Annual SDGs Report 2018

National University of Sciences & Technology

NUST
Defining futures

SUSTAINABLE DEVELOPMENT GOALS

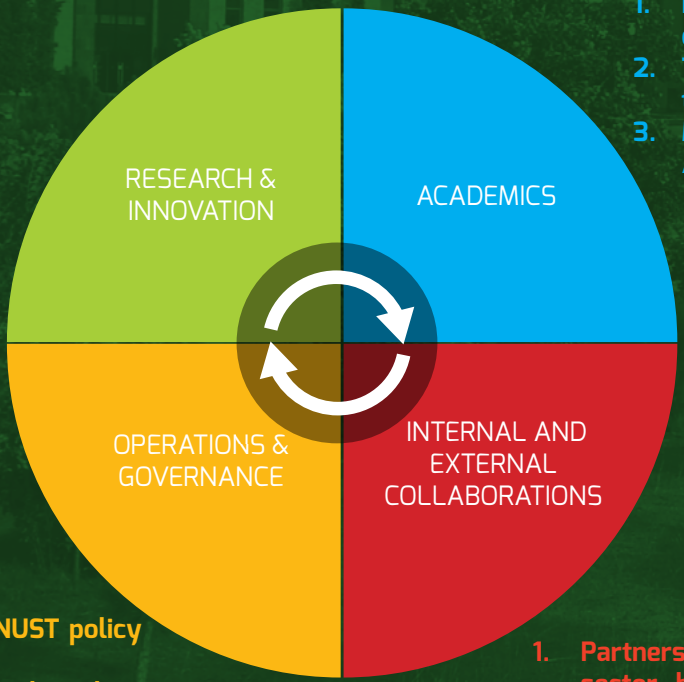
Introduction

The UN SDGs is a universal, comprehensive, and inclusive framework for development which addresses the needs of all forms of life existing on this planet. With 17 goals, 169 targets, and 232 indicators included in the Development Agenda 2030, UN SDGs provide an elaborate masterplan for all the organizations to adopt sustainability as the key element in their long-term strategy.

Universities hold a special place in societies, being a major contributor in shaping them. Universities are the centres of knowledge creation and diffusion, thus have a multi-dimensional societal impact due to their outreach, access to youth and socio-economic outcomes. Therefore, universities are the instrument that has the potential to play a direct and pivotal role in meeting the Agenda 2030 by contributing across all the 17 SDGs through education, research, and innovation as well as collaborations with the key members of the civil society.

NUST is one of the leading Pakistani universities which has embarked upon becoming SDGs-engaged university and has thus incorporated SDGs across its major four domains: Academics, Research, and Innovation, Operations and Governance and internal and external collaborations.

1. **Research alignment with SDGs**
2. **Capacity building in terms of research and innovation**
3. **Cross-disciplinary approach towards research for problem-solving**
4. **Support Innovations supporting SDGs**
5. **Support Social enterprises addressing SDGs**



1. **Integrating ESD with NUST curriculum**
2. **Training Students on SDGs and their future roles in SDGs**
3. **Making Future Leaders and Change Agents**

1. **Integrating SDGs into NUST policy across all levels**
2. **Performance evalaution based on SDGs**
3. **Training HRs on adopting SDGs**

1. **Partnership with industries, public sector bodies and social sector to align SDGs implementation strategies across national levels**
2. **Adopting a collaborative model for SDGs**

NUST SDGs Contribution Areas

Academics

Knowledge dispensation being the foremost task of any university, NUST has aligned its curricula delineating core sustainability-related topics for enlightening its vast and diverse pool of students. Hence NUST aims to engage with youth and enlighten them on impending societal challenges confronted by humanity at large but with particular reference to local environments. NUST is thus creating future leadership that is cognizant of sustainability-related challenges and is ready to resolve them with greater commitment.

01

Research and Innovation

Knowledge creation is the second core task of research-led universities. NUST being a research-led, research-intensive university, finding solutions to the existing multi-dimensional societal problems from a sustainability perspective, remains its high priority agenda. Through effective research and innovation ecosystem, NUST resolves multiple sustainability-related issues, by undertaking research that has societal impact. The research outcomes resulting in innovations improve the lives of many, assist in education and improve the wellbeing, thus addressing multiple complex sustainable development challenges.

02

Operations and Governance

Strategic alignment of organizational governance with SDGs with downstream effect on its operations remains a consistent matter for many organizations and NUST is no exception. Therefore, NUST accommodates SDGs into its policies across all levels including human resources and administrative matters. All the performance indices are quantified in terms of their contribution towards SDGs. All the events and activities taking place at NUST are thus aligned with SDGs and are so marketed as a part of an overarching governance strategy.

03

Internal and External Collaborations

Living in the era of connectivity that is driven by extensive collaboration in this globalized world, NUST uses its vast network of international partners, industrial collaborations, multi-sectoral partnerships to advance its SDGs vision, both at the national as well as international level. Entertaining foreign students on exchange, offering internships under different programs to foreign and local students, training on developing the future leaders, new funding opportunities and assisting in policymaking are some of the avenues NUST pursues under such collaborations.

04

NUST SDGs ROAD MAP


1
NO
POVERTY

GOAL 1

No Poverty

351 Publications | **55** Research Projects | **34** Patents

NUST outreach to Balochistan and FATA

NUST has been extensively working to expand its academic services to under-developed and under-represented tribal regions of Pakistan for the capacity building of the youth of these areas at par with international standards. Therefore, by investing in such capital intensive outreach programs, NUST has proven its commitment to the reduction of economic disparities across all regions of Pakistan through quality education.

PKR 50 million

allocated to Balochistan Campus under **NEED initiative for Students Scholarships**

First-Generation Students **785 out of 2555**

NUST has around 30% of first generation students, i.e whose parents were never enrolled for higher education. This large proportion of students at the campus speaks of our contribution towards bringing out an increasing number of families from poverty.

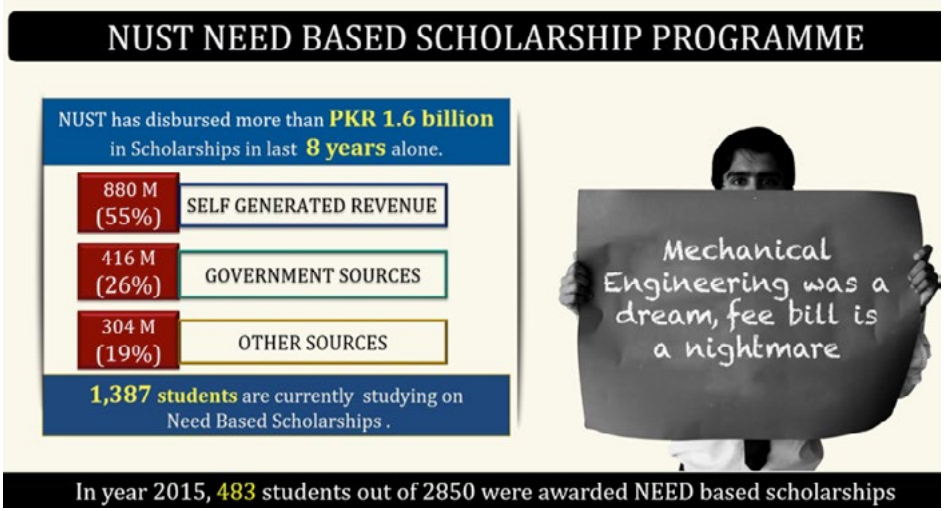
NEED Initiative

NUST aims to be a need-blind university, affording education to all those who make it to the university on merit. In this respect, NUST looks after the financial needs of the students from underprivileged and underrepresented groups from all across the country, through partnerships with NUST alumni, private donors, and government agencies for funding. More than 1000 students are studying on need-based scholarships in NUST since 2015, and 106 of the targeted 400 seats have been made free for scholars through a permanent endowment. It is also pertinent to mention that NUST contributes 55% to the fund.

PKR 1.6 billion
in **Scholarships** in last 8 years alone

1387
Students
Studying on
NEED based scholarships

400 Free Seats



CHADAR Initiative

Secondary SDG: 10

NUST is committed to eradicating poverty and empowering lower-income families through various initiatives. The CHADAR initiative at NUST aims to transform the lives of lower-income groups by providing them with clothes for all seasons. The students collect used clothes from students and faculty and deliver them to people in various impoverished localities located around Islamabad. The student-led initiative helps counsel households to lower their expenditure, increase savings, and explore novel ways to earn in order to afford better living standards.

Pics: Chadar Initiative

NUST Relief Campaign for IDPs

Secondary SDG: 10

In order to help settle Internally Displaced People (IDP), NUST Community Services Club (NCSC) along with NUST Business School (NBS) held fund-raiser for the provision of essential items especially stationery items to school children at the IDP camp in Bannu, KPK. The students managed to procure 500 school bags and stationery items like copies, colored pencils, and writing material.

Pics: Chadar Initiative

Cash Distribution to Flood Affected Blue Collar NUST Staff

Secondary SDG: 10

The flood victims need special attention for rehabilitation therefore, NUST Community Service Club (NCSC) worked hand in hand with NUST Admininstration to distribute cash donations amongst NUST NG Staff who were affected due to the vigorous floods of Punjab in 2014. A ceremony was organized to distribute the donations among NUST blue collar staff whose properties got destroyed due to the ravaging floods in Punjab in 2014. Such initiatives promote empathy and play a tremendous role in reducing the financial stress on the lower-income striving communities.


2
ZERO
HUNGER

Zero Hunger

249 Publications | **27** Research Projects | **2** Patents

Crop Monitoring via Remote Sensing: From Earth Observation Satellites

Automated crop monitoring is an active and important component in ensuring food security and to understand the effects of agriculture on climate. Moreover, the precise and in time assessment of crop health is crucial for numerous applications pertaining to agricultural monitoring. With recent advances, remote sensing provides the most cost-effective method of crop monitoring via several in-orbit satellites providing archived time-series data. NUST, in collaboration with SUPARCO, Pak Space Agency, has delivered a project that enables monitoring of crops in different parts of the country using satellite imagery and data. The project aims to devise a mechanism for timely action in case crops are getting affected, thus ensuring the best yield.

