



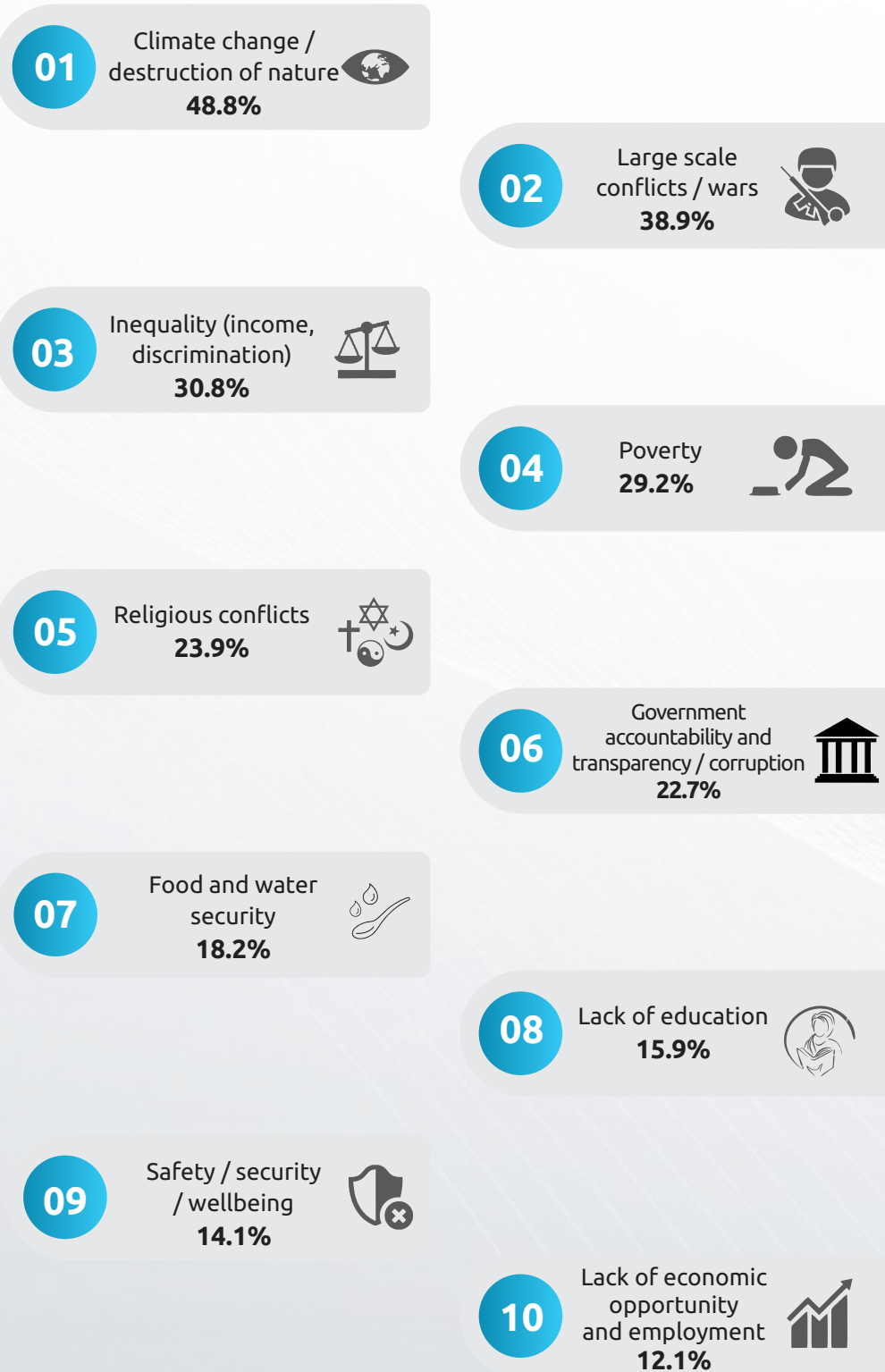
Launch Conference for
Islamabad National University
Emerging Challenges
& Opportunities for
Pakistan

21-22 December - 2018

Conference Catalogue



WORLD'S 10 MOST SERIOUS PROBLEMS



Source: World Economic Forum's Global Shapers Survey 2017



Launch Conference for
Islamabad National University
**Emerging Challenges
& Opportunities for
Pakistan**

21-22 December - 2018

Thematic Areas

- **Governance**
- **Development**
- **Climate**
- **Technology**

Institute of Advanced Studies ISLAMABAD NATIONAL UNIVERSITY

Islamabad National University (INU) is envisioned as an apex institution designed to support research-based policy formulation. The INU will initially consist of an Institute for Advanced Studies (IAS), which will be charged with providing a science-based annual report to the government on emerging challenges confronting Pakistan and the world, and the menu of options for addressing these challenges.

In order to discharge this function, the IAS will build relevant in-house research teams, which in turn will engage and collaborate with researchers and research institutions within the country and abroad. In particular, the IAS will collaborate with and guide various centers of advanced studies (CAS) established by the HEC in recent years.

Finally, in order to sustain and enhance the quality of the research programs, the INU will initiate PhD level programs in critical fields. In other words, the design of the INU will start with what is often referred to as the Third Mission of the University, namely service to the society; and extend it backwards, initially to the Second Mission, namely research, and finally to the First Mission, namely teaching. Extensive consultations with policy makers, academics, and other stakeholders have led to the identification of a number of these emerging challenges. This list has been refined and clustered into four themes: Governance (transparency, security, devolution and administrative efficiency), Development (urbanization, education, health and economic governance), Climate (water and food security, energy, climate futures / glaciers, and disaster management), and Technology (artificial intelligence / robotics, nanotechnology / applied biotechnology, ICT and cybersecurity).

