 15–22, 2022, being organized by Pakistan Boy Scouts Association
- The Rover Scouts Unit celebrated Independence Day at the university, and a tree plantation was also done along with the Worthy Vice Chancellor, faculty members, and other students
- Eight rovers participated in the Rover Leader Course being held from September 12–18, 2022, at the Provincial Scouts Training Center Gora Gali Murree
- The Rover Scouts Unit participated in 49th All Punjab Rover Moot 2022, which was held from August 16–22, 2022, at Ghora Gali Murree. RSU won eight positions in 11 competitions.
- Three rovers participated in Scouts Wood Badge Course being held from September 29 to October 6, 2022, at Provincial Scouts Training Center in Ghora Gali Murree.
- Two rovers participated in the President Rover Scout examination being held at Punjab Boy Scout Association headquarter in Lahore on November 17, 2022
- Mr. Qasid Ali participated in the President's Gold Medal Competition being held at Provincial Scouts Headquarter in Lahore from December 22–25, 2022
- The Rover Scouts Unit organized One Night Camping for boys at Changa Manga. More than 50 students participated in the camp
- The Rover Scouts Unit also organized One night camping for girls at Rohtas Resort, Rohtas. More than 50 girl students participated in the camping
- The Rover Scouts Unit participated in Golden Jubilee Moot 2023 being held at University of Agriculture Faisalabad on the eve of the 50th Anniversary of Agriversity Scouts Group, UAF.



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**UNIVERSITIES BUILDING LEADERSHIP**

- The Rover Scouts Unit participated in the All Punjab Snowfall Hike organized by the Punjab Boy Scouts Association
- Rover Scouts Unit organized CPR and Bleeding Control Training under Pakistan Lifesaver Program in collaboration with Rescue 1122 and Public Health Society
- The Rover Scouts Unit participated in the 3rd All Punjab Summer Hike organized by Punjab Boy Scouts Association. Eight rovers participated in the hike
- Six rovers rendered services in Haji Camp Multan during Hajj Operation 2023

**11.4. Career Development Center/Placement Bureau**

The Career Development Center/Placement Bureau was established with the aim of providing guidance / counseling to the students of MNS University of Agriculture, Multan, for career improvement and placement after the completion of their professional degrees. There are two members of CDC/PB i.e., Dr. M. Ishtiaq, Assistant Professor, Entomology (Focal Person), and Mr. Usman Jamshaid, Lecturer, Soil and Environmental Sciences (Member). Two students are working on a per hour basis, which helps them learn office management, data collection, to organize seminars, webinars, and recruitment drives. Details of each activity performed during the years 2022-23 are given herewith.

**11.4.1. Students Counseling and Information Sources**

Students are being provided services through personal contacts and our online resources. They could call, email [cdc@mnsuam.edu.pk](mailto:cdc@mnsuam.edu.pk), or visit our online resources to get help for different kinds of issues. They could also visit our Facebook page: "Career Development Center, MNS University of Agriculture, Multan". The link of Facebook page is <https://www.facebook.com/MNSUAM.CDC>. More than 2000 people are connected through social media, including students, faculty members, and employers. It has a great effect on disseminating information among the students, which includes scholarship information ads, Job postings, motivational posts, information regarding seminars, trainings, and important events to be held at MNSUAM. We received a good and quick response from this page. Students are provided guidance for the following:

1. Major selection /career goals
2. Searching of jobs
3. Interviewing
4. Writing of resumes
5. Online application to various posts at NTS, PPSC, FPSC, etc.
6. Scholarship advice: Searching Foreign scholarships and applying
7. Required Contact information of any company or institute for applying
8. Information regarding government departments according to their subject

**CHAPTER-11****UNIVERSITIES BUILDING LEADERSHIP****11.4.2. Alumni Data Collection and Maintenance of Alumni Association**

Alumni play an important role in future academia-industry linkages. They could help to achieve our goals. They could help us in a better way than others. Keeping in view the importance of Alumni, A group of alumni students has been maintained by CDC/PB using social media such as WhatsApp, Gmail, and Facebook. We have received bio-data forms from all graduates of all degree programs passed out during each year. A database of the alumni students has been established with contact numbers and postal addresses. WhatsApp groups for each session have been maintained for the dissemination of information to the alumni graduates. Alumni students were invited to annual dinners arranged by each department to strengthen relationships as well.

**11.4.3. Placement of Graduates of MNSUAM**

Graduates of MNS University of Agriculture Multan are being placed in different organizations through the following activities.

**11.4.3.1. Internship placement for final year students**

Students in professional degree programs require real life experiences through market exposure, which is only possible through internships in professional organizations. In order to equip the students with professional experiences, internships play a vital role. This year, we were able to find internships for final year students of B.Sc. (Hons.) Agriculture at private sector professional organizations through an internship committee. Dr. M. Ishtiaq, Focal Person of CDC/PB was in charge of the committee. One faculty member was nominated by the Chairman of each department as the focal person of the respective department for internship placements. The main objective of the committee was to find internships in well reputed private organizations, institutes, and progressive private farms, and the second option was to find paid internships. Different organizations were contacted for internship offers. Almost 65 % of the students were offered paid internships by Agro industries, Progressive Farms, Banks, and various organizations.