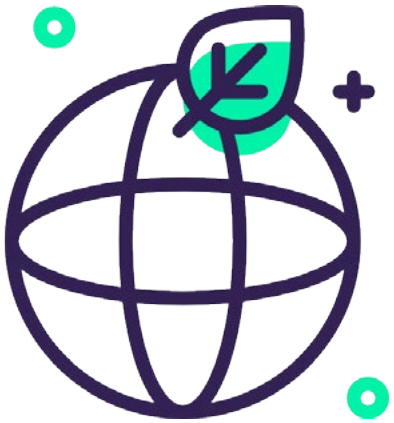
Smart Phone-Based on-tree mango Fruit Quantity and Quality Estimation using near-infrared Spectroscopy and Machine Vision

Pakistan produces approximately 1.8 million tons of mango fruit per year, equivalent to about 8.5 % of the world's total mango production. With world's fourth-largest exporter, approx. 90,000 tons of mangoes are exported annually. With this scale of activity in export markets comes a need to improve farm management, predict harvest volumes, coordinate harvests and market logistics.

NUST has thus delivered an application for the farmers for on-tree mango Fruit Quantity and Quality Estimation using near-infrared Spectroscopy and Machine Vision that enables the farmer to better manage the entire ecosystem of mangoes, resulting in increased productivity.

GrISt: Green Internet of Things (IoT) for climate smart-agriculture

One of the key challenges which developing countries with high population density face is doubling the production of food by 2050 to serve increased demand while facing the reality of climate change. Therefore, precision farming is being adopted by the agriculture sector that increasingly depends upon technology.
GRiST is a NUST project geared towards the development of technology enabler i.e, low-cost sensors by exploiting recent advancements in IoT. This would result in affordability, thus enabling large scale adoption of precision agriculture in Pakistan's agriculture sector.




3
GOOD HEALTH
AND WELL-BEING

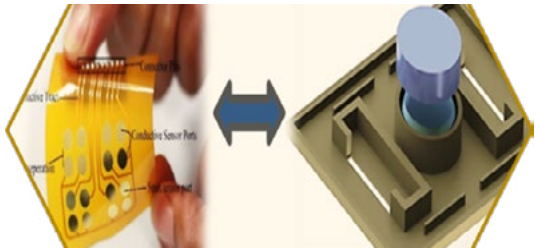
Good Health and Well-being

790	73	48	02
Publications	Research Projects	Patents	Patents Licensed to Industry

Technologies licensed to industry

Smart Wound Management Device:

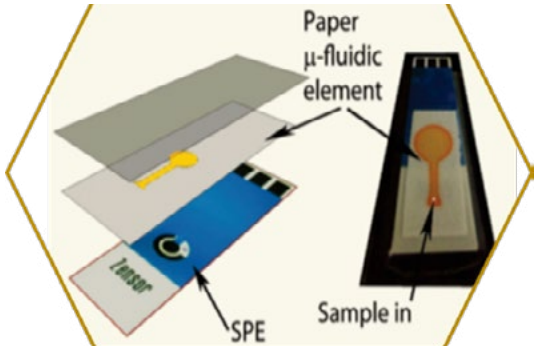
NUST researchers have developed a real-time wound health monitoring device coupled with tailorable drug delivery treatment options. It consists of two parts, A PH sensor array, and a tune-able drug delivery device.



Impact: NUST has licensed the technology of smart management of diabetic/chronic wounds which obviates hospital interventions.

SpotTB:

NUST researchers have developed a hand handled robust electrochemical biosensor to specifically and distinguishably identify Tuberculosis (TB), Multi-Drug Resistant (MDR)-TB and Extensively Drug-Resistant (XDR)-TB with Drug susceptibility testing (DST) module. This is an advanced portable alternate solution to existing GeneXpert sensing with improved testing time, specifically to TB type and DST in order to screen the population for early TB diagnosis in resource scarce remote areas.



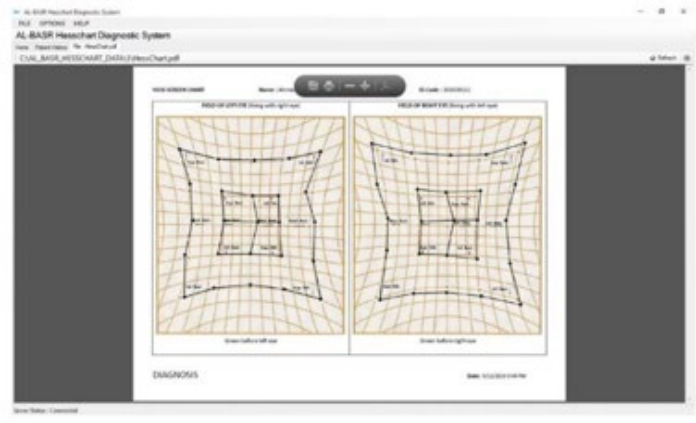
Impact: Solution for low-cost and indigenous solution for TB detection and screening
Industry: Pharmatec Pakistan Pvt. Ltd

Blood Donation Drives

Pakistan's annual blood transfusion requirement is approximately 1.5 million bags, with 40% of the demand being met by the public sector. NUST Community Services Club (NCSC), in collaboration with registered blood banks and hospitals, holds 4-day blood donation drives at campus every semester. The blood collected is used for the treatment of cancer and thalassemia patients. A percentage of this stock is made available for people in need.

Hess Screening System

Hess screening system is used to test eye squint and to identify eye muscles, which are responsible for squint. Traditional screening systems include a Hess screen and manually marking of points on Hess graph by the doctors which take 25-30 min. NUST has revolutionized the concept of Hess screening by introducing a dual-mode computer-supported system. While operating in the new computer-supported mode, the screen is controlled from computer software which enables producing the Hess graph in a single click. The operational time has been reduced from 25-30 min to 8-10 min only.



Free Eye Sight Testing Camps

According to statistics by Layton Rahmatulla Benevolent Trust (LRBT), Pakistan has 20 million people suffering from blindness or impaired vision. A free-of-cost eye examination camp is organized twice a year at NUST for all students, faculty, and staff of NUST to detect potentially treatable blinding eye diseases, ocular manifestations of systemic disease, or signs of tumors or other anomalies of the brain.

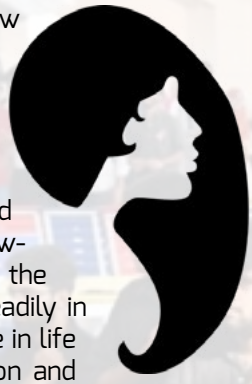
Similar free eye camps were held by NUST Community Service Club in collaboration with Al- Shifa Eye Hospital in villages near Chakwal where people were tested for weak eye-sight and the patients were provided with free-of-cost spectacles and medicines.

Mental Health and Counselling

Depression and mental health issues are constantly at a rise, especially among youth, becoming one of the major areas of concern alongside physical well-being. To address such issues, NUST is working to help individuals with such problems by offering extensive psychological help. The Centre for Counselling and Career Advisory (C3A) at NUST is committed to addressing NUST students' psychological and emotional concerns and helping them achieve their intellectual, academic, and personal goals. C3A provides short-term individualized therapy, group therapy, crisis support, and psychiatric services.

The centre organizes week-long camps every semester to promote awareness about mental health and encourage students to seek therapy.

Breast Cancer Awareness



There are about 1.38 million new cases and 458 000 deaths from breast cancer each year (IARC Globocan, 2008). Breast cancer is by far the most common cancer in women worldwide, both in developed and developing countries. In low- and middle-income countries the incidence has been rising up steadily in the last years due to an increase in life expectancy, increase urbanization and adoption of modern lifestyles. Pink Day, a breast cancer awareness event, was held at NUST in an effort to raise awareness and reduce the stigma of breast cancer through education on symptoms and treatment. Such awareness campaigns lead to earlier detection of breast cancer and higher long-term survival rates.

Free Dental Camp

NUST is committed to making oral healthcare affordable and accessible for impoverished communities. NUST Community Service Club organizes dental camp at Aaghosh Orphanage, providing free-of-cost dental health services to children under care. The children are examined by health professionals for primary checkups, extractions, fillings, dentures, scaling, and oral hygiene.

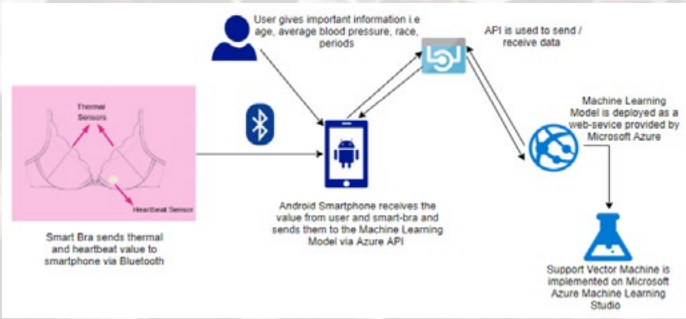
The purpose is to spread smiles and to entertain children with a set of engaging activities, such as huddling them together for games, group paintings, and puppet shows.

Training workshop on Cognitive Behavior Therapy (CBT)

NUST highly values the importance of emotional stability and psychological wellbeing of its employees. Centre for Career Counselling and Advisory (C3A) arranged a five-day training workshop on Cognitive Behavior Therapy (CBT) led by certified psychotherapists. CBT is a psycho-social intervention that aims to improve mental health by focusing on challenging cognitive distortions and behaviors, improving emotional regulation, and development of personal coping strategies that target problem-solving.

Menerva – Early Detection of Breast Cancer

Early detection of breast cancer greatly increases the chance of survival. Therefore, there was a need for smart equipment that automatically informs the user of the risk of developing breast cancer. Menerva is a smart brassiere, developed by researchers at NUST, which is equipped with several sensors which send various important readings from the breast region to the smartphone via BlueTooth. The smartphone then takes some values from the user manually and calculates the risk of having breast cancer based on those reading using machine learning algorithms, thus enabling early detection of breast cancer. The prototype of the technology is ready to be licensed to industry.