The objective of the launch conference is to assemble the best brains within the country on each topic, and from our partner institutions in other countries, in order to develop an action agenda for thematic research. The outcomes of the thematic round tables will, on the one hand, spell out the marching orders for the new institutions, and on the other hand, help identify the key partner institutions and individuals from Pakistan and abroad.

PROGRAMME

Inaugural Session | Friday, December 21, 2018 | 0930 - 1230 hours

0900 - 1015	Registration
1020	Guests to be seated
1030	Arrival of the Chief Guest
1031	National Anthem
1035	Recitation from the Holy Qur'an
1041	Welcome address by Mr. Shafqat Mahmood, Federal Minister for Federal Education & Professional Training
1048	Remarks by Mr. Asad Jamal and Mr. Yao Jing, Chinese Ambassador to Pakistan
1105	Introduction to the Conference by Dr. Tariq Banuri, Chairman HEC
1120	Thematic introductions: <ul style="list-style-type: none"> • Governance: Dr. Ishrat Hussain • Development: Dr. Norman Waitzman • Climate: Dr. Adil Najam • Technology: Dr. Umer Saif
1145	Address by the Chief Guest

1230 hours - Lunch / Friday Prayers

BREAKOUT SESSIONS

Day 1, December 21, 2018

1400-1530 hours - Parallel Session - 1

- Governance: Transparency
- Development: Urbanization & Housing
- Climate: Water & Food Security
- Technology: AI & Robotics

Tea

1600-1730 hours - Parallel Session - 2

- Governance: Security
- Development: Education
- Climate: Climate Futures / Glaciers
- Technology: Nanotechnology & Biotechnology

1900 hours - Conference Dinner

Day 2, December 22, 2018

0900-1030 hours - Parallel Session - 3

- Governance: Devolution
- Development: Health
- Climate: Energy
- Technology: ICT

Tea

1100-1230 hours - Parallel Session - 4

- Governance: Administrative Efficiency
- Development: Economic Governance
- Climate: Disaster Management
- Technology: Cyber Security

Lunch

Wrap-up Session | Saturday, December 22, 2018 | 1400-1500 hours

Closing Session | Saturday, December 22, 2018 | 1500 - 1700 hours

1510	Guests to be seated
1515	Arrival of the Chief Guest
1516	National Anthem
1520	Recitation from the Holy Qur'an
1525	Conference recommendations by Dr. M. Aslam Chaudhry
1545	Vote of thanks by Lt Gen Muhammad Asghar, Executive Director, HEC
1553	Address by the Chief Guest

BREAKOUT SESSIONS

GOVERNANCE

The term "governance" entered into development literature in the late 1980s. It signified the importance of efficiency, transparency, accountability, and incentive compatibility for development outcomes.

However, similar concepts have been a part of traditional political thinking in the Islamic world. The concept of "circle of justice" (please see box) was central to state-society relationship in the Islamic world from the middle ages, and formally so in the Ottoman Empire.



The circle describes four (or more) inter-connected

arguments: no prosperity without justice; no justice without a state (or a judicial system); no state without revenues; and no revenues without prosperity. The idea dates back to *Sirrul Asrar* from before the 10th century AD, and articulated in subsequent scholarly treatment, most notably in Nizamul Mulk Tusi's *Siyasat Nama* and in the Nizamiyya schools established by him to teach statecraft.

After a circuitous journey, as Pakistani society contends with corruption, terrorism, economic crimes (especially land grabbing), violence against women, ethnic conflicts, and slow down of development, it has begun to recover and relearn some older truths. The INU will be tasked to provide advice, based on scientific analyses, on the key dimensions of the challenge facing Pakistan. The discussion is divided into four sub-themes: transparency, administrative efficiency, security, and devolution (including decentralized and participatory decision-making).

Each sub-theme will be discussed in a round table meeting, with a view to setting out a policy research agenda for the new institution.

Round-Table Sessions

Day 1 – Session 1: Transparency | 1400-1530 hours

S. No.	Name	Designation	Role
1.	Dr. Muhammad Shoab Suddle	Member, NUST Global Think Tank Network, Former IG Police	Chair
2.	Lt Gen (R) Khalid Maqbool	Former Governor, Punjab and Chairman NAB	Discussant
3.	Mr. Owais Ahmed Ghani	Former Governor Khyber Pakhtunkhwa and Balochistan	Discussant
4.	Barrister Ahmer Bilal Soofi	Research Society of International Law	Panelist
5.	Mr. Zafarullah Khan	Pakistan Institute of Parliamentary Studies	Panelist
6.	Dr. Hussain Shaheed Suherwordi	Peshawar University	Panelist

