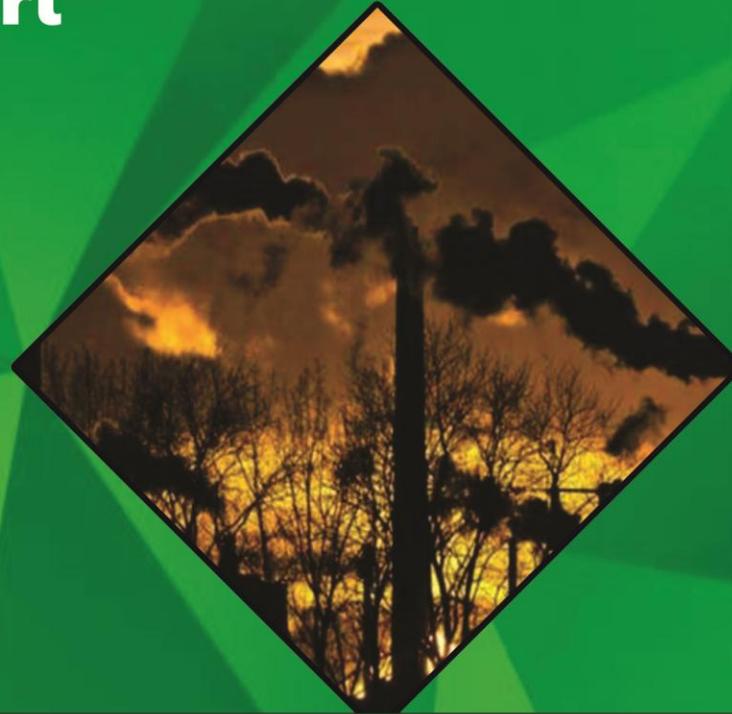
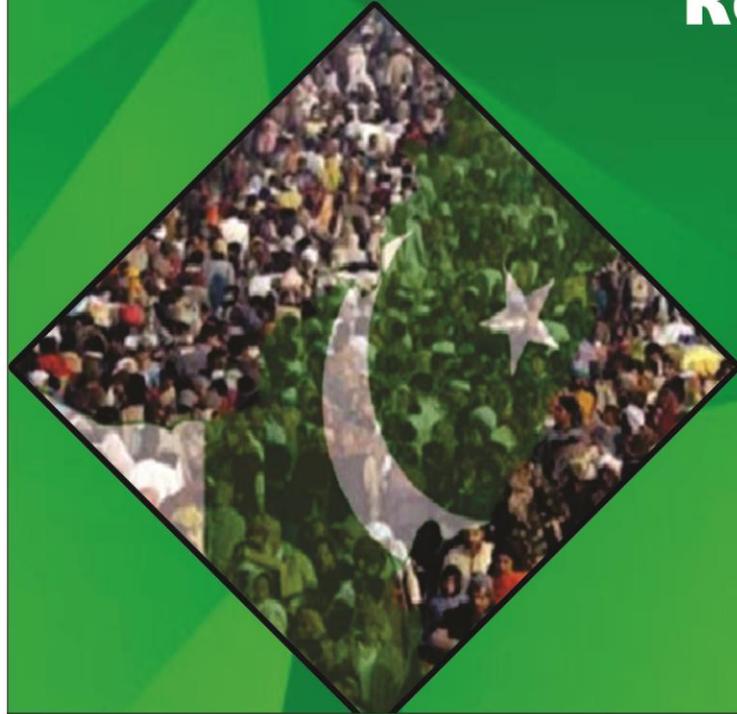
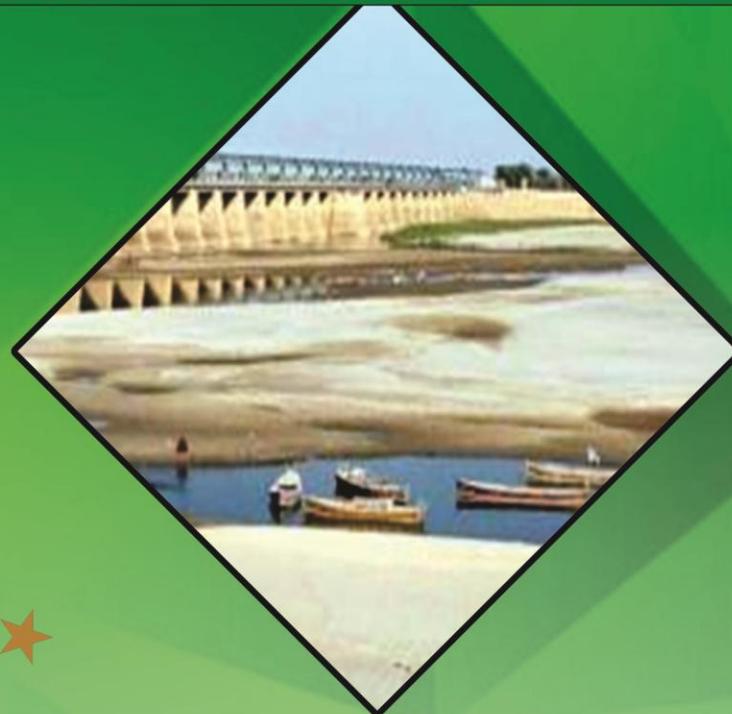


National Seminar Report



Non-Traditional Security Challenges to Pakistan

March 28, 2018



Institute of Strategic Studies Islamabad

National Seminar

Report

Non-Traditional Security Challenges to Pakistan

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The Institute of Strategic Studies was founded in 1973. It is a non-profit, autonomous research and analysis centre, designed for promoting an informed public understanding of strategic and related issues, affecting international and regional security.

In addition to publishing a quarterly journal and a monograph series, the ISSI organises talks, workshops, seminars and conferences on strategic and allied disciplines and issues.

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CONCEPT NOTE OF THE SEMINAR

In the post-Cold War era, the term 'National Security' has acquired broader connotations. In the 21st century, 'National Security' extends beyond relying simply on hard power means. It includes non-traditional security challenges in order to ensure comprehensive national security.

Pakistan, for quite some time has also been facing a host of non-traditional security challenges that have seriously impacted its development, growth, economic progress, as well as political stability. These non-traditional security challenges including environmental degradation, food and water scarcity and unprecedented population explosion merit urgent attention before they spiral out of control, posing a threat to the survival and development of Pakistan.

The Institute of Strategic Studies Islamabad (ISSI) considers that Pakistan's regional and internal security environment is complex and complicated. In the given context, there is a need to identify these non-traditional challenges along with the traditional challenges and also develop a strategy that would enable Pakistan's policy makers and opinion leaders to optimally confront and neutralize these challenges.

The seminar brought together a core group of experts and officials in order to put together concrete recommendations in this regard. The recommendations at the end of this report have been suggested by the experts as some of the possible ways to help policy makers formulate a national level strategic framework for Pakistan to timely deal with these non-traditional security threats.

Pakistan's state institutions have largely remained focused on maintaining stable law and order situation amidst fog of unprecedented internal and external threats. Moreover, like other South Asian countries, Pakistan has also been facing a number of non-traditional security challenges that have seriously impacted its development, growth, economic and political stability. Pakistan has been identified as one of the most vulnerable countries to environmental degradation, especially when faced with the adverse implications of global climate change.

In Pakistan, low-probability and high-impact events such as earthquakes, floods, droughts, storms and cyclones have been increasing in frequency, inflicting unbearable human and financial losses. The case in point being the earthquake of 2005 that caused approximately 0.1 million deaths, made 3.5 million people homeless and incurred \$5.2 billion financial losses; and the floods of 2010 that wreaked havoc affecting 20 million people. Climate change and variations in precipitation patterns also affect agricultural production, exacerbating food shortages. Food scarcity is an issue that is being predicted to be one of the most important problems that will be faced by the states in the future. Dwindling fresh water resources has led many scholars to speculate inter-state ‘water-wars’ in not too distant future.

Pakistan’s large population and high growth rate adversely affect all aspects of society, the economy and the environment. Population growth creates and exacerbates vulnerabilities by endangering basic civic amenities, leading to scarcity of food, clean water, space for housing and infrastructure, unbridled urbanization and ultimately burdening the state and the society. Ideally, the non-traditional challenges require trans-border regional cooperative strategies, however, our hostile neighborhood further heightens our challenges. These non-traditional issues can have very serious consequences for the security, stability and the peaceful development of the country in the near future.

Objectives:

- 1) Map the existing narratives on non-traditional security challenges to Pakistan, accounting for all dimensions and perspectives.
- 2) Analyze the response to non-traditional security challenges, and determine how pragmatic and relevant they are within the context of Pakistan.
- 3) Produce policy relevant recommendations by bringing together a core group of experts and officials specialising in non-traditional security sphere.

Session I: Environmental Degradation

Pakistan, unlike its other Asian neighbors, is particularly vulnerable to climate change, as its socio-economic fabric is largely agrarian, which makes it highly climate sensitive. Pakistan is ranked at 8th position in the index of most affected countries by the effects of climate on the

Climate Risk Index 1992-2011. Pakistan can mitigate the adverse effects of natural disasters through early warning systems, technological advances in building and infrastructure construction, improved sanitation systems, increased disaster preparedness, and having an effective emergency response strategy. Expanding and enhancing the information and knowledge base on climate change, as well as mapping vulnerabilities, can help create adaptive measures for reducing the effects of climate change.

Apropos to the above, carry out an appraisal of domestic, regional and global factors contributing to environmental degradation with a view to proffer input for futuristic policy formulation to meet the challenges of environmental degradation and to make Pakistan a sustainable, thriving and prosperous state.

Session II: Population Explosion

Population explosion and resultant unbridled, unchecked and unplanned urbanization is clearly a major issue afflicting Pakistan. Large population and high growth rate adversely affect all aspects of society, the economy, and the environment. Population growth creates and exacerbates vulnerabilities by endangering basic civic amenities, leading to food shortages, dwindling clean water resources and space for housing, and ultimately burdening the state and the society. Pakistan has the highest urbanization rate in the South Asian region, and the process of urbanization is characterised by sharp socio-cultural and geo-physical diversities. Here, as with many other developing countries, most population growth happens in areas that are below the poverty line, and survive in a subsistence economy, living in disaster prone areas.

Apropos to the above, carry out an appraisal of the efficacy of policy measures undertaken thus far to regulate population growth with a view to suggest a pragmatic approach suitable for our socio-cultural milieu.

Session III: Food Security

Growth in agricultural productivity has broadly kept pace with accelerating food demand in the country. However, medium-term food security challenges will become far more daunting if immediate attention is not paid to managing water resources, both underground and in the Indus

Basin river system. Due to scarcity of irrigation water, the farmers are shifting cultivation from water intensive crops like rice, wheat, cotton and sugarcane (staple food) to low water intensive crops and vegetables, thus putting pressure on food market. Moreover, the crops yield is declining due to evaporation and sever temperatures during long summer season. Food insecurity is a major hindrance to social and economic development of the country and needs critical scientific inquiry, and idea of viewing this issue in terms of climate change carries with it a multipronged strategy to address the issue seriously.

Apropos to the above, carry out an appraisal of the factors affecting food security in Pakistan with a view to suggest a holistic approach to make Pakistan a sustainable, thriving and prosperous state.

Session IV: Water Security

Water security is the most serious challenge for Pakistan due to several factors, particularly the increasing pressure of population and urbanization, massive expansion of tube-well irrigation, reduced levels of precipitation caused by climate change, and the accelerated retreat of Himalayan glaciers. Pakistan receives less the average rainfall in the world, therefore, the Indus River System which is the lifeline for Pakistan has been severely affected. However, the political, economic, and technological management of water resources has been woeful because of the lack of consensus on the construction of mega projects. According to the World Bank, Pakistan is moving from a water stressed country to a water scarce country. From agricultural purposes to power generation; from domestic use to industrial purposes, the water resources have been used extensively without enough management on sustainable grounds. Recently, Pakistan's eastern neighbor has adopted an extremely hostile posture, linking cooperation on Indus Water Treaty with situation in Occupied Kashmir. If not amicably resolved, this would further aggravate the water security issue.

Apropos to the above, carry out an appraisal of the inland and trans-border factors affecting water security in Pakistan with a view to suggest a viable policy to make Pakistan a sustainable, thriving and prosperous state.

DETAILED PROGRAMME OF THE SEMINAR

INAUGURAL SESSION

- 0945 hrs: Registration
- 1000 hrs: Recitation from the Holy Quran
- 1005 hrs: Welcome and Introductory Remarks - Ambassador Khalid Mahmood,
Chairman, ISSI
- 1015 hrs: Address by Lt. Gen. (R) Nasser Khan Janjua, *National Security Advisor of
Pakistan*
- 1030 hrs: Tea Break

SESSION I: ENVIRONMENTAL DEGRADATION

- Chair: Ms. Romina Khurshid Alam - *Parliamentary Secretary for Climate Change*
- 1100 hrs: **Identifying the Environmental Challenges Facing Pakistan**
Dr. Ghulam Rasul - *DG, PMD*
- 1115 hrs: **The Impacts of Environmental Degradation on Pakistan: Implications
for National Security**
Mr. Javed Ali Khan - *Country Head, UN Habitat Pakistan*
- 1130 hrs: **Overcoming Environmental Challenges: Recommendations and Future
Discourse for Pakistan**
Dr. Abid Qayyum Suleri - *Executive Director, SDPI*
- 1145 hrs: Q & A
- 1200 hrs: Concluding Remarks by the Chair

SESSION II: POPULATION EXPLOSION

- Chair: Mr. Abdul Ghaffar Khan: - *DG, Population Ministry for National Health Services, Regulations and Coordination (MNHSRC)*
- 1210 hrs: **Population Explosion and its Challenges to Pakistan's National Security**
Dr. Asma Hyder Baloch - *Member Social Sector and Devolution, MPDR*
- 1225 hrs: **Pakistan's Growing Population: Measures for Exploiting the Youth Bulge**
Ms. Puruesh Chaudhary - *Founder/President, AGAHI*
- 1240 hrs: **Meeting the Challenges of Population Growth in Pakistan: Suggestions and Recommendations**
Dr. Zeba Sathar - *Country Director, Population Council Pakistan (PCP)*
- 1255 hrs: Q & A
- 1315 hrs: Concluding Remarks by the Chair
- 1320-1420 hrs: Lunch Break

SESSION III: FOOD SECURITY

- Chair: Mr. Javed Jabbar - *Former Senator and Federal Minister*
- 1420 hrs: **Factors Contributing to Growing Food Insecurity in Pakistan**
Mr. Basharat Ahmed Saeed - *Water Resources Specialist, World Bank (WB) Pakistan*
- 1435 hrs: **Overcoming Food Insecurity in Pakistan: Future Challenges and Coping Strategies**
Dr. Iqrar Ahmad Khan - *Vice Chancellor, University of Agriculture, Faisalabad*
- 1550 hrs: Q & A
- 1525 hrs: Concluding Remarks by the Chair

SESSION IV: WATER SECURITY

- Chair: Lt. Gen. (R) Muzammil Hussain - *Chairman, WAPDA*
- 1530 hrs: **Water Security: Emerging Challenges and Threats for Pakistan**
Dr. Qamar Uz Zaman Chaudhry - *International Climate Change Specialist, Asian Development Bank*
- 1545 hrs: **The Nexus Between Pakistan's Depleting Water Resources and its National Security**
Mr. Ahmer Bilal Soofi - *President, RSIL*
- 1600 hrs: **Enhancing Pakistan's Water Resources: Recommendations and Suggestions**
Dr. Khalid Mohtadullah - *Senior Advisor, Global Water Partnership (GWP)*
- 1615 hrs: Q & A
- 1635 hrs: Concluding Remarks by the Chair
- 1640 hrs: Tea Break

PROFILES

INAUGURAL SESSION



Lt. Gen. (R) Nasser Khan Janjua, is the current National Security Advisor of Pakistan. Previously, he served as National Security Advisor of Pakistan (NSA) from October 23, 2015 to July 28, 2017. Lt. Gen. (R) Nasser Khan Janjua, is a retired three star rank army general. He commanded the XII Corps in Quetta and briefly tenured as the President of the National Defense University, Islamabad (NDU) in 2012.

In his last position as Commander Southern Command, he played a vital role in eradicating extremism, militancy, terrorism and insurgency. In addition to distinguished Command assignments, he has also been, Chief of Staff of a Strike Corps, Director Military Operations, Chief of Staff of Southern Command, and Vice Chief of the General Staff. In recognition of his meritorious services, Chief of Army Staff and Prime Minister of Pakistan have collectively chosen General Nasser Janjua as National Security Advisor.



Ambassador Khalid Mahmood is Chairman Board of Governors & Director General, Institute of Strategic Studies, Islamabad (ISSI). He is also member of the Asian Regional Forum (ARF) Experts and Eminent Persons Group, member Economic Cooperation Organization (ECO) Eminent Persons Group, President Islamabad Council of World Affairs (ICWA) and Course Director at the Foreign Service Academy, Islamabad.

Ambassador Khalid Mahmood is a former Ambassador of Pakistan to China, Saudi Arabia, Iran, Iraq and Mongolia. He has served as Deputy Permanent Representative of Pakistan to the United Nations, New York and as Additional Secretary at the Ministry of Foreign Affairs, Islamabad. He is also Former Permanent Representative of Pakistan to the Organization of Islamic Cooperation (OIC) and the Economic Cooperation Organization (ECO) and member UN Peace-Building Fund Advisory Group, New York. He is a former President of the Institute of Regional Studies Islamabad, ex-President, Association of Former Ambassadors of Pakistan and former member Board of Governors, Islamabad Policy Research Institute (IPRI).