**11.4.3.2. Summer Internship**

Undergraduate students are also encouraged to work during summer vacations. The Career Development Center/ Placement Bureau issued letters to the students willing to serve in any organization of their own choice. We facilitated different organizations to conduct interviews with students for the selection of suitable candidates for summer internships and project based offers.

**11.4.4. On Campus Orientation Seminars / Sessions and Recruitment Drives by industrial representatives of different organizations for job opportunities**

Career Development Center/Placement Bureau helps University graduates find better job opportunities at different Companies / institutes, etc. Our initial survey indicated that the majority of our graduates wanted to continue their studies. But for those, who want to start their career, the following efforts have been made for the placement of our graduates during this year 2022-23.



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### UNIVERSITIES BUILDING LEADERSHIP

Different job and scholarship advertisements are being posted using the Alumni Network and notice board.

We helped the graduates find jobs at different Companies / Organizations and arranged their interviews through personal contacts, social media, mobile calls, SMS, and Emails. Fifteen awareness seminars and recruitment drives were conducted by different industries and facilitated by CDC/PB MSNUAM during this year. A number of students have joined and started their careers in these organizations.

A number of organizations, including progressive farmers across Pakistan, contacted us for assistance in the recruitment process, and our placement office assisted in the collection of CV's of graduates and encouraged graduates to apply for recruitment. Not only our graduates but also graduates from other Universities were getting benefits from our office.

**Table 11.1. List of Activities of CDC/PB involving industry for awareness sessions and Recruitment Drives during 2022-23**

Sr. No.	Name of Organization	Events	Date
01	PepsiCo International Pvt. Ltd	Career Counseling Session and online written test	25-08-2022
02	PepsiCo International Pvt.Ltd	On campus interviews	26-08-2022
03	JK Sugar Mills	Orientation Seminar and Recruitment test	17-11-2022
04	JK Sugar Mills	Recruitment Drive for Agronomists	17-11-2022
05	SnS Giants Pvt. Ltd	Pathway to IT Industry	22-11-2022
06	Suncrop Pvt. Ltd	Internship Placements	31-1-2023
07	Ali Akbar Pvt. Ltd	Internship Placements	31-1-2023
08	NBP	Internship Placements	31-01-2023
09	Evyol Group Pvt. Ltd. Multan	Recruitment Test	09-02-2023
10	BOP	Internship Placements	14-02-2023
11	Pest Warning & Quality Control, Multan	Internship Placements	17-02-2023
12	Power Crop Science Pvt. Ltd. Multan	Internship Placements	17-03-2023



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### UNIVERSITIES BUILDING LEADERSHIP

13	Evyol Group Pvt. Ltd. Multan	Internship Placements	17-03-2023
14	SSS Group IT industry	Awareness session and paid internship	04-05-2023
15	Approval for dean office	Major Selection Seminar	31-05-2023

#### 11.4.5. Employability Survey of MNSUAM Graduates

##### 11.4.5.1. Mode of Survey

An employability survey of graduates passed out every year from MNS University of Agriculture Multan from various departments / Institutes was conducted in January-March, 2023 through an online form shared through social media groups of Alumni, office records of CDC/PB and employer information.

##### 11.4.5.2. Survey Results

Responses from a total of 662 graduates / postgraduates out of 950 graduates received. Employer's survey results showed that the total respondents who participated in the survey were 70% of the total passed out graduates in 2022-23. Among those who passed master level programs, respondents were 76%, whereas 70% responded from Bachelor level degree programs.

##### 11.4.5.3. Employment Status

###### 11.4.5.3.1. Overall Employment after 8 months of graduation

The employment rate of total graduate/postgraduate respondents was 66%, unemployment was 20%, and 14% were still studying in higher degree programs (Table 11.2).

**Table 11.2. Overall Employment status of graduates after 8 months of graduation**

Employment status	No. of respondents	Percentage (%)
Employed	367	66
Study	113	20
Unemployed	80	14
<b>Total Respondents</b>	<b>560</b>	

###### 11.4.5.3.2. Masters Graduates: Employment after 8 months of graduation

The employment status of Postgraduate respondents was 80%, the unemployment rate was 8%, and 12% were still studying (Table 11.3).

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### UNIVERSITIES BUILDING LEADERSHIP

**Table 11.3. Masters Graduates: Employment status of graduates after 8 months of graduation**

Employment status	No. of respondents	Percentage (%)
Employed	82	80
Study	12	12
Unemployed	08	8
<b>Total Respondents</b>	<b>102</b>	

#### 11.4.5.3.3 Bachelor Graduates: Employment after 8 months of graduation

The employment status of graduate respondents was 50%, unemployed were 15 % and 35 % admitted to higher degree programs (Table 11.4)

**Table 11.4. Bachelor Graduates: Employment status of graduates after 8 months of graduation**

Employment status	No. of respondents	Percentage (%)
Employed	230	50
Study	159	35
Unemployed	69	15
<b>Total Respondents</b>	<b>458</b>	





# FINANCE





**CHAPTER-12**

**FINANCE**

**12.1. Financial year at a Glance**

Total outlay of recurring budget to the tune of 900.334 million PKR for the financial year 2022-23 was approved by the Syndicate containing a deficit of 8.280 million PKR; however, the revised estimates of the said budget were reduced to the extent of 851.326 PKR million with a surplus of Rs.29.970 million PKR. Actual expenditures for the financial year 2022-23 were 846.585 PKR million against total receipts of 874.178 million PKR producing a surplus of Rs. 27.593 million.

