

DEVELOPMENT NEWS



BIANNUAL NEWSLETTER

VOLUME III
SPRING 2018



FOOD

**SECURITY AND THE FUTURE OF
PAKISTAN**



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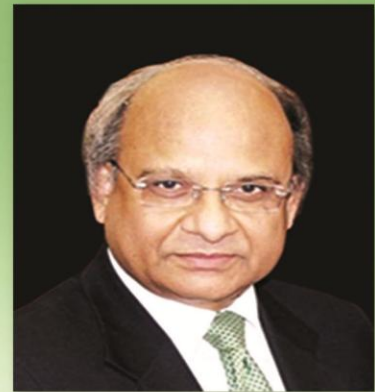


Message from Dean

Welcome to the Department of Development Studies at S3H, NUST Islamabad.

This department is set up to bridge the gap between academia and practical realities on training the professionals with sound knowledge of development studies. I am pleased to announce that the newly established department which has successfully completed three semesters (one and a half year) and now has achieved third important milestone in the form of "FOOD SECURITY AND THE FUTURE OF PAKISTAN" newsletter that portrays remarkable (formal and informal) activities of the students of the Department and faculty. No-doubt growth and excellence of our student body and teachers as projected in this newsletter, highlights inter and intra-departmental activities that make Development Studies department a state of the art platform to learn and excel in the field of development studies.

I wish the department and the Newsletter team all the success in their efforts.



Dr. Ashfaque Hasan Khan

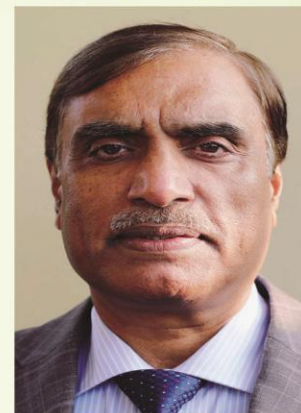
Dean S3H
PhD, Economics
The Johns Hopkins University, USA.

Message from Head of Department

It gives me immense pleasure to note that the Department of Development Studies is releasing its third Bi Annual Newsletter.


This is another way, we reach out to our professional community at large. In its one and a half year, the activities of the department have increased manifolds in quantity as well as quality. An example of this is the recently published research work by the faculty and participation of students in international conferences and journals of national and international repute.

I thank all the faculty and students who have contributed to this Bi-Annual Newsletter and look forward to have more contributions in the future issues of the newsletter.



Dr. Zafar Mahmood

(HOD-Development Studies)
PhD and Mphil (Economics)
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SCHOOL OF SOCIAL
SCIENCES & HUMANITIES

EDITOR'S NOTE

Spring 2018

A unique quality of our department is broad diversity of its brain-power as faculty, but more importantly the student group. is located right at the middle of the campus, our Department is serving as a platform for acquiring knowledge through Development Studies in the field of Social Sciences and Humanities as it follows a holistic approach in state of the art environment. In addition to teaching, the Development Studies Department thrives to project its constructive activities and achievements. Development News remains a landmark success under the NUST flag. This third issue of Development News with the theme 'FOOD SECURITY & THE FUTURE OF PAKISTAN' is devoted to the major hazard being faced in the current scenario. In reflection to the cover story, our emphasis is to engage students of MS (DS) having developed a wide range of expertise to explore the views regarding the concerned issue. I proudly admire their engagement in and importantly around campus and across continents. In the quest for a perfect shot, I welcome you all to explore Development Studies in S3H, NUST.

This issue includes the message from S3H Principal Dr Ashfaq H. Khan and Head Of Development Development Studies, Dr. Zafar Mahmood who have transversed the journey of Development Studies program from thought to reality.



Dr. Umer Khayam
Editor



Food Insecurity in Pakistan

- Pakistan ranks 77th out of 109 on the Global Food Security Index.
- Six out of 10 Pakistanis are food insecure.
- Food insecurity persists although food production is sufficient to feed all Pakistanis.
- Almost half of women and children under five years of age are malnourished.
- Agriculture is vital to Pakistan: it employs almost half the work force and contributes over a fifth of GDP.