SESSION I: Environmental Degradation Session Chair/Speakers



Ms. Romina Khurshid Alam is a Member National Assembly, and currently serving as the Parliamentary Secretary for Climate Change. Ms. Romina is also the Coordinator PM Youth Laptop Scheme, and Media Coordinator Young Parliamentarians Forum. She is also a member of many organizations like Federal Think Tank for Climate Change, Nursing Council; National Institute of Health & Women Caucus. At the international level, she is serving as Convener of Philippines and Singapore, Coordinator of Netherland, Sweden and France Friendship Groups and Ambassador of South Asian Physicians and Surgeons Academy. She has also the participant of the National Security Workshop 2015 and National Media Workshop - 5.



Dr. Ghulam Rasul is Director General, Pakistan Meteorological Department (PMD). He is also Permanent Representative of Pakistan with World Meteorological Organization (WMO) and has also served as the Vice-President of the Asia-Pacific Region. Due to keen involvement in research, he won the SAARC Best Young Scientist Award in 1993 and later, the Senior Scientist International Award in 2007.



Mr. Javed Ali Khan is Country Head, United Nations Habitat Organization. He is an eminent development consultant, with expertise in areas such as climate change, urban development, socio-economic issues, migration, and others. To his credit are numerous milestones including the formation of National Climate Change Policy, National Environment Policy, National Sanitation Policy, National Drinking Water Policy, National Human Settlement Policy, National Sustainable Development Policy (draft).

Moreover, he has served as a National Focal Point for UNFCCC, UN-Habitat, UNEP, UNCSD and UNESCAP for more than ten years and has represented Pakistan at various international and national technical expert groups and committees.



Dr. Abid Qayyum Suleri is Executive Director, Sustainable Development Policy Institute (SDPI). He is also member of different policy making forums/advisory boards, including National Economic Advisory Council; National Advisory Committee of Planning Commission of Pakistan; Climate Change Commission formed by Lahore High Court to ensure implementation of National Climate Change Policy; and Education Testing Council of Higher Education Commission of Pakistan, among others.

SESSION II: Population Explosion Session Chair/Speakers



Mr. Abdul Ghaffar Khan is Director General at Population Ministry for National Health Services, Regulations and Coordination (MNHSRC).



Dr. Asma Hyder Baloch is a Member Social Sector and Devolution at Ministry of Planning, Development and Reforms (MPDR). She has extensive experience in research, academia and public sector. She served as an Associate Professor at Institute of Business Administration, Karachi (IBA), National University of Sciences & Technology, Islamabad (NUST) and as an Assistant Professor at Karachi School of Business and Leadership. She received J. William Fulbright Award for International Understanding,

Distinguished Faculty Award and Mega I.T Fund Award. She was also a Research Fellow at University of Sussex, the London School of Economics, and Political Science and University of Pennsylvania.

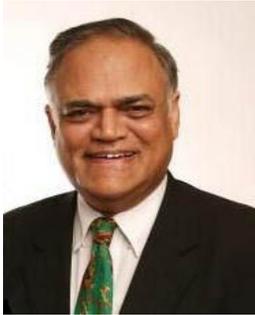


Ms. Puruesh Chaudhary is Founder/President, AGAHI a futures researcher and strategic narrative professional. She has been Distinguished Fellow at the Institute of Strategic Studies Islamabad (ISSI). Her work mostly involves futures research, knowledge-collaborations and content intelligence within the framework of human security. She has worked with multilateral donors and aid agencies, news organizations and multinationals in advancing development efforts in Pakistan. She has a professional master's degree in International Negotiation and Policymaking from Institute De Hautes Études Internationales Et Du Développement, Geneva.



Dr. Zeba Sathar is Country Director, Population Council Pakistan (PCP) in Islamabad, Pakistan, overseeing technical assistance and capacity building, social science research, and population and demographic dividend research that informs national policy discussions and developments. She also represents the Council through advisory meetings with government officials in Pakistan. She attained her PhD in Medical Demography from London School of Hygiene and Tropical Medicine in 1982. She has contributed to more than 22 books and has about 42 publications to her name.

SESSION III: Food Security Session Chair/Speakers



Mr. Javed Jabbar is a former Senator and Federal Minister of Pakistan, he takes an active interest in diverse fields including international affairs, voluntary work for rural and urban development, the environment, social issues and mass media. As Federal Minister, he has drafted several progressive laws and policies for development and reform in different fields, including the PEMRA Ordinance 2000-2002. The Human Rights Society of Pakistan presented him with a Gold Medal in May 2008 for outstanding voluntary public service.



Mr. Basharat Ahmed Saeed works at World Bank Pakistan as Water Resources Specialist. Before joining WB, he has served at LEAD Pakistan as a Team Lead towards Vision 2047. He has also undertaken professional research and project management assignments with many renowned organizations such as Lahore University of Management Sciences (LUMS), Princeton University, International Growth Centre and Government of Azad State of Jammu and Kashmir (AJK) in his diverse career of more than 6 years. Mr. Basharat received his Master degree in International Relations from the University of Sussex and an undergraduate degree with honors from LUMS. He has also attended the prestigious Oxford Adaptation Academy in 2014.



Dr. Iqrar Ahmad Khan has an extensive and diverse experience in academia, research and administration. Currently, he is Vice Chancellor, University of Agriculture, Faisalabad (UAF). He has been assigned an additional charge of Vice Chancellor Office, Muhammad Nawaz Sharif University of Agriculture (MNSUA), Multan. He attained his PhD from the University of California, Riverside, US. He was instrumental in developing regional/international mango research program and discovering new varieties of

wheat. He is also an author of hundreds of publications which include five books and several book chapters.

SESSION IV: Water Security Session Chair/Speakers



Lt. Gen. (R) Muzammil Hussain has assumed the charge as Chairman, Water and Power Development Authority (WAPDA) on August 24, 2016. He joined Pakistan Army in 1976 and graduated with distinction from Pakistan Military Academy (PMA). He underwent his grooming in an Infantry Battalion. He has been employed on exalted positions in Interior Sindh and Gulf War - 1 in Saudi Arabia. He also attended different courses in France and Indonesia. He served as Defense Attache in Jakarta, instructor in Army Command and Staff College, Quetta and Chief Instructor as a brigadier. He commanded an Infantry brigade, prestigious Force Command Northern Areas (FCNA) Division in Gilgit-Baltistan and 30 Corps Gujranwala.



Dr. Qamar Uz Zaman Chaudhry is a climate scientist and associated with the UN-World Meteorological Organization, first as a Member of Executive Council and then Vice President of the Asia Region since 2003. He is currently working with Asian Development Bank (ADB) as International Climate Change Specialist. He is the lead author of Pakistan's first National Climate Change Policy, 2012 and the Framework for Implementation of Climate Change Policy (2014 – 2030). He has contributed to more than 60 research papers in national and international journals, conferences and forums.



Mr. Ahmer Bilal Soofi is founding President of the Research Society of International Law (RSIL) and the Senior Partner of well-reputed law firm ABS & Co. He served as Federal Minister for Law and Justice, Parliamentary Affairs and Human Rights, in the caretaker government in 2013. He represents Pakistan as an expert in matters of international law and provides legal counsel before the International Court of Justice (ICJ) and International Centre for Settlement of Investment Disputes (ICSID). He was elected as a Member Advisory Council of United Nations Human Rights Council for three years (2011 – 2014).



Dr. Khalid Mohtadullah is a Senior Advisor, Global Water Partnership (GWP). He is a civil engineer with vast experience in water resources policy, strategy, institutional development, planning, project preparation, research, implementation and management. He possesses an advanced degree and diploma in engineering and management from Massachusetts Institute of Technology (MIT), USA and the Harvard Business School, (HBS) USA respectively. He retired as Managing Director and Member WAPDA. He remained Director of Research and Deputy Director General at International Water Management Institute (IWMI). He has served as the Executive Secretary of GWP in Stockholm, Sweden.

PICTURES OF THE INAUGURAL SESSION









WELCOME AND INTRODUCTORY REMARKS

Ambassador Khalid Mahmood

Chairman, Institute of Strategic Studies Islamabad

First of all, a very warm welcome to all the distinguished participants in the National Seminar on 'Non-Traditional Security Challenges to Pakistan'. The Institute of Strategic Studies Islamabad (ISSI) and I personally are specially beholden to the Honorable Chief Guest, Lt. Gen. (R) Nasser Khan Janjua, National Security Advisor of Pakistan for taking time out of his busy schedule. We also greatly appreciate the presence of all the distinguished speakers who will be enriching the Seminar's deliberations with their valuable experience and expertise.

The global security environment has changed drastically over the course of last two decades. While the risks of inter-state war and armed conflict are still looming, the global community is now confronted with the security challenges which are non-military in nature and referred to as the non-traditional security threats. These challenges include environmental degradation, population explosion and food and water scarcity. They are increasingly seriously impacting the stability, development and, in fact, the very survival of mankind.

However, humans themselves have subverted the global eco-system through over-utilization of natural resources since the beginning of the industrial revolution, causing wide spread pollution. The speed of global climate change is projected to be more rapid than any to have occurred in the last 10,000 years.

Pakistan is specifically vulnerable to climate change and ranked at 7th position in the index of most affected countries on Global Climate Risk Index 2018. Glaciers of the Himalayas are melting. As glaciers recede, it will increase flooding and affect water resources within the next two to three decades. This will be followed by decreased river flows and damaged coastal areas in Pakistan. Furthermore, in violation of the 1960 Indus Water Treaty, India is relentlessly building dams on the rivers apportioned to Pakistan. Rivers Ravi, Sutlej and Chenab are drying up, threatening to render the whole plains of Punjab and Sindh barren.

As Pakistan's economy is largely agrarian, so these harmful effects of environmental degradation may also affect agricultural yield leading to food scarcity. The spending on the import of edibles by an agrarian country like Pakistan is not only worrisome but also putting extra-burden on the already depleting foreign exchange reserves.

The nexus between climate change and human security within states and international peace and security has been recognized by various UN agencies and other international organizations. Listing various security challenges, the UN Secretary General in its Report on "Climate Change and its Possible Security implications" (64/350) states that climate change could potentially cause conflicts between countries sharing trans-boundary water or other resources. Former US Secretary of State John Kerry described climate change as "a global threat of the same magnitude as terrorism, epidemics and weapons of mass destruction".

Pakistan's population now stands at well over 200 million, which is almost 60% more than what it was during the last census that took place in 1998. With an annual growth rate of more than 2% the country's population will cross 400 million in the next four decades. The UN Population Division estimates that "by 2025 nearly half the country's population will live in urban areas." Pakistan's uncontrolled high growth population rate, resulting in messy urbanization coupled with a strain on resources, is causing poverty and unemployment- a perfect breeding ground for terrorism.

Despite having the world's largest glaciers, Pakistan is among the world's 36 most water-stressed countries. Pakistan's Council of Research in Water Resources (PCRWR) has warned that unless timely measures are taken, the country will run out of water by 2025. This will also constrain the country's ability to harness its full potential of hydro-electricity. While giving attention to enhancing water supply, there is need to also focus on demand side measures which promote water conservation, water use efficiency and control on excessive ground-water exploitation.

Food security is fundamental to national security. Right to food has been recognized as a core element of standard of living in the 1948 Universal Declaration of Human Rights. The focus of national and global food security has largely remained on the supply side. The availability of food, however, cannot ensure its access to the people. Furthermore, food security implies safe and nutritious food required for an active and healthy life.

The government of Pakistan has taken concrete measures to address these challenges. The Parliament of Pakistan has adopted the Sustainable Development Goals (SDGs) as a national development agenda. The government also established special SDGs units at the Planning Commission, Prime Minister Secretariat, the Parliament House and provinces to mainstream SDGs by creating synergies among the various federal and provincial organizations and agencies.

Now the most important task in front of us is to connect the dots between environmental degradation, water security and food security, keeping in view the population explosion. Pakistan requires an urgent re-conceptualization of “National Security” and to devise an appropriate strategy to meet the attendant challenges.

The Institute of Strategic Studies Islamabad (ISSI), by organizing this Seminar, has taken the initiative to sensitize the public opinion about this looming threat of non-traditional security challenges. Last year also, ISSI organized a seminar on Indus Water Treaty to identify the key issues affecting its smooth implementation, in letter and spirit.

The objectives of the Seminar are to:

1. Map the existing narrative on non-traditional security challenges to Pakistan, accounting for all its dimensions.
2. Analyze the response to non-traditional security challenges, and determine how relevant and effective it has been.
3. Formulate policy recommendations by bringing together a core group of experts and officials specializing in non-traditional security sphere.

The non-traditional security extends in all directions.: Upwards from the earth to the biosphere, Downwards from the nations to individuals. Horizontally, it extends to political security, economic security, social security and environmental security.

So, the responsibility for ensuring non-traditional security also extends to all segments of the state; upwards to regional and international organizations, downwards to provincial and local governments and sideways to civil society, and media.

This planet, our world, is our common asset and protection of this common asset for future generations demands a common responsibility. I want to reiterate what Mr. Ban Ki-moon, Former Secretary General of United Nations said.

“We are the first generation to be able to end poverty, and the last generation that can take steps to avoid the worst impacts of climate change. Future generations will judge us harshly if we fail to uphold our moral and historical responsibilities.”

KENOTE ADDRESS

Lt. Gen. (R) Nasser Khan Janjua
National Security Advisor of Pakistan

We are here to talk about a very important subject that is the non-traditional security challenges to Pakistan. I am a person who thinks of security as comprehensive security. Traditional security threats and non-traditional security threats overlap. Any threats from within the country or outside that are not military in nature are non-traditional security threats. However, if a state is weakened from within it invites traditional security threats. Threats are not singular in their character. They can make you exploitable if people are not happy, they are hungry, if a society suffers from haves and have-nots. The fissures within the society are exploited by the adversaries. If a country is weak from inside, then it is easy to break it from outside. Let us, as a nation, have an outlook that caters for both traditional and non-traditional security since there is considerable overlap between the two.

Traditional security threats are essentially against the sovereignty and territorial integrity of a state. They are usually related to the military and direct intervention by an adversary. The adversary can, however, resort to indirect strategy and can exploit faultiness in the non-traditional security domain to undermine sovereignty and integrity of a state. It is possible to apply indirect strategy to begin with to make a state fragile and then wait for an opportunity to apply the direct strategy.

Coming to non-traditional security, the issues are non-military in nature, transnational in scope, neither purely domestic, nor totally interstate. These are challenges related to the survival and well being of the people. These are non-state actors, terrorism, environmental degradation, drug trafficking, human security, food security, water security, population explosion. These non-traditional threats are much more intimidating than the traditional ones. Non-traditional security threats are also a great threat to national security, survival and development of a state. Such threats can cause huge economic losses to a state, to a region and even to the world. There is a link between traditional and non-traditional security.

National security is constantly undergoing changes. In the contemporary world, the people are becoming the stake holders of security. A state can be called secure if it can preserve the sovereignty, territorial integrity and freedom along with its people. The contemporary notion of security is not only focused on sovereignty and territorial integrally. It also encompasses the security of the people. If the people are not secure then a country is not secure.

How do we approach the subject? For a moment, zoom out of Pakistan and look at the global and regional dimensions of security - may they be traditional or non-traditional. When we try to understand and relate Pakistan with the regional and global level, I am hit by some basic questions as a nation. If we fail to benefit from global commerce, can we make our country secure? If we fail to comprehend the global power politics and trends and how they affect your security, will you be able to secure yourself? In different blocks of power, which side are you on? Are you taken as a country that is low on global peace index, are you taken as a dangerous country? Are people willing to embrace and coexist with you or they want to confront you? What is the image of your country? How are you placed in your region? Are there reasons within your region to go to war? Do you have some dispute resolution mechanism? What are the military strategies prevailing?

Now zoom back to Pakistan. There are a number of things that contribute to national security. Political stability of a country is important. How many political parties and political leaders does Pakistan have? Are the political parties reduced to regional/provincial character only? Does the country have simmering sentiments like Pashtoonistan, Baluchistan, Sindhu Desh? What is the political culture in the country? What is economic security? What is the level of governance? Is there justice within the country? What is the Human security? What is the level of food security within the country? What is the health security within the country? Are you taken as a state with a high mortality rate? On average 46 children for every 1000 die in Pakistan. How are you developing your human resource, education ? There are 22.6 million children who do not have education facilities available. Approximately 44% in Pakistan are out of school. How many Madrassas are there? There are approximately 38000 Madaris in Pakistan with 3500000 students at one time. Where are how these students get consumed? How many of them revert to serve the society? What does the world think of our religion? Our religion is maligned over the world. What are we doing about it? There are 5000, 000 children born every year in Pakistan. However,

can the country provide food, security and services for these children? What is the population growth rate of Pakistan?

What are the issues confronting Pakistan. What can we give our coming generations ? Some of the challenges facing Pakistan are unemployment, drugs, poverty. It is believed that 30% of Pakistan's population lives under the poverty line. Other problems Pakistan needs to deal with are energy security and environmental degradation. There is no water security in the country. The country has had floods as well as water scarcity. Pakistan is the 4th highest consumer of water in the world. 30% of the country's water is wasted. Pakistan has to face, confront, and manage all these challenges. Pakistan is divided on religious lines. How is it that was are divided over a religion that was completed by the Prophet Muhammad (PBUH).

What is the way forward? What is reversible and what is not reversible? We should reverse whatever is possible. As a resilient nation, nothing is beyond us. Whatever is not reversible, we must adjust. What are the things that can be reversed. We must defeat extremism, sectarianism and terrorism. These have undermined our nation tremendously. In FATA we have been fighting since 2001. It was a state within a state. We fought and reduced militancy and terrorism. We launched the largest operation Zarb-e-Azab. Coming to Karachi. There were operations. Coming to Baluchistan which is the largest province of Pakistan. It encompasses half of the country. There was an insurgency going on over there. Our canvas was full of threats. It seemed we were fighting an octopus without knowing where is its head. It is our failure to integrate them and also their failure not to be integrated. Why were they not getting integrated? It was a sense of deprivation. How does one fight a sense of degradation that has drawn out a separatist sentiment? The root cause is negative sub-nationalism. We must fight the root cause. What do you give a people suffering from sub-nationalism? We must give them nationalism, not use force. We have to continue to fight extremism and terrorism in our country at all levels. As a country we have to invest in human security. We have to invest in food security, agriculture, health, governance, education, industry and better use our natural resources.