Awareness Session on Drugs and Narcotics

Centre for Counseling and Career Advisory (C3A) in collaboration with Antinarcotics Force (ANF) arranges awareness sessions on the use of drugs and its consequences, warning students of potential damage to their physical and mental health due to substance abuse. The students were advised to avoid recreational drugs and seek counseling in case of addiction.

NUST has adopted a strict policy against use of drugs and narcotics on campus.


4
QUALITY
EDUCATION

GOAL 4

Quality Education

305 Publications | **13** Research Projects | **15** Patents

Academic Programs

NUST offers top-notch education with a comprehensive curriculum of 28 UG, 56 Masters and 40 Ph.D. programs, offered in 18 different schools and colleges, all over Pakistan. NUST has an enrollment of 16k + students and boasts of a competitive pool of 1100+ faculty members out of which 50% are Ph.D. qualified. NUST is the top university of Engineering and Technology in Pakistan, and 417th in the world according to QS World University Rankings 2018. NUST has also been nominated in the list of the top young universities of the world, declared 61st among world universities under the age of 50 - QS World University Rankings 2018.

29 Undergraduate Programmes

61 Masters Programmes

42 PhD Programmes

19 Schools and Colleges

16,000+ Students

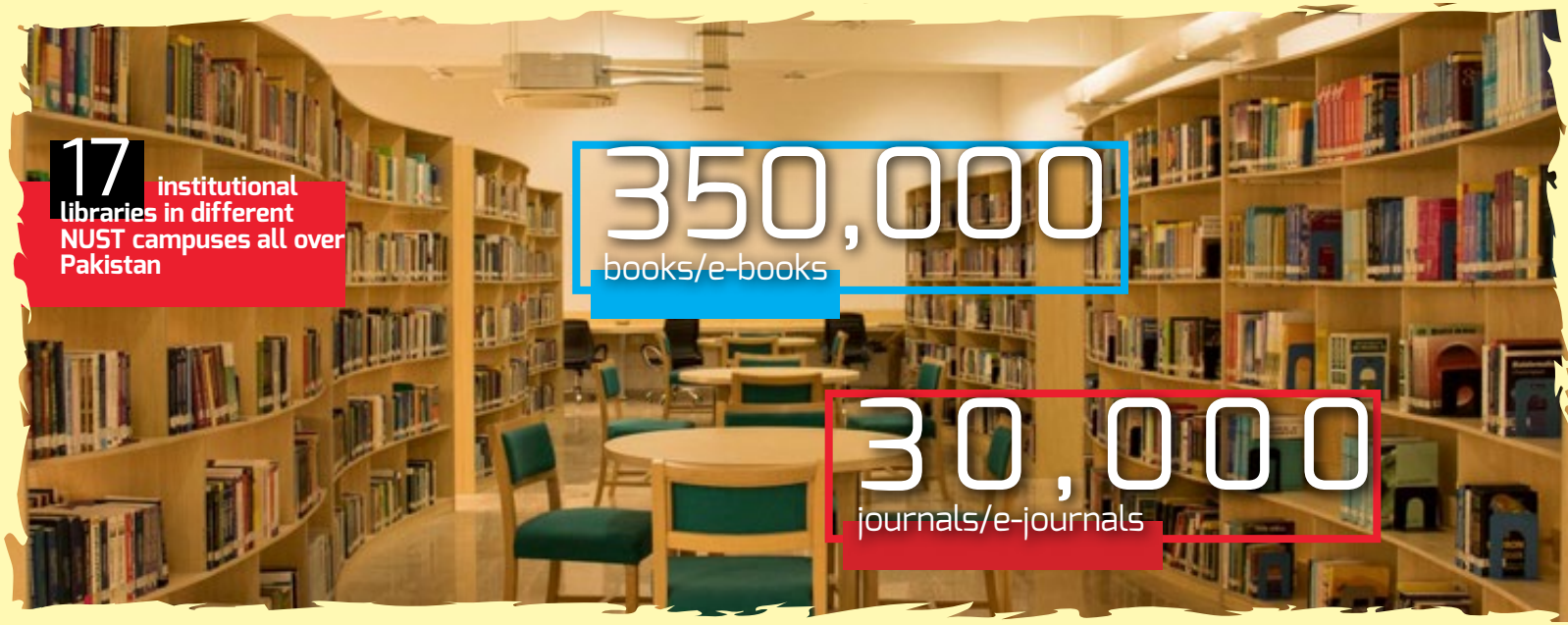
Labs and Research Facilities

NUST has been equipped with state-of-the-art labs to facilitate practical knowledge and applied research. There are more than 330+ labs for UG programs and 35 key labs for advanced research. NUST also provides on-campus cloud infrastructure offering IAAS, SAAS services. Some of the notable research-intensive labs include Anechoic Chamber, Image Processing Centre GPU-based Supercomputing, Supersonic Wind Tunnel, Material Characterization Facility at Micro & Nano level, Smart Grids, Robotics & Control Lab and Neuro-Informatics, etc.

330+ labs

Central Library and Affiliated Libraries

A state of the art Central Library has been established in H12 Islamabad Campus along with 17 institutional libraries in different NUST campuses all over Pakistan to house more than 350,000 books/e-books and 30,000 journals/e-journals. Such a facility is open to NUST students, faculty and staff to promote reading culture, facilitate group studies and conduct training on citation management, information literacy and search management. NUST has continued to revive book-keeping culture as well as upgraded the facility with digital formats like e-books/e-journals to keep up with the pace of the modern age. The students are facilitated with publications, presentations, and writings in all formats free of cost, thus committing to free access to education for everyone.



Career Counselling Session for High-school Students

NUST aims to transform the lives of students in Pakistan through guidance and quality education. NUST Community Service Club (NCSC) organizes career counseling session for students from various schools in Islamabad & Rawalpindi, including Beaconhouse, Torcia Academy, Westminster School, and Islamabad Model College for Boys. The visiting high school students are given a detailed presentation about different disciplines and admission procedures of universities in Pakistan and abroad.

Professional Development Centre

PDC is imparting high quality continuing education to NUST employees and industry professionals in the field of Management, Engineering and Information Technology. PDC has conducted so far 550+ trainings and trained more than 11,500 personnel and made a huge clientele of over 800 organizations. PDC is leveraging upon a rich faculty base of 900 members of NUST, including more than 570+ PhDs.

PDC is considered one of the most sought after institutions of Pakistan for short term courses in various fields and has maintained a tradition of excellence since its inception in 2007. The prime objective of PDC is to provide access to knowledge, capacity building and continuing education facility to professionals from all walks of life.

550+ Pieces of training

11500

Personnel Trained

800+ organizations

Book Donation Drive

NUST believes in access to education regardless of the economic background of its students. Every year, NUST facilitates its students in conducting a book donation drive to make textbooks accessible and affordable to students from lower-income backgrounds. A large number of books are donated by the NUST community, to be stored in a dedicated book-bank. The books are further passed on and re-used until they are worn out.


5
GENDER
EQUALITY

GOAL 5

Gender Equality

88	7	127
Publications	Research Projects	Patents

Female Representation in NUST

Science and technology is a field where women are usually under-represented globally with an evident gender gap. Despite being a university focused on engineering and related technologies, NUST has managed to provide an environment conducive for women to pursue an education in these fields, with current female enrolment at 30%. The university also facilitates female students by providing them with on-campus accommodation, equipped with appropriate sports and health facilities, with priority given to students from remote areas of Pakistan.

Apart from a healthy female students' representation, NUST also has a female membership of around 22 % in its pool of faculty and researchers.

NUST has a stringent policy on harassment against women at the workplace in order to provide a healthy environment for women at the workplace.

FEMPOWER @ NUST

A billion women, or 40% of the global female population, don't have access to a bank account. Many of these women have simple dreams about a better life – provide education for their children, clean water and nutritious food for their families. Yet, they don't have the means to earn income, receive capital or create businesses to invest in their modest goals. The students at NUST Community Service Club founded FEMPOWER, an initiative to empower women from lower-income backgrounds through interest-free microfinancing. In its first cohort, around 15 women were selected to undergo vocational training and start their business. NUST is playing its role in setting up projects to provide opportunities to the female populace of Pakistan and bridge the income gap between the genders.

All-Girls Team of Formula Racing Car

The exceptional accomplishments of women in recent years have brought Pakistan much pride and joy. They have fought and struggled in many male-dominated fields and proven their mettle not only in Pakistan but also in the global avenues. Team Auj from NUST is Pakistan's first all-girl formula student team, which participated in Formula Student UK. In 2018, the team participated for the first time and bagged Race Tech Spirit of Formula Student Award 2018. NUST has always emphasized on providing equal opportunities to all students regardless of gender, especially in the fields of technology in which women are most under-represented.

NUST Daycare Facility

In order to ensure female inclusion in the workforce and higher education, NUST has taken significant measures to facilitate working mothers or women pursuing higher education. A dedicated day-care facility for NUST female students and employees, along with an on-campus school for kids has been established at NUST so that the mothers can carry out their duties without stress. Currently, more than 30 Children are enrolled in daycare whereas 200+ students are enrolled in NUST affiliated school. Such adequate childcare access at arms' length has significantly reduced the burden on mothers.


6
CLEAN WATER
AND SANITATION

GOAL 6

Clean Water and Sanitation

365 Publications | **13** Research Projects | **21** Patents

Waste Water Treatment Plant

With water shortages plaguing the world, water scarcity has become one of the largest threats facing society today, making it one of the UN's main sustainable development goals. Therefore, NUST is aiming to focus on developing new projects and technologies to reduce its water consumption. Our researchers developed and installed the Wastewater Treatment plant which is a low-cost technology requiring minimal energy and operational attention for the treatment of wastewater. A joint project of UNESCO and NUST, it is able to produce 75,000 gallons of recycled water per day for the entire horticulture of NUST. Unlike the rest, wastewater treatment presents a sustainable short-term and long-term solution to water scarcity. Currently, around 20,000 liters of water is being recycled per day which is used for horticulture, thus significantly reducing water usage of the campus.

