Sustainable Development in the times of COVID-19

The COVID-19 pandemic took the world unawares with the developed, emerging and least developed countries equally prone to its contagion. But has it really been the ‘Great Economic Equalizer’ many have claimed? How has it impacted the last decade of action with regard to the Sustainable Development Goals, especially in South Asia? How has it affected different vulnerable groups such as students, small businesses, daily wagers, and sectors such as health, education, Information & Communication Technologies (ICTs) in countries like Pakistan and India?

How did day-to-day social relationships change and what effects has that had on mental health and well-being? Most importantly, has the way nation-states govern changed from being economic-centric to becoming more human security-centric?

Vibrant nations turn challenges into opportunities. Have governments and businesses across the world, particularly in South Asia found new ways of working? What are the areas where Pakistan’s policymakers need to invest more to recover and improve? What are some of the best practices thought leaders need to focus on from the public and private sector to keep the 2030 Sustainable Development Agenda on track, while ensuring economic, food, water, health, education, and human security for citizens?

The authors in this volume try to answer the above questions by specifically focusing on issues related to green policymaking; regional connectivity and collaboration; economic growth, social protection, healthcare, ICTs; education; water governance; and community resilience.

- Sarah Siddiqui Aneel
Sustainable Development in the Times of COVID-19

Edited by
Uzma Tariq Haroon
Imrana Niazi
&
Sarah Siddiq Aneel

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The numbers are terrifying: around 20 million people around the world have been infected with COVID-19 so far; and more than 4.2 million of them have died. Hundreds of thousands of flights, trains and buses have been cancelled; millions of businesses have shut down; and millions of jobs have been lost. Schools, colleges, and universities are struggling to cope with the burden of online classes and exams. Tens of millions of students have become unsure of the future of their education – and employability. Healthcare systems are reeling under the pressure to deal with a continuous rise in the victims of COVID-19; and the psychological impacts of the disease are making an unprecedented number of people report higher mental and emotional stress than ever before.

This is just a brief and, admittedly, incomplete snapshot of how COVID-19 has changed – and continues to change – the world around us. So, how do we handle so much change taking place at breakneck speed around us? From social scientists to economists, from psychologists to public health experts, from scientists to educationists and from policymakers to policy analysts, everyone, indeed, is scrambling for an answer.
The massive range – and depth – of economic, social, medical, and psychological ruptures caused by the pandemic have made everyone dizzy with confusion. No one is sure if they can deduce any seriously relevant lessons from the pre-COVID-19 era to understand what is going on now and they do not know with a high degree of certainty where the current trajectories are headed – which, in turn, makes it really hard to plan for the future.

This quandary is only compounded by another set of related questions.

If the world is not the same as it was before COVID-19, will it also not be the same once we get to the other end of the pandemic? How much of policy changes forced by the disease will be useful and relevant once this period of extreme disruption and uncertainty is over? Or, perhaps more fundamentally, will the pandemic really go away in the near future? What if it is still around, say, over the next five years?

When the Sustainable Development Policy Institute (SDPI) was planning its Twenty-third Sustainable Development Conference (SDC) in mid-December 2020 on the subject of Sustainable Development in the Times of COVID-19, it was confronted by all these questions and then some more. The single most important challenge confronting the conference organisers – as well as those partaking in it – was this: how to make projections and predictions about the future when the recent past – since the outbreak of the COVID-19 pandemic in March 2020 – has taken a clean break from what went on before it?

SDC 2020 took up the challenge successfully. It put together an impressive array of researchers, policymakers, policy practitioners and civil society representatives from across South Asia to not just discuss the questions mentioned above but also present and mull over their possible answers.

For the very first time, the SDC was held completely online. While many events were being cancelled or deferred the world over, the team
at SDPI went ahead, adapted to the challenging times step by step, and came up with an impressive array of sessions.

It was a challenge to foresee how such a mega event, which has always been held in-person, would appear online. Nevertheless, it was successfully put together by the team of dedicated professionals at SDPI. Like a gigantic jigsaw puzzle, each scattered piece was brought together to turn it into a whole.

Starting from the initial days of discussing the overarching theme of the Conference developed during the early days of lockdown, shortlisting of the sub-themes by the researchers, to engaging with the donors and knowledge partners, practitioners, speakers, and policymakers and to finally bringing it all on a virtual platform meticulously handled by the IT and Web crew, along with support provided by relevant teams.