Source: World Food Program (WFP)

Food Security and Poverty



SOBIA SIDDIQUE
Batch 2K17

Food security exists when all people at all times have physical as well as economic access to adequate, safe and nutritious food to meet their dietary needs and food preferences. It includes integrated components like availability, access, utilization and stability. Since Pakistan is a low income developing country so agriculture plays a pivotal role in its development. Although, total cultivated area in Pakistan has increased by 40% over the last 60 years, it falls short in comparison to the population growth rate. This gap in growth has led to the issue of food security in the country. South Asian region has been regarded as a region with the largest number of population suffering from hunger and malnutrition. The prices of food are higher in the region, people spend large fraction of income on food.

Pakistan has been facing a prolonged food security issue despite having high self-sufficiency of producing food to easily meet needs of its population. This is basically due to poor social indicators and prevalent issues like low level of education, poor health, large geographic disparities, low per capita income, inadequate employment opportunities and existence of undernourishment in most parts of the country. Poverty plays a significant role in raising concern of food security. Most people are unable to get access to adequate healthy food, which in turn leaves them with no alternative other than consuming low quality food increasing undernourishment and other health issues. According to Foreign Service Academy 2013, 50.6% of the population in Pakistan is not consuming adequate calories required for a healthy living. Pakistan need to focus on designing innovative solutions to eventually eliminate the risk of hunger, and to cater the problem of food insecurity.

Food Security- A Challenging Phenomena



NAMRAH ALI
Batch 2K17

Pakistan's economy is highly dependent on the agriculture sector, and food security is one of its key issues. Eradicating hunger and acquiring food security is among the sustainable development goals set by the United Nations. Food insecurity in Pakistan is considered to be a public health concern. According to International Food Policy Research Institute (IFPRI), 22% of Pakistan's population is undernourished, so food insecurity is widespread throughout the country. According to the Global Hunger Index 2017, Pakistan has been ranked 106 among the 119 countries with a score of 32.6; therefore, it falls in the category of countries with serious hunger level. According to Integrated Context Analysis Report, forty-two districts of Pakistan have been identified as being highly vulnerable to food insecurity coupled with high to medium levels of natural disasters.

Achieving food security in Pakistan is a difficult and challenging phenomenon. There is an imbalance between local food production and population as there has been rapid population growth in the country over the past few years, which resulted in increased food consumption. With the increased population growth, there has been a rapid urbanization, which adversely impacted the food availability and accessibility.

Climate change is another biggest threat in ensuring food security. According to Climate change Ministry spokesperson, "Global warming negatively affect Pakistan's food production system as it results in loss of crop yield and also decrease the growing cycles in various climatic zones of the country." In addition to this, lack of water resource management and, increase in water requirement by crops can be a risk in achieving food security. Due to natural disasters such as earthquake and floods, high fuel prices and energy shortage, there has been increase in food prices as well. Since people have low purchasing power so increased food prices limit access of sufficient food to the vulnerable and marginalized groups. Another challenge to food security is lack of political will and weak governance. We have resources, knowledge and technology to tackle food insecurity but we lack the determination and political will to turn commitment into action.

Quality and quantity of food available to poor segment of the country is insufficient and immediate measures are required to tackle this serious issue. We need to make food security the top priority in order to become a food secure country because it is one of the major threats to the peace and stability in this region. According to Mehoob ul Haq development centre report Pakistan needs to focus on pro-poor and inclusive growth policies with high level of political commitments in order to reduce food insecurity. In addition to this, improvement in coordination among the departments of agriculture, health, education, women's empowerment and water and sanitation are also required. There should be equal income distribution and stable economic growth to achieve food stability. In order to eradicate hunger and malnutrition, we need to reduce corruption and improve the institutional and governance system. Investment in research and development along with agricultural infrastructure is important to increase the domestic food production and to deal with natural calamities.





POOR FOOD SECURITY



AYESHA MAJID
Batch 2K17

A recent report 'Food Insecurity in Asia: Why Institutions Matter' released by the Asian Development Bank revealed that Pakistan faces chronic food insecurity despite having a high food self-sufficiency rate. In other words, Pakistan's food insecurity issue is not related to the country's ability to produce food or the existence of abundance of staple food. It is rather associated

with the fact that prevalence of undernourishment remains high in the country. According to FAO estimates, a whopping 44.2 million in the country are undernourished. In addition, stunting in children less than five years remains very high at 45 per cent. Incidence of anemia in women of reproductive age is also rising due to iron deficiency. These trends are in line with the fact that Pakistan was unable to meet the Millennium Development Goal related to hunger. Main reason for widespread undernourishment and lack of nutritious diet is inflation, poverty and inadequate food security systems.