Day 1 – Session 2: Security | 1600-1730 hours

S. No.	Name	Designation	Role
1.	Gen. Zubair Mehmood Hayat	Chairman Joint Chiefs of Staff Committee	Chair
2.	Lt Gen Masood Aslam	Former Corps Commander, Peshawar	Discussant
3.	Dr. Zafar Iqbal Cheema	Director, Strategic Vision Institute, Islamabad	Discussant
4.	Mr. Iftikhar Rashid	Former Inspector General Police	Panelist
5.	Jalil Abbas Jilani	Former Ambassador and Secretary Foreign Affairs	Panelist
6.	Amb. Tasnim Aslam	Former Ambassador	Panelist
7.	Vice Admiral Muhammad Shafiq	Rector, Bahria University, Islamabad	Panelist
8.	Maj Gen Zia-uddin Najam	Rector, National University of Modern Languages, Islamabad	Panelist
9.	Dr. Shaheen Akhtar	National Defence University, Islamabad	Panelist
10.	Dr. Muhammad Waseem	Lahore University of Management Sciences	Panelist
11.	Dr. Kiran Ahmed	Quaid-i-Azam University, Islamabad	Panelist
12.	Ms. Saima Aman Sial	Center for International Strategic Studies	Panelist
13.	Mr. Rahimullah Yusufzai	Senior Journalist, The News, Peshawar	Panelist
14.	Dr. Saeed Shafqat	Forman Christian College University, Lahore	Panelist
15.	Dr. Rabia Akhtar	University of Lahore	Panelist
16.	Dr. Syed Hassan Akbar	Jinnah Institute	Panelist

Day 2 – Session 3: Devolution | 0900-1030 hours

S. No.	Name	Designation	Role
1.	Dr. Fahmida Mirza	Federal Minister for Inter Provincial Coordination	Chair
2.	Mr. Owais Ahmed Ghani	Former Governor Khyber Pakhtunkhwa and Balochistan	Discussant
3.	Dr. Syed Rifaat Hussain	HoD, Government & Public Policy, NUST	Discussant
4.	Dr. Ijaz Shafi Gilani	Chairman, Pakistan Institute of Public Opinion	Panelist
5.	Barrister Ahmer Bilal Soofi	Research Society of International Law	Panelist
6.	Dr. Muhammad Shoab Suddle	Member, NUST Global Think Tank Network, Former IG Police	Panelist

Day 2 – Session 4: Administrative Efficiency | 1100-1230 hours

S. No.	Name	Designation	Role
1.	Mr. Muhammad Shehzad Arbab	Advisor on Establishment Division	Chair
2.	Dr. Muhammad Akram Sheikh	Former Federal Minister / Deputy Chairman Planning Commission	Discussant
3.	Mr. Ejaz Rahim	Former Cabinet Secretary	Discussant
4.	Mr. Afzal Shigri	Former Inspector General Police	Panelist
5.	Dr. Youde GUO	Fudan University, China	Panelist
6.	Dr. Xin ZHANG	Zhejiang University, China	Panelist
7.	Mr. Fida Hussain	Director General, Learning Innovation Division (LID), HEC	Panelist
8.	M. Raza Chohan	Director General, Academic Division, HEC	Panelist
9.	Dr. Saad Gulzar	University of Stanford, USA	Panelist

Core Group

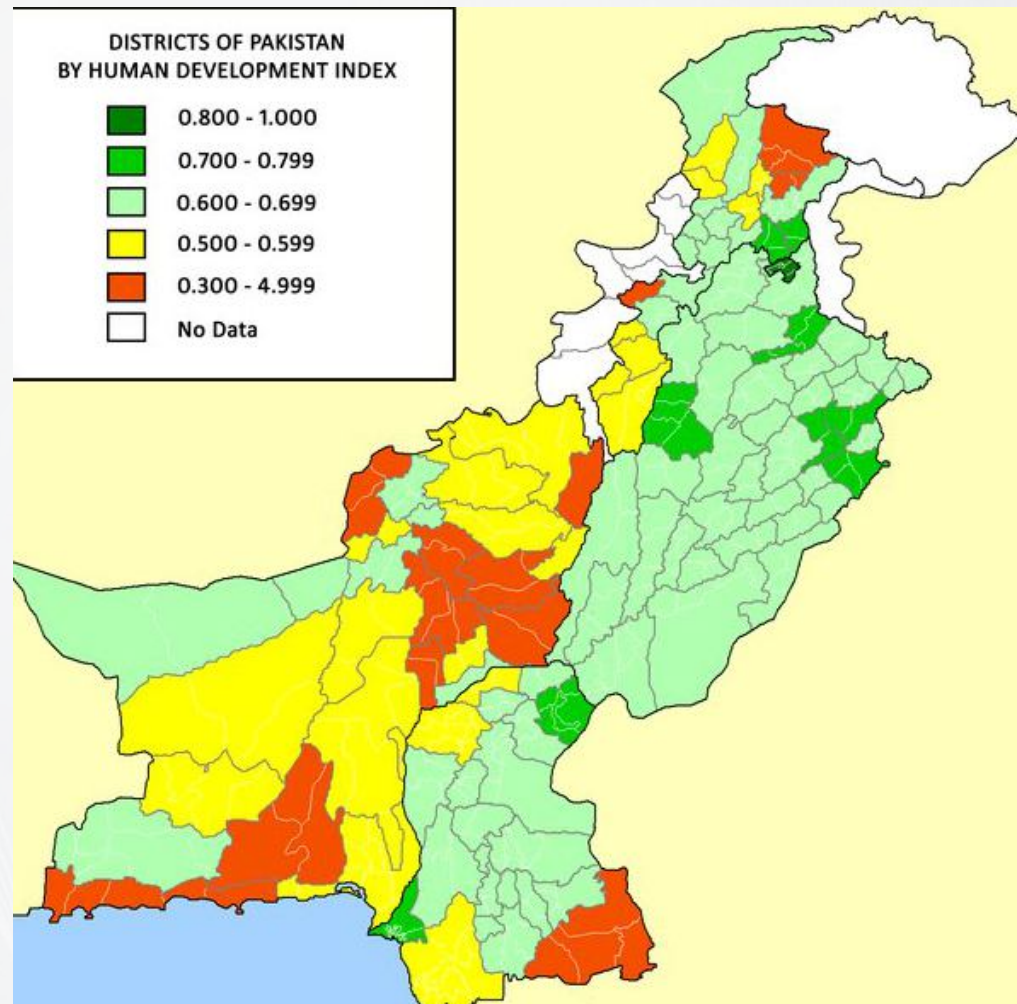
S. No.	Name	Designation
1.	Air Cdre. (R) Khalid Banuri	Former Director General Arms Control & Disarmament Affairs, SPD
2.	Dr. Ishtiaq Ahmad	VC, Sargodha University
3.	Barrister Ahmer Bilal Soofi	Research Society of International Law
4.	Dr. Salma Malik	Quaid-i-Azam University
5.	Dr. Asim Zia	Professor of Public Policy and Computer Science, University of Vermont
6.	Dr. Xuetang GUO	Center for South Asia and Indian Ocean Studies