Asia has 60% of the world population. As it is said: "Love is where the heart is". Asia is a very important region. This region contains the maximum resources, consumer markets, manufacturing, development scope, connectivity potential. This is where the world is. If Asia is

the future world how does Pakistan connect Asia with the rest of the world? All the roads can lead to Pakistan and all can lead from Pakistan. Pakistan is the only country through which you can connect with the whole of Asia. India can look at us by way of peace, by coexisting peacefully. The two countries cannot be enemies forever. We can take India to China, to Afghanistan, to Central Asia, to Russia and to Europe. Instead of refusing to talk, the two countries need to engage in dialogue. They have to find a way forward. Perhaps our future generations will have the wisdom to resolve differences and live in peace. I can predict that there is a future economic block here in Asia. By way of connectivity Pakistan has the potential to become a massive economic and trade corridor. Pakistan thus has the potential to be a trade, economic, and industrial hub. Pakistan will be country to reckon with if its huge economic, trade and connectivity potential is realized.

SESSION I

ENVIRONMENTAL DEGRADATION



The session was chaired by **Ms. Romina Khurshid Alam**, *Parliamentary Secretary for Climate Change*.

The speakers in this session included **Dr. Ghulam Rasul** - *DG, PMD*, **Mr. Javed Ali Khan** - *Country Head, UN Habitat Pakistan*, **Dr. Abid Qayyum Suleri** - *Executive Director, SDPI*.

PICTURES OF THE SESSION





PRESENTATION

Identifying the Environmental Challenges Facing Pakistan

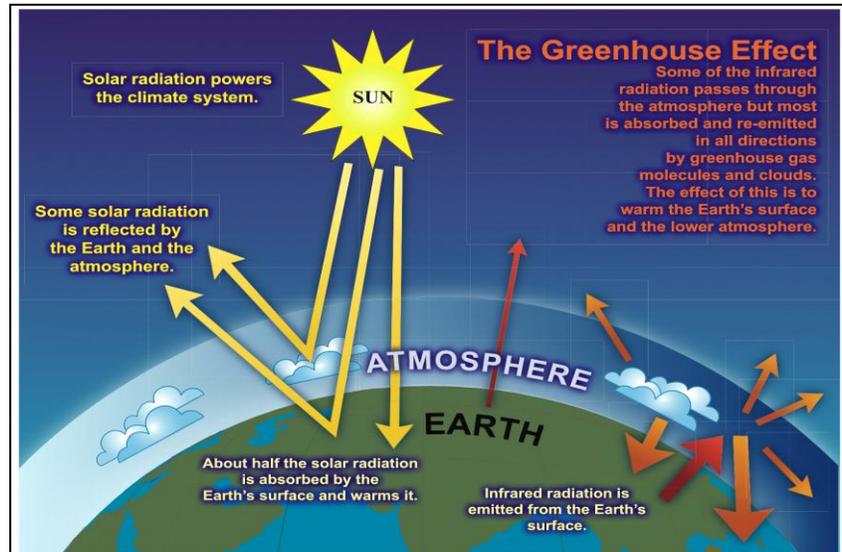
Dr. Ghulam Rasul

Director General, Pakistan Meteorological Department

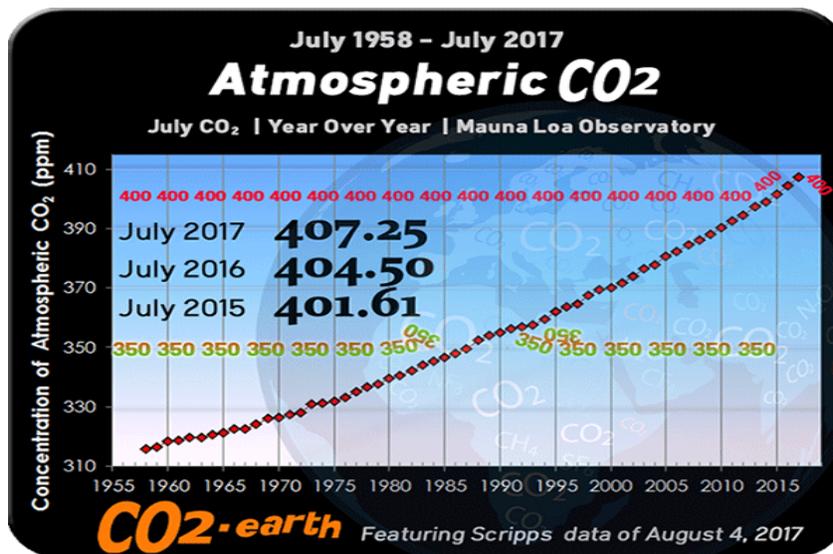
Environmental degradation is triggering climate change. Climate change is happening due to two kinds of factors. One are the natural short time challenges for example solar activity, volcanic activity, oceans and natural variability. The second are anthropogenic factors which are primarily related to human activity. These include urbanization, land use, aerosols and greenhouse gases. Land use and urbanization can be lumped together. If you take the example of Pakistan's top cities and towns, and villages which are growing at the cost of green fields. When green fields are converted into houses then at least 3-4 degree centigrade temperature increases. Aerosols are solid particles suspended in the air. Those aerosols are emitted through natural activity like dust storms and sand storms and also through human activities like industrial emission, transportation and agricultural sector emissions. Green house gases are responsible for increase in temperatures and global warming. These gases are also friendly for humans. those gases developed an envelope around the earth. This also traps outgoing radiation that is necessary to maintain the temperature on earth to a liveable level. If not for this envelope, earth's temperature could be 18 centigrade which would be unsuitable for life. This way these gases are beneficial for human beings. But what went wrong? After industrialization and modernization they emitted large amount of gases, combined with other human activity those gases concentrated in the envelope. Now those gases are trapping more heat which is causing global warming.

Main greenhouse gases are water vapor (H₂O), carbon dioxide (CO₂), ozone (O₃), methane (CH₄), nitrous oxide (N₂O), and (hydro) chlorofluorocarbons (CFCs and HCFCs). Ozone is friendly to humans when it is 24-25 km above the surface of earth. It is serving as a filter to ultraviolet radiation, not allowing it to reach the surface of the earth. But when this is present near the surface of the earth, it is creating health problems. Nitrous oxide and methane are mainly emitted as a result of agricultural activities. chlorofluorocarbons are emitted from air conditioners, refrigerators etc.

In 2015 Paris Climate Agreement, it was mutually agreed by many countries that the average temperature of the earth would be kept below 2 degree Celsius as compared to previous years. However, that has not happened. In 2016 and 2017 the temperature increase was closer to 3 degrees. If we go



into the history of temperature increase, it was about 1 degree during the 1960s and now it has come up to 3 degrees.

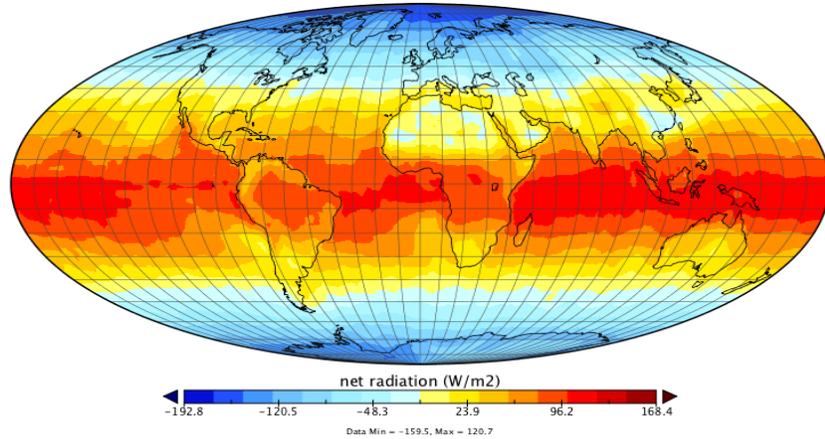


According to world meteorological organization, 2016 was the warmest year over the globe, followed by 2015 and 2017. Some of the indicators of global warming are glaciers are melting and snow cover is receding. This water is going into the sea resulting in rise to the sea level. This is a great threat to

small islands in the Pacific and Atlantic Ocean. Due to increasing temperatures animal and plant species are also marching upwards in search of suitable temperatures. Climate pattern has been shattered due to the increase in temperatures.

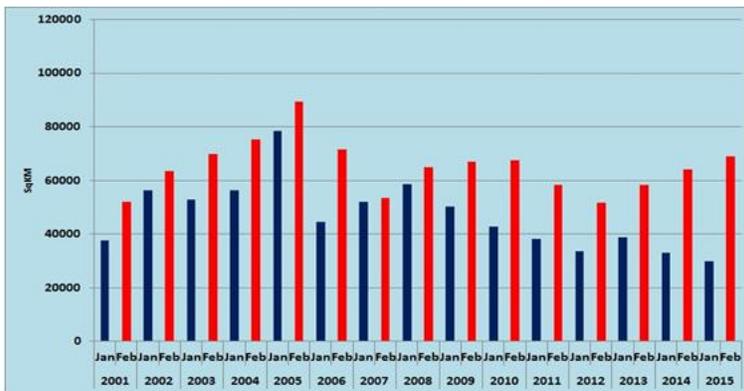
Pakistan is very high on climate change vulnerability scale. It is 135th in GHG emissions. Located in a heat surplus zone, Pakistan is the 7th most vulnerable nation to Climate Change Impacts according to Global Climate Risk Index 2017.

Pakistan, therefore, stands to suffer more due to global warming. There is a drastic increase in temperature in the Baluchistan and Sindh province. Khyber Pakhtunkhwa and Punjab maintained their



temperatures somewhat. In mountainous areas such as Gilgit and Baltistan the temperature increase is much higher compared to other regions of Pakistan. In rainfall or snow pattern in terms of amount there is no significant change. There is large inter annual variation which is not allowing sustainable development especially in the agriculture sector.

Snow Maxima is Shifting Towards February Snow Residency Period is Shrinking

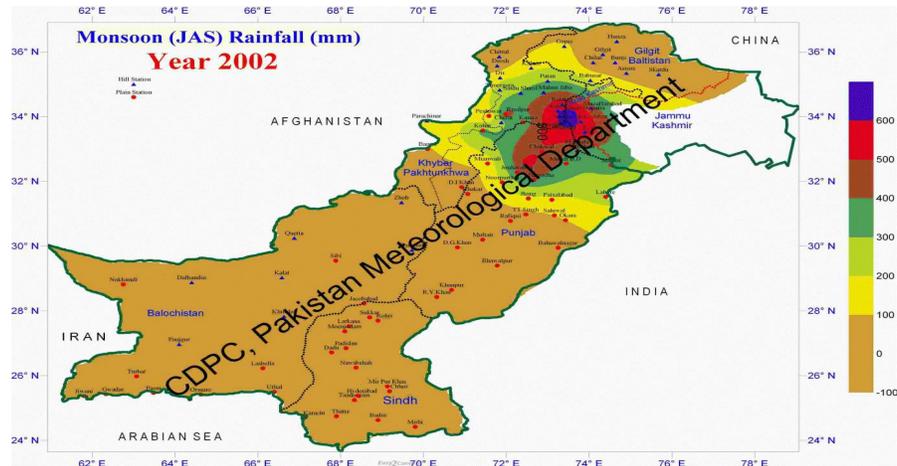


Snowfall pattern is changing drastically. Usually peak snowfall season was in January. Now it has shifted towards February. What is wrong with that shift is that when maximum snowfall used to occur in December-January that was replenishing the decay of glacier through metamorphic process.

The rate of glaciers melting was slow. Now immediately after February temperatures increase and the snow is washed away.

The monsoon patterns are also changing in Pakistan due to rising temperatures. In the past, monsoon used to occur from July to September, but now it is limited to July and August. September monsoon is almost non-existent. Major monsoon precipitation is occurring downstream Mangla and Tarbela which means that we have no control over the flow of water.

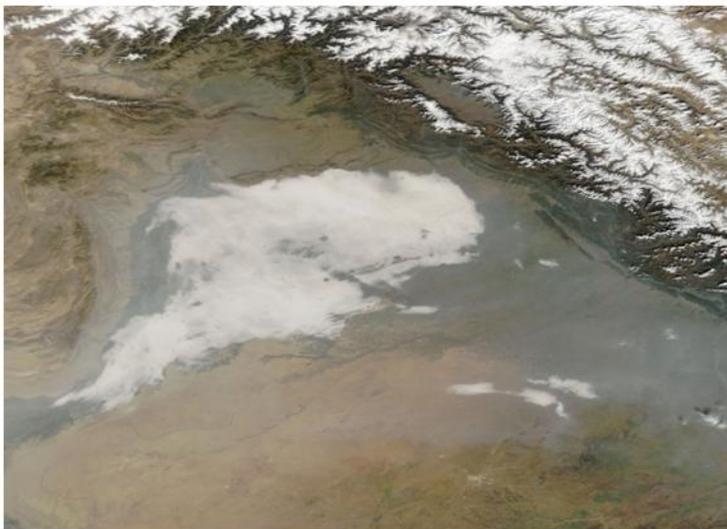
Tropical cyclones are not common on Pakistan coastal areas. But their frequency is also increasing because sea surface temperature is increasing in the Arabian Sea significantly. There are more than 7000



glaciers in Pakistan. Some of those glaciers are retreating at a much faster pace but about 1% glaciers are showing advancing behavior. Due to glaciers retreating, glacier lakes are forming. These lakes have surplus water sure to rain as well and cause floods. This has become a major disaster in the northern parts of Pakistan.

A lot of water is wasted due to flooding. 61% of rain is occurring in July August only. We have the capacity to hold that water for 30 days only. We are not able to carry the surplus water from summer to winter months.

Dense Fog in Pakistan Fog in Winter (Nov – Jan)



Dense fog in Pakistan during the months of November-January is also causing problems. India has many coal power projects along the border, pollutions from that is transported to Pakistan crating a lot of problems like black carbon and health issues.

Future climate predictions include intensified monsoons during the next 3 decades. After that the monsoons will weaken and precipitation will also lessen creating further water issues for Pakistan. Future predictions show a 3-4 degree increase in temperatures of all major cities of Pakistan by the end of the century. Frequency of cyclones in coastal areas is expected to increase as well.

PRESENTATION

The Impacts of Environmental Degradation on Pakistan: Implications for National Security

Mr. Javed Ali Khan

Country Head, UN Habitat Pakistan

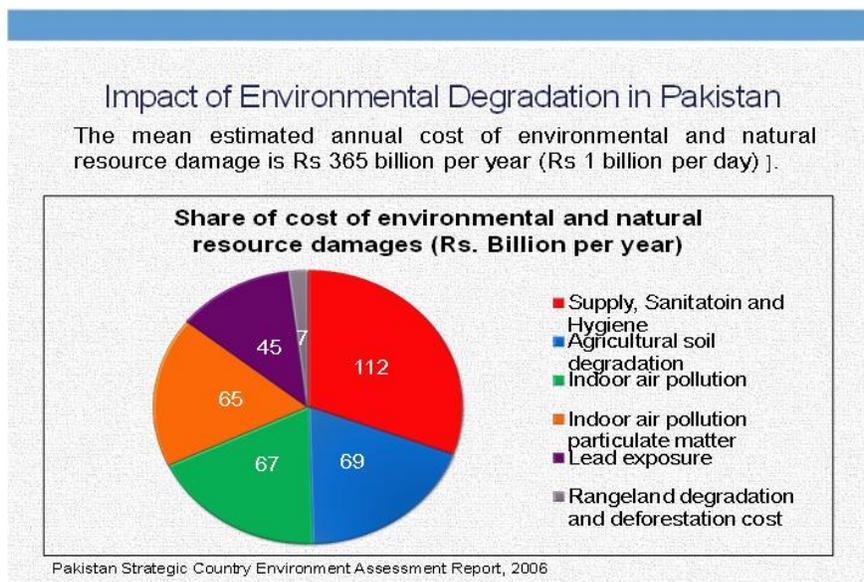
Environmental challenges have transcended the context of security and the canvas of security. So it is one of the most serious challenges that country faces. The non-traditional security includes environmental degradation. Climate change has become the biggest threat to the country. Rapid natural resource depletion, population growth, food security all of these are very much interlinked with the degradation of environment. So these are just the factors that are depleting the quality of environment. Pakistan faces serious environmental problems which is reflected in the loss of GDP. Accelerated industrial growth and urbanization presents environmental challenges, air pollution, water and land pollution and unsustainable pattern of consumption and production. This is inefficient way of using resources. Depletion of our resource base is pretty fast and it is seriously impacting our economy. Since 1950, Pakistan has registered 24 floods with 12,330 deaths and some 197,257 villages have been affected. This resulted in Rs. 10 billion loss and 20 million people were dislocated or were affected. So, it is extremely serious for Pakistan and frequency of floods has increased after 2010. In 35 to 45 years, Karachi will be completely submerged and 100 acres of land is being eaten up by sea level rise in areas of Badin, Thatta and coastal towns of country. So this is very serious phenomenon. Glacier melt is also rapidly impacting. There are 52 glacial lakes where there is a possibility of an outburst like Attaabad lake. It is called the ocean under the bed of the mountains. It can burst out and God forbid it can wipe out most of the part of country. It can create havoc. So these are real challenges that Pakistan faces. Pakistan need to really address these challenges to make pragmatic long term strategy plans. Tropical cyclones has hit coastal town and it has destroyed and impacted the economy and people. After every 10 years droughts also affects Pakistan and the impact of last drought was extremely serious as it affected the entire country but Baluchistan was the worst affected. 3 million people were affected and 2.5 million livestock was lost and

agriculture also registered negative trend of 2.5%. So these are really serious challenges Pakistan faces because of environmental degradation.