Total Development (ADP Schemes) Budget for the financial year 2022-23 was approved for 350.317 million PKR which was revised for 472.615 million PKR and same was utilized.

Particulars	Million PKR		
	Approved Budget 2022-23	Revised Budget 2022-23	Actual 2022-23
<b>RECEIPTS</b>			
Opening Balance	69.325	62.053	62.053
Govt. Receipts	337.029	336.617	335.799
University's Own Sources (Self-Generated Income)	460.700	469.276	462.976
Donation	25.000	13.350	13.350
<b>Total Receipts</b>	<b>892.054</b>	<b>881.296</b>	<b>874.178</b>
<b>EXPENDITURES</b>			
Salary Expenditures	458.276	438.331	437.776
Non Salary Expenditures	442.058	412.995	408.809
<b>Total Expenditures</b>	<b>900.334</b>	<b>851.326</b>	<b>846.585</b>
<b>Surplus/Deficit</b>	<b>(8.280)</b>	<b>29.970</b>	<b>27.593</b>
Development Budget	350.317	472.615	472.615
Recurring Budget	900.334	851.326	846.585
Self-Generated Income	469.700	469.276	462.976
<b>In PKR</b>			
Trend of Per Student Spending (Salary Expenses Basis)	77,542	86,798	86,688
Trend of Per Student Spending (Non-Salary Expenses Basis)	74,798	81,781	80,952



**UNIVERSITY GOVERNANCE**



## CHAPTER-13

## UNIVERSITY GOVERNANCE

The MNS University of Agriculture, Multan, was announced by the Chief Minister, Punjab, on January 28, 2012. The University was established under the Act 2013 of the Punjab Assembly with the objective of imparting professional education in agriculture sciences and allied disciplines by catering to the needs of population, nationally and regionally. The Act XXII of 2013 authorized the University to establish the following authorities to supervise the affairs of the University for its smooth functioning.

**13.1. Syndicate**

The Syndicate is the executive body of the University and takes effective measures to raise the standard of teaching, research, technological development, publications, and other academic pursuits. As of June 30, 2023, a total of 37 meetings of Syndicate had been held, out of which, four held in 2022-23 are given below:

Sr. No.	Meeting	Date
1	34 <sup>th</sup>	02.07.2022
2	35 <sup>th</sup>	19.11.2022
3	36 <sup>th</sup>	30.12.2022
4	37 <sup>th</sup>	21.03.2023

**13.2. Selection Board**

The Selection Board considers the applications and recommends to the Syndicate, the names of suitable candidates for appointment to teaching and other posts and recommends a suitable salary for the selected candidate; it also considers cases of promotion or selection of officers of the University and recommends the names of suitable candidates for such promotion or selection to the Syndicate. The details of the selection board meeting held during current year are given below:

Sr. No.	Meeting	Date
1	19 <sup>th</sup>	23.09.2022
2	20 <sup>th</sup>	12.11.2022

**13.3. Finance and Planning Committee (F&PC)**

The Finance & Planning Committee prepares the annual statement of accounts, proposes annual budget estimates, makes recommendations to the syndicate, reviews periodically the financial position of the university, and advises the syndicate on all matters related to finance, investment, and accounts of the university. The following meetings of F&PC were held during the current year:



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## UNIVERSITY GOVERNANCE

Sr. No.	Meeting	Date
1	13 <sup>th</sup>	13.12.2022
2	14 <sup>th</sup>	16.06.2023

**13.4. Board of Faculties**

Board of Faculty coordinates the teaching and research work in the subjects assigned to the faculty and scrutinizes the recommendations of a Board of Studies comprising the faculty with regard to the appointment of paper-setters and examiners for graduate and postgraduate examinations and forwards the panels of suitable paper-setters and examiners for each examination to the Vice Chancellor.

Sr. No.	Board of Faculties	Meeting Date
1	11 <sup>th</sup> Meeting of Board of FA&ES	23.08.2022
2	12 <sup>th</sup> Meeting of Board of FA&ES	21.10.2022
3	9 <sup>th</sup> Meeting of Board of FSS&H	12.08.2022
4	10 <sup>th</sup> Meeting of Board of FSS&H	02.03.2023
5	5 <sup>th</sup> Meeting of Board of FV&AS	10.05.2023
6	6 <sup>th</sup> Meeting of Board FAB&T	29.08.2022

**13.5. Board of Advanced Studies and Research (BASR)**

The Board of Advanced Studies and Research advises on all matters connected to the promotion of advanced studies and research publications at the University. The following meetings of the Board were held during 2022-23:

Sr. No.	BASR	Meeting Date
1	17 <sup>th</sup> Meeting of BASR	12.10.2022
2	18 <sup>th</sup> Meeting of BASR	02.01.2023
3	19 <sup>th</sup> Meeting of BASR	17.03.2023
4	20 <sup>th</sup> Meeting of BASR	21.06.2023

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## UNIVERSITY GOVERNANCE

**13.6. Academic Council**

The Academic Council is the highest academic body of the University and lays down proper standards of instruction, research, publication, and examination, regulates and promotes the academic activities of the University.