Note: May kindly attend all the sessions of this cluster

DEVELOPMENT

In the 1960s, Pakistan was seen as rapidly growing economy, with growth rates exceeding 6-7 per cent per year, far higher than comparable developing countries. Since then, growth has slowed down, while population growth and fertility remain high, which has also contributed to governance problems.

This has led to persistent poverty, inadequate services, especially health, education, energy, water and sanitation, and rising pressure on natural resources. Pakistan was off-track on the MDGs, and is in danger of being off-track on the SDGs despite being an early signatory.



The launch conference will hold round tables on four sub-themes of these challenges. First, ensuring access to quality education, improving resource allocation for universities, investing directly in quality, and making education and knowledge the new engine of growth. Second, investing in preventive and environmental health (in particular air and water quality), ensuring access to affordable health services, linking primary to tertiary health, disseminating health information and awareness widely, and improving the informational base for health planning. Third, investing in sustainable urbanization and affordable housing, including addressing the growth and agglomeration of population. Finally, re-igniting the growth process, in particular by addressing problems in the system of economic management.

Each sub-theme will be discussed in a round table meeting, with a view to setting out a policy research agenda for the new institution.

Round-Table Sessions

Day 1 – Session 1: Urbanization and Housing | 1400-1530 hours

S. No.	Name	Designation	Role
1.	Makhdoom Khuro Bakhtiar	Federal Minister for Planning, Development and Reform	Chair
2.	Dr. Rong XIANG	Director of Yunnan University-HK PolyU Design and Social Development Center	Discussant
3.	Mr. Ghulam Samad	Research Economist, Pakistan Institute of Development Economics (PIDE)	Discussant
4.	Dr. Ataullah Shah	VC, Karakoram International University	Panelist
5.	Dr. Nadeem ul Haque	Former Deputy Chairman Planning Commission	Panelist
6.	Dr. Javed Hamid	Former Director, International Finance Corporation, World Bank	Panelist

Day 1 – Session 2: Education | 1600-1730 hours

S. No.	Name	Designation	Role
1.	Raja Yasir H. Sarfraz	Provincial Minister of Punjab for Higher Education & Tourism	Chair
2.	Dr. Rauf-i-Azam	VC, University of Education Lahore	Discussant
3.	Dr. Aliya Hashmi Khan	Former Professor of Economics, QAU, Islamabad	Discussant
4.	Dr. Mohammad Nizamuddin	Chairman HEC, Punjab	Panelist
5.	Mr. Rizwan Rasheed	Dean, Social Sciences, IIU, Islamabad	Panelist
6.	Dr. N. B. Jumani	Director, Directorate of Distance Education, IIU	Panelist
7.	Dr. Nasir Mahmood	Dean Education, Allama Iqbal Open University, Islamabad	Panelist
8.	Ms. Mehnaz Akber Aziz	Chief Executive and Founding Director, Children's Global Network Pakistan	Panelist
9.	Dr. Tahir Raza Shah Andrabi	Dean School of Education, Lahore University of Management Sciences	Panelist
10.	Dr. Arshad J. Minhas	Executive Director Transformation & Knowledge Management	Panelist
11.	Ms. Rosemary Hilhorst	Country Director, British Council, Pakistan	Panelist

Day 2 – Session 3: Health | 0900-1030 hours

S. No.	Name	Designation	Role
1.	Dr. Sania Nishtar	Chairperson, Benazir Income Support Program	Chair
2.	Lt Gen Syed Muhammad Imran Majeed	VC, National University of Medical Sciences, Rawalpindi	Discussant
3.	Dr. Stephen C. Alder	Division Chief, Public Health Program	Discussant
4.	Prof. Dr. Feng NING	Center for Global Public Health, Chinese Center for Disease Control and Prevention	Panelist
5.	Dr. Javaid Akram	VC, University of Health Sciences	Panelist
6.	Dr. Naheed Usmani	President Association of Physicians of Pakistani-descent of North America (APPNA)	Panelist
7.	Dr. Aamer Ikram	Executive Director, National Institute of Health	Panelist

Day 2 – Session 4: Economic Governance | 1100-1230 hours

S. No.	Name	Designation	Role
1.	Mr. Asad Umar	Federal Minister for Finance, Revenue and Economic Affairs	Chair
2.	Dr. Muhammad Nadeem Javaid	Karachi School of Business and Leadership, Former Chief Economist, Planning Division	Discussant
3.	Dr. Asad Zaman	VC, Pakistan Institute of Development Economics, Islamabad	Discussant
4.	Dr. Waqar Masood Khan	Former Secretary Finance	Panelist
5.	Dr. Abrar Chaudhury	Saeed School of Business, Oxford University	Panelist
6.	Prof. Khalid Nadvi	Professor of International Development, University of Manchester	Panelist
7.	Mr. Ghulam Samad	Research Economist, Pakistan Institute of Development Economics	Panelist
8.	Dr. Shahid Rasheed	Director, Center of Excellence for CPEC	Panelist
9.	Mr. Irfan Akhtar	Former Pro-Rector Finance, NUST	Panelist