Poverty prevents people's ability to gain access to adequate food. It also forces people to consume low quality food which might not be fortified, therefore, increasing the risk of nutritional deficiencies. Corruption negatively impacts equitable distribution of food to all segments of the society. Low level of accountability of public officers and low level of regulation and check on the quality and quantity of food being distributed leads people in power to abuse their privilege and use the distribution to their advantage. This leaves the disempowered classes in a position where they are unable to gain full access to food. Political instability, lack of consistency in food policy and low priority given to the agricultural production have stagnated the growth of the sector. Pakistan should, focus on alleviating and eventually eradicating the menace of under-nutrition and hunger if she wants to truly attain food security in the future.

Food Security

A GLOBAL ISSUE



NAYYAR ABBAS

Batch 2K17

Food, shelter and clothing are considered as the basic and pivotal factors for human development. Limited availability of basic necessities, increasing population and demand for goods and services creates an inhumane environment where every individual expects to improve their condition on behalf of

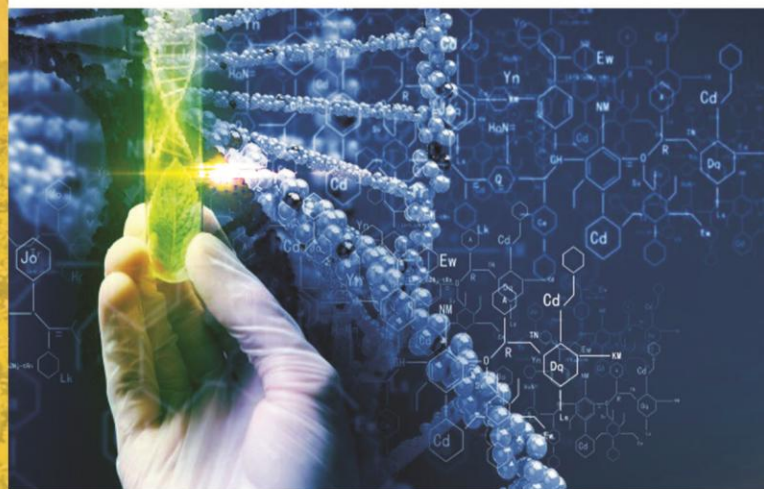
undermining other people. This argument can be understood if we look into food security issue and increasing hunger around the world. According to United Nations Population Fund, 1999, there was an aggregate decline in the food supply in developing world, which resulted in child hunger and illness. A huge number of people in developing countries lack the appropriate amount of food in order to fulfill their basic nutritional needs. Three parameters have been defined by FAO on the basis of which hunger and food inadequacy can be measured.

Most of the people confronting the problem of food insecurity, are living in the developing world. Poor countries like Nigeria, Somalia, Sudan and Yemen are facing natural calamities; increased deforestation and soil erosion, which play a vital role in increasing food insecurity and hunger. Increased population is also a threat as people are not skilled enough to yield the basic food requirements. Underdeveloped countries at the same, time have no technological or economic advancement to acquire higher production of food through innovation in order to avoid vulnerability to food insecurity. Furthermore, since urban industrialization is linked to pollution and extreme weather conditions; it has resulted in increased flooding, contaminated drinking water and drastic climate changes.

Problem of global warming, ageing demographics and gender parity hampers access to food and basic nutrition. Food security has become problematic for the wellbeing of people. Proper nutrition leads to an increased capacity to work, integrate and develop. Thus, in order to achieve sustainable development, international organizations and government need to work together in order to utilize resources effectively as food insecurity can lead to issues like malnutrition, hunger and conflict.