Sanitation Festival

The WASH (Water, Sanitation and Hygiene) coalition of Pakistan arranged a mega-scale event on sanitation and labeled it as the 'Sanitation Festival' parallel to the World Toilet Day, to raise awareness on Sanitation and Hygiene in Pakistan. This was one of its kind event where students participated as volunteers to create awareness on sanitation, hygiene and water conservation.

Water Conservation Awareness Walk

In order to create awareness regarding water conservation, NUST Environment Club organized an Awareness Walk in Islamabad in which university students and faculty participated in the event.

NUST installs Solar-Powered Water Pump at Thar

Solar surface and bore pumps are ideal for use in many areas in Sindh – they get plenty of sunshine throughout the year. Solar pumps are a popular choice for watering livestock, crop irrigation, industrial water supply, and even domestic use. Keeping in view the importance of these pumps for the place, NUST has set a unique example of collaboration with other private groups to ensure the availability of drinking water to far-flung areas. In collaboration with the Association of Water, Applied Education & Renewable Energy (AWARE), NUST successfully completed the installation of a solar-powered water pump at Revi-Ji-Dhani, UC Faqeer Abdullah District Umerkot, Thar. The pumps are low-maintenance and get their energy directly from the sun, reducing costs to a great extent. The water pump now provides clean water to many households in the district, thus alleviating the water-related shortages for the local people.


CENTRE FOR ENERGY SYSTEMS
7
AFFORDABLE AND
CLEAN ENERGY

GOAL 7

Affordable and Clean Energy

428	42	19	01
Publications	Research Projects	Patents	Patents Licensed to Industry

Technology Licensed to Industry

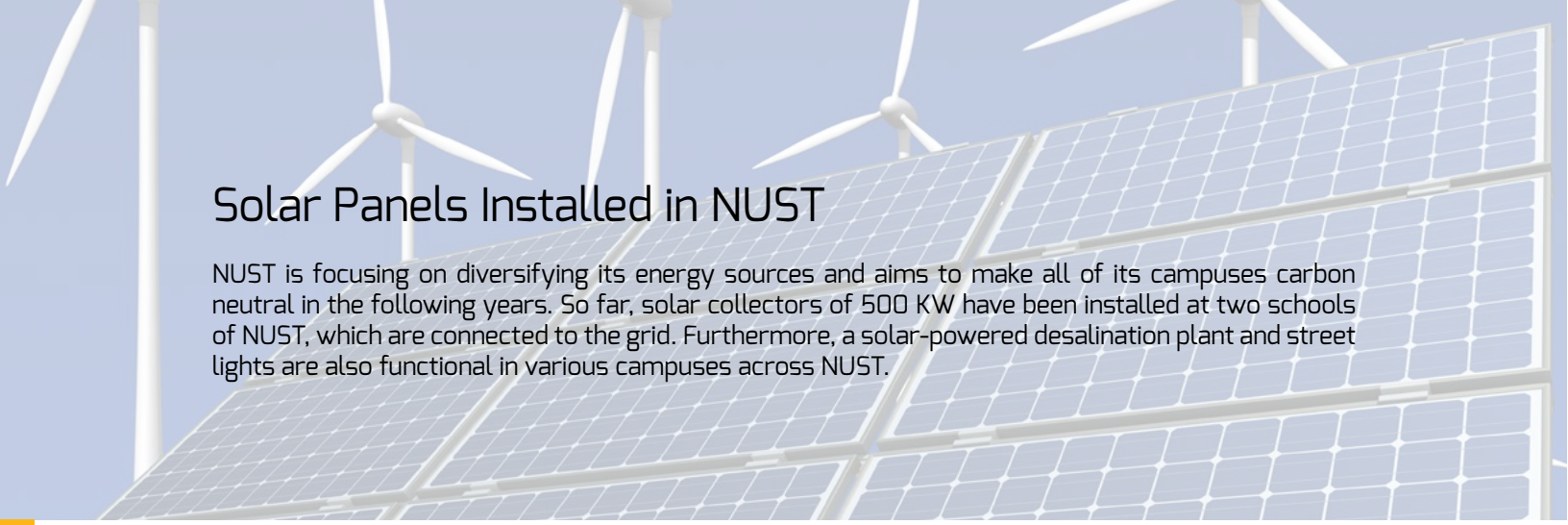
3Phase Load Balancer: 3PLB is a power electronics device developed by NUST which deals with the issue of load unbalancing through uniform distribution of current in all three phases, hence eliminating the neutral current flow. The technology reduces 20% of the electricity bills if it is installed in a three-phase fed house.

Impact:
- Cost-effective and locally developed
- Reduces 20% of electricity bills

Industry: Bolts Pvt. Ltd

Centre of Excellence in Energy

NUST collaborated with Arizona and Oregon State Universities to establish U.S.Pakistan Centre for Advanced Studies in Energy (USPCAS-E) to address some of the outstanding challenges faced by the energy sector in Pakistan. Strategic goals behind USPCAS-E are to evolve into a Centre of Excellence in applied research catering to the energy sector and economy of Pakistan with the aim to establish efficient governance structures, sustainability, value-added curriculum, and capacity building, promote applied research to serve public/private sector and NUST-US students/faculty exchange programs. The core mission of USPCAS-E is to efficiently address and implement the E3 criteria (Energy, Environment, and Economy) for sustainable societal development.



Solar Panels Installed in NUST

NUST is focusing on diversifying its energy sources and aims to make all of its campuses carbon neutral in the following years. So far, solar collectors of 500 KW have been installed at two schools of NUST, which are connected to the grid. Furthermore, a solar-powered desalination plant and street lights are also functional in various campuses across NUST.

Sustainable Energy Production from Biomass In Pakistan

Biomass is considered to be one of the carbon-neutral renewable energy sources and could be a potential source of energy in Pakistan due to large amounts of agricultural waste produced in the country. NUST initiated a project, in collaboration with United Nations Industrial Development Organization (UNIDO) Pakistan, under GEF-funding that aims to stimulate investments in Biomass Gasification Technologies (BGT's) in SMEs in Pakistan. The project objective was to create awareness on the use of biomass gasification technologies in Pakistan and build the capacity of market enablers and players in dealing with BGTs.

The project also strengthened the capacities of existing technology services providers so that they are able to support the Biomass Gasification Technologies system, especially their operations and maintenance. An International Conference & Expo on Biomass Gasification Technologies was also organized during the project.

Workshop on Green Energy

As a part of collaborative efforts to enhance the capacity of USPCAS-E students and faculty, the centre organized a workshop on "Green Buildings: the US and Pakistani Practices" in collaboration with UET-Peshawar on December 2016. Besides government officials, representatives from industry including ENERCON, Pakistan Green Building Council, SMC, and many others attended the two-day event.


8
DECENT WORK AND
ECONOMIC GROWTH

GOAL 8

Decent work and Economic Growth

393 Publications | **123** Research Projects | **05** Patents

NUST Placement Ecosystem

NUST has a strong ecosystem supporting placements of its students for internship and jobs for its graduates, through active engagement with the industry. A large number of on-campus recruitment drives, industry sessions, and alumni talk series are conducted across all schools and campuses. Being a comprehensive university, industries matching each discipline are selected. NUST has thus achieved a 94% employment rate as per QS ranking criteria, and ranked as Pakistan's No 1 university in Employers' Reputation.

360 Recruitment Drives

700 Industries engaged in the last five years

17607 Internships offered

94% Employment Rate

9025 jobs

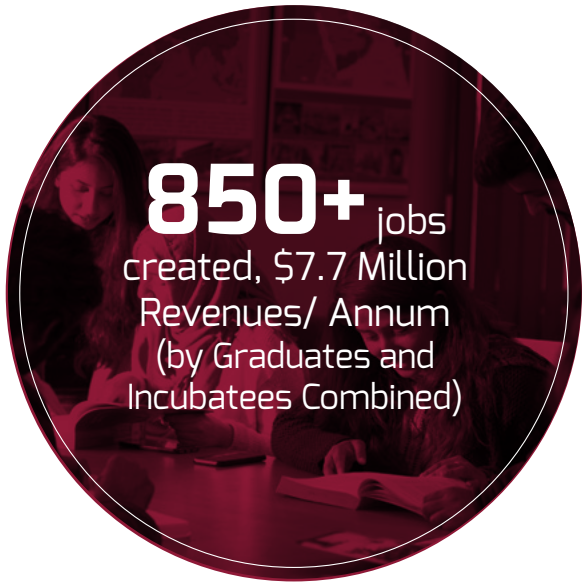
NUST: Pakistan's No 1 university in Employers' Reputation.

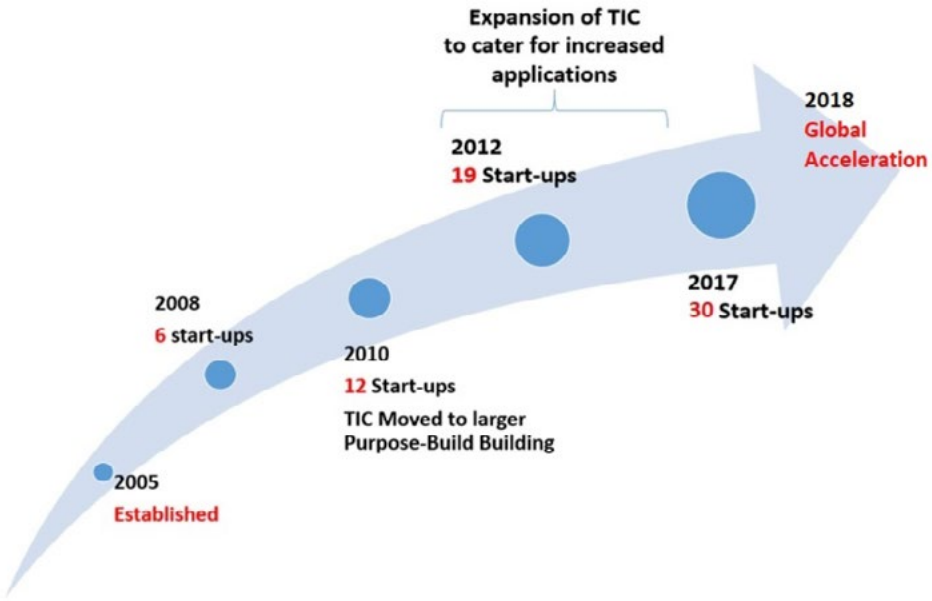
Preparing Students for Employability

In order to prepare our students for the job market, we implement custom made career development programs focusing mainly on developing employability skills applicable to the competitive job market. The career development program includes Career Orientation Seminars, Workshops on Resume Writing, Workshops on Interviewing Techniques One-o-One counseling sessions and Focused Group Discussions (FGD).