Sr. No.	Academic Council	Meeting Date
1	9 <sup>th</sup> Meeting of Academic Council	02.11.2022
2	10 <sup>th</sup> Meeting of the Academic Council	08.06.2023





# OFFICE OF THE RESOURCE GENERATION/DEVELOPMENT

**CHAPTER-14****OFFICE OF THE RESOURCE GENERATION/DEVELOPMENT**

Sustainability of higher education institutions is possible only by employing various modern methods and using non-conventional techniques for resource generation and commercialization by involving the local community, staff, political leadership and foreign funding agencies.

The MNS University of Agriculture, Multan is working in coordination with the UC Davis and JICA on different doable proposals regarding modern lab development, date palm production/quality and mango production/quality.

The University's Financial Aid Office, P&D Office and ORIC are vigorously pursuing the funding agencies with the plan proposals in order to develop a state of the art agriculture institution in the Southern Punjab.

**14.1. Scholarship Program**

MNS University of Agriculture, Multan always tries to make quality education accessible to all students in Pakistan, including those from lower and middle income households. Therefore, Students Financial Aid Office (SFAO) was established in 2015 at MNS University of Agriculture, Multan with the aim to commit the success of our students by providing financial aid and advising services that support student recruitment, retention, and timely degree completion, and ensures that a world-class education remains within reach for all eligible students who need financial assistance to achieve their educational goals.

Currently SFAO is offering following Scholarship to the deserving and merited students of MNS-University of Agriculture, Multan

1. University Merit Scholarship
2. BISP (EHSAAS) Scholarship
3. HEC Need Based Scholarship
4. Need Based Scholarship from own resources (MNSUAM)
5. USHR Scholarship
6. Punjab Education Endowment Fund
7. Pakistan Bait-UI- Mal Stipend
8. Student Loan Schemes
9. Karwan-e-Ilm Foundation Scholarship
10. Diya Foundation Scholarship
11. FFS Scholarship Scheme
12. Gurmani Foundation Scholarship
13. Muhammad Rasheed Memorial Scholarship
14. Sungreen Scholarship Program
15. Sona Welfare Foundation (SWF) Scholarship Scheme



## CHAPTER-14

## OFFICE OF THE RESOURCE GENERATION/DEVELOPMENT

## 14.2. Miscellaneous Facilities

1. Tuition Fee Concession (50%) to 10% of the students in the class by Dean Faculty.
2. Facility to deposit dues in installments for financially constrained students.
3. A number of students are working on various research projects sponsored by HEC/ Government Departments/ organizations (national and international) to perform work in exchange for money for their education
4. Hiring of students on hourly basis (Work-related learning experience for students who wish to develop hands-on work experience in a certain occupational field).

## 14.3. Under and Postgraduate Scholarships Awarded During (2022-2023)

Scholarship Type	No. of Awardees	Amount (Million PKR)
Merit Scholarship	309	1.78
USHER Scholarship	107	2.24
PEEF	27	2.72
Pakistan Bait Ul Mal	21	0.55
HEC Need Based	125	10.82*
Rasheed Memorial Scholarship	4	0.24
Ehsaas Scholarship	296	31.98
<b>Total</b>	<b>889</b>	<b>39.51</b>

## 14.4. Planning and Development Office

The P&D Office of MNS University of Agriculture, Multan, is playing its role in resource generation for the university's development. Annual Development Programs worth Rs. 2215.00 Million have been successfully completed during their approved Gestation Periods under the auspices of the Agriculture Department, Govt. of Punjab. The project activities have been completed with 99.9% utilization, including physical infrastructure, procurement of lab equipment, furniture and fixtures, transport, generators, farm development, construction work, and allied activities. Specifically, a 9 Km underground pipeline from the bed of the River Chenab for cultivation of 500 acres of land with fresh irrigation water at Jalalpur Pir Wala Research Farm of the University. The training Hall, Input and Produce Stores, Animal and Implement sheds, and other allied facilities have also been completed under the ADP Scheme.

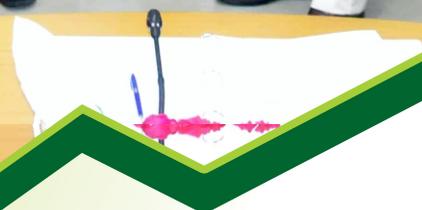


## OFFICE OF THE RESOURCE GENERATION/DEVELOPMENT

Another flagship ADP project (Pilot Project) has been completed with a cost of Rs. 200 million, a gestation period of 36 months, and the objective of training 376 interns, onboarding the contact farmers, and Monitoring through the GEO Tagging Application. A feasibility study for the establishment of a subcampus of MNS-University of Agriculture Multan at Khanewal has also been completed for submission of the project for approval.