Core Group

S. No.	Name	Designation
1.	Dr. Sohail J. Malik	Chairman, Innovative Development Strategies (pvt) Ltd
2.	Dr. Vaqar Ahmed	Joint Executive Director Sustainable Development Policy Institute (SDPI)
3.	Dr. Abrar Chaudhury	Saïd Business School, University of Oxford
4.	Dr. Shuihui ZHANG	Associate Dean of Continuing Education School, Shanghai University of International Business & Economics
5.	Dr. Oguz Nuri Babüroglu	Core Faculty, School of Management, Sabancı University; CEO, ARAMA RESEARCH
6.	Dr. Rukhsana Siddiqui	Former Professor of International Relations, Quaid-i-Azam University
7.	Dr. Norman Waitzman	Co-Director, Health Society and Policy Program
8.	Dr. Mehtab Kareem	VC, Malir University, Karachi
9.	Dr. Karamat Ali	Quaid-i-Azam University, Islamabad

Note: May kindly attend all the sessions of this cluster

CLIMATE

Pakistan faces a number of challenges due to climate change, including the unpredictable behavior of the HKH glaciers, inadequate analysis of future trends in rainfall and temperature, the resultant variability in river flows (leading to both floods and droughts), heat waves, temperature increases, likely declines in crop yields as well as power generation, coastal erosion and storm surges. Concerted efforts are needed by government as well as civil society to mitigate these threats.

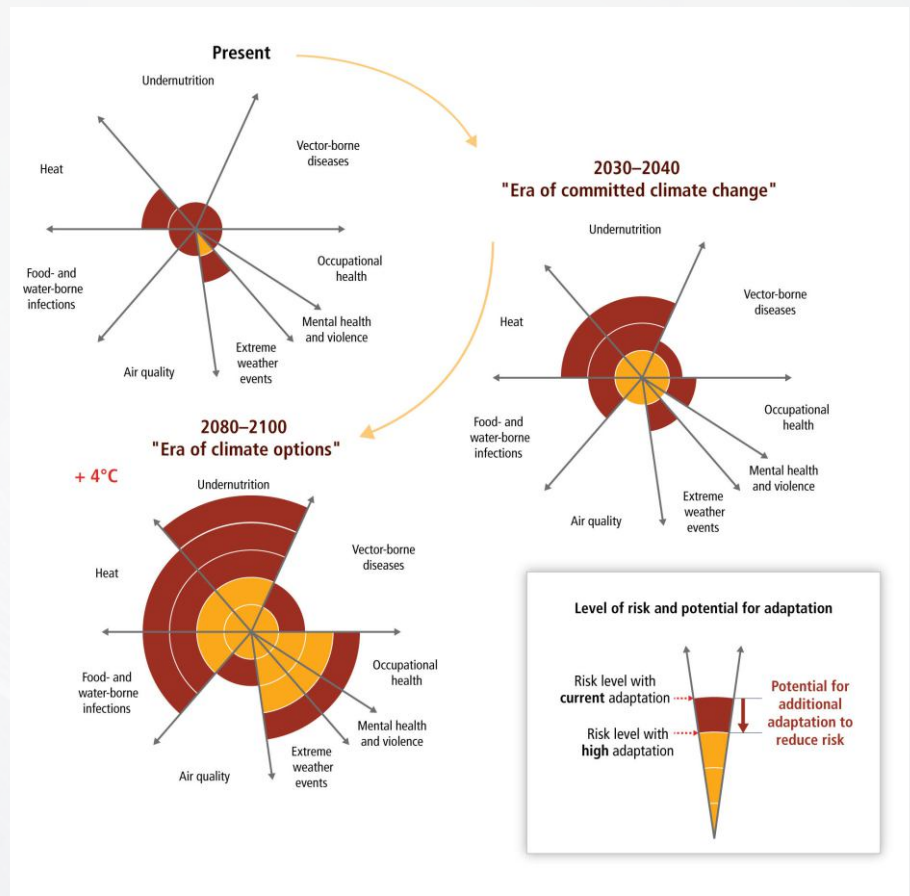
These threats are not in the future. They are already here. Average temperature has already risen by 0.57 per cent over the last century. Heat wave days per year have increased by 31 days between 1980

and 2007, rainfall has become more concentrated, increasing over the summer months and declining in the winter, sea level has risen by 1.1 mm per year along Karachi, the frequency and intensity of floods has increased, several regions have suffered from systematic increases in aridity.

Such changes are likely to be persistent regardless of any immediate changes in policies. The IPCC has used the phrase "the era of committed climate change" (please see diagram) to describe the foreseeable future.

Climate policy has to be driven by three interconnected considerations: to protect lives and property from adverse climate impacts, to ensure sustainable development and sustained prosperity, and to fulfill the country's international commitments. This requires a proactive policy framework, rather than the limited and reactive approaches favored in the past.

The launch conference will discuss these in four round tables, entitled food and water security, energy security, disaster management, and future climate projections, including glacier behavior. The goal is to set out a policy research agenda for the new institution.