Technology Incubation Centre (TIC)

TIC is the first Technology Incubator of Pakistan established in academia in 2005 by Pakistan's premier university NUST as a mean to replicate the concept of incubators in Pakistan. It provides a conducive environment for young businesses with all the necessary facilities, training and venture capital opportunities under one roof over an area of 33000 sq. ft.






9
INDUSTRY, INNOVATION
AND INFRASTRUCTURE

GOAL 9

Industry, Innovation and Infrastructure

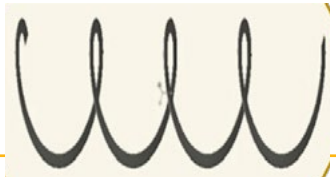
1548	123	175	02
Publications	Research Projects	Patents	Patents Licensed to Industry

Technology Licensed to Industry

In the absence of locally available quality fleshing and shaving blades, Pakistani leather manufacturers have to opt for imported ones. Under the licensing agreement between NUST and Shafi Reso Chemicals Lahore, the company will now manufacture these blades locally with support of NUST researchers, thus offering quality indigenous blades at a significantly reduced cost, leading to substantial savings in foreign exchange.

Impact:
- Cost-effective and locally developed
- 150x firms, an annual turnover of PKR 750 M

Industry: Shafi Reso Chemicals Pvt. Lt



Faculty Placement

In the year 2018, NUST initiated Faculty Placement Program which is the only Pakistani university to launch such an initiative, aiming to build industrial linkages to engage faculty in applied research. In the first batch, 13 faculty members from six schools of NUST were placed in four different industries for two weeks during the summer break of 2018. As a result, 27 projects were proposed out of which two projects received industrial funding. Reciprocating the trend, two industrial reps from each industry visited NUST that resulted in advancing further relationships with these industries.

Industry-Academia Linkages

At NUST, we strongly believe in knowledge transfer and open innovation to meet industrial needs. NUST has formulated an integrated, interdependent ecosystem that helps in establishing and consolidating industry-academia linkages and subsequently, in commercializing research. The parts of this eco-system are:

- Corporate Advisory Council (CAC)
- National Science & Technology Park (NSTP)
- Directorate of Research
- Intellectual Property Office (IPO)
- Technology Transfer Office (TTO)

- Professional Development Centre (PDC)
- Industrial Liaison Office (ILO)

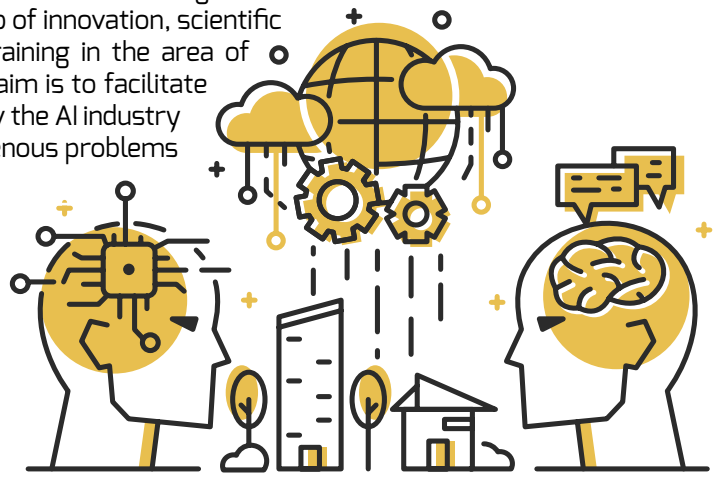
All of the above organs play a key role in establishing collaborations with industry and bridging the gaps between industrial needs and academic research.

418 Industrial Partnerships, **7** Technologies licensed to Industry, **80+** Industrial Consultancies

29 Joint Research projects with Industry

National Centre of Artificial Intelligence (NCAI)

NCAI is the latest technology initiative of the Government of Pakistan under the government's Vision 2025. The centre is designed to become the leading hub of innovation, scientific research, knowledge transfer to the local economy, and training in the area of Artificial Intelligence (AI) and its closely affiliated fields. The aim is to facilitate the researchers in the field of AI; help them establish and grow the AI industry following international trends and seek solutions to the indigenous problems through AI.



Approved by the Government of Pakistan in January 2018, NCAI is designed on a consortium model where the most leading researchers in the field of AI are identified on competitive grounds and new state-of-the-art labs are established after a competitive evaluation and rigorous selection process.

National Centre of Robotics & Automation (NCRA)

The National Centre of Robotics and Automation is a consortium of 11 labs over 13 universities of Pakistan with its centre headquarter at NUST College of E&ME. The centre will serve as a leading technological hub within the domain of Robotics and Automation. The aim of NCRA is to manage and efficiently use the highly skilled researchers, scientists and experts of robotics and automation in order to generate resources based on innate strengths and build capacity in the fields of Robotics and Automation.

Finding Innovative & Creative Solutions for Society

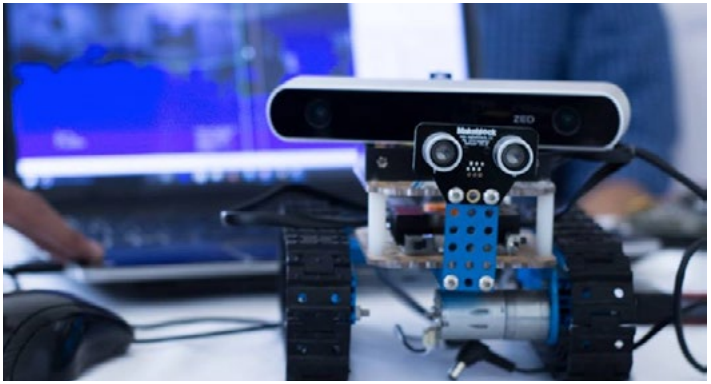
FICS

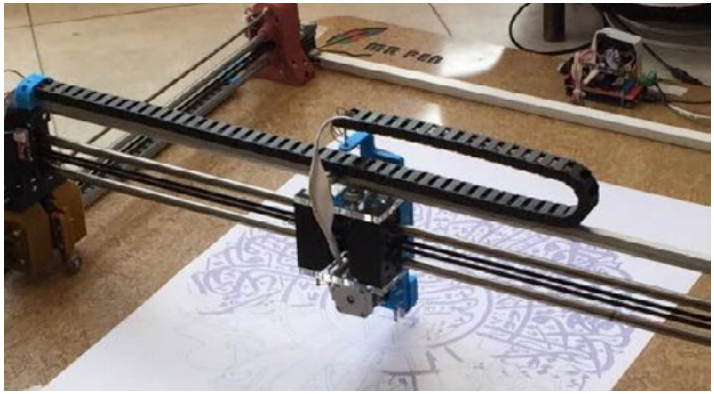
NUST strongly believes in inculcating the spirit of entrepreneurship and innovation among students to tackle modern-day challenges head-on. Finding Innovative & Creative Solutions for Society (FICS) is an annual competition hosted by NUST in which students from around the country present their ideas and prototypes for funding and commercialization. The aim of this initiative is to instill a spirit of social entrepreneurship amongst students, encouraging them to convert their creative ideas into value-adding solutions and thereby benefit themselves and society. The three-stage competition spans over two months in which projects are examined by industry leaders, innovators, and investors.
Some of the objectives of FICS are given below:

- To encourage students to become valuable members of society and contribute to societal / community development by deploying technical knowledge and scientific tools.
- To allow students to think creatively and develop the latest applications and innovative technology based-solutions, hence encouraging them to work on practical utilization of knowledge.

1000+
2014-18: No. of Ideas Submitted

20+
No. of successful startups






10
REDUCED
INEQUALITIES

GOAL 10

Reduced Inequality

35 Publications | **20** Research Projects

Non- discrimination policy

NUST imposes a strict, non-discrimination policy for reducing in-equalities due to gender, race, marital status, ethnicity, religion, financial background, disabilities, and sexual orientation. The policy, which emphasizes on merit, is applicable to all matters of university employment, administration, admission to university academic programs and other activities.

NUST Outreach Programs

NUST believes that education is the only tool to bridge not only economic inequalities but also cultural inequalities. NUST outreach program aims at inducting talented but underprivileged students from remote areas of Pakistan into various undergraduate programs. NUST-PPL Outreach Program 2018, conducted in Balochistan and KPK, aims to bring students from these remote areas of Pakistan into the mainstream of education. The 4-week program, in collaboration with Pakistan Petroleum Limited (PPL), commenced in June 2018, and more than 150 students from these areas were enrolled to prepare them for the highly competitive NUST Entry Test (NET). The University is an active participant in a similar program of National ICT (R&D) Fund which offers scholarships for 4-year degree programs in IT-related disciplines. NUST contributes 20% of the total expenses of these scholars.
From 2019 onwards, campus in Balochistan will start enrolling students in UG programs, which is a laudable step of NUST for ensuring social inclusion. Further inclusion and outreach programs in the pipeline include the campus in FATA.

Need-Based Financial Scholarships for Students

Need-Based Financial Aid Program aims to make NUST education affordable and accessible to the most financially challenged students, admitted purely on merit. The program is bolstered by NUSTs' own resources and external funding, seeking to facilitate students from low and middle-income families. Need-based financial aid is offered to Undergraduate and Masters students in various forms like tuition fee coverage, interest-free loans, deferment of tuition fee and fee deposits in installments.