The details of following on-going projects and being submitted for approval at different Provincial and Federal agencies;

- ADP Project of Rs. 472.920 million for National Crop Genomics and Speed Centre for Agriculture Sustainability was approved with an execution period of 36 months (2021-22 to 2023-24). The two years of the project have been successfully completed with 100% utilization as per the PC-I provision.
- ADP Scheme titled “Strengthening of MNS-University of Agriculture Multan” of Rs. 646.600 million was submitted to Agriculture Department for approval with a Gestation Period of 36 months (2022-23 to 2024-25). The agriculture department allocated the funds for the said project. The project proposal includes a female hostel for 350 students, a sports complex for indoor games, two computer labs, and three student buses. The first year of the project has been successfully completed with 100% utilization.
- A development project of Rs. 1356.378 million has also been approved for FY 2023-24 Funds amounting to Rs. 200 million have been allocated for current financial year with implementation period of 36 months by Higher Education Commission (HEC) Islamabad. The project proposal includes the Undergraduate lecture block and Teaching Labs, Central Library (FF), the boys hostel with capacity of 350 students each, the girls hostel with a capacity of 350 students each, the multipurpose hall with a capacity of 700, the faculty hostel, External Development and landscaping, Lab equipment for the newly established Faculty of Veterinary and Animal Sciences, and Faculty of Agricultural and Biosystems Engineering, Furniture and fixtures, IT equipment, and allied external services.
- The tender was called for the pre-qualification of consultants, and EOI Books were also received from consultants .



# DIRECTORATE EXTERNAL LINKAGES





**CHAPTER-15****DIRECTORATE EXTERNAL LINKAGES**

The changing role of the universities mandated greater connectivity and strong linkages with the local, national, and international communities. Therefore, the Directorate of External Linkages was established at the MNS University of Agriculture, Multan, in 2016 under the initiative of HEC Pakistan.

The MNS University of Agriculture, Multan, seeks to gather expertise from a wide variety of sources within/outside the country in order to boost its academic and research activities. This in turn helps to create a deeper impact on the worlds of agriculture, science, and technology. For this purpose, the university collaborates with leading international universities, professional/research organizations, commercial ventures, talented professionals, and scholars to pursue its academic and research goals. Our faculty, researchers, and students are constantly adding value to MNSUAM by remaining actively engaged with professional groups and individuals in the research, review of academic papers, and organization of conferences and seminars. The MNSUAM has so far developed linkages with 52 international organizations, 44 national organizations, and 64 industries. Therefore, the MNSUAM has a total of 160 linkages.

This office also has the responsibility to attract international students, facilitate placement of university students and faculty in high-ranking universities, facilitate interaction between faculty and industry, and exert a pull for the financing of training, research, and development activities of the university by national and international donors, alumni, civil society, and agro-based industries. The Directorate of External Linkages also has the responsibility to attract international students, place university students and faculty in high-ranking universities, facilitate interaction between faculty and industry, and exert a pull for the financing of training, research, and development activities of the university by national and international donors, alumni, civil society, and agro-based industries. The university is receiving delegates from international and national organizations for building and expanding partnerships for capacity building, research and development, and outreach activities to improve the lives of the farming community in the country.

**15.1. Vision**

To establish purposeful linkages with national and international academia, organizations, stakeholders, and industries for a thriving win-win relationship.

**15.2. Mission**

To create links and consortia with relevant organizations that could help to strengthen scientific collaboration and enhance capacity building with an aim to strengthen professional learning and extend community services to meet ever-changing local, regional, and global demands through social transformation.



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### DIRECTORATE EXTERNAL LINKAGES

#### 15.3. Achievements

During the fiscal year 2022-23, External Linkages signed 10 MoUs/AoCs with International organizations, 12 MoUs/AoCs with different industries, and similarly, 5 MoUs/AoCs were signed with national private and public sector partners from Pakistan. Therefore, the MNSUAM has signed a total of 28 contracts during the financial year 2022-23.

#### 15.4. MoU/AoCs with International Organizations

Sr. No.	Subject of on-going MoU/AoC	Parties Name	Focal Person	Date of Commencement	Date of Completion	Activity and Remarks
1	Technology Development	Tianjin Modern Vocational Technology College, China	Dr. Mohsin Nawaz	28/07/2022	Four Years	Tianjin Modern Vocational and Technical College China granted a corn picker (worth Pak Rs. 15,000,000) to the MNSUAM during this year, and other four agricultural machines will be handed over to the MNSUAM during 2023-24. The TMVTC will arrange the LUBAN Workshop at MNSUAM and with the help of Chinese resources
2	Research and Development	Xinjinag Jinghua Seed Industry Co., Ltd., China	Dr. M. Abubaker	18/08/2022	Four Years	Establishment of commercial tissue culture facilities in Pakistan, development of varieties adapted to indigenous needs and climatic conditions, Joint academic and research activities, exchange of experts, students, researchers, and faculty members. The joint research project submitted for the future task of establishing



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**DIRECTORATE EXTERNAL LINKAGES**

						commercial cotton germ and tissue culture facilities in Pakistan
3	Education and Development	Uni kassel Versitat	MNSUAM	02/10/2022	One year	Joint resource facility and degree program. Conducting joint research Projects, organizing training programs for farmers, students and researchers, webinars, international meetings and conferences, exchange of information, teaching materials, and technological
4	Research and development	Sivas University of Science and Technology	Dr. Fawad Ahmad Zafar	04/01/2023	(Five Years)	Conducting joint research Projects, organized training program for farmers, students and researchers, webinar, international meetings and conferences, and exchanging information, teaching materials, and technology.
5	Research and development	Silk Road Asia Europe University (Vocational Educational ) Alliance )	MNSUAM	16/1/2023	It will remain effective until modified or terminated by one of the partners	Joint education program. The Silk Road Asia Europe University is facilitating the MNSUAM for Vocational Education. During this year conducted a joint online seminar on modern agriculture and also exchanged the faculty.