Quality of freshwater bodies and underground water is deteriorating rapidly. Fluoride, Arsenic and E. Coliform are contaminations that goes in earth. The real cause of water quality degradation is disposal of untreated and unsafe waste from industries. It sinks into the soil as well as it is discharging to our fresh water bodies in the sea as well as rivers. It is impacting health of people. Arsenic and Fluoride phenomenon is actually because of deep extraction of ground water. So the minerals sitting inside become impacted and it starts diluting in the water.

There is always a concept of sustainable consumption and production. So whatever resource nature has blessed, the repairing capacity of the natural system is such that at certain level it can repair itself. But when the extraction is more than a limit, then its capacity to repair is damaged. Pakistan's pattern of development has led to such a serious trend or behavior where natural resource repairing capacity has damaged far beyond. Pesticides also impacts human health. Recycled plastics and hospital waste is another problem. Recycled plastic is being used for making feeding bottles, nipples, utensils and shopping bags which is extremely serious and

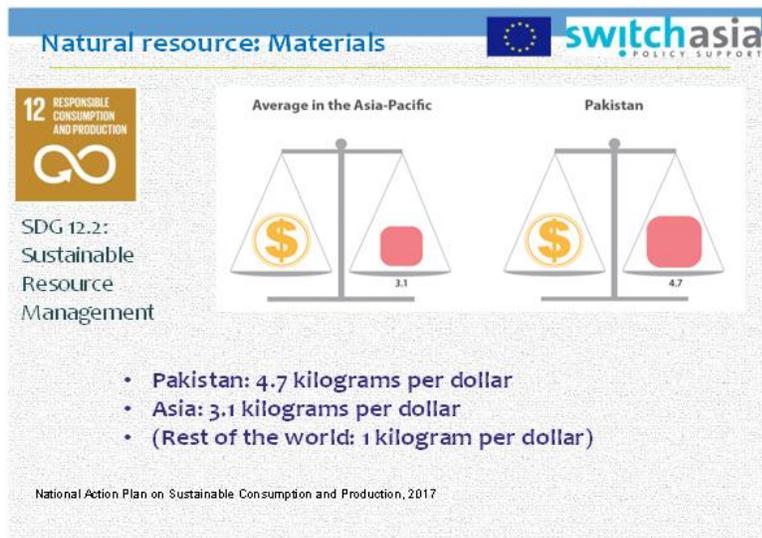
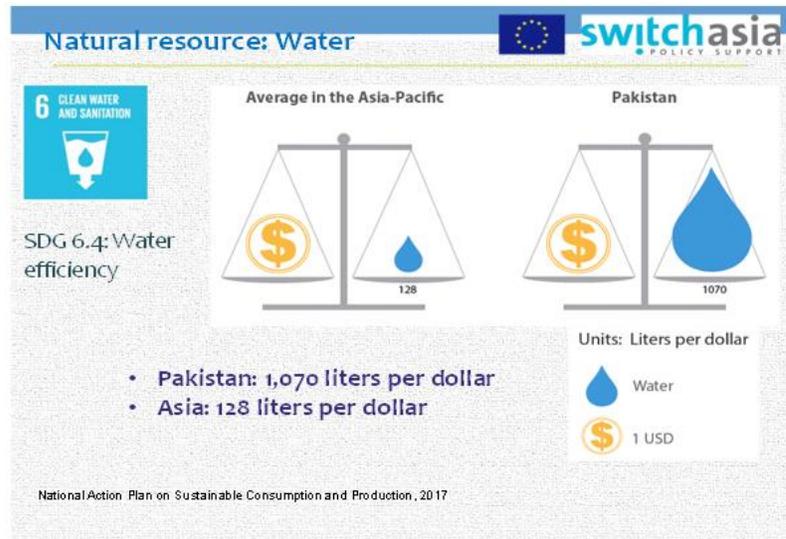
impacting health of not only the elderly population but the younger generation as well. The cost of environmental degradation in Pakistan is roughly one billion rupee per day or 365 billion rupees annually which is 6% of GDP in 2006. It had increased to 9% in 2015.



Economic growth or economic prosperity impinges on arresting this trend. Coming to human development index, value for 2015 was 0.550 which did not change till 2017. There is no positive trend in policies taken during these past years. It is not showing any betterment in the

behavior of management of environment. There are other factors. The population growth is faster and Pakistan need to develop a long term strategy to arrest this trend.

When it comes to sustainable consumption pattern, other countries produce 1\$ of GDP by consuming 128 liters of water. In Pakistan, to produce 1\$ of GDP, 1070 liters of water is used.



For the natural resource material, other countries use 3.1 kilogram of natural resource material to produce 1\$. Pakistan uses 4.7 kilograms of natural resource material to produce 1\$.

This is the inefficient manner of using natural resources. The magnitude of environmental threat has become a very eminent threat

for the security of Pakistan. The recommendations are as follows; first of all Pakistan need to develop a comprehensive strategy to check the loss of 1 billion Rs. Per day. If Pakistan is able to check that, it would be helpful ; Environment should be tackled as priority issue; Create awareness because actually the basic root cause of environmental degradation or even climate change is said to be anthropogenic human behavior- human response to nature. This will wipe off the survival of human being on planet earth. Human behavior really needs to be taken that seriously to develop strong and effective strategy to change the mindset of the people and

specially the younger generation; switch to low carbon economic growth ; adopt environmental friendly technologies; promote sustainable consumption and production.; adopt climate resilient development and increase forest cover because forest cover is called lungs of earth. If Pakistan has more green cover, its environment will be better and there will be more capacity to absorb carbon dioxide.

PRESENTATION

Overcoming Environmental Challenges: Recommendations and Future Discourse for Pakistan *

*(*While the speaker was assigned the above topic, he was requested to speak on Energy Security)*

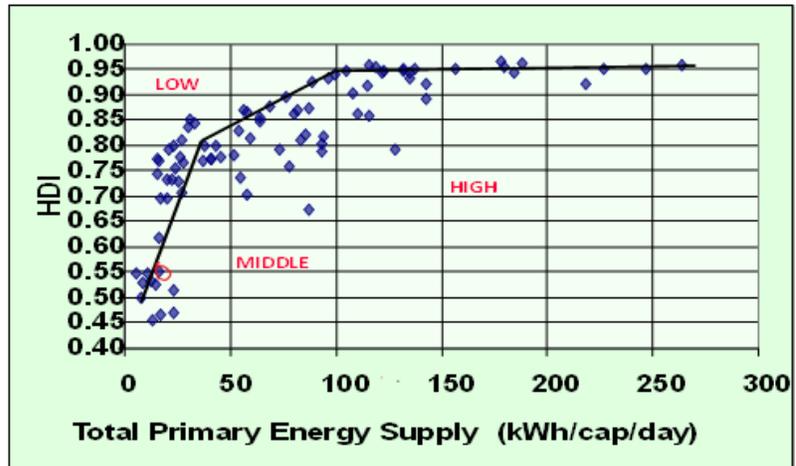
Dr. Abid Qayyum Suleri

Executive Director, Sustainable Development Policy Institute

Climate change is a manifestation of human activity. It is about the way energy is produced and consumed. That is where carbon dioxide emission comes and that is where it affects temperature and availability of water. There are seven "F" crisis and all of these seven "F"s are interrelated. One cannot address six of them leaving seventh behind. These are fiscal, fuel crisis which is energy, its fragility of climate, it is fertility which is population growth, it is functional democracy crisis which is governance and its food crisis. All of them need a long term solution. Security implication of any of these crisis, be its climate change, be it food or water security , it needs to be examined in the context of pre-existing social and environmental threats or stress which are key factors in the security of individuals, communities and states. Of course, insecurity breeds insecurity. If there is insecurity of any kind, it would multiply and it would invite all other insecurities. Energy security can be discussed in four ways. It is about availability, accessibility, affordability and acceptability.

One can argue that the modern industrial age was based on a big push of investment in fossil energy. One can say that because of investment in fossil energy came this third industrial revolution. But going forward for fourth industrial revolution in terms of sustainable development and in terms of security, Pakistan need a big push on renewable energy. Fossil energy will not be helpful. Investment in fossil energy and has seen the impacts in terms of climate change. Pakistan need to bring about a rapid reduction in unit costs of renewable energy so that it is more affordable. Poor countries and poor households also need to be enabled to access modern energy services. This chart is quite interesting.

This is human development index and the total of energy supply. With the human development index, countries with high energy supply per capita per day gain more benefit of their human development growth. Pakistan comes here. Its total energy supplies is



somewhere near 120. Human development index is .55. One can argue that Pakistan is among the middle human development index countries but looking in perspective the way Pakistan is able to make out of some of these indicators, Pakistan is still lagging far behind then rest of the countries. Affordability is again something very important. Usually household leave 10% of their budget for energy. So the cost of energy and to keep in mind how much energy a household can use, if it is 6 cent its 7Kwh per hour, if it is 10 cents 4.5 Kwh of electricity and if it is 20, it is 2 KWh. India, Pakistan and Bangladesh are all falling on the same trend when it comes to per capita income per day. China of course with the per capita income of 24 \$ per day, its affordability is much higher.

What is Affordable Where?

Income \$/cap/day	Energy Budget 10%	Affordability kWh/day at prices (cents/kWh)		
		6	10	20
India (\$4.5)	\$0.45	7	4.5	2
Egypt (\$7)	\$0.70	11.5	7	3
China (\$24.20)	\$2.40	40	24	12
Pakistan (\$4.4)	\$0.44	7	4.4	2
Bangladesh (\$4.41)	\$0.41	7	4.1	2
OECD (\$120+)	\$12.00	200	120	60

This leads us to rethink not only about energy sources, but also about the prices. OECD countries with higher income also have higher affordability. How the developing countries can cope with the energy situation? Exclusion can be a very simple solution.

Many people have no access to modern energy. Environmental stress which is reliance on inefficient but cheap biomass. Then there is regressivity. Energy expenditure share falls with income and of course the household with low income have to allocate maximum share of their

income for their energy needs. Lastly, it is the targeted subsidies. At the end, one can argue that there is negative coping mechanism and in order to take care of climate change and to take care of environment, some positive coping mechanisms are required.

In order to achieve energy security, climate and development agendas need to be integrated. One can argue that there is a race between climate and development. Part of the reason for failure of MDGs, has been to tackle this environment and development in silence. MDG 1 was poverty reduction. MDG 7 was environmental conservation. There could be one department very dedicatedly working for environmental conservation. Another department could be trying to achieve economic growth. But if they don't talk to each other, the result would be negative. The example is New Murree development project. It could have brought some economic development but at the expense of thousands of hectares of forest. Pakistan needs to take environment in all policies and not only in development policies. Pakistan need to approach renewable energy as an infant industry that requires big push. There is a need for frontload investment to accelerate innovation, bring cost down and bend the emissions curve. The example is the introduction of satellite dish antennas in Pakistan. When these satellite antennas and receivers were introduced in Pakistan, the cost was extremely expensive, but then the local entrepreneurs started replicating and duplicating it and within couple of years it was everywhere until cable TV and other mechanisms got introduced. Second thing is catalyzing public funding. Of course Pakistan need to have some short term subsidy. Pakistan is already handling with energy circular debt. Today energy circular debt is one billion Rs and the energy circular debt is one trillion Rs. Pakistan can afford one trillion Rs. in energy circular debt so it can also afford some kind of subsidies on renewable energy and try to shift focus from traditional energy to this renewable energy. Goal should be to bring a rapid reduction in per unit cost of energy and the result would be a universal access to poor household which can drive growth process.

While looking at security, there is global security, regional security, national security and individual security. Very often individual security is compromised. All these four levels of security are not mutually exclusive. Rather, they are interconnected and cumulative. Work need to be done on all four of them. If one is ignored, the rest of the three would be compromised. Individual cases of individual insecurity, when turn into collective deprivation and gets an identity, be it creed, gender, class or ethnic nationality, it would lead to conflict and violence

between have and have not. Pakistan is already facing conflict between have and have not. When individual insecurities get some kind of identity tag, they lead to social instability and regional and extra regional involvement starts coming. Pakistan should not provide any excuse to any external intruder to interfere in its security matters. But in order to do that, Pakistan need to tackle security. Then there is big dilemma about allocations and budget. After the 18th amendment and after revised allocations to provinces, following are the figures from current financial budget. Net Fed Revenue with the Federal government after paying to provincial governments would be 2926 billion Rs. Out of this 2926 billion Rs. loan and mark ups makes 1363 billion . Defence affairs services makes 920 billion. Pension makes 248 billion. Foreign loan repayment makes 286 billion. All of these are non-discretionary expenditures. One cannot compromise on them because it is only the PSDP which is the discretionary expenditure of the government. They already make 2817 billion. To run civil government another 376 billion is required. The revenue which was 2926 and non-discretionary expenditure already upto 3200 billion. So what happens, that every year PSDP allocation gets compromised. This year it was one trillion it will be seen how much of it is released and how much is spent. If Pakistan does not focus on this and if Pakistan do not reduce some of this non-discretionary expenditure, Pakistan would not be able to invest in human security. And if Pakistan cannot invest in human security, these non-traditional security threats would keep on multiplying and keep on challenging all other security measures that would make our country safe and secure.

QUESTION AND ANSWER SESSION

Q: In Navy, weather forecast is lifeline. But weather forecast today is out of date as it was in 1950s. The problem is the lack of equipment with the Met department. Their request for ground radars have been pending for three decades. Have you raised this in the parliament?

A: Climate change subject is very close to my heart. As being a parliamentarian for the last four and a half years, I met certain high officials. We have discussed this thing and we all are doing whatever we can do in our individual capacity.

A: Investment on early warning system is very important. All other countries are catering to that but Pakistan lags behind. But now Pakistan metrological department has initiated a case of refurbishment of infrastructure which will be completed in 2-3 years. Two radars in Karachi and Islamabad are near completion and will take on the outdated equipment. 25 years old radars were being used, but now 11 billion Rs. have been allocated which will enhance early warning system.

Q: Hydro power is the cheapest source of energy. How it got neglected from our national narrative.

A: That's a very controversial subject. Everybody keeps talking about rectifying public sector enterprise. Whole subject of producing energy through dams has become so controversial that no one wants to talk about it. Even if there were some projects, international donor shy away from financing them. All political governments want quick solutions and to construct a dam, one has to be patient. These are some of the problems facing our energy sector.

A: Yesterday, we launched three documents on climate change mitigation potentials for Pakistan identified after two years of study. We have found over hundred thousand mega watts potential micro hydel. Big projects might be challenging for Pakistan. But micro hydel and small hydro potential is extremely rich and it is within excess and probability of making use of it.

Q: My question is regarding environmental degeneration of certain substances like mercury?

A: There is a new convention on safe disposal of mercury under consideration. Pakistan would be signatory to that. Ministry of Climate Change, which is the custodian of environmental conventions, is very seriously looking at it and working towards safe disposal of mercury.

Q: This is no news that Pakistan has potential for hydro power. This is very old story. We lack funds so what is the solution? 21st of March was celebrated as international forest day. 21st of March is too late to be celebrated as Forest Day. It should have been celebrated a month and a half ago.

A: It's an international day and where there is a will, there is a way. It is never too late to start anything.

Q: Kindly elaborate low carbon growth?

A: Low carbon growth is switching over to cleaner technology, switching over to energy conservation and switching over to more efficient way of using resources. This would be called low carbon development pattern.

Concluding Remarks by the Chair

Whatever the recommendations, suggestions made here brings awareness. We all are trying very hard in our individual capacity. Learning has no end and we are all students. Climate change is not a small subject. It's a very vast subject. Everything is related to climate change including security. Taking little credit on behalf of the Parliament, in 2017 Parliament unanimously adopted the Act of Climate Change Bill 2017. Young people are also being engaged to create maximum awareness. Urban forestation and importance of forestation is also being promoted. Small or big, every step counts.

SESSION II

POPULATION EXPLOSION



The session was chaired by **Mr. Abdul Ghaffar Khan** - *DG, Population Ministry for National Health Services, Regulations and Coordination (MNHSRC)*.

The speakers in this session included **Dr. Asma Hyder Baloch** - *Member Social Sector and Devolution, MPDR*, **Ms. Purush Chaudhary** - *Founder/President, AGAHI*, **Dr. Zeba Sathar** - *Country Director, Population Council Pakistan (PCP)*.

PICTURES OF THE SESSION





OPENING REMARKS BY SESSION CHAIR

Abdul Ghaffar Khan

*Director General, Ministry of National Health Services,
Regulation and Coordination Islamabad*

Pakistan is the fifth most populous country in the world. The development indicators of Pakistan are worst among the Muslim countries. Pakistan's population will double in the next 29 years if the present growth rate will continue. The demographic indicators of Pakistan are worst if you compare with other Muslim countries of the world and the worst among SAARC countries. The subject of population in Pakistan has either been misunderstood or not fully understood in Pakistan by policy makers and planners. After having been associated with this population program for several years, I have been looking at the problems of high population growth and I can say that the problem of population is multidimensional and has its impact on several issues.

I am still confused whether the problem of population in Pakistan is a demographic pursuit, or is it a family planning program or is it the primary health care issue or is it human rights issue, especially women's right and the rights of children. Or is it a cross cutting issue? In my opinion, population is a multidimensional and cross cutting issue. It has its impact on food, housing, water, education, health issues, environment and security.

Had we understood it fully, we should have pursued it fully and we have failed and we must accept that. Population is not number and size issue; it is also related to quality issues as well. When population is unmanaged, it can also affect the security and stability of the country. Population also affects development and prosperity as well. It is very important to look at all factors when talking about prosperity and development.