Using Sports for Inclusion

Sports events not only promote a healthy lifestyle but also remove barriers of class, ethnicity, and gender as well. Hence, NUST Community Service Club (NCSC) allied team, Serving the Servers regularly organizes sports events for NG staff (blue-collared staff) of NUST with a special focus on organizing recreational and entertaining events.

Fund-Raising Futsal match

NUST Community Service Club (NCSC) organizes Footy Mania, a fund-raiser match for paying the fee of deserving students of NUST, every year in April. The event registers various teams for the matches that continue into the wee hours. The impressive event depicts the true picture of collaboration among the student body and the university to support financially feeble students.

A Play by NUST Community Service Club (NCSC)

NUST Community Service Club (NCSC) organized a play "Patang" staged by special children of HEC National School of Special Children (NSSC) on its campus. It was an event dedicated to special children who were engaged in activities and events specially designed for them.

NUST Community Service Club (NCSC) "Knack of all"

With a view of providing underprivileged children a platform to showcase their skills, NUST Community Service Club (NCSC) organized "Knack of All" at SOS village. This year, the activities focused on public speaking, self-defense, and career counseling. The program aimed to develop new skills in children and prepare them to face the challenges and overcome the disadvantages associated with economic inequality.


11
SUSTAINABLE CITIES
AND COMMUNITIES

GOAL 11

Sustainable Cities and Communities

811	23	19
Publications	Research Projects	Patents

Smart Waste Management

A smart city is a municipality that leverages the use of ICT technologies to optimize daily operations, such as traffic, transportation, power, water supply networks, waste transportation, law enforcement, education, health care, and other community services.
NUST has developed a project which implements a novel application of the IoT for Smart waste transportation and shares an illustrative study on the design of smart waste transportation processes for the city of Islamabad, the capital of Pakistan. Our researchers surveyed the current traditional waste transportation process and obtained retrospective data from the Capital Development Authority (CDA). An IoT-based solution for the smart waste transportation system was simulated at the city level to show the performance gain and resource-saving. Later, the model was implemented, including physical hardware equipped with top-load waste bins, ultrasonic range sensors, and communication modules, an online server/ dashboard for computing optimization algorithms and visualizations accompanied by a mobile application for job assignments and transport navigation. The proposed solution assists in optimal planning and making informed decisions for waste collection through optimal routes, thus reducing cost and time.

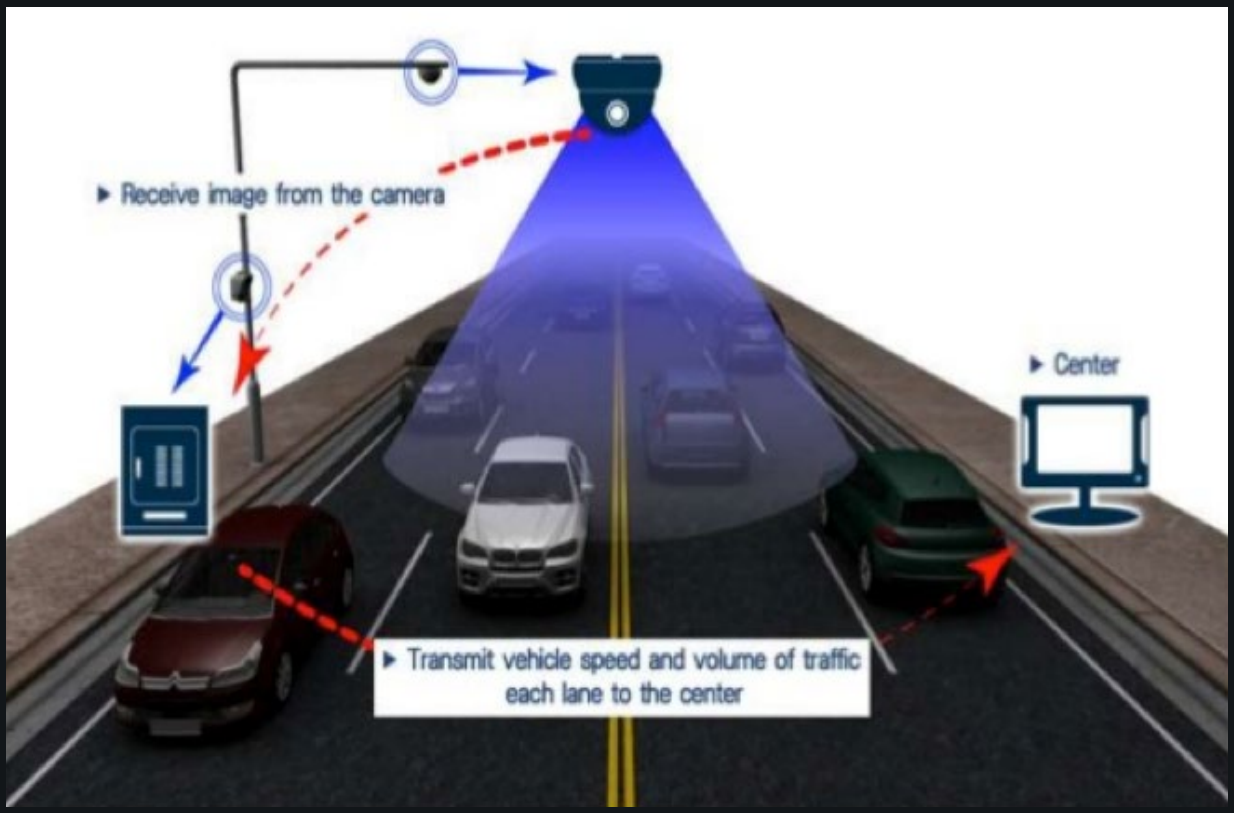
Promoting “Green Buildings”

NUST has been actively engaged in promoting sustainable green buildings with zero carbon footprint with research in new materials for sustainable infrastructures. As a part of a collaborative effort to enhance the capacity of students and faculty on green buildings, NUST organized a workshop on “Green Buildings: the US and Pakistani Practices” in December 2016. The workshop highlighted the international best practices in terms of sustainability in structures and buildings and discussed the design considerations to minimize the carbon footprint of buildings. Besides government officials, representatives from industry including ENERCON, Pakistan Green Building Council, SMC, etc., attended the two-day event.

An Automatic Real Time Vehicle Detection, Identification and Registration Plate Recognition System (VSURV)

Stolen Vehicles are a huge problem for the security agencies of Pakistan as they are prone to be used in illegal activities. Video surveillance cameras are installed at different locations in all major cities of Pakistan but these video cameras are controlled from the control rooms where the illegal activity is being detected manually. Automatic vehicle detection, registration plate recognition, and authentications play a significant role in efficient traffic management where safety is the main concern. An automatic real-time vehicle detection, identification, and registration plate recognition system is being developed for traffic management and security surveillance of roads in Pakistan.

VSURV is a project, developed by NUST, aiming to develop an extensive database for training a machine learning algorithm for the traffic management system in Pakistan. Features of VSURV include background estimation, foreground object extraction, vehicle detection and identification, registration plate localization, a region of interest detection, and registration plate recognition and authentication.



Video Vehicle Detection

15th HONET-ICT International Conference 2018: Smart Cities: A Step Towards Improving Lives using IoT And AI

Smart Cities, being one of the research themes of NUST, has further been divided into 8 research areas which are crucial for efficient infrastructure development of the country. With current mega-scale infrastructure development projects in pipeline due to CPEC, NUST wants to build the capacity and engage its researchers with other stakeholders involved in development sector.

HONET-ICT is an international conference that attracts researchers from around the world with a global audience and presence. In Oct 2018, the conference was held at NUST, the focus of which was on using technologies like Optical Networks, Cloud Computing, Virtualization Technologies, Big Data, Energy and enabling technologies, Artificial Intelligence, Internet of Things (IoT), Cyber Security and related areas for smart cities applications. HONET-ICT 2018 also featured a Symposia on Higher Education, CPEC and Industry-Academia Partnership. Several distinguished invited speakers from renowned foreign universities, industrial reps of local and foreign multi-national companies attended the event. Workshops and tutorials on A.I., IoT, BlockChain, Big Data Analytics, Smart Grid, and many other interesting topics were covered during the conference.

Green Building Design Projects

NUST engages its researchers to provide their expertise on sustainable technologies for planning its expansion and infrastructure development. "Energy Efficient Building Design," is one of such projects of NUST in which NUST researchers highlighted the recommendations for suitable measures, materials, orientations, layouts and internal fixtures to construct energy-efficient buildings at NUST. A similar project, "Self Compacting Pace Systems using Secondary Raw Materials" was an attempt to investigate the effects of different cement replacements by Secondary Raw Materials (SRM), which includes silica fumes, fly ash and hemihydrate or their combinations.


12
RESPONSIBLE
CONSUMPTION
AND PRODUCTION

GOAL 12

Responsible Consumption and Production

421	4	9
Publications	Research Projects	Patents

Online Awareness Campaign to Reduce waste

NUST aims to encourage students to adopt eco-friendly habits when it comes to waste disposal. Therefore, Waste Reduction Week was arranged by NUST Environmental Club (NEC) which included an online social campaign encouraging people to create beautiful and useful items out of the trash and submitting their pictures to the page. The submissions were then voted by the online community for their ingenuity, creativity, and impact.

Clean-up Drives

NUST Environment Club (NEC) organizes a Clean Up Drive at the very heart of Islamabad, Faisal Masjid every spring. In line with various productive activities of Waste Reduction Week, with many students joining and contributing to the cause. The week-long activities included the Earth Day celebration and cycling competition. With Clean-Up Drive, the week culminated on a high note, encouraging the public, especially the student fraternity to come forward for such initiatives as a response to counteract the issues of environmental degradation.

Color-Coded Dustbins

NUST is working to reduce waste and promote efficient recycling and reuse for a sustainable environment. NUST has installed color-coded dustbins in all cafeterias where waste is sorted into plastics, paper, and glass to facilitate faster recycling. Color coding helps waste disposal companies distinguish different types of wastes, and easily sorts them into different categories. This initiative has encouraged adopting recycling a major part of the Institution's operations and management.