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6	Research and Development	Center for Pesticide Suicide Prevention, University Edinburgh UK	Prof. Dr. Shafqat Saeed	20/4/2023	It will remain effective until modified or terminated by one of the partners	Conducting joint research and development projects and cooperation in pesticide projects. Both parties are working in the field of biosafety technology to proliferate the use of other advanced features to promote agriculture with modern technology methods, including human safety.
7	Research and Development	Xinjiang Agricultural Vocational Technical College, China	Prof. Dr. M. Asif Raza	03/05/2023	Four Year	Exchange of faculty members for lectures and short term visits. One visit by both parties is arranged during this year (2023) for the exchange of knowledge and research ideas. Furthermore, during the year 2024, the Faculty of animal science will start dual diploma program in LAD with cooperation of Xinjiang Agricultural Vocational Technical College, China
8	Research and Development	BGI Genomics Co., Ltd. China	Dr. Shoaib Ur Rehman	25/5/2023	Four Year	BGI will assist MNSUAM in establishing a genomics facility under this AoC. Exchange of faculty members for lectures and short term visits. One visit by both parties is arranged during this year for the exchange of knowledge and research ideas. One Chinese researcher came to



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						MNSUAM in June 2023. The Parties agree to strengthen cooperation in scientific research, training, and other scientific activities.
9	Research and Development	Konya Graduate and Tanm Universities, Turkiye	Prof. Dr. Irfan Ahmad Baig/Dr. Nadir Naqqash	11/06/2023	It will remain effective until modified or terminated by one of the partners	One visit by both parties is arranged during this year (2023) for the exchange of knowledge and research ideas. Conducting joint research Projects, organizing training programs for farmers, students, and researchers, conducting webinars, attending international meetings and conferences, and exchanging information, teaching materials, and technology.
10	Research and Development	Istambul Gelisim University, Istambul Turkiye	Prof. Dr. Irfan Ahmad Baig/Dr. Nadir Naqqash	11/06/2023	It will remain effective until modified or terminated by one of the partners	The purpose of this MoC is to conduct joint research projects, organize training programs for farmers, students, and researchers, conduct webinars, attend international meetings and conferences, and exchange of information, teaching materials, and technology. One visit by both parties is arranged during this year (2023) for the exchange of knowledge and research ideas.



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**DIRECTORATE EXTERNAL LINKAGES**

**15.5. MoUs/AoCs with Industries**

Sr. No.	Subject of on-going MoU/AoC	Parties Name	Focal Person	Date of Commencement	Date of Completion	Objective, Activity and Remarks
1	Development and awareness	Faizan Global Relief Foundation	Dr. Tanveer Ahmad	12/08/2022	Two Years	Three thousand plants are planted in MNSUAM during the year 2022
2	Development and awareness	World Wide Fund (WWF) - Pakistan	Dr. Muqarab Ali	18/8/2022		The 30,000 plants was granted to the MNSUAM and these plants are planted at MNSUAM Farm at Jalalpur Pir Wala
3	Research and Development	Star Farm	Prof. Dr. Mubashir Mehdi	01/09/2022	Four Years	To develop capacity building sessions and internship opportunities. Joint research work between both parties is ongoing. Facilitate Incubation activities to build capacity and skills through experts of early stage startups, With mutual collaboration, support is provided to entrepreneurs and early stage startups by providing technological facilities through training, mentoring, networking and market Take joint steps for the promotion of data-driven agriculture, livestock, dairy and meat in the
4	Research and Development	Foster Learning	Prof. Dr. Mubashir Mehdi	26/11/2022	Two Years	This cooperation (AoU) concerns the subject of "Promoting goodwill and friendship, aiding the



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						education sector and encouraging the development of youth by mutual collaboration and "Foster Flagship Training Program," at MNS-University of Agriculture Multan campuses across Pakistan
5	Research and Development	FertiScience	Dr. Nadir Naqqash	25/11/2022	Three Years	Organize training program under sustainable National Productivity, Conduct customized training need based assessment national productivity. Conducting joint research and development projects and cooperation in individual.
6	Research and Development	South Punjab Hospital	Dr. M. Shahbaz	21/12/2022	Two Years	South Punjab Hospital, while exercising corporate social responsibility, will join hands for the welfare of the personnel of t\4NS University of Agriculture [Multan, in the form of investigation of diseases through blood sampling, OPD and IPD services, and other facilities with the following terms of references.
7	Research and Development	Rise AG Group Pvt. Ltd, Multan Pakistan	Prof. Dr. Shafqat Saeed	12/01/2023	Four Years	Joint research activities, promote the nutritional value of alfalfa fodder through joint research activities, offer scholarship/internship for graduate and undergraduate students. During this year, we offered



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						paid internship and one scholarship to the MS students To build capacity at Rise for the formulation of biopesticides and biofertilizers.
8	Capacity Building and Support	Elite Sports Pakistan Pvt. Limited	Mr. Arqam Iqbal	13/03/2023	Five Year	The Elite sports Pakistan will support university teams for participating in national matches. The Elite sports Pakistan will bear the expenses. It also involves investors in the sport activity.
9	Research and Development	CropLife Pakistan Association	Dr. Rana Binyamin	02/05/2023	Two Year	Provision of finance facilities to fresh graduates / farmers associated with MNSUAM in accordance with CropLife Pakistan Association's own. During this year a seminar is arranged, Participated in DIC event at MNSUAM, Offered paid internship to MNSUAM graduates.
10	Research and Development	Syngenta Pakistan Limited	Dr. Abid Hussain	05/06/2023	Three Years	Exploring the possibility of conducting joint projects around regenerative agriculture and cooperation, including the development of Regenerative Center/model farms at project sites. Capacity building and training of students of B.Sc. (Hons.) Agri. through offering paid internships. To collaborate in organizing seminars, exhibitions, symposiums, and summits.