Research & Development for Food Security in Pakistan



MEHAK SHAHZAD
Batch 2K17

As Pakistan is on the crossroads of development, therefore it is the primary commitment of government to provide healthy food to its fastest growing population. Reducing poverty, hunger, and food insecurity are important factors for achieving Sustainable Development Goals (SDGs). All these factors can be achieved through research-based innovative policies and systems for food monitoring, which could enable a resourceful coordinated action to deal with food scarcity. For handling food crisis in Pakistan, effects of agricultural policies on food supply and income as well as knowledge about how it is parallel to the effects of climate change on production need to be known. According to SDPI and WFP report on food insecurity, about 48 percent population suffers food insecurity, and floods in 2010, 2011 and 2012 further increased the population going through the misery of food insecurity.



The colossal and disastrous flood in 2010 affected more than 20.1 million population in Pakistan. Heads of small and large livestock perished, and around 600,000 more died due to lack of veterinary support and emergency feed. These circumstances made the people food deficit as they had to use contaminated commodities especially water. Generally, that disaster pushed the farmers' prosperity to several years back. To cover such losses and to deal with natural calamities Pakistan needs to strengthen its research and development agencies to work for resilience and establishment of early warning systems along with the capacity building of both the rural population and agricultural industries. Furthermore, various seasonal stresses and their effects on farmers also need to be identified and strategies to overcome these stresses need to be reformed by conducting efficient researches.

Though Climate Smart Agriculture was mentioned during the previous interventions in agricultural sector such as insect-pest management (IPM), budgetary supports and an improvement in extension services, it lacks the reformation policies for governance structure, and which were deficient in a number of areas covered. These problems are due to incomplete research statistics and implementing failed policies again and again. Thus proper assessments of changes in trade flows and livelihoods are required in sequential patterns, so the research could expand to larger areas.

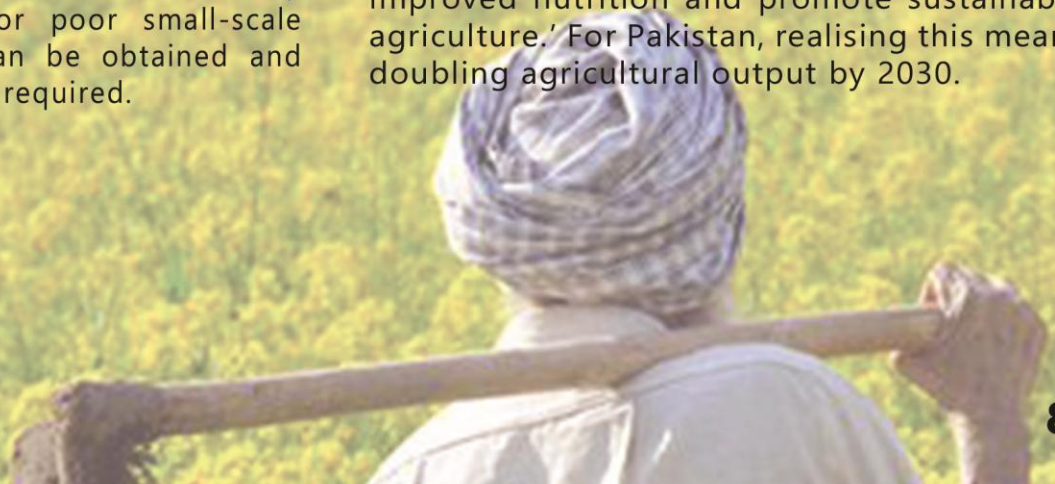
TACKLING THE ISSUE OF FOOD INSECURITY USING BIOTECHNOLOGY



RIDHA BANO
Batch 2K17

Food security is vital for a nation's long-term health. Basic reason of food insecurity and poverty is low crop production and high rate of poverty. A large percentage of the poor population faces food insecurity and mostly this population is living in underdeveloped or the rural part of the developing countries. In this scenario, biotechnology can play its part to reduce food insecurity through the application of genetic engineering. Biotechnology functions in a variety of ways to handle the problem of food insecurity. Initially, it increases the yield of crops by familiarizing with high-yielding varieties that are strong enough to handle the biotic and abiotic stresses. Biotechnology can help in reducing pest associated losses. Recent discoveries in functional genomics and molecular mapping demonstrate that biotechnology products are reasonably realistic in the near future. By improving the situation for poor small-scale farmers, positive results can be obtained and practical approaches will be required.