Consisting of 45 online sessions spread over four days, the Conference was attended by 235 panellists from Afghanistan, Australia, Austria, Bangladesh, Brunei, Canada, China, Ecuador, Germany, Hong Kong, India, Kenya, Nepal, Nigeria, Pakistan, Saudi Arabia, South Africa, Singapore, Sri Lanka, Sweden, Switzerland, Thailand, the Netherlands, the United Kingdom, and the United States. Taking place on a virtual platform, it was host to an audience of over 6,800 who joined from 84 countries. No visa hassle, no missed flights, no need to take leave from work, and at the same time, enabling everyone to be a part of this event from the safety of their workplaces and homes.

The SDC does not end at the Closing Plenary but goes on to be documented in the shape of this book which contains the discourse and analysis tendered at the Conference. I feel both honoured and humbled while offering this anthology to a wider audience. I am honoured because the various submissions allow SDPI to offer unique – and yet practicable – insights into the COVID-affected world from regionally renowned scholars, policymakers, and civil society representatives.
I am humbled because so many amazing people from around South Asia and beyond have trusted SDPI with the dissemination of their thoughts and ideas to a regional audience. This task entails a massive moral responsibility of reproducing and presenting their sayings and writings both faithfully and effectively. I sincerely hope that SDPI comes up to the expectations of both the speakers/authors and the viewers/readers in this regard. A special note of gratitude to the team of editors and referees for bringing to a culmination this peer-reviewed volume and documenting some of the key papers presented at the Conference.

I am also thankful to all the speakers, panellists, discussants, and audience who participated actively in the SDC 2020 and enriched it with their thoughts, ideas, and observations. I am also proud of and thankful to the SDC organisers for not just organising a highly successful Conference under extremely difficult circumstances but also for painstakingly putting this anthology together through untiring efforts.

In the end, I hope that the readers of this anthology will be able to fathom the depths of the economic, social, and medical crises that COVID-19 has pushed the whole world into. I also hope that they will find in it some pertinent intellectual tools to answer questions about a precarious present and a fragile future that the pandemic has ushered everyone to.

Dr Abid Qaiyum Suleri
Executive Director, Sustainable Development Policy Institute
Plenary Discourse

a. Message

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Ladies and Gentlemen,

It gives me immense pleasure to address the Twenty-third Sustainable Development Conference by the Sustainable Development Policy Institute. I would like to congratulate Ambassador Shafqat Kakakhel, Chairperson, Board of Governors (BoG) and Dr Abid Qaiyum Suleri, the Executive Director of SDPI.

Last year (2019), I inaugurated the Twenty-second Sustainable Development Conference, and it seems it was decades ago. The biggest change that has happened [since then] is the COVID-19 pandemic, which has not only affected Pakistan but the world. It has affected societies, the poor much more than the rich; it has affected poor
countries much more than the rich [ones] curtailing the progress of sustainable development.

However, it has also opened a new avenue, a new era, whereby [there has been an] increase in outreach because of digital transformation, which has been anchored by COVID-19 in many ways. The world may not have been as excited about digital communication as it became during the COVID-19, when people could not move around. The digital transformation, which may have taken a decade, has happened within a year and that opens a lot of options.

The inflow and the outflow of knowledge through the Internet for health facilities and education has also become a major boon to countries which cannot afford to build brick-and-mortar institutions.

I believe that the COVID-19 challenge is an enormous challenge, but it also has a lot of opportunities, and those opportunities are where sustainable development issues of the world must be looked at. Development means that we should be uplifting our people from poverty in the poor countries by providing them with health [benefits], education and welfare.

Pakistan has done tremendous work in starting the Ehsaas Program by which more than half of the population was provided help to fight the pandemic. It worked wonders as far as we are concerned because we took care of the poor in the society. It is important because that is what the Constitution of Pakistan talks about (and) that is what every government throughout the world talks about.

Despite COVID-19, Pakistan ensured that our poor were taken care of. Pakistan ensured that its macroeconomic change continued. In fact, our Balance of Payment got better, our exports rose, and our imports reduced, which we consider of significant importance, and these macroeconomic changes are guiding Pakistan toward a better society. Alongside, the Prime Minister [of Pakistan] has ensured construction
packages, which will offer employment. All these efforts have been taken despite the pandemic, and I believe as far as development is concerned, these will be of great help.