Round-Table Sessions

Day 1 – Session 1: Water and Food Security | 1400-1530 hours

S. No.	Name	Designation	Role
1.	Engr. Shams-ul-Mulk	Former Chairman, Water and Power Development Authority and Chief Minister of the NWFP (Khyber Pakhtunkhwa)	Chair
2.	Dr. Muhammad Ashraf	Director General, Pakistan Council of Research in Water Resources	Discussant
3.	Dr. Steven Burian	Associate Professor, Utah University, USA	Discussant
4.	Dr. Muhammad Kaleem Abbasi	VC, University of Azad Jammu and Kashmir	Panelist
5.	Mr. Cristiano Mandra	World Food Program, Islamabad	Panelist
6.	Dr. Talat Naseer Pasha	VC, University of Veterinary and Animal Sciences, Lahore	Panelist
7.	Dr. Iqrar Amhed Khan	Former VC, University of Agriculture Faisalabad	Panelist
8.	Dr. Mansoor Hashmi	Former Vice President, NESPAK	Panelist
9.	Dr. Ashfaq Ahmad Chattha	Department of Agronomy, Faculty of Agriculture	Panelist
10.	Dr. M. Tahir Khan	Director, Pakistan Meteorological Department	Panelist
11.	Dr. Farrukh Bashir	Pakistan Meteorological Department	Panelist
12.	Mr. Irfan Tariq	Director General, Ministry of Climate Change	Panelist
13.	Dr. Abdul Majid	International Union for Conservation of Nature	Panelist
14.	Dr. Sultan Habibullah	USPCAS - Agricultural and Food Security, Faisalabad	Panelist

Day 1 – Session 2: Climate Futures / Glaciers | 1600-1730 hours

S. No.	Name	Designation	Role
1.	Mr. Malik Amin Aslam	Federal Minister for Climate Change	Chair
2.	Dr. Rick Forster	Associate Dean, College of Social & Behavioral Sciences, University of Utah	Discussant
3.	Dr. Kulsum Ahmed	Former Director, World Bank	Discussant
4.	Dr. M. Zia-ur-Rahman Hashmi	Head, Water Resources & Glaciology Section, Global Change Impact Studies Center (GCISC), Islamabad	Panelist
5.	Dr. Muhammad Arshad	Project Director, Glacier Monitoring Research Center, WAPDA	Panelist
6.	Mome Saleem	Program Coordinator Ecology at Heinrich Boell Foundation	Panelist
7.	Dr. Syed Moazzam Nizami	Director, Integrated Mountain Area Research Center (IMARC), Karakoram International University	Panelist
8.	Dr. Farrukh Bashir	Pakistan Meteorological Department (PMD)	Panelist
9.	Mr. Muhammad Riaz	Director General, PMD	Panelist
10.	Dr. Qamar-uz-Zaman Chaudhry	Former Director General, PMD	Panelist
11.	Dr. Najeem Ullah	USPCAS-Energy, UET, Peshawar	Panelist
12.	Dr. Abid Qayyum Suleri	Executive Director, SDPI	Panelist
13.	Mr. Muhammad Arif Goheer	Global Change Impact Studies Center (GCISC), Islamabad	Panelist
14.	Mr. Ali Tauqeer Sheikh	CEO, Leadership for Environment and Development (LEAD)	Panelist
15.	Dr. Wei WAN	International Project Office, Monsoon Asia Integrated Research for Sustainability - Future Earth, Peking University, China	Panelist

Day 2 – Session 3: Energy | 0900-1030 hours

S. No.	Name	Designation	Role
1.	Mr. Omar Ayub Khan	Federal Minister for Power	Chair
2.	Dr. Muhammad Bilal Ahmed	Former Principal and Dean, USPCAS-Energy, NUST	Discussant
3.	Dr. Abdul Hameed Toor	Associate Professor, Quaid-i-Azam University	Discussant

4.	Mr. Anjum Ahmad,	Senior Energy Specialist, World Bank	Panelist
5.	Mr. Waqar Ahmad Khan	CEO, Star Hydropower Limited	Panelist
6.	Dr. Zuhair Subhani Khan	A/Principal and Dean, USPCAS-Energy, NUST	Panelist
7.	Dr. Muhammad Aslam Uqaili	VC, Mehran University of Engineering and Technology	Panelist
8.	Dr. Iftikhar Hussain	VC, UET, Peshawar	Panelist
9.	Dr. Farrukh Kamran	Chief Technology Officer, Sky Electric	Panelist
10.	Dr. Kashif Iqbal	US-Pakistan Center for Advanced Studies-Energy, NUST	Panelist
11.	Mr. Sohail Wajahat	CEO, Karma Green Energy	Panelist
12.	Mr. Amer Zafar Durrani	CEO, Reenergia, Islamabad	Panelist
13.	Dr. Rabia Liaquat	USPCAS-Energy, NUST	Panelist
14.	Dr. kashif Imran	USPCAS-Energy, NUST	Panelist
15.	Dr. Naseem Iqbal	USPCAS-Energy, NUST	Panelist
16.	Dr. Najeeb Ullah	USPCAS-Energy, UET, Peshawar	Panelist
17.	Dr. Gul Muhammad	UET, Peshawar	Panelist
18.	Dr. Shiqiu ZHNAG	Professor, College of Environmental Sciences and Engineering, Institute of Environment and Economy, Peking University	Panelist