PRESENTATION

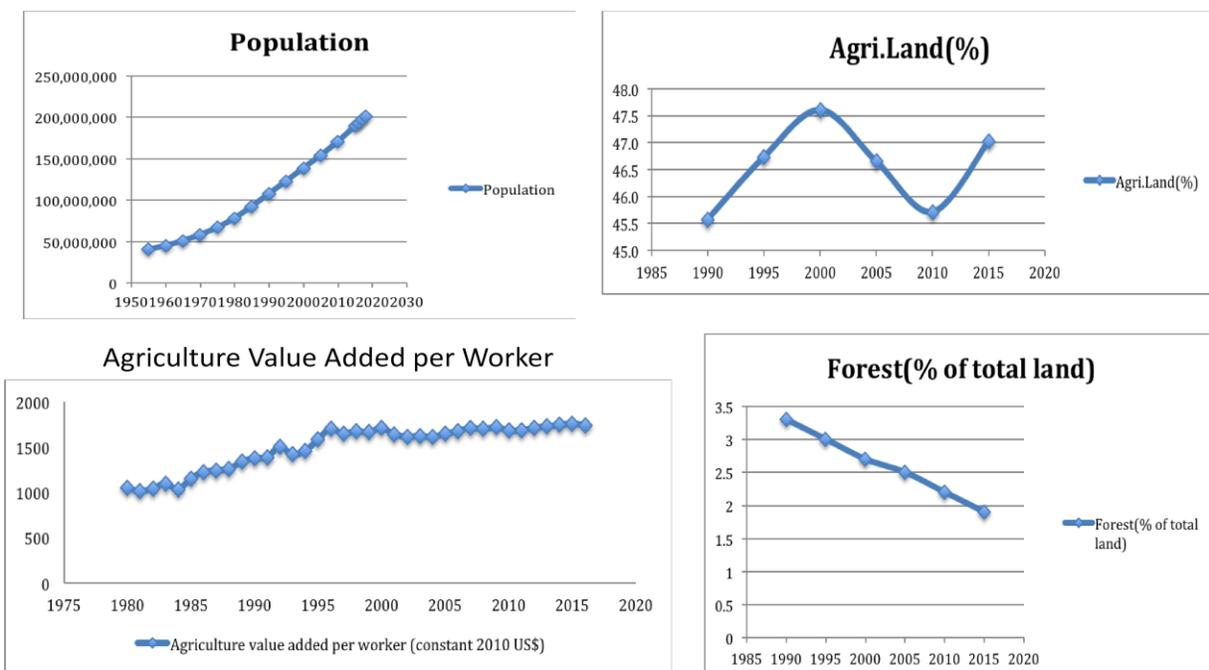
Population Explosion and its Challenges to Pakistan's National Security

Dr. Asma Hyder Baloch

Member Social Sector and Devolution MPDR

I am not going to cover many areas in my presentation, but I will just cover a few important issues. This is a very important issue and a rapidly growing population affects a country in the long term and the threat of a large growing population can be seen in various forms. I will say that we must look at the few important issues where intervention is necessary, for example population, deforestation, and agriculture development, population, food and nutrition, population and urbanization, population and water resources. The following slide shows the detail:

Population, Deforestation and Agriculture Development



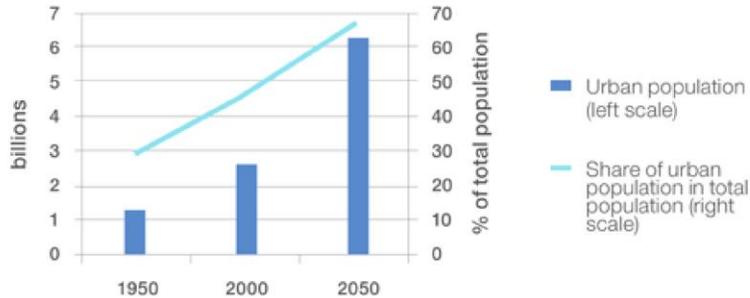
Source: <http://databank.worldbank.org>

These are considered to be among the bigger challenges of today's world. While Pakistan's mainstream debate focuses on tackling the extremism, militancy and our emerging shortages in the energy sector, an equally important threat is population explosion. I will not go through too many statistics, but some of them are really really alarming, for instance, our population has now risen to 207.774 million as compared to 132.35 million in 1999, according to the previous census. So the average population growth rate is 2.4% which is highest in the region. There are many demographic indicators, as shown in my slides, according to which TFR is 3.57% and CPR is 41%. Population, deforestation and agriculture are related issues and the indicators in this regard are also not very encouraging either. I will go in deforestation, but I will not go into details as we have already discussed these things in the first session. There are multiple synergetic links related to population growth and environmental degradation. The relationship between these three variables is very important because there are multiple factors that affect the population growth. From the theoretical perspective, on one hand when there is population growth, the agriculture production will be affected. All these problems required us to innovate and unfortunately we did not innovate.

The productivity of agriculture is increasing at a decreasing rate. Stunting rates are very high in Baluchistan and anemia and stunting are very serious problems and will become very high in a few years time. Our performance is worse than the least developing countries. Unprecedented urbanization is taking place and the numbers have increased phenomenally and it is assumed that by 2050, the city dwellers will comprise of a huge number and this will lead to numerous problems of population and urbanization and several related problems like transportation issues and more. Pakistan is a water stressed country and the water resources are depleting rapidly and per capita availability is also being affected. Poor sanitation is also a huge problem and so is child mortality. The initiatives taken by the Planning Commission have not been implemented to their full potential, although the planning commission is dedicated to the SDG's (Sustainable Development Goals). There is also focus on the urgent priority areas as well. The following table shows the detail:

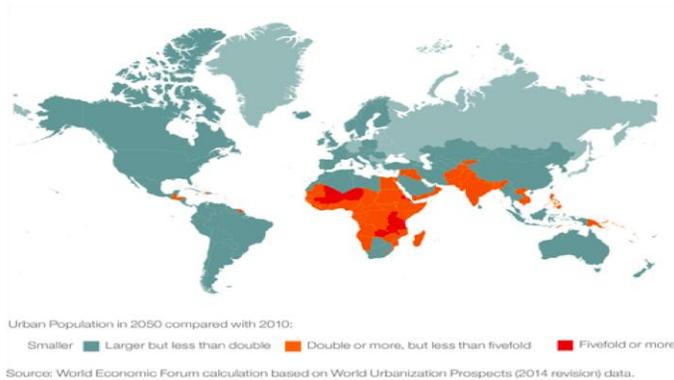
Population and Urbanization

Figure: Global Urban Population Growth (1950-2050)



Source: World Economic Forum calculation based on World Urbanization Prospects (2014 revision) data.

Forecasted Urban Population Growth 2010-2025



Rapid population growth and urbanization will lead to transportation issues, problems in the availability of utilities, congestion in the urban areas, governance issues, pollution and also ethnic conflicts. After looking at all the above issues, it can be realized that we cannot take rapidly increasing population for granted. To address these issues we need an aggressive and multi-sectoral approach. In this regard, several initiatives are taken by the Planning Commission. In this regard, the Planning Commission has taken an initiative to notify a National Task Force led by the Member (SS) to prepare the national action plan to tackle this grave issue. The actions on urgent priority areas like family planning in Essential Package for Health Services in Primary Healthcare (EPHS) are included in forthcoming five year plan including establishment of Civil Registration and Vital Statistics (CRVS) Unit at Planning Commission.

Governance/ Institutional/ Policy Reforms

- NFC Award, we need to revisit this.
- Amalgamation of MNCH (Mother and Child Health) and Family Planning (FP) Departments.
- Multi-sectoral approach to address the increasing population issues, i.e., education, health, food and nutrition.
- Combat Poverty through Designing Innovative Intervention in BISP Program.
- Expanding family planning concept beyond FP to reproductive health services, organizing effective media campaign, improve existing service quality, strong emphasis on women social status and education, involving religious leaders voice to endorse the programs.
- Well perceived and better urban planning

PRESENTATION

Pakistan's Growing Population: Measures for Leveraging the Youth Bulge

Puruesh Chaudhry

Founder, President, Agahi

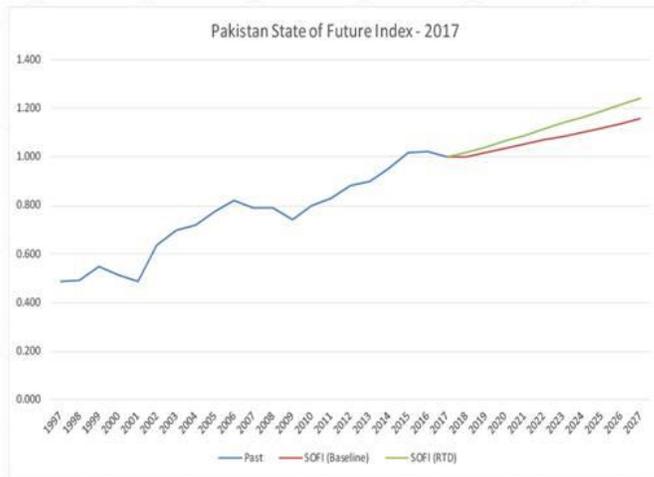
In my opening title, I avoided using the word exploiting and I used the word leveraging instead. For the very simple reason, words and images create an impression that leaves a perception in the minds of the people of how they are going to be looking at the situation. So when I look at the bulge, I am looking at it from the point of view of it being a potential. The way I tried to capture the topic was through the environment which is very complex. If we are to see what the global context is, by 2020, approximately six billion people would have access to the internet with a hundred billion connected devices. If you just think about your homes, how many devices do you have in your homes, through electrification, and now add on another layer and see how many computing devices you have. This is the kind of global security environment that we are living in. For the youth, that will be the scale of opportunity in just two years from now in the digital landscape now. Today, between the ages of fifteen to twenty four, there are a billion young people all over the world. If we expand the age bracket, it goes beyond two billion young people. In some places, the academia is coming to the realization that education alone is not going to be sufficient. This is through a very foresight lens that we can say that the world is going to go through the changes that it has not been through in the last few years.

What becomes important in this global context is Talent Markets, Gig Economy, Urbanization, Scientific breakthroughs, Technology and Innovation, Digital Security and Big Data Analytics. While looking at the following slide, we see the future index.

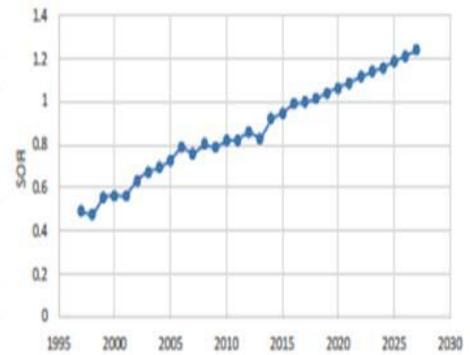


PAKISTAN
STATE OF
FUTURE
INDEX

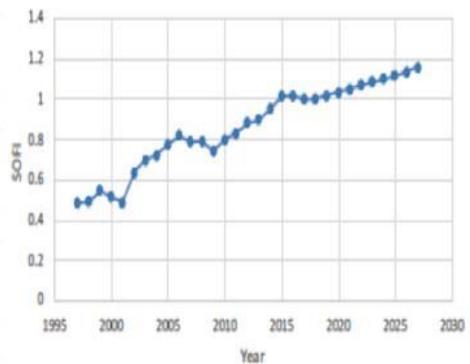
PAKISTAN STATE OF FUTURE INDEX (PK-SOFI)



RTD PK-SOFI (1997-2027)



Baseline PK-SOFI (1997-2027)



Source: Foresight Lab's Collaborative Network

In 10 years, it is anticipated that by 2027, over a 100 million Pakistanis will have access to the internet and approximately 1.6 million will be enrolled in tertiary education with unemployment expected to rise up to 8%. Emerging trends do indicate joblessness; which can potentially contribute to public anger and anxieties. Unemployed, unskilled youth is a security challenge; In the 'Headspace' domain there is no such thing as to what is traditional or non-traditional – the pace of technological advances is rapidly changing the approaches, shaping the context with every new breakthrough. In 2060, Pakistan has low citizen empowerment, and is regionally integrated, high citizen empowerment, and is regionally integrated, high citizen empowerment, and is regionally fragmented, low citizen empowerment, and is regionally fragmented. These are the possible scenarios that can be. The preferred scenarios are regional connectivity, high citizen empowerment, and Pakistan in year 2060 can expect the drivers of change to be energy, youth, quality education, technology penetration, governance devolution, economic prosperity and also nuclear power. So, what do we know so far? Almost 29 incubators and accelerators, more than

40 million have access to the internet, over 200 universities are recognized by the Higher Education Commission, and on the Global Competitiveness Index 2017-18 Pakistan ranks 137. In Technological Readiness – 111, Business Sophistication – 81, and Innovation – 60. There are so many new things which have emerged, like Block Chain Management, Artificial Intelligence, drones, autonomous and urban mobility, digital trade, data flows, and precision medicine and among others, the fusion of technologies, blurring lines between the physical, digital and biological spheres. Young unemployed youth can be more easily frustrated in this scenario.

And if the world continues to sign-up for the Fourth Industrial Revolution; what does it mean for Pakistan? To create newer work opportunities – *Contributing towards the Global discourse on the Future of Work*. Three critical areas of the competitiveness framework include: Technological Readiness, Business sophistication and Innovation. National foresight and decision making can be improved by creating a network of government and non-governmental futurists on call for quick futures assessments like “future considerations” section in policy reporting requirements, as well as adding foresight as a performance evaluation criterion for senior government officials. Similarly, including how to connect foresight to decision-making in government training programs and testing proposed policies before implementation by postulating random future events of all sorts and evaluating how these might affect the policies. Moreover, computing and publishing an annual national State of the Future Index, synthesizing relevant futures research for an annual state of the nation’s future report, including 5–10 year allocations in budgets based on rolling 5-10 year SOFIs, scenarios, and strategies, participating in the informal long-term strategy networks to share best practices, establishing a permanent parliamentary "Committee for the Future," as Finland has done to provide foresight to other parliamentary committees to improve their decision-making and creating a collective intelligence system and connecting it to related units in government agencies and e-government systems.

PRESENTATION

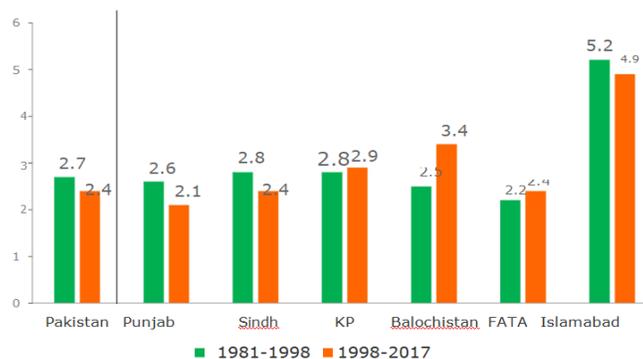
Meeting the Challenge of Population Growth in Pakistan: Suggestions and Recommendations

Dr. Zeba Sathar

Country Director, Population Council Pakistan (PCP)

I would like to congratulate the Institute of Strategic Studies for highlighting this very important topic and devoting a whole panel on population, finally realizing that it is a huge non-traditional security threat. The census results have come as a real shock to the system, even people like us who have been working on populations issues for a long time did not expect quite the results that we saw. Our projections put Pakistan at 198 million and the growth rate is not the natural rate of growth and I would have thought it would have been less than 2%, so the shock of getting an intercensal average after the previous census result of 2.6% and fertility in Pakistan has begun to decline quite dramatically in the 1990s and slow down, but it did not start increasing as the census results would imply. But the figure of 2.4% growth as shown by Dr. Asma was really swallowed up and digested by most people and not even questioned. In fact, the whole debate moved totally differently, like the political debate about resources, about political power etc. So basically, these figures became more meaningful that there was a redistribution of population. If you look at KP, instead of decreasing, the growth rate has actually gone up as in FATA and Baluchistan as well, whereas it declined in Punjab, shown in the table below:

NATIONAL AND PROVINCIAL INTERCENSAL GROWTH RATES (1981-1998 AND 1998-2017)



Source: Pakistan Bureau of Statistics - Population and Housing Censuses

We were working very closely with the PBS (Pakistan Bureau of Statistics), and dealt with a lot of provincial teams that were looking at the results. There is depression in Punjab while there is celebration in achieving a lower growth rate and there were celebrations in KP, due to the addition of seats and shares of the National Finance Commission Award.

What Should Be Our Priority

So my message on what our priority should be is that whether this is a good thing? Is a growth rate of 2% plus a good thing? We should look left and right at our neighbors, especially our Islamic neighbors, they have an intrinsic growth rate of 1.5%, except Turkey. These countries, for example Iran and Bangladesh realized many years ago, way back in the 1970s and 1980s that they could not really bear the load of high population growth rates. We really have not blinked, and we are still not blinking when we see these figures from the 2017 census. We really need an enunciated policy direction. But we do not think, but if the majority thinks that adding 4 million every year is not frightening, then it is a very scary situation. It has to be more imaginative that what the repercussions will be on the environment and others. With due apology, I would like to say that we have had huge policy flaws. Since I have been associated with this field long enough, in previous years when I would go to the Planning Commission, they would ask us what the growth rate is.