Ban on Plastic Bags

NUST actively promotes environment-friendly practices at all of its campuses. The use of plastic bags at all stores inside NUST was banned on account of their negative impact on the environment and has long been replaced by eco-friendly alternatives.

Art from Waste

Art comes from the view of an artist. NUST Environment Club (NEC) believes in reusing disposables in an innovative manner. Therefore, NUST Environment Club set up a community service for the students to make art from waste materials such as bottles, cups etc. To this end, the club held the third installment to its premier event, "Trash to Model" in which students from all over NUST and beyond were huddled around their workstations encircling the IESE courtyard on a warm afternoon, focused on the task at hand: to showcase the hidden potential of garbage by transforming used and thrown away bottles, cups, plates and popsicle sticks into splendid works of art.


13
CLIMATE
ACTION

GOAL 13

Climate Action

221 Publications | **14** Research Projects | **6** Patents

NUST Green Campus Initiative

During the last few years, NUST cultivated about 20.1 acres of land and planted 2708 plants to negate the carbon footprint of the campus. The figure rose to 57 more acres in 2012 and 2013 and in 2014, 8.90 acres of land were beautified with 1587 plants. For 2015, about 5.8 acres had been planted with 1628 tree saplings and the figures are set to increase every year. The projects included the beautification of various empty spaces within NUST including cafeterias, squash court, parking spaces, etc. It is amazing to note that there was only one gardener in 2008, but now the number has increased to 79, which shows the commitment of NUST to combat climate change. According to the horticulture team, about 180 acres of land is now green, with the development plan to cultivate more acres within NUST.

Meteorological High Precision Solar / Wind Measuring Station

NUST provides a platform for ground-breaking research to explore new methods for sustainable development. US Pakistan Centre for Advanced Studies in Energy (USPCAS-E) at NUST installed a Meteorological High Precision (MPH) Solar/Wind Measuring Station which is a cutting-edge tier-2 station, the second of its kind in Pakistan, to capture real-time data for research and development of sustainable technologies. The MPH is capable of acquiring real-time ground data for both the Solar Thermal and Solar PV applications, which will be crucial in making accurate meteorological predictions and analysis. The station has been installed in NUST by the World Bank through the Alternative Energy Development Board.

Solar Powered Shuttle

Climate changes pose one of the greatest threats to our planet. Of the environmental risks identified by the World Economic Forum in its annual Global Risk Report, four can be linked to climate change: extreme weather events, failure of climate change mitigation and adaptation, natural disasters, and biodiversity loss and ecosystem collapse. NUST is committed to reducing greenhouse gas emissions and cutting down carbon footprint for a sustainable environment. Students at the School of Mechanical and Manufacturing Engineering (SMME) developed a solar-powered shuttle to provide transport to students traveling inside NUST. The shuttle is eco-friendly, noiseless and uses no fossil fuel, thus ensures zero emission level.

Cykiq

At a campus spread over 700 acres, commuting has been a hectic activity for the students and staff at NUST. Therefore, to facilitate a zero-emission commute within NUST, a team of students came up with an innovative solution to this: Cykiq, a bike-sharing startup for small distances. It reinforces NUST's goal to reduce greenhouse gas emissions and promote eco-friendly modes of transportation.

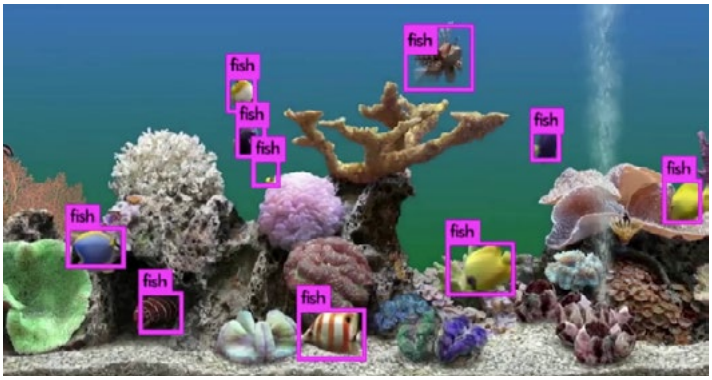

14
LIFE
BELOW WATER

Life below Water

393	3	5
Publications	Research Projects	Patents

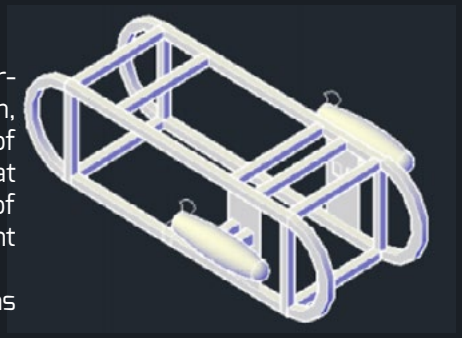
Fish Biodiversity Estimation by Low-Cost Non-Destructive Video-Based Sampling (FIBEVID)

Pakistani rivers are home to 34 endemic species of fish that are unique worldwide, multiple of them endangered. These habitats of these fishes are threatened by overfishing, polluted rivers, the introduction of more dominant species in the habitat and the construction of water dams in the area. The monitoring of these species, so far, has been done manually with experts deploying fishnets, capturing samples and counting them to get an estimate. This method is labor-intensive, time-consuming and most of all destructive to the already endangered species.



FIBEVID is a NUST project which proposes a non-destructive, video sampling-based solution to fish population estimation. The project has run over the last two years, in collaboration with Rhein-Main University of Applied Sciences (HSRM), Germany. Algorithms and tools for fish detection, classification, and tracking have been developed for fish fauna estimation in Pakistani rivers.

Autonomous Underwater Vehicle (AUV)



Autonomous Underwater Vehicles (AUVs) have broad applications in preservation of underwater species as they assist in large area underwater detection, relay communication, navigation, and large area ocean environment observation. However, the uncertainty of the underwater environment and the uniqueness of acoustic measurement are the great challenges. To solve this problem, NUST developed a project that takes improvement of AUV cooperative navigation performance under distributed acoustic sensing measurement network as the main line.

This project has enabled high precision of information in harsh underwater conditions through acoustic channel high precision multi-AUV cooperative localization.

Evaluation of chemical-induced toxicity and quorum quenching potential using fish as a model organism

Agrochemicals have become a leading cause of health problems in countries throughout the world. Pakistan, being an agricultural country, relies greatly on pesticides to achieve higher crop yields with better quality. Lambda-cyhalothrin, a synthetic parathyroid low-cost pesticide, is very popular in Pakistan due to its proven efficacy against crop however, WHO has prohibited its use due to its acute toxicity. Similarly, a higher concentration of pharmaceuticals active ingredients like sulfamethoxazole has also been detected in surface waters of Pakistan due to untreated wastewater and run-off from agricultural usage.

In order to reduce the impact of commonly used pesticides on aquatic life and humans, it's necessary to assess their toxicity potential. In this NUST research project, fish was selected as a model organism and exposed to different concentrations of potential contaminants to identify the sub-lethal levels. During this study, isolation of pathogens from the surrounding water and various organs of fish was also performed to measure their quorum sensing ability.


15
LIFE
ON LAND

GOAL 15

Life on Land

309 Publications | **14** Research Projects | **6** Patents

NUST Plantation Drives to Preserve Environment and Natural Habitat

NUST is trying its best to increase awareness on preserving ecosystems by organizing programs as well as taking initiatives to defer the rate at which ecosystems for wildlife are being destroyed. More than 50k samplings have been planted all over NUST in the past 5 years at different occasions like orientations, semester ends, summer, international visits, chief guests and all other important events. These drives, aiming to restore the habitat of wildlife within NUST, are also aligned with the Prime Minister's Clean and Green Pakistan Initiative.

NUST Main Campus offers 180 acres of green land, out of which 103 acres is covered in forest, which provides habitat to a number of wild animals such as fox, porcupines, cats, dogs, mongoose, pigs and many more. Apart from forests, lakes situated inside the campus attract a number of bird species such as sparrows, francolins, kingfishers, and drakes, etc.

50,000+ Samplings Planted

180 Acres of Green Land

NUST Environmental Club (NEC)

NUST Environment Club (NEC) was proudly launched at NUST H-12 Campus back in 2011 to celebrate nature and create awareness on environmental issues that are challenging the fate of planet Earth. The purpose of NEC has been to instill a sense of collective and individual responsibilities in the community towards protecting the environment and to inspire people into innovating and reforming their lives to eco-friendlier alternatives. NEC hosts exclusive events, sessions, blogs and much more to interact with its audience and is one of the most active societies thriving at NUST. Some of the events NEC successfully held are NEC Earth Day Carnival, Cycling Competition, Waste Reduction Week, etc.

Biography and Phylogeny of Western Himalayan Cyperaceaee

There are more than 200 species of Cyperaceae, grouped into 22 genera present in Region of Western Himalayan, Pakistan. This research project of NUST is a part of the Global project of Carex classification, where species of family Cyperaceae predominant in Pakistan will be explored. The works of this international collaborative project focus on the global sectional revision of Carex (Cyperaceae) and its embedded genera and aim to construct a framework based on DNA sequence data for a global database. The findings of the project will enhance the online biodiversity tool, strengthen international collaboration and train the next generation of sedge systematics. All species hosted in different regions of Pakistan will be collected and then identified using molecular techniques. The data obtained will be analyzed using bioinformatics tools and all the refined vouchers specimens, along with GIS information, will be sent to the herbarium of The Morton Arboretum, the USA for permanent digitized archival on Cyperaceae.