Day 2 – Session 4: Disaster Management | 1100-1230 hours

S. No.	Name	Designation	Role
1.	Lt Gen Omar Mahmood Hayat	Chairman, National Disaster Management Authority	Chair
2.	Prof. X. L. DING	Director of Research of Urban Hazards Mitigations, PolyU, Hong Kong	Discussant
3.	Dr. Syed Muhammad Ali	University of Engineering & Technology, Peshawar	Discussant
4.	Dr. Qasim Jan	President, Pakistan Academy of Sciences	Panelist
5.	Mr. Ahmed Kamal	Chairman, Federal Flood Commission, Islamabad	Panelist
6.	Dr. Muhammad Asif Khan	VC, University of Peshawar	Panelist
7.	Rashid Bajwa	CEO, National Rural Support Program (NRSP)	Panelist
8.	Dr. Sarfraz Ali	Military College of Engineering, NUST	Panelist
9.	Dr. Javed Iqbal	Head of Department, IGIS, NUST	Panelist
10.	Dr. Kamran Akhtar	Military College of Engineering, NUST	Panelist
11.	Dr. Mazhar Iqbal	Military College of Engineering, NUST	Panelist
12.	Dr. Tariq Feroze	Military College of Engineering, NUST	Panelist

Core Group

S. No.	Name	Designation
1.	Mr. Shakil Durrani	Former Chairman WAPDA
2.	Dr. Dost Muhammad Baloch	VC, Lasbela University of Agriculture, Water and Marine Sciences
3.	Dr. Chaochao GAO	Associate Professor of Environmental and Resource Science, Zhejiang University, China
4.	Dr. M. Aslam Chaudhry	Professor, Department of Economics, University of Utah. Presently, working in USPCAS-Water at Mehran University of Engineering and Technology
5.	Dr. Sajjad Ahmad	Department Chair and Professor, Civil and Environmental Engineering and Construction, University of Nevada, Las Vegas
6.	Dr. Abdul Wahid Jasra	Country Manager, ICIMOD
7.	Dr. Weiqiang MA	Institute of Tibetan Plateau Research, Chinese Academy of Sciences, China
8.	Dr. Rasool Bux Mahar	US- Pakistan Center for Advanced Studies in Water, Mehran UET, Jamshoro Sindh

Note: May kindly attend all the sessions of this cluster

TECHNOLOGY



ARE THE ROBOTS REALLY COMING?

Much has been said about the possibility of robots taking on more and more of the low-value, repeatable tasks currently done by humans. According to survey respondents, **64% Strongly Agree/Somewhat Agree** that machines or robots will be doing the bulk of monotonous tasks 25 years from now.



MAIN BENEFITS OF AUTOMATION TO BUSINESS

77% of respondents cited "save time on monotonous tasks"

70% cited "eliminate human error"

53% cited "introduce controls and transparency"

49% cited "give the company a competitive advantage"



77%



70%



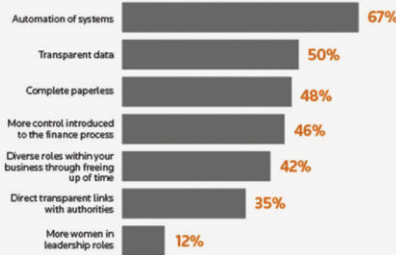
53%



49%

WHAT'S TO COME? AUTOMATION

Respondents were asked, "Which of the following would you most like to see improved by automation in the coming years?"



WHAT'S TO COME? DISRUPTIVE CONFLICTS

Across the board, respondents in Asia, Europe and North America cited Social Unrest as the leading cause of disruptive conflicts in the next 25 years, followed by Immigration and Water.



Social Unrest

76%



Immigration

48%



Water

47%

RESPONDENT PROFILE

452 respondents, representing 24 countries

84% private sector, 11% public sector, 5% not-for-profit

Respondents drawn from 28 different career levels, including CEO, CFO, VP of accounting, accountant and finance business partner

Organization size:
 10,000+ (32%); 1,000 – 9,999 (24%);
 250-999 (15%); 50-249 (13%); 1-49 (17%)

Primary respondent regions:
 Asia (92), Europe (160),
 North America (99)

The world is said to have entered the age of rapid technological development and the fourth industrial revolution. Information and Communication Technologies (ICTs) have revolutionized production, distribution, and society. A number of newer technologies are transforming the landscape today. These include nanotechnology, biotechnology, genetic modification, artificial intelligence, robotics, and the Internet of Things. All this creates opportunities as well as threats. On the opportunity side, there are opportunities for rapid increases in efficiency, production, and consumption, and a reduction of wastage.

On the other hand, cyber security poses a persistent threat for economic activity as well as social interaction. The health impacts of several newer technologies are poorly understood. Social media has the capacity to promote extremism, undermine democracy, and weaken social cohesion. Poor countries are also in danger of being left behind, partly because of the digital divide, and partly due to the new division between knowledge production and routine production.

The launch conference will discuss these in four round tables, entitled ICTs, cyber security, AI/ robotics, and nanotechnology/ biotechnology, with a view to setting out a policy research agenda for the new institution.

Round-Table Sessions

Day 1 – Session 1: Artificial Intelligence / Robotics | 1400-1530 hours

S. No.	Name	Designation	Role
1.	Dr. Atta-ur-Rahman	Advisor to the Prime Minister on Science & Technology	Chair
2.	Mr. Asif Peer	CEO, Systems Ltd	Discussant
3.	Dr. Yasar Ayaz	National Joint Lab in Robotics & Automation, NUST	Discussant
4.	Lt. Gen (R) Engr. Khalid Asghar	Rector, National University of Technology, Islamabad	Panelist
5.	Prof. Dr. Khurshid Khan	VC, Abdul Wali Khan University Mardan	Panelist
6.	Dr. Syed Taha Ali	Department of Electrical Engineering, NUST	Panelist
7.	Dr. Noman Naseer	Air University, Islamabad	Panelist
8.	Dr. Fasiyal Shafait	National Joint Lab in AI, NUST	Panelist