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11	Research and Development	Eastern Scientific corporation	Dr. M. Shahbaz	07/06/2023	Five Year	Eastern Scientific Corporation will provide necessary measures and technical support regularly for the strengthening of biosafety and agriculture research at MNSUAM. Eastern Scientific Corporation (P.t.) Limited will provide paid internship opportunities to 3-4 students in undergraduate programs. The ESC will arrange job fair at MNSUAM on annual basis
12	Research and Development	Pakistan Horticulture Development and Export Company	Dr. Kashif Razzaq	20/6/2023	Four Year	The PHDEC will offer paid internships to MNSUAM student for an efficient use of resources in respective institutes. Joint workshops/seminars/webinars on horticultural product development, exports, productivity enhancement etc. Collaborative research activities including data sharing for both academic and contract research study projects Organize combined training programs for Farmers, Students and Researchers, etc.



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**DIRECTORATE EXTERNAL LINKAGES**

**15.6. MoUs/AoCs with National Organizations**

Sr. No.	Subject of on-going MoU/AoC	Parties Name	Focal Person	Date of Commencement	Date of Completion	Activity and Remarks
1	Development and public help	Bankislami Pakistan	Mr. Rana Ali Zia	01/09/2022	Two Year	<p>The Bank Islami provided motorbikes to the employees of its selected corporate customers at MNSUAM, under Employee Banking Services.</p> <p>The University can forward the cases/ applications of the further interested employee(s) to the bank as per the application form, along with all required documents duly and the bank will accommodate the employees according to the AOC.</p>
2	Development and awareness	Potato Research Institute	Dr. Nazar Farid	18/11/2022	Four Years	<p>To test the adaptation of a new cultivar of the potato and during the growing season 2022-23 the test research trial was conducted at MNSUAM.</p> <p>The second trial will be conducted during the coming season. Furthermore, both institutes are organizing invited lectures and combined outreach activities.</p>
3	Research and Development	Health Science Academy	Dr. M. Umair Waqas	02/08/2022	Five Year	<p>MNSUAM and HAS have agreed to work together for the improvement of the nutrition and health of the university staff. In this regard, both institutes conducted an awareness seminar.</p>

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4	Research and Development	Punjab Aids Control Program	Dr. M. Umair Waqas	12/01/2023	Thee Year	The Punjab Aids Control Program is committed to conducting an awareness seminar regarding the health of the university employees. Furthermore, during this year PACP will offer internship to the MS student of food nutrition
5	Research and Development	Mir Chakar Khan Rind University of Technology	Dr. M. Abid	09/05/2023	Four Year	Conducting joint research and development projects and cooperating in individual projects. Both parties are working in the field of agricultural technology to proliferate the use of other advanced features to promote agriculture with modern technology methods.





# MEDICAL AND HEALTH FACILITIES





**CHAPTER-16****MEDICAL AND HEALTH FACILITIES****16.1. Available Medical Facilities**

- Free ambulance service
- Routine check-ups for the students and faculty
- First aid to the students and employees of the University

**16.2. Medical Camps**

- A camp offering free screening for HIV, HEP C and B has been organized to detect potential cases at an early stage and improve the chances of successful treatment outcomes. This initiative is part of our HIV/Hepatitis campus free drive, and over 2000 staff and students have already undergone screening.
- To ensure the oral health of the university's staff and students, a complimentary dental camp has been arranged. Qualified professionals provide advice and treatment free of charge during these camps.
- The university has established free public health and nutritional medical camps with the aim of promoting and advocating healthy lifestyle choices. These camps focus on behavioral modifications, preventive measures, early screening, surveillance, diet consciousness, and health awareness.
- Through data collection at medical camps, we are able to identify the vulnerable population at risk of developing lifestyle diseases.
- Our camps provide various medical services at no cost, including tests for hemoglobin, cholesterol, blood glucose, and uric acid. Additionally, visual acuity is checked using the Snellen chart, while blood pressure, pulse rate, body temperature, and body mass index are measured. Furthermore, free nutritional recommendations are offered.

**16.3. Wellness Center Extension**

- Previously located solely in A block, the Wellness Clinic facility has expanded its reach to include the girls' hostel and academic block. This expansion aims to bring basic health services closer to the staff and students, conveniently meeting their needs at their respective locations.
- In addition to physical health services, the facility also focuses on addressing the significant concern of mental health. It offers counseling services and helps individuals cope with stress triggers, aiming to promote overall well-being.

**16.4. Public Health Society**

- Throughout the year, the Public Health Society has actively fulfilled its role in advocating for a healthy lifestyle and raising awareness among the community.
- The society has created a health calendar to educate individuals about their health status and promote proactive healthcare practices.