The economists obviously knew the importance of the growth rate. With due apology, the economists have now seem to have forgotten about the population factor. The huge migration has to be taken into account as well and urbanization as well. With the NFC award, we have started to speak to people about considering that the population should be controlled, even a little bit could make a huge factor. By adding positive incentives for population growth rate that are linked with development outcomes is the formula that we are really proposing. Pakistan may be spending one dollar per capita on family planning. I feel that the messaging is all wrong and convoluted. I do want to spend some time on Bangladesh, it is a natural comparison as we split in 1971 and it was assumed that they would not survive if they grew at the same rate. They put in place a strong policy; it was done by an investment in education, in women empowerment. There was cross party support, the religious lobby was brought in and other factors were taken into consideration. It was a question of survival. They have ended up with 43 million less people and

it is likely that the Bangladesh per capita income will surpass us. We need to stabilize population, which means it will not grow beyond a certain figure. They have also invested in a strong family planning program and community outreach. Why can't Pakistan expedite the fertility decline when other countries can? The following slide shows the details:

**PAKISTAN'S POPULATION GROWTH RATE IS VERY HIGH –
EVEN COMPARED TO OTHER MUSLIM COUNTRIES**

Country	Population Growth Rate, %
Turkey	1.57
Malaysia	1.50
Morocco	1.35
Iran	1.15
Indonesia	1.14
Bangladesh	1.08
PAKISTAN	2.0+

Sources: 1: Pakistan Economic Survey 2016-17, Govt of Pakistan
2: The World Bank – 2016 data bank for countries other than Pakistan

Planners and economists have overlooked population dynamics in their forecasts, analysis and have not factored high population growth or internal migration into development plans in last ten years – a missed opportunity. Perverse incentives through distribution of funds through the NFC award and allocation of Assembly seats discourage provincial governments from strong efforts to reduce fertility as rigorously as required. The earlier population narrative focused on economic grounds for limiting births was flawed - it was seen to infringe on people's decision-making space. We need to move forward in this regard, and it is only possible if we have a changed narrative which states that there is a better quality of life for citizens and not greater numbers. The narrative must include rights to education, health and productive employment for all and make strong alliances (currently missing) with Climate Change, Water Scarcity, Health and Economic growth. And also each province to work out and decide what 'sustainable' numbers are establishing clear links with provincial Sustainable Development Goals (SDGs). The Federal government must provide financial and technical support to provinces to achieve these aims.

QUESTION AND ANSWER SESSION

Q: We need to approach the topic of population with sensitivity, maybe we can get some religious scholars on board?

A: We have already engaged some religious scholars on board, and they have understood the rationale as well. We have tried to do that and we convened thirty two religious leaders, to get their support on this issue. We talked about birth spacing instead of limitation and talked about the mother's life and the child's life. We also got their signatures and their endorsement.

Q: Family planning in Nigeria was pursued by using the Quran and selected Ayats were picked up and there was absolutely no opposition to family planning. Maybe we can pursue a similar way in Pakistan?

A: My colleagues in Nigeria picked up what we did; they picked up Ayats from the Quran and Hadees and convinced the public using those. We need to talk about the endorsements within Islam, not just for birth spacing, but also for girl's education. We have to decide whether this is a health issue, or a development issue or anything other than this. Making alliances is important, so I am glad we have some people here who have been talking about climate change and water scarcity. In terms of practical solutions, the eighteenth constitutional amendment is the most constructive thing in terms of the delivery of social services and what we must support and the Planning Commission of Pakistan must take up the Sustainable Development Goals very seriously and work on ways to achieve them. While working on population numbers, it should be assessed as to what is required. If the provinces find it hard to fund the development programmes, then the Center should help them achieve their targets.

Comment: You are right, the religious and political level of leadership have not yet endorsed what the second level of leadership has agreed to and that is where we have to bell the cat. When we look at particularly the rural areas, they think that by having

more children is social security as the children will become income providers and will be a source a of security for them. So the problem is how to tackle this problem, which remains a huge challenge.

A: The data shows that success can only be achieved when there is education, and the message can be transferred inadvertently through the media of a better tomorrow if the family size is smaller. Now everyone wants their children to go to school, so in order to achieve that, even in the rural areas they want a certain lifestyle. In Mianwali district, we were looking at Esakhel after the floods. We saw that a lot of damage was done and there was a decline in fertility in that area. What we saw there was a better flow of ideas after the rescue operations and people who were not exposed before were also seemingly more aware. And in some cases the rural areas are not very rural; they have become quite urbanized as compared to before.

Q: **There is no legislation at the provincial or federal levels that only two children will be supported by the government for education?**

A: Your observation is correct, there is no such legislation in Pakistan. In Pakistan, we see that families think that by having a large number of children, they can combat poverty. For example, in Africa we see that due to the prevalence of HIV and AIDs, the fertility rate is higher and the parents know that their child will not live beyond his or her fifth birthday. We need to make the households in Pakistan understand this that the quality of life is affected by the large number of children.

Concluding Remarks by Chair

There are difficulties; the population does not enjoy social priority or economic priority. There are some priorities that work against it, and I am sorry to say that the population numbers at the Center are there to determine your constituencies and the Province, whose population has come down, instead of celebrating, starts to condemn and oppose the numbers available. In a country like this, if a province has a smaller population, its share in the NFC award is also less as compared to others and after the Eighteenth Amendment; this subject has become a provincial

subject. The question is that are we pursuing it wholeheartedly unless we change these policies. And are we going to change these policies and do we have the political will?

The answer is No! We cannot move forward if we do not change and unless we have the will to change these policies. The only thing that can be done is to start looking after the population, just as Puruesh said that we need to look at the future and align policies. The only solution is to educate the population and education has been the least discussed subject since the morning until now. If this population is educated, they will be motivated to look after their families in a better way and make better decisions altogether. In order to regulate fertility, we need to go into the rural areas and have more family health homes there and in my opinion; the money that the government is spending on urban health centres is useless and has no benefit at all.

We need to involve the civil society as well, as this work is not just for the administrative departments alone. The government role is facilitation and coordination and the rest of the work can be done with the help of the other stakeholders. Coming back to the question of involving the religious scholars, they have been against our very first policy statement which was “Kum Bachey Khushhal Gharana”, which for them was equivalent to challenging God as they said that do not associate economic provision and well being with less number of children. However, after all the efforts of the population ministry, it can be said that there has been some sensitization but as far as the religious scholars are concerned, they are still not promoting population control, just as they promote other religious edicts, which just shows that it has not been promoted by them at all. I will say in the end that population is a human rights issue and a lot has been said about the role of the family structure in the Quran. So we need to revisit all these issues and take more effective measures for the future.

SESSION III

FOOD SECURITY



The session was chaired by **Mr. Javed Jabbar** - *Former Senator and Federal Minister*.

The speakers in this session included **Mr. Basharat Ahmed Saeed** - *Water Resources Specialist, World Bank (WB) Pakistan* and **Dr. Iqrar Ahmad Khan** - *Vice Chancellor, University of Agriculture, Faisalabad*.

PICTURES OF THE SESSION





PRESENTATION

Factors Contributing to Growing Food Insecurity in Pakistan

Mr. Basharat Ahmad Saeed

Water Resources Specialist, World Bank

My presentation is based on my research work of last ten years in Pakistan that started with the project titled “Patterns of Conflict in Pakistan” back in 2009. I hope to get you thinking about food security in Pakistan in a different way.

“ **Food Security** exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. ”

(1996 World Food Summit)

The best thing about the definition provided by the World Food Summit 1996 is “all people” which reflects that food security is not about crops, food or livestock; it is essentially about people and guarantee of certain level of existence or living standards of which food is an essential part.



‘A world without hunger is one in which most people are able, by themselves, to obtain the food they need for an active and healthy life, and where social safety nets ensure that those who lack resources still get enough to eat.’ (FAO, 2007)

There are four dimensions of food security:

- i. *Availability* has to do with the how a country is producing importing or how much stocks country has as buffers.
- ii. *Affordability and Financial Access* which means that there can be enough food which people can consume, but can have difficulty in accessing it because either there are physical constraints or mostly economic constraints where people are unable to afford the food which is available. Another realization is what has to do the quality and life of food. A lot of people may have access to food but it may be not the right kind of food at the right time. Low nutrition is often associated with the poorest people in Pakistan, but if you look at the statistics you will find the cases in wealthy section of society. So, it's not that people are not able to buy food at right time, it's about the quality of food, right nutrition and dietary balance. So, it's not just about having access to food, it's about the food in right proportion at the right time.
- iii. *Resilience and Stability* means that one have access and affordability, but the system through which food is being provided is not stable or vulnerable to shocks like natural disasters, recession and conflicts, etc. But whatever the stressor is, if the system that provides food is not resilient then food security will become an issue.
- iv. *Utilization* pay emphasize in people fulfill the all dimensions of security by themselves. Although people are dependent on systems, governments and organizations but, at the same you do not resolve yourself off responsibility of making right choices at right time.

Constitution of Pakistan and Food Security

We do not need any organization to tell us about food security because we have it in our own constitution. In some other constitutions it was directly mentioned, but in our case it's indirect in Article 38 of the Constitution of Islamic Republic of Pakistan way before any international summit or organization. This article deals with the **Promotion of social and economic well-being of the people**. Article 38 states that:

The State shall:

- Article 38(a): **secure the well-being of the people**, irrespective of sex, caste, creed or race, by **raising their standard of living**, by **preventing the concentration of wealth and means of production and distribution** in the hands of a few to the detriment of general interest and by **ensuring equitable adjustment of rights between employers and employees, and landlords and tenants**.
- Article 38(d): **provide basic necessities of life, such as food**, clothing, housing, education and medical relief, for all such citizens, irrespective of sex, caste, creed or race, as are permanently or temporarily unable to earn their livelihood on account of infirmity, sickness or unemployment.

Snapshot of Food Security in Pakistan

If we compare the above mentioned responsibility of the State with the present situation of food security in Pakistan, then the situation is very bleak.

- Global Hunger Index 2017, Pakistan ranks 106th out of 119 qualifying countries with a score of 32.6, its status is 'serious' (bordering on 'alarming').
- Global Food Security Index 2017: Pakistan ranks 77th out of 113.
- UNDP Human Development Index: Pakistan ranks 147th out of 188 countries and Pakistan's HD indicators (health, education, and gender) are below the regional averages for South Asia.
- FAO: 37.5 million people in Pakistan still do not receive proper nutrition.
- Pakistan has the fifth highest rate of stunting in the world (44%).
- While the country is food self-sufficient, 68% of HHs cannot afford a staple-adjusted nutritious diet.

In addition to the quality of food, another major concern is the amount of food Pakistan is producing. Pakistan is unable to keep up with its expanding population.

Factors Driving Food Insecurity

1. *Lack of Institutional Coordination and Silo-ed Thinking on Food*

Lessons from Sindh and Punjab

- Irrigation Dept., AWB, ONFW (Agriculture Dept.), Livestock Dept.
- Law enforcement and justice.
- Research Institutions, Agri Extension, and Farmers' decisions.
- Supply-orientation vs. Demand-management.

2. *Determinants of Human Behavior/Choices (Political Economy of Land)*

- Akbar Zaidi claims that poverty in rural Pakistan reflects 'patterns of land ownership, land tenure, and access to land for cultivation' (2008).
- Anwar et al. (2002; 2004) find that rural poverty is strongly correlated with lack of assets, and that poverty is the highest among landless households, with some estimates suggesting that 50% of landless households are living in poverty. Tenant farmers working under sharecropping arrangements corresponded to the highest level of poverty.
- Toor (2010) claims that landless households account for 70% of the rural poor.
- Other studies that look at the impact of education; household income; age of household head; etc., also identify secure access to land as a fundamental determinant of poverty and food security

Why are we talking about Land/Tenure Security?

- Land Security increases HH's willingness to:

- Change agricultural practices by making investment in water and soil management, and through adoption of climate change adaptation technologies and strategies.
- Spend on food that has higher nutritional value.
- Invest in better storage and more hygienic food preparation practices.
- Make health investments, especially in female and children's health.
- Remain on farm and diversify income, as opposed to migrating to nearby urban areas.

3. *Population Growth and Climate Change*

- Population Growth and Demographic Change.
- Climate Change: Extreme Events and Slow-onset Events.

Economic Commission of Africa: *'Land offers a wedge for the poor to mobilize their own power to chart their development destiny, and any attempt to mitigate poverty ought to be centered on the reinforcement of rights and opportunities arising from land and agriculture'.*

PRESENTATION

Overcoming Food Insecurity in Pakistan: Future Challenges and Coping Strategies

Dr. Iqrar Ahmad Khan

Vice Chancellor, University of Agriculture Faisalabad

Historical Background

I will start with a little historical background on the food insecurity in Pakistan. In old times, we used to call this food insecurity as famines. Throughout the history, various famine commissions were formed which are as follows:

- Famine Commission (1880)
- Famine Commission (1901)
- Irrigation Commission (1901)
- Cooperative Societies (1904)
- Imperial Agri. Res. Inst. (1905)
- PAC, Lyallpur (1906)

It was the time when the need to divert river waters were realized and the then colonial power constructed the new canal system from River Ravi first, then Chanab and then it continued for next half century. After the construction of this canal system we continued to grow. These Commissions not only allowed more production but couldn't solve the problems of peasant class. So it was realized that there is a need for education, research and development. So, various institutions were established e.g. Agriculture Commission (1958-60) and 1st Five Years Plan (1955-60). The major exercise was carried out by the Agriculture Commission headed by Nawab of Kala Bagh and that commission was able to put forward not only the set of recommendation but also the series of them were also implemented and because of this we were able to benefit from the canal system. Other initiatives were:

- National Commission on Agriculture established in 1986 was headed by Sartaj Aziz.
- 9th Five Years and MTDF.
- Growth Strategy of Pakistan (2011).
- 11th Five Years Plan

Present/Vision 2025

Today, the challenges are more complex and nature of food insecurity has not changed. Currently, government is following the Vision 2025 that identified seven pillars of development, four titled as Water, Energy, and Food Security. Food security has been on radar since partition. It envisages food security in the context of entire supply chain from production, processing, storage, and distribution to consumption.

Objectives for Achieving Food Security

- Protecting most food insecure segments of population.
- Creating a modern, efficient, and diversified agriculture sector.
- Optimizing production and supply mix consistent with needs.
- Providing stable and affordable access to adequate nutritious / safe food.
- Sustainable resource use.




Nutrition Related Challenges in Pakistan

Following are the nutrition related challenges being faced by Pakistan:

- Food Safety Issue.
- Lack of balanced diet.
- Scarcity of potable water.
- Wasting and stunting among the children.
- Micronutrient deficiencies (Iron, zinc and Vitamin A & D).
- Low literacy and poverty rate.
- Lack of proper coordination between health and other sectors.

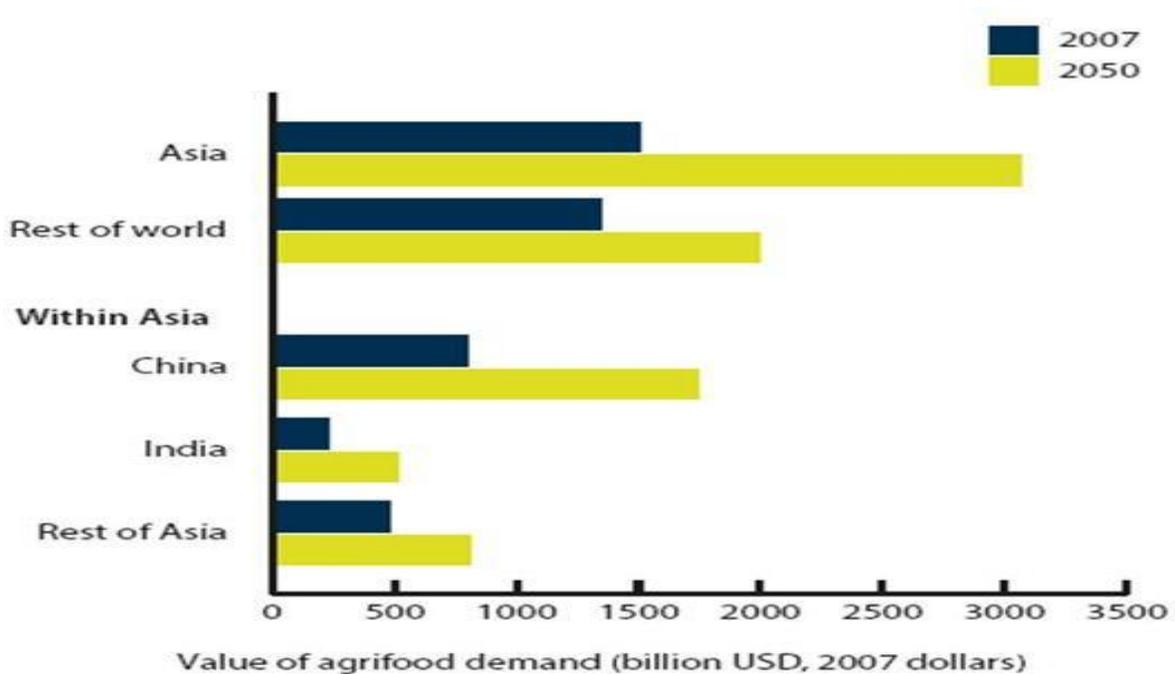
Food Availability in Pakistan (Capita/Annum)						
Items	Year/units	2009-10	2010-11	2011-12	2012-13	2013-14
Cereals	Kg	158.8	158.7	160.0	160.0	160.5
Pulses	Kg	6.8	6.7	7.0	6.7	6.5
Sugar	Kg	26.1	26.5	29.5	31	31.5
Milk	Ltr.	117.2	112.3	96.5	97.4	100.8
Meat	Kg	20.5	20.9	21.5	21.0	21.0
Eggs	Dozen	5.8	6.0	6.0	6.0	6.0
Edible Oil	Ltr.	12.6	12.6	13.0	13.0	13.0
Calories per day		2415	2420	2430	2450	2450
Protein per day (gm)		71.5	72.0	72.5	72.5	72.0

Nutrition Related Problems Globally

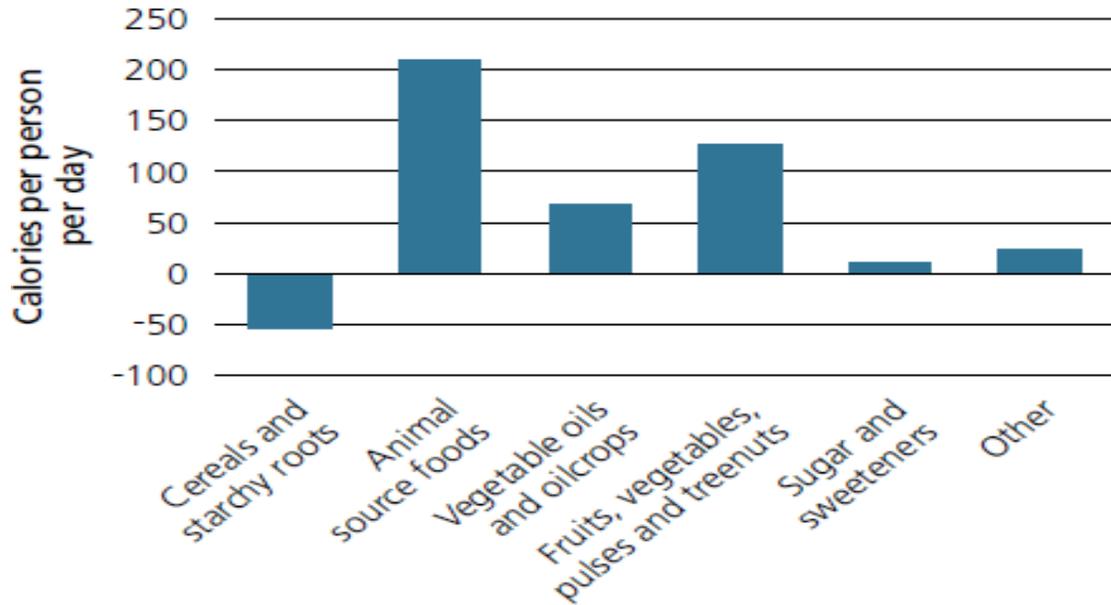
Following are the nutrition related challenges at global level:

- Feeding 9 billion people.
- Urbanization issue.
- Water availability.
- Invasive species.
- Pesticide resistance.
- Health and nutrition.
- GHG emissions.