Day 1 – Session 2: Nanotechnology / Applied Biotechnology | 1600-1730 hours

S. No.	Name	Designation	Role
1.	Dr. Muhammad Naeem	Chairman, Pakistan Atomic Energy Commission	Chair
2.	Dr. Sayed Wilayat Hussain	VC, Institute of Space Technology	Discussant
3.	Dr. Imran Haider Shamsi	Associate Professor, Zhejiang University, China	Discussant
4.	Dr. Khalid M. Lodhi	Director, Forensic Science Program, Fayetteville University	Panelist
5.	Dr. Fazal Ahmad Khalid	VC, UET Lahore	Panelist
6.	Prof. Dr. Rukhsana Jabeen	VC, Sardar Bahadur Khan Women University, Quetta	Panelist
7.	Dr. Masoom Yasinzai	Rector, International Islamic University, Islamabad	Panelist
8.	Dr. Zakir Hussain	Professor, Materials Engineering Department, NUST	Panelist
9.	Dr. Muhammad Ali Muhammad	Department of Engineering Sciences, PNEC, NUST	Panelist
10.	Dr. Ishrat Jabeen	HoD, Department of Computational Sciences, NUST	Panelist
11.	Dr. Muhammad Ali	Quaid-i-Azam, University, Islamabad	Panelist
12.	Dr. Ashraf Ali	Dean, Faculty of Material Sciences, GIK	Panelist
13.	Dr. Muhammad Imran Khan	Faculty of Material Sciences, GIK	Panelist

Day 2 – Session 3: ICT | 0900-1030 hours

S. No.	Name	Designation	Role
1.	Dr. Khalid Maqbool Siddiqui	Federal Minister for Information Technology and Telecommunication	Chair
2.	Sabahat Rafiq	CEO, United We Reach (UWR)	Discussant
3.	Dr. Naveed Malik	Rector, Virtual University, Lahore	Discussant
4.	Dr. Zia-ul-Qayyum	VC, Allama Iqbal Open University, Islamabad	Panelist
5.	Dr. Ayub Alvi	VC, FAST National University, Islamabad	Panelist
6.	Dr. Hasan Usmani	Director of Product Marketing, Software and Cloud, Data Protection Division, Dell EMC	Panelist
7.	Mr. Irfan ul Haq	Pakistan Institute of Engineering and Applied Sciences	Panelist
8.	Mr. Asif Khan	Consultant IT, HEC	Panelist

9.	Dr. Ali Tahir	Institute of Geographical Information System, NUST	Panelist
10.	Mr. Salim Ghauri	CEO, Netsole Technologies	Panelist
11.	Mahir Mohsin Sheikh	CEO, Trillium Information Security Systems	Panelist
12.	Prof. Saleem Ullah	National Joint Lab in Space Sciences, IST, Islamabad	Panelist
13.	Dr. Qmmar ul Islam	National Joint Lab in Space Sciences, IST, Islamabad	Panelist
14.	Dr. Hamadullah	National Joint Lab in Space Sciences, IST, Islamabad	Panelist

Day 2 – Session 4: Cyber Security | 1100-1230 hours

S. No.	Name	Designation	Role
1.	Dr. Shahid Mahmud	Chairman and CEO, Interactive Group	Chair
2.	Dr. Kashif Kifayat	National Cyber Security Center, Air University	Discussant
3.	Dr. Cuihong CAI	Center for American Studies, Fudan University	Discussant
4.	Dr. Wajahat Mahmood Qazi	COMSATS University, Lahore Campus	Panelist
5.	Dr. Tughral Yamin	Dean NIPCONS, NUST	Panelist
6.	Dr. Noman Naseer	Air University, Islamabad	Panelist
7.	Dr. Haider Abbas	Military College of Signals, NUST	Panelist
8.	Mr. Irfan ul Haq	Pakistan Institute of Engineering and Applied Sciences (PIEAS)	Panelist
9.	Dr. Faisal Bashir	Bahria University, Islamabad	Panelist
10.	Dr. Najam ul Islam	Bahria University, Islamabad	Panelist
11.	Dr. Hanif Durad	Pakistan Institute of Engineering and Applied Sciences (PIEAS)	Panelist
12.	Dr. Mansoor Alam	COMSATS University, Islamabad	Panelist
13.	Dr. Atta ur Rehman Khan	Air University, Islamabad	Panelist
14.	Dr. Shaharyar Kamal	Air University, Islamabad	Panelist
15.	Dr. Ammar Masood	National Center for Cyber Security, Air University, Islamabad	Panelist

Core Group

S. No.	Name	Designation
1.	Lt. Gen (R) Engr. Khalid Asghar	Rector, National University of Technology, Islamabad
2.	Dr. Raheel Qamar	VC, COMSATS University
3.	Dr. Sayed Wilayat Hussain	VC, Institute of Space Technology
4.	Dr. Athar Usama	Member Science and Technology, Planning Commission
5.	Dr Lixi JIANG	Director, Department of Agronomy, College of Agriculture and Biotechnology, Zhejiang University
6.	Dr. Zhiui QIU	Associate Prof, Institute of Advanced Manufacturing Technology, Mechanical Engineering College, Jiao Tong University, Xi'an, China
7.	Dr. Rizwan Riaz	Principal, Research Center for Modeling and Simulation, NUST
8.	Faisal Shafait	CEO, DCUBE, NUST
9.	Dr. Ashiq Anjum	University of Derby, UK
10.	Dr. Omer F. Rana	Cardiff University, Uk

Note: May kindly attend all the sessions of this cluster