Adoption of genetically modified cotton cultivation has increased family incomes, resulting in significantly raised dietary quality and calorie consumption. This technology was effective as a considerable reduction of 15-20% was found among the cotton-producing households. Therefore, GM crops play an important role in the food security strategy but alone it cannot resolve the hunger issue. Pakistan needs a plan of action along with a national strategy to use this innovative method for rapid development of the country. Implementation of Biosafety Rules 2005, along with its comprehensive set of guidelines, has given much needed impetus to agri-biotech research. Nevertheless, the government still needs to implement Seed Rules 2016 to ensure that biotech product registration is undertaken in order for farmers to gain the productivity benefits. Let us not forget SDG 2: 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture.' For Pakistan, realising this means doubling agricultural output by 2030.



GLACIER GRAFTING

-A Solution to Food Insecurity



TEHZEEB BANO
Batch 2K17

Food insecurity and water scarcity is a multidimensional issue, presenting different challenges when viewed from local, national, global or household perspective. There is a prominent relationship between water accessibility and food security. Water availability is an essential element for all the agricultural activities everywhere

in the world. Non-availability of water results in no or less food production which makes the poor countries more vulnerable to the risk of food security. A huge budget is spent every year by the international organizations on seminars, conferences and conventions dealing with the issue of food insecurity and water scarcity. Indigenous people of Himalayan ranges are working hard to find ways of resolving these issues. In mountainous ranges of Himalayas, people have adopted the art of glacier grafting to increase the availability of water for agricultural purposes.

The practice of growing glacier in the Himalaya is an old practiced technique that is used in high altitude water catchment areas to sustain the growth of ice patches. In its first step, a suitable area is located for the purpose of glacier growing. Chosen land is usually found in shadowed scree-slopes that are overlooked by steep headwalls. These sites are at least 4,000-5,000 meters above the sea level and prone to snowfall and avalanches during the winter and spring season. This helps in creating a suitable atmosphere for the accumulation of ice which is then transported by teams of two to three people in baskets of woven willow twigs. Throughout the glacier implanting other vital constituents are wheat husk, sawdust, charcoal and branches which are spread over ice once it had been conveyed to a particular site. The shared trait in the prescribed constituents is their capacity to shield the ice.

Water gourds are positioned with the pieces of the ice. In winters, these gourds breakdown as the water is frozen and develop fragment of ice. The water then converts into frost and later develops into a bulk of ice commonly known as glacier. This glacier then become a source of water for the indigenous people and they use it for agricultural purposes, which ensures them food security.



E-Agriculture- Defining the next Frontier in Food Security



ABDUL AHAD KARIM
Batch 2K17

The ever-increasing population pressure, constantly diminishing arable land and climate change have hampered the already limited capacity to produce food. According to FAO, the total food production will have to increase by more than 70% in 2050 as compared to that in 2006. While food insecurity is a global threat, it particularly affects the developing countries more as they are prone to shocks and stresses such as bad crops, natural disasters, climate, change etc. In addition to the external factors, a majority of farmers in these countries are poor; practicing agriculture on small land-holdings, and lacking the capital to purchase agricultural technology such as tractors, thrashers, monitoring equipment, etc. Furthermore, the capacity to produce food is also limited due to a lack of 'timely' and 'relevant' information. Oftentimes, the crops are lost to natural calamities, and maltreatment of land/crops due to an absence of early warning systems.

Therefore, it could be argued that the productivity of small farms could be increased through the introduction of precision farming and smart agriculture that integrate technology to enable farmers to make informed decisions. The agricultural landscape in Pakistan is affected by a multitude of problems; ranging from legal issues such as tenancy laws to a shortage of information about the biophysical sphere such as soil moisture, mineral ratio, humidity levels, temperature, etc. This dearth of data about the environmental factors force farmers to adopt a 'hit and trial' strategy in agriculture and farming. Thus, the adopted strategies are often a result of hunches and prior experiences.

However, with the rise of internet-of-things, a scientific approach can be implemented if the government invests in providing access to tools and devices that record these variables, and communicate them in real time to the farmers. This could allow farmers to make decisions based on hard-evidence rather than mere feelings. This would also ensure that the response of each farmer is customized to suit her/his specific needs, depending upon the environmental conditions, rather than a generalized response.