## **MEDICAL AND HEALTH FACILITIES**

- The society has also observed various health-related days and organized seminars and awareness campaigns on occasions such as Breast Cancer Awareness Month, Heart Day, AIDS Awareness Day, International Health Day, and many more.
- Additionally, the society focuses on enhancing the capacity of university students to perform, understand, and analyze various medical tests.
- To further their objectives, the society collaborates with other institutions to gather up-to-date data on prevalent ailments, stigmas, nutritional misconceptions, lifestyle choices, healthcare facilities, and policy-related aspects.

### **16.5. Memorandum of Understanding with Punjab Aids Control Program (PACP)**

- The university has entered into a Memorandum of Understanding (MoU) with the Punjab Aids Control Program (PACP) to collaborate in the fight against HIV and Hepatitis. As part of this partnership, the PACP has supplied the Public Health Society-MNSUAM with free screening kits for HIV/HEP B & C for diagnostic purposes. Moreover, the students of the society have received training from the PACP to conduct these tests.
- Additionally, students from the Public Health Society visit the BSL-3 lab established at the PACP. This visit allows them to gain firsthand experience of the facility and its operations.

### **16.6. BS and MS Public Health Programs**

- BS and MS Public Health programs are successful programs running at the university and playing their part in community health awareness through interventions, research, and awareness campaigns by producing well-equipped students in the field.

### **16.7. Mosquito and Mosquito Borne Diseases**

1. Surveillance of mosquitoes, especially Dengue vectors, is carried out across the whole of the university every week throughout the year.
2. Pictures of at least 30 activities per working day on average for Anti-Dengue, were uploaded to dashboard of PITB created for Dengue and its vector mosquitoes.
3. Identification of samples of mosquito larvae received from the Health Department was done, occasionally.
4. Dr. Unsar Naeem Ullah, Associate Professor, MNSUAM, attended the meetings of District Emergency Response Committee (DERC) for Dengue vector management.
5. On July 2, 2022, Anti-Dengue Day was celebrated. On that occasion, Dr. Unsar Naeem-Ullah, Associate Professor, was invited by the Health Department, Multan as expert / invited speaker to various events held in the city. Further, one activity was organized in MNSUAM by Institute of Plant Protection in collaboration with Hall Warden Office and Senior Tutor Office. The activities are summarized below:

**CHAPTER-16****MEDICAL AND HEALTH FACILITIES**

- Participated as invited speaker at Dengue Awareness Seminar and Walk organized by Department of Health at General Post Office, Multan.
- Participated as an invited speaker at the Dengue Awareness Seminar organized by the Department of Health at Multan Hospital, Old Shujabad Road, Multan.
- Participated as a guest in the Dengue Awareness Walk organized by the Department of Health at MNSUAM.
- Organized a Dengue Awareness Walk under umbrella of Institute of Plant Protection, MNSUAM in collaboration with Senior Tutor Office.
- 6. Organized Anti-Dengue Week from (24-08-2022 to 26-08-2022) in the University in compliance with the directions of Government of the Punjab. Dr. Unsar Naeem-Ullah, Associate Professor, Dr. Mirza Abdul Qayyum, Associate Professor; and Dr. Mudssar Ali, Assistant Professor, Entomology, organized various activities during the week:
  - Mosquito larval surveillance
  - Anti-Dengue pamphlets are distributed at the admission desk.
  - Anti-Dengue pamphlet distribution at university roads and Flood affected areas
  - Roof-top cleanliness
  - Awareness Talk at Juma prayer
  - Anti-Dengue walk
- 7. Dr. Unsar Naeem Ullah, Associate Professor, MNSUAM served as resource person for training on Dengue Mosquito conducted by WARISON, in September 2022.
- 8. Awareness seminars on Dengue and mosquito borne diseases were conducted at the GRC forum on October 12, 2022.
- 9. Awareness seminars on Dengue and mosquito borne diseases were conducted from the forum of GRC on 04-04-2023.
- 10. Organized Anti-Dengue Day on June 15, 2023, at the University in compliance with the directions of the government of the Punjab. Dr. Unsar Naeem-Ullah, Associate Professor, Dr. Mirza Abdul Qayyum, Associate Professor; and Dr. Mudssar Ali, Assistant Professor, Entomology, organized various activities for the event:
  - Mosquito larval surveillance
  - Anti-Dengue pamphlet distribution
  - Roof-top cleanliness
  - Dengue Awareness Talk
  - Anti-Dengue walk led by Prof. Dr. Muhammad Ashfaq, Director, Institute of Plant Protection, MNSUAM

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## MEDICAL AND HEALTH FACILITIES

## 16.8. COVID-19

1. Free on-demand COVID-19 testing facility was provided to students, faculty, and staff of the University with the cooperation of the Health Department.

## 16.9. Community Services

- Dr. Muhammad Umair Waqas, along with the Public Health Society, is actively involved in a project focused on early screening of tuberculosis (TB) in slum communities of Multan, particularly in children. The project is carried out in collaboration with the National Health Institution in Islamabad and the University of California, Davis. The aim is to explore a more convenient method of TB diagnosis using blood samples, considering the challenge of sputum production in children.
- Furthermore, the Public Health Society has organized free medical camps in vulnerable communities in Multan. These camps aim to provide essential healthcare services to individuals in need, ensuring they have access to basic health facilities at no cost.





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