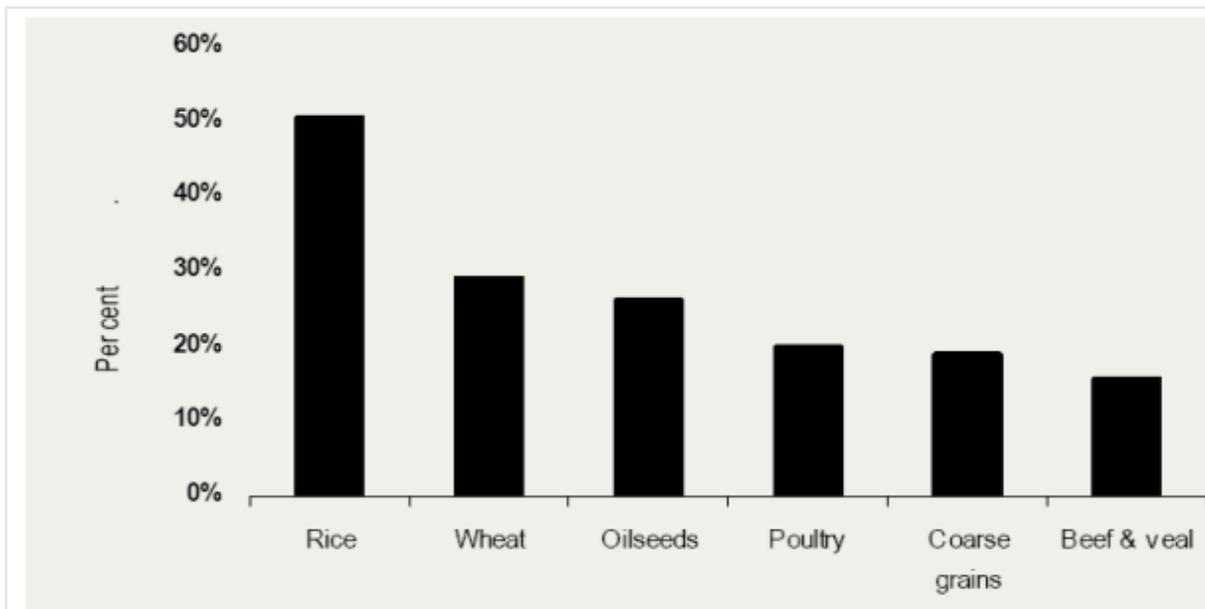
Projected Changes in Regional and Global Demand for Food Between 2007 and 2050



Change in Contribution of Various Food Groups to Diets in Asia and the Pacific Region Between 1990 and 2011

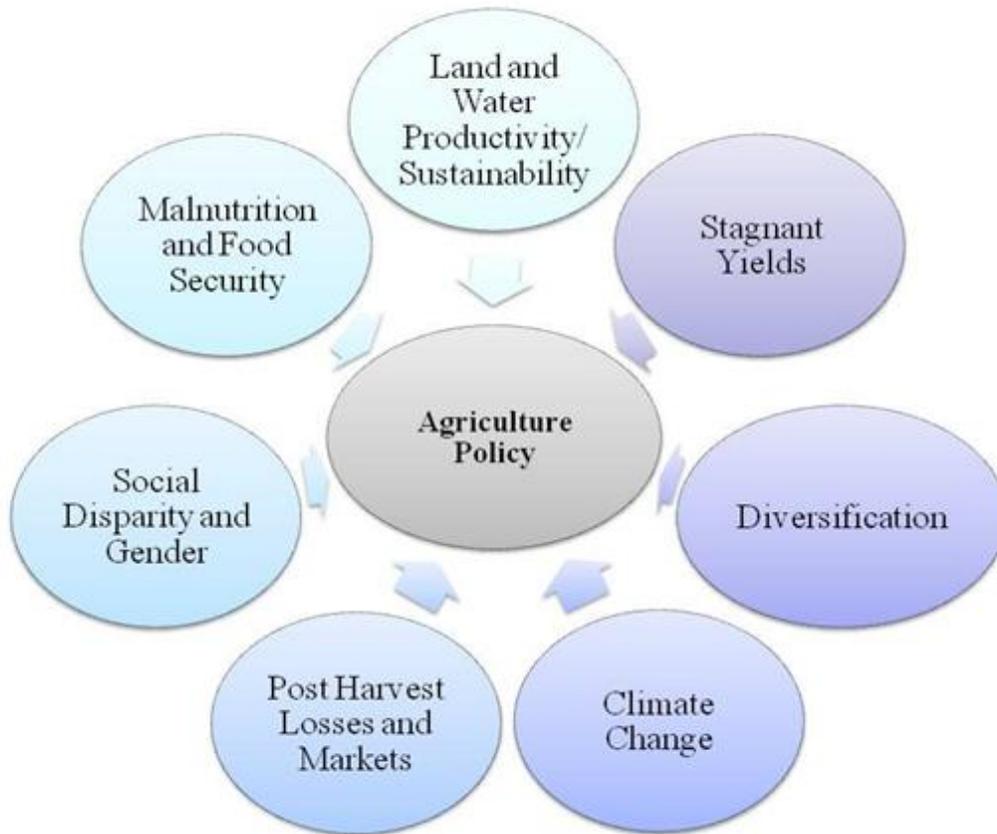


China and India: Shares of Global Consumption for the Major Food Commodities



Data source: OECD-FAO Agricultural Outlook - Database

Major Issues/Seven Point Agenda



Strategies to Resolve Problems

i. Bridging Yield/Productivity

Yield Gap-Crops

- Between best and national average = 31-73 %
- Between best farmers and research stations = 25-57 %

Yield Gap-Milk

- Between best and national average = 61 %

ii. Small Farms/Challenge

- Total number of farms increased from 3.7 million in 1972 to 8.26 million in 2010 (Fragmentation)
- Farm size distribution
 - Under 2.5 acres = 43 %
 - Under 5.0 acres = 64 % (28 % in 1972)
 - Under 12.5 acres = 89 % (68 % in 1972)
 - Under 25.0 acres = 96 %
 - 25 acres and above = 4 %

iii. Increasing number of small farms raises issue of availing scale economies in input purchase & output marketing, and services delivery.

Agriculture Initiatives 2015-16/17

- Federal/PM Package
 - Reduction in tax on tractors/removal of GST from fertilizer and pesticide.
 - Tax exemption on new meat process plants.
 - Enhancing indicative agricultural credit limit to Rs. 600-700 billion.
 - Tax exemption to Rice mills.
 - Duty on Powder Milk.
 - Edible Oils.
- Punjab/CM Package (100 billion)
 - Rs. 150 billion 3 years rural roads program.

- To reduce marketing costs and open new avenues for rural development.
 - Record development budget for agriculture.
- Major initiatives on revamping of extension services.
- Enhanced allocation for Livestock & Dairy Development .

Paradigm Shift

- High Value Crops and Productive Livestock Breeds.
- Investment in R&D vs. Subsidies.
- Some Doable Proposals:
 - Balanced Fertilizer Application.
 - Optimize Wheat and Cotton Production.
 - Three Irrigations for Wheat.
 - Mechanized Cotton Crop.
 - Direct Seeded Rice.
 - Soybean to Save the Ecosystem.
 - Breed Improvement and Fodder/Feed.
- Through Human Resource: Innovation/Entrepreneurship.

QUESTION AND ANSWER SESSION

Q: We are facing the issue related to pricing of commodities because of certain strong lobbies. Please enlighten us on the pricing policy of wheat in Pakistan, especially in relation to international standards.

A: Yes, you are right there is an issue of pricing in Pakistan mainly because of lobbies and mafias. You rightly hit the nail on the head on the pricing issue of sugar and wheat. With respect to sugarcane, we first gave subsidies to help people grow certain amount of sugarcane so that the mills that were setup can survive a couple of years. When we produced more than required, then there is no option other than export for which we provided another subsidy. You can find a strong connection between land ownership patterns and decision making authorities. Subsidies should be given to the small farmers for subsistence but the market is penetrated by big landlords that have the political power of decision making on these issues.

In addition, we should also diversify the range of commodities for subsidies. Previously, the price of wheat was low in Pakistan as compared to international prices and at that time no one said that farmer is underpaid. But as the price in Pakistan crossed the international price, everyone started saying that farmers are overpaid. The objective behind the concept of subsidy is to regulate the price because if this task was left with the free market forces then there will be a chaos. So, the idea of support prices guarantees the profit.

Q: I think there are two aspects of what you are talking about, which are:

- i. Research and Development**
- ii. Structural and Management Issues**

In the wake of climate change, focus should be on the research. The bad management lead to structural violence and conflict. How we can address these issues?

A: With respect to research, I completely agree but the focus on the quality and management of the research data is as important as the focus on the research itself. Instead of writing unreadable thick manuals and research reports, focus should be on achieving most through the practical implementation of project grants which people can witness. Along with the advancement of methods and techniques of production, the importance should also be given to the genetic experimentation which can produce better results. However, such an advance level research is dominated by few powerful corporate and blocking the research to be conducted by small independent organizations. To address this issue, the government should enhance the inter-institutional coordination.

SESSION IV

WATER SECURITY



The session was chaired by **Lt. Gen. (R) Muzammil Hussain - Chairman, WAPDA.**

The speakers in this session included **Dr. Qamar Uz Zaman Chaudhry - International Climate Change Specialist, Asian Development Bank, Mr. Ahmer Bilal Soofi - President, RSIL and Dr. Khalid Mohtadullah - Senior Advisor, Global Water Partnership (GWP).**

PICTURES OF THE SESSION





PRESENTATION

Water Security: Emerging Challenges and Threats for Pakistan

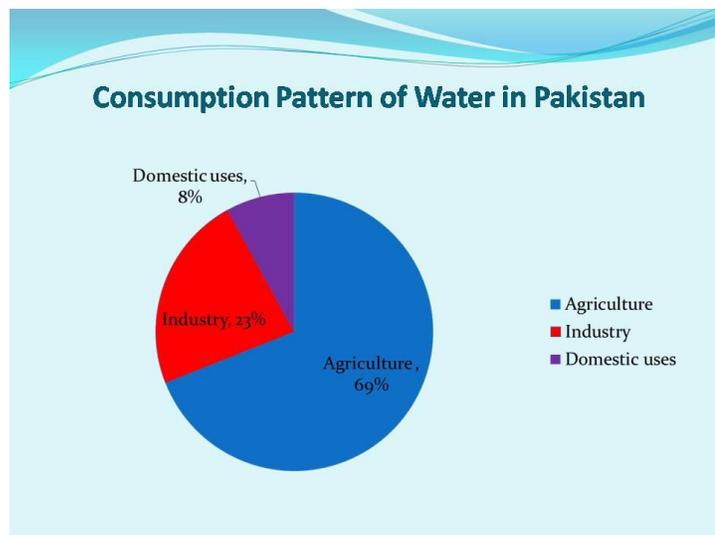
Dr. Qamar Uz Zaman Chaudhry

International Climate Change Specialist, Asian Development Bank

I will begin by listing availability of water resources in Pakistan, for example, varying levels of precipitation from arid to wet areas from 135 mm to 750 mm of rainfall and total water accumulated through this rainfall is around 32 million cubic meters. Another water resource is the ground water and surface water stored in the form of rivers and dams. The threat of climate change and global warming is quite grave. The biggest source of water in Pakistan is its glaciers which are responsible for about 70% of the total reservoir. They are now melting causing water to waste away through excessive flooding.

The more immediate threat however is that the quantity of water available per head has severely declined from 5000 cubic meter per annum to a mere 1000 cubic meter which could further fall to a meager 850 cm³. So this dramatic reduction of about 81% of water availability in just 67 years is quite alarming. Maximum percentage of water consumption in Pakistan can be attributed to agriculture. Pakistan has the world's oldest and largest irrigation system in use but he pointed out that there is great room for improvement, e.g. it needs to be modernized and made more efficient.

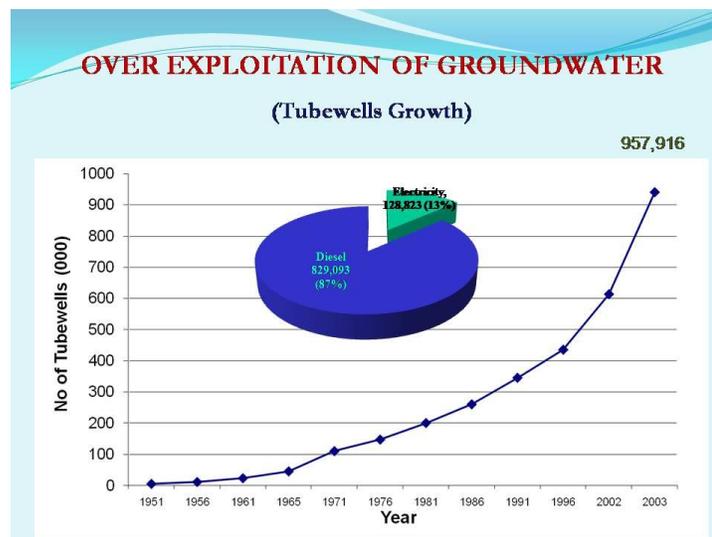
It currently works on basis of share allocation to farmers instead of being based on 'distribution on demand' principle. Thus, farmers receive their share regardless of heavy rainfall or whether their crops need water at the time of supply or not. See pie chart of consumption pattern of water in Pakistan distributed among three sectors; agriculture, industry and domestic use.



There is need for more efficient management of water resources. If the over-exploitation of water continues at this rate then arid provinces like Baluchistan are likely to become inhabitable in about 30-40 years. However, it is a positive sign that at least the policy makers are now sensitized to hazards of climate change. Different constraints for water resource management in Pakistan are many such as water competition among sectors, provinces and communities, usage of water in irrigation, supply of water affected by climate change and etc. In the end, I would like to give a few recommendations for improving the state of water resource management in Pakistan.

1. Prioritization of water conservation through frameworks and regulations at the governmental level.
2. Reduction in irrigation water losses.
3. Improvement of flood irrigation system
4. Enhancement of water storage capacity by building small dams and reservoirs.
5. Harvestation of local rainwater.
6. Monitoring and regulation of groundwater to stop exploitation.
7. Utilization of the international climate change fund for developing countries.
8. Addition of water conserving practices to the educational curriculum of children.

The following graph depicts the increase in over exploitation of groundwater over the years in Pakistan:



PRESENTATION

The Nexus Between Pakistan's Depleting Water Resources and its National Security

Mr. Ahmer Bilal Soofi
President, Research Society of International Law

I will be talking from a legal angle as I am a lawyer. When the Modi government took power, BJP had three clearly stated agenda items:

1. To violate principles of non-intervention by actively supporting non-state actors (NSA) in neighboring countries particularly Pakistan
2. To dilute Pakistan's position on Kashmir by attempting to scrap Article 370 of the constitution.
3. To scrap or attempt to scrap the Indus Water Treaty (IWT) to create a genuine threat vis-à-vis the State of Pakistan.

In the first area, we had confronted and responded by carrying out anti-terrorist operations which were aimed at responding to the first threat. In the second event, surprisingly, the courts in Jammu & Kashmir and the Supreme Court of India did not subscribe to the political position of BJP. There were attempts made by filing petitions in Jammu & Kashmir High Court seeking scrapping of Article 370. The petitions were rejected. The matter was taken to the Supreme Court and again it was rejected. The legal position within the Indian constitution that Kashmir remains an issue that needs to be resolved could not be watered down by the political position that the BJP government was so keen to take. The third demonstrated threat was that we will scrap the Indus Water Treaty (IWT), we can create a food security issue or we can create a possible threat related to water. Up till the point when Modi had taken over, whenever we would participate in international conferences and would interact with Indian scholars, we would say that there is a perception in Pakistan that India is making water reservoirs as an upper riparian which are completely disproportionate to its needs and the purpose of those reservoirs is to create an enabling environment where they could control the water flow in a situation of hostility. They would laugh at us. Until the Modi government comes in and as Prime Minister, he thinks

seriously of scrapping the Treaty and revocating it. He commissions a meeting at the PM house with all his officers, including lawyers about it. It was a very dangerous development that for the first time in history at the PM level, a thought was processed to possibly scrap this Treaty.