Similarly, with an increased coverage provided by the telecom sector and an accelerated smart phone penetration right down to the grass-root level, the time is just ripe to capitalize this network of communication devices. In case of a threat of a natural disaster, mobile phones could effectively be used as an early warning system whereby the farmers could be warned of an impending disaster such as floods, thunderstorms, etc. This could allow farmers to either inquire about or to themselves devise mitigation strategies to minimize damage caused by these calamities. Furthermore, mobile phones could be utilized to disseminate information about the markets as well. As small farmers are often exploited by the middle-man, mobile phones could be used as a means of broadcasting information about market prices too. In the longer run, this could even turn into a virtual market place whereby the buyers are directly linked to the sellers. Hence, mobile phones could be used to effectively relay information to the farmers.

Although the technologies mentioned above already exist, there are some challenges to implementing the proposed solutions in Pakistan. Firstly, this would require a huge injection of funds by the government to provide such technology to farmers. Secondly, since majority of farmers in Pakistan are reluctant to use technology and lack an educational base to effectively utilize data. Lastly, an overreliance and a strong belief in the traditional methods could be a challenging factor too.



UPDATES AND ACHIEVEMENTS



RESEARCH PUBLICATION

A research paper "Rehabilitation of 2010 Flood Affectees in Pakistan" by **Ms. Sheeba Farooq** is published in NUST JOURNAL OF SOCIAL SCIENCES AND HUMANITIES **Vol.3 No.2**.

MS. SHEEBA FAROOQ is a lecturer at S3H, NUST (Department of Development Studies).

www.nust.edu.pk/INSTITUTIONS/Schools/S3H/NJSSH/Pages/View-Articles.aspx

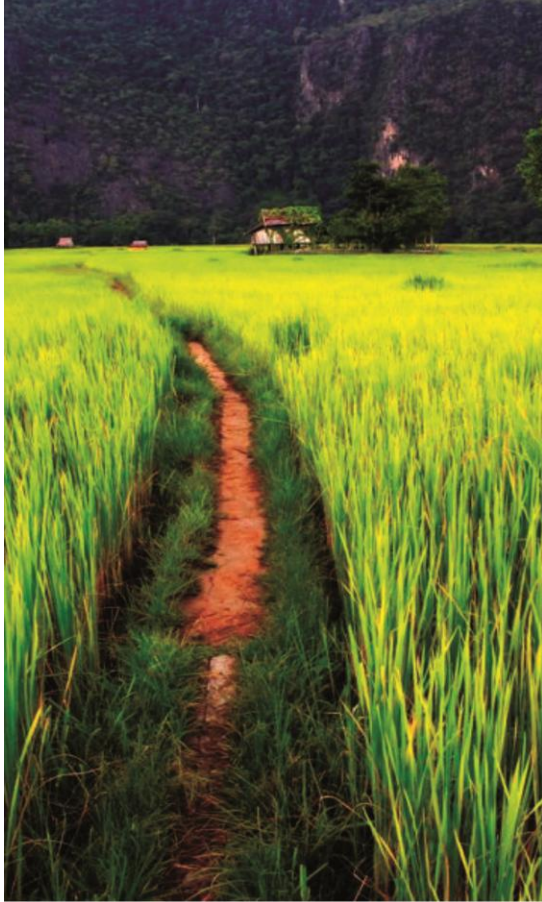
YOUNG SOCIAL ACTIVIST AWARD

MEHAK SHAHZAD, a student from MS Development Studies Batch 2K17 was awarded Young Social Activist Award at Alkhidmat 2nd Youth Gathering and 'Zabaradast Performance Award' from CDRS in recognition of her community services and development activities.



COMMUNITY SERVICE AWARD

SOBIA SIDDIQUE, from MS Development Studies received the Community Service Award from Rector NUST on November 21, 2017 as an appreciation of her hard work and dedication to serve humanity.



EDITORIAL TEAM



**GRAPHICS
& LAYOUT**
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MS Development Studies
Batch 2K17

Department of Development Studies at S3H in NUST, takes pride in providing students with the opportunity to engage in hands-on educational experiences and apply academic concepts, strategies and techniques to contemporary real-world issues.



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