OF POLICY STUDIES
16 PEACE, JUSTICE AND STRONG INSTITUTIONS

GOAL 16

Peace, Justice and Strong Institutions

302	14	6
Publications	Research Projects	Patents

Centre for International Peace and Stability (CIPS)

The Centre for International Peace and Stability (CIPS) was established and inaugurated by UNSG Ban Ki-moon on 13th August 2013 in NUST. It is one of its kind institute established with the purpose of conducting research and training in matters related to UN Peacekeeping Operations (UNPKOs). Its mandate is not restricted to the relatively narrow field of peace-keeping, but it also offers combined graduate programs in Peace & Conflict Studies (PCS) with short courses on pre-deployment peacekeeping training. With time, CIPS has emerged as a centre of excellence in international peace and stability with a focus on peacekeeping, peacebuilding, and conflict resolution within the context of prevailing international and regional politics.

International Seminar on Peace and Conflict Resolution

The International Seminar on Peace and Conflict Resolution was held at the Centre for International Peace and Stability (CIPS) in NUST in December, 2016. The Seminar was inaugurated by the President of the Islamic Republic of Pakistan, whereas many notable foreign dignitaries, chief military observers, and UN officials attended the event. The speakers discussed international laws and their relevance to peacekeeping operations. A large number of researchers and scholars from local universities and think tanks also attended the proceedings.

International Conference on Post Conflict Rehabilitation

In the backdrop of addressing the underlying issues faced by nations post conflict, which deter the conditions for sustainable peace and development, and in order to curb such issues not only in Pakistan, but in the global perspective, NUST held first International Conference on Post Conflict Rehabilitation in November 2015.
National and international researchers, policy specialists, and all the other key stakeholders were invited to participate and share their views on the topic addressing peace, stability, human rights, and effective governance based on the rule of law which become important conduits for sustainable development in the post conflict scenario.

Roundtable Conference On Crises in Syria and Iraq

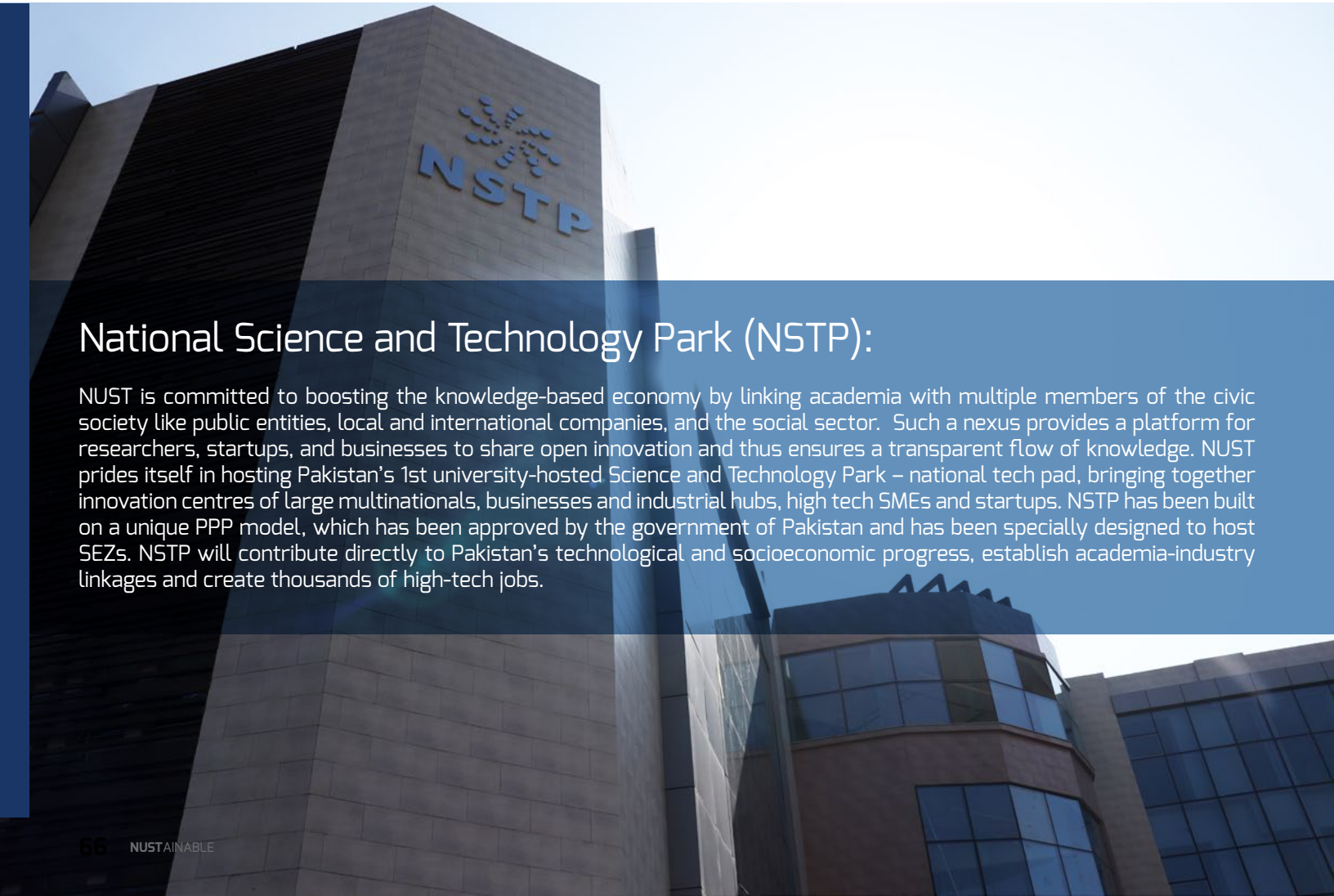
Since 2015, the conflict in Syria and Iraq has caused forced displacement of the local population towards Europe beyond epic proportions. The current refugee crisis is arguably the worst humanitarian crisis since the Second World War. Interestingly, the enormous experience of Pakistan in relation to the management of millions of war-stricken Afghan refugees since the 1980s has been overlooked. In fact, Pakistan has emerged as one of the largest refugee host nations in the world. Despite political turmoil, security situations and economic hardships, the country stand enriched with varied experiences and understanding of the issues surrounding refugee crises, including the ongoing repatriation and rehabilitation process. Therefore, a conference on the topic was held in NUST to share such experiences, better understand the 'politics' of refugee crises and also to identify different approaches to address the issue.


17
PARTNERSHIPS
FOR THE GOALS

GOAL 17

Partnerships for the Goals

980	14	6
Publications	Research Projects	Patents



National Science and Technology Park (NSTP):

NUST is committed to boosting the knowledge-based economy by linking academia with multiple members of the civic society like public entities, local and international companies, and the social sector. Such a nexus provides a platform for researchers, startups, and businesses to share open innovation and thus ensures a transparent flow of knowledge. NUST prides itself in hosting Pakistan's 1st university-hosted Science and Technology Park – national tech pad, bringing together innovation centres of large multinationals, businesses and industrial hubs, high tech SMEs and startups. NSTP has been built on a unique PPP model, which has been approved by the government of Pakistan and has been specially designed to host SEZs. NSTP will contribute directly to Pakistan's technological and socioeconomic progress, establish academia-industry linkages and create thousands of high-tech jobs.

China-Pak Technology Transfer Centre (CPTTC)

NUST signed an MoU with the Chinese International Technology Transfer Centre (CITTC) on December 11, 2018, in Beijing, China. CITTC is a joint project of the Chinese Ministry of Science & Technology and Beijing Municipal Science & Technology Commission, that provides a professional international technology transfer platform between China and other countries. CPTTC being established at NUST, will facilitate technology transfer between China and Pakistan and provide a soft landing to companies of both the countries to enter into each others' markets. The Centre will thus act as a gateway between the industries and innovative resources of both the countries.

CPTTC is the first-ever international centre established at any Pakistani university to promote two-way technology transfer between the two friendly nations. The Centre will be established at National Science & Technology Park (NSTP), a flagship project of NUST.

NUST Collaborations with International Associations

NUST believes in establishing collaboration with international bodies for the capacity building, shaping the future leadership, and preparing youth for the multi-dimensional global challenges. NUST has been collaborating with International Association for Exchange of Students for Technical Experience (IAESTE) foreign interns since 2013 as well as International Association of Students in Economic and Commercial Sciences (AIESEC) for students' exchange programs.

So far NUST has hosted fourteen international students in these programs and aims to increase the numbers in the future, focusing on in-take from under-represented countries.

Apart from students' exchange, NUST has been a member of SDG Accord, United Nations Academic Impact (UNAI) and Association for Advancement of Sustainability in Higher Education (AASHE) which enable NUST to propagate its sustainability initiatives, establish collaboration, and share knowledge with the global key players.

aashe member

The SDG Accord

The University and College Sector's Collective Response to the Global Goals

UNITED NATIONS academic impact

Sharing a Culture of Intellectual Social Responsibility

NUST Internship Program for International Students (NIPIS)

In 2018, NUST launched its own international internship program - NUST International Internship Program (NIPIS) to further enhance its collaborative efforts in youth engagement and empowerment. Nine students from different countries joined the program and were placed in different schools within NUST, working in the fields of engineering, bio-sciences and management sciences. Each intern was assigned a dedicated mentor from faculty and student sponsor, as the program aims to provide high-quality internship experience at one of the leading Higher Education Institutions of Pakistan. The internship is designed to reinforce their academic and professional learning with theoretical knowledge, supplemented by hands-on experiences. The program also included various industrial and recreational trips in and around Islamabad and Lahore.

NUST Community Service Club (NCSC)

NUST has encouraged and facilitated its students to participate in community service. Therefore, a highly dedicated and active club, NUST Community Service Club (NCSC), sponsored by the School of Mechanical and Manufacturing Engineering (SMME), was established in 2007 for the sole purpose of developing a sense of responsibility, compassion, and empathy towards the community amongst the students of NUST. From a humble beginning of 35 volunteers in 2007, the club has now grown to 1000 registered members every year, 1100 registered for community service courses and an extensive network of NCSC alumni.

It is headed by a council of students, yearly selected on the basis of past community service contributions. The council makes a yearly calendar of activities, collaborates with community partners and non-government organizations (NGOs).

115,365
Total Service Hours with respect to activities

81631
service hours (participants)

2017-18:
33,734
service hours (volunteers)

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Report Compiled by
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