So what does this mean for Pakistan? This clearly means that Pakistan needs to put its act together in terms of giving a legal response vis-à-vis the sanctity of the Treaty. We must clearly convey to the Indians that you cannot scrap the Treaty and if you desire to do so then according to the Article 12 you need to negotiate an independent separate treaty. If you are unable to do that, then it cannot be scrapped and it has to be honored. The water has to be allowed to flow. There is only one situation in which the treaties are held in abeyance and that is the situation of war; a situation of declared hostility. If there is a declaration of war, then either of the two states may declare that the Treaty stands suspended and then the consequences follow. So from a practical viewpoint, I think what Pakistan needs to do is to plan for building as many reservoirs as possible downstream as a lower riparian. When I interact with international lawyers who specialize in water, they specifically ask me why you accuse India that as an upper riparian it is a trustee of water reservoirs, it has a duty to manage the melting of the glaciers, but what do you do as a lower riparian? They say you have an equal responsibility under the international law to preserve the water that flows through your territory. But you are not preserving it. So our inability and failure to preserve the water is being used against us and that is why I think that somebody like the Chair can play a crucial role as WAPDA is an entity entrusted with the job description to create reservoirs and other water storage plans.

This is not only in the context of the threat that I just mentioned, but also in the context of an obligation that Pakistan has under the new climate change conventions that Pakistan has ratified. According to the Climate Change Convention Act, we have the Green Fund for various projects which would help implement the Climate Change Convention. Once you ratify the Climate Change convention, you assure the international community that you will move from fossil based fuel to non-fossil based fuel which means solar, hydro, nuclear, etc. Our insistence to go for the nuclear power plants is basically an implementing framework for the Climate Change Convention. Our plan to make more water reservoirs and to make more dams, notwithstanding internal and political dimensions is due to an international obligation.

The threat of water security is becoming more and more severe domestically. The judicial arm of the state which normally wouldn't get involved in these issues is now beginning to look at these issues as the 'Right to life'. So when it is the Chief Justice of Pakistan is talking about the availability of clean water, he is actually talking about the constitutional obligation to provide water. At the provincial and municipal levels, water treatment plants are not being installed. Treatment plants need to be installed on rivers near cities. If the water treatment plants are not installed, it leads to destruction of ecosystems which quite adversely affects the food security in any country.

The judicial arm of Pakistan is now beginning to look into the availability and preservation of clean water as the governmental institutions have become rather stagnant. A Lahore High Court judge who now sits in the Supreme court had emphasized that under the 'Right to Life', it is obligatory for the government to build dams even if they are controversial as the right of life supersedes the right to political association. Another judge of the High Court has commissioned a new commission for management of flood plains. I am trying to convey here that this threat is being sensed by the judicial arm of the government and needs to be addressed. I think agricultural experts and scientists from universities must be granted chunks of land for experimentation under the Colonies Act or the Land Grant Act so that various experiments are carried out. Intellectual property of research for example patents and innovations can also go a long way to help our community with water preservation.

PRESENTATION

Enhancing Pakistan's Water Resources: Recommendations and Suggestions

Dr. Khalid Mohtadullah

Senior Advisor, Global Water Partnership

It is a great honor for me to be able to speak to such a distinguished audience. After hearing everything that I have heard today, there is little left to add, so I will try put it all together so that we get a consolidated picture of what are water resources, what issues related to it are we facing and why? Then I will argue my premise that land and water endowments are two main endowments in Pakistan from which we can gain economic surpluses for infrastructural development which can further attract investors and lead to industrialization and rapid economic development. I think it is failure at our part as a nation that these endowments are rare and we are lucky to possess them. I quote the example of California's All American Canal which led to its impressive development is quite pertinent here. These main endowments are quite lucrative if properly utilized. I believe that achieving basic water security and enhancing water retention must be one of our goals.

Water is key input in agriculture, industry, energy, transport and healthy ecosystems. But it is also a force for destruction well known in Pakistan such as:

- Flood, drought, landslides, disease.
- Erosion, inundation, desertification, contamination and disease.

Achieving basic water security, harnessing the productive potential of water and limiting its destructive impacts, has to be our choice and focus of Pakistan's water strategy. Water resources development and management remain at the heart of the struggle for growth, sustainable development and poverty reduction. Most industrial countries, have invested early and heavily in water infrastructure, institutions and management capacity, institutions' includes capacity, organizations, policies, rules, and agreements.

At this point I would like to point out some sobering facts about the water predicament of Pakistan:

1. Highly stressed water environment.
2. No additional water is being added to the existing resource.
3. High risk water environment and only one river system exists.
4. Large-scale degradation of water resources.
5. Ground water is overexploited.
6. Floods and drainage have worsened especially in the lower areas of the Indus basin.
7. Climate change adversely affecting the Indus Basin as it is the 5th most vulnerable area to these harsh climatic changes.
8. Inadequate knowledge base about Indus Basin as it is the single most comprehensive and integrated ecosystem.
9. Infrastructure is in a poor state.
10. Quality of project implementation is poor.
11. Water systems are not financially sustainable.
12. No investment in larger dams as our storage capacity is only 150 cubic meters per capita while for example in Australia is about 5000 cubic meters per capita.

Water resources are primarily advantageous for economy of any country. I suggest following recommendation for a way forward:

1. Formulate a clear national water management vision as Pakistan's economy is undoubtedly a 'water economy'.

2. Set a target of 10,000 MW of hydropower and 20 MAF of additional water storage capacity in the next 10-15 years.
3. Achieve consensus on depoliticization of dam projects.
4. Formulate a comprehensive strategy of management of water such as extension of irrigation systems to 20 million acres of new land.
5. Set a target of at least 3 months of water storage.
6. Strategize to switch to high value-added agriculture.
7. Reusing water.
8. Allocation of water resources for urban economy.
9. Restoration of custodial role of national water resources to WAPDA.
10. Strengthen the Indus Water Commission (IWC).

I would like to conclude by saying that where there is water, there is light and life.

QUESTION AND ANSWER SESSION

Q: Why is the Ministry of Climate Change not utilizing the funds allocated from the Climate Change convention for taking practical measures to reduce Pakistan's vulnerability to the hazards of climate change and why is there no political consensus on this issue?

A: The capacity problems restrict the use of finance that is available to us. Recently, the first 'Green Climate Fund' of about \$35 million has been approved. So the problems are being tackled with. A few more are also underway under the Ministry. These international funds for developing countries amount up to a \$100 billion per annum but it is important to have sellable projects that can be approved by the international community.

Q: What can be done about the health of drinking water available to our people in Pakistan?

A: In Pakistan, most drinking water comes from groundwater and excessive drawing out of this water has led to this problem. Now, also, the water table has receded, so drawing water from an excessive depth compromises its health. Private tube wells in rural areas have also contributed to this problem. Wrong policy decisions have lead to this problem.

Q: I would like to have the panel's opinion on Mr. Ahmer Bilal Soofi's observation regarding land allocation to agricultural experts in universities for experimentation and intellectual property?

A: Yes we do have land, but we do not have the water. The land allocated to us was supplied water from two distributaries which now pass through an over-populated town and therefore there is no water. We are requesting new land where water can be easily supplied for experimentation. The other question was about intellectual property (IP). Yes we do have an IP policy written by a very competent lawyer

and it has been endorsed by the Higher Education Commission (HEC) and in fact our IP policy has also been endorsed by other universities.

Concluding Remarks by the Chair

The entire discourse today points to one point; political governance is the key. Pakistan has enormous energy potential, i.e. water, sunlight, geothermal etc. You can produce about a 100,000 MWs of energy from geothermal technology. Political consensus is required, but if Kalabagh isn't being built then we can go for Diamer-Basha Dam or any other option. Kalabagh Dam like all other projects is not an inter-provincial issue rather an intra-provincial issue.

Vote of Thanks by Chairman ISSI

Our perception of security is common; a concept of human security that has evolved over time. The mother of all threats to human security is climate change. National security and climate change nexus is unmistakable in case of Pakistan both in terms of its traditional and non-traditional definitions. I am thankful to distinguished speakers, foreign diplomats and all attendees.

POLICY RECOMMENDATIONS AND TAKEAWAYS

SESSION I: ENVIRONMENTAL DEGRADATION

Recommendations

1. Environmental issues should be tackled on priority basis:
 - Creating awareness specially among the younger generation because the root cause of environmental degradation or even climate change is anthropogenic human behavior - human response to nature.
 - Switch to low carbon economic growth.
 - Adopt environmental friendly technologies.
 - Promote sustainable consumption and production.
 - Adopt climate resilient development and increase forest cover because forest covers are the lungs of earth.
2. Global warming is an issue that needs to be tackled on urgent basis by Pakistan. It is causing change and severity in weather patterns and rise in sea levels. It is affecting Pakistan greatly which is already situated in a heat surplus region.
3. Along with environment, Pakistan needs a big push on renewable energy.
4. In order to achieve energy security in Pakistan, climate and development agendas need to be integrated. The goal of the government should be to bring a rapid reduction in per unit cost of energy so that the result would be a universal access by poor household which can drive growth process.
5. Ultimately, Pakistan needs to invest in human security. If not these non-traditional security threats would keep on multiplying and keep on challenging all other traditional security measures that make the country safe and secure.

Takeaways

1. Environmental challenges are one of the most serious challenges that Pakistan faces, and which has become the biggest threat to the country, particularly in terms of land being effected by water logging and salinity, unchecked industrial waste and rapid population growth.
2. Rapid natural resource depletion, population growth, food security are all very much interlinked with the degradation of environment.
3. Depletion of the country's environmental resource base e.g. forest cover is pretty fast and has serious consequences for the environment and economy.

SESSION II: POPULATION EXPLOSION

Recommendations

1. To address the various issues of population explosion and diminishing resources, Pakistan needs an insistent and multi-sectoral approach. Regarding this, several initiatives are being taken by the Planning Commission. The Planning Commission must take an initiative to notify a National Task Force led by the Member (SS) to prepare the national action plan to tackle this grave issue.
2. The actions on urgent priority areas like family planning in Essential Package for Health Services in Primary Healthcare (EPHS) need to be highlighted in forthcoming five-year plan including establishment of Civil Registration and Vital Statistics (CRVS) Unit at Planning Commission.
3. Pakistan needs to put in place a strong policy to invest, on priority basis, in education, and women empowerment.
4. National foresight and decision making can be improved by creating a network of government and non-governmental futurists on call for quick futures assessments like “future considerations” section in policy reporting requirements, as well as adding foresight as a performance evaluation criterion for senior government officials.
5. National foresight should also include how to connect foresight to decision-making in government training programs and testing proposed policies before implementation by postulating random future events of all sorts and evaluating how these might affect the policies.
6. Add positive incentives for population growth rate that are linked with development outcomes is the formula that is really being proposed.
7. Pakistan may be spending one dollar per capita on family planning. However, the messaging is all wrong and complicated. Pakistan needs to stabilize population, which means it must not grow beyond a certain figure, which can help in achieving results.

Takeaways

1. Planners and economists have overlooked population dynamics in their forecasts, analysis and have not factored high population growth or internal migration into development plans in last ten years- which has been a missed opportunity.
2. Perverse incentives through distribution of funds through the NFC award and allocation of Assembly seats discourage provincial governments from strong efforts to reduce fertility as rigorously as required.

3. Pakistan is the fifth most heavily populated country in the world and has the worst development indicators among Muslim countries of the region, as well as the SAARC countries, which is a grave concern and a challenge.
4. The earlier population narrative focused on economic grounds for limiting births was flawed - it was seen to infringe on people's decision-making space.
5. The problem of family planning and population growth has largely been misunderstood and it has its impact on food, housing, water, education, health issues, environment and security. Had it been understood fully, it should have been pursued fully and Pakistan has failed in this regard and we must accept that. Population is not number and size issue; it is also related to quality issues as well. When population is unmanaged, it can also affect the security and stability of the country. Population also affects development and prosperity as well.
6. A rapidly growing population affects a country in the long term and the threat of a large growing population can be seen in various forms. The average population growth rate is 2.4% which is highest in the region. Population, deforestation and agriculture are related issues and there is a link between population growth and environmental degradation.
7. Unprecedented urbanization is taking place and the numbers have increased phenomenally and it is assumed that by 2050, the city dwellers will comprise of a huge number and this will lead to numerous problems of population and urbanization and several related problems like transportation issues and more.
8. Pakistan is a water stressed country and the water resources are depleting rapidly and per capita availability for the growing population is also being affected. Poor sanitation is also a huge problem as well as child mortality.
9. Rapid population growth and urbanization will lead to transportation issues, problems in the availability of utilities, congestion in the urban areas, governance issues, pollution and also ethnic conflicts.
10. The global security environment is changing and by 2020, approximately six billion people would have access to the internet with a hundred billion connected devices. For the youth, that will be the scale of opportunity in just two years from now in the digital landscape now. What becomes important in this global context are Talent Markets, Gig Economy, Urbanization, Scientific breakthroughs, Technology and Innovation, Digital Security and Big Data Analytics.

11. In 10 years, it is anticipated that by 2027, over a 100 million Pakistanis will have access to the internet and approximately 1.6 million will be enrolled in tertiary education with unemployment expected to rise up to 8%. Emerging trends indicate joblessness; which can potentially contribute to public anger, growing anxieties and depression.
12. The preferred scenarios are regional connectivity, high citizen empowerment, and Pakistan in the coming years can expect the drivers of change to be energy, youth, quality education, technology penetration, governance devolution, economic prosperity and also nuclear power.
13. There are so many new things which have emerged, like Block Chain Management, Artificial Intelligence, Drones, autonomous and urban mobility, digital trade, data flows, and precision medicine and among others, the fusion of technologies, blurring lines between the physical, digital and biological spheres. Young unemployed youth can be more easily frustrated in this scenario.
14. Pakistan must get ready for Technological Readiness, Business sophistication and Innovation in the coming years.
15. Population growth is a huge non-traditional security threat and must not be ignored.
16. We need an enunciated policy direction and we have to be more imaginative that what the repercussions of a high growth rate will be on the environment and others. There have been policy flaws throughout, thus resulting in ineffective measures for population control.
17. The huge migration has to be taken into account along with urbanization as well. With the NFC award, we have started to speak to people about considering that the population should be controlled, even a little bit could make a huge difference.

SESSION III: FOOD SECURITY

Recommendations

1. Ensure access to the already available food.
2. Reform the land ownership mechanisms for secure and stable agricultural investment by the farmers.
3. Modernize agricultural practices by making investment in water and soil management, and through adoption of climate change adaptation technologies and strategies.
4. Create awareness among public to spend on food that has higher nutritional value.
5. Invest in better storage and more hygienic food preparation practices.
6. Promote staying on farm and diversification of income, as opposed to migrating to nearby urban areas.
7. Narrow the gap between average and progressive yield of crops.
8. Enhance the capacity of the farmers through advance technologies and research information.
9. Redefine the “Agricultural Ecological Zones” in Pakistan.
10. Promote investment in research and development and human resource in agriculture sector.
11. Balance the subsidies among different fertilizers.
12. Divert excess supply of water from wheat to other crops for diversification of agricultural products.

Takeaways

1. Local district governments and law enforcement agencies must be depoliticized for effective and uniform enforcement of agricultural laws and mechanisms.
2. Enhance the coordination among critical governmental institutions in agriculture sector.
3. Design a SMART (Strengthening Market for Agricultural and Rural Transformation) Programme.
4. There is a need for all-encompassing national food policy.
5. Break the nexus between land insecurity, poverty and food security.
6. Pakistan must start producing food commensurate with its expanding population.
7. Increase genetic experimentation.

SESSION IV: WATER SECURITY

Recommendations

1. Formulate frameworks and regulations at the governmental level for prevention of exploitation of ground water.
2. Prioritize water conservation at ground level.
3. Improve flood irrigation system.
4. Enhance water storage capacity.
5. Harvest local rainwater.
6. Utilize international climate change fund.
7. Add water conservation practices to educational curriculum at primary and secondary level.
8. Modernize the irrigation system in Pakistan to meet climate challenges of the contemporary era.
9. Farmers need to be provided water on a need basis not on a cyclical basis which tends to deplete water resources in a lopsided manner.
10. Conserve water from precipitation, melting of glaciers and flow from our eastern upper riparian neighbor.
11. Build an economic vision based on 'water economy' to create a solid foundation for agricultural and industrial development of the country.
12. Introduce water pricing mechanism to decrease water wastage.
13. Set a target of 10,000 MW of hydropower and 20 MAF of additional water storage capacity in the next 10-15 years.
14. Create consensus and depoliticize dam projects.
15. Extend irrigation systems to 20 million acres of new land.
16. Set target of at least 3 months of water storage.
17. Switch to high value-added agriculture.
18. Reuse water.
19. Allocate water resources for urban economy.
20. Restore custodial role of national resources to WAPDA.
21. Install treatment plants on rivers near cities.
22. Strengthen Indus Water Commission.
23. Put your act together and give a legal response to India for maintaining sanctity of Indus Water Treaty

Takeaways

1. Water resources of Pakistan need to be replenished, protected and channelled into fruitful projects.
2. Political differences must be kept aside in case of preserving a crucial resource like water.
3. Institutions related to water resource development and research must be empowered on a fundamental level through delegating funds and by liberating their decision-making processes.
4. Policy making for water conservation must be taken up at the grass root level through educational programs and campaigns to teach children to not waste water.
5. It is also the duty of the civil society and the mainstream public to preserve water resources in the country so that the entire responsibility does not fall upon the governmental institutions.
6. The most crucial takeaway was that water resources need to be replenished, protected and channelled into fruitful projects that will create an atmosphere conducive to better economic development.



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