Societies which progress in the world are those which are inclusive. Exclusive societies maintain exclusion when it comes to the elite and the poor in society. Inclusive societies provide and ensure work, education, and health facilities for the entire population. In Pakistan, whatever we have done in response to the COVID-19 pandemic, whatever efforts we have made to reach out to the population, they will help us continue to provide benefits such as healthcare to the masses once things normalise.

For countries like us, prevention is the key. For countries that cannot afford curative approach to health, prevention is the key.

I believe we have established structures of communication by which through different modes we have been able to reach the grassroots level of our society. At the same time, poverty alleviation and development are related to educating the population. COVID-19 presented opportunities [for education] beyond the brick-and-mortar school and universities set-ups. This opportunity has allowed one to reach out to the people in the least expensive manner, as outreach through the Internet is much cheaper than the ability to multiply [education initiatives] in brick-and-mortar set-ups.

I believe all your discussions must have been informative. I believe Pakistan will keep on learning from its own experiences and from countries and from societies which have done better in the past century in trying to lift their people.

Along with all these initiatives, we have to ensure the fact that they are environmentally and ecologically sustainable. That is where responsible governments, responsible media as well as responsible institutions come to play their part to ensure that all this development
is not at the cost of increasing the [carbon] footprint of man in this world.

I have a lot of hope for Pakistan. During the COVID-19 situation, we have shown resilience and strength. We have shown that despite COVID-19, our GDP has not gone down as compared to other countries. We have shown that despite COVID-19, our ability to ensure health and education outreach has existed. We have shown that despite COVID-19, our sustainable development efforts may have slowed down, but [there were] no major setbacks.

Ladies and Gentlemen, I thank you for participating in this Conference and I believe all your deliberations will help in a stronger, more forward-looking, more emancipated Pakistan.
Welcome Remarks

by

Ambassador Shafqat Kakakhel, Chairperson, Board of Governors Sustainable Development Policy Institute

On behalf of the Board of Governors of SDPI, I welcome you all to this Inaugural Plenary of the Twenty-third Sustainable Development Conference (SDC). We are grateful to the President of Pakistan, His Excellency Dr Arif Alvi, for accepting our invitation to present his special message on the occasion.

I wish to commend the Executive Director, Dr Abid Suleri, for selecting the theme of this SDC with a view to addressing the profound multiple impacts of COVID-19, and the threats it poses to the promotion of sustainable development in Pakistan and globally. He and his staff also deserve appreciation for organising a four-day event despite the logistical challenges created by the pandemic.

* This Welcome Address was delivered live and online at the Inaugural Plenary of the Sustainable Development Policy Institute’s Twenty-third Sustainable Development Conference titled ‘Sustainable Development in the Times of COVID-19’ on 14 December 2020.
Since COVID-19 was declared a pandemic by the World Health Organization (WHO), this deadly disease has reached all corners of the world. It has affected over 65 million people and killed a million-and-a-half, including doctors, nurses, and other medical staff trying to save the lives of those infected. Efforts to contain the spread of the virus through lockdowns and suspending or restricting all kinds of human activities have led to huge material losses. Industrial production and trade, travel within and across countries, tourism, educational and cultural activities, and normal healthcare facilities have been disrupted. These measures have impeded socioeconomic development, accelerated unemployment, expanded and deepened poverty, disrupted food supply and threatened food security in many regions.

As in the cases of other natural and man-made disasters, COVID-19 has disproportionately affected the poor and vulnerable communities. The achievement of most of the Sustainable Development Goals (SDGs), especially by the developing and least developed countries, has become nearly impossible. South Asia has suffered hugely from the human and material impacts of COVID-19. Economies of all South Asian countries, including Pakistan, have been plunged in recession, while those critically dependent on exports and tourism have suffered the most.

The international community, including the United Nations (UN) and International Financial Institutions (IFIs) as well as China and several developed countries have responded to the pandemic by assisting developing countries in meeting their urgent healthcare needs and reducing the socioeconomic hardships caused by the pandemic. The UN system has helped in promoting international solidarity for limiting, to the extent possible, the spread of the pandemic and in rebuilding economies and livelihoods, especially in developing countries. The UN Secretary General convened a special session of the UN General Assembly (UNGA) to review the effects of COVID-19 and their amelioration.
A redeeming feature of the situation is the success achieved by a large number of pharmaceutical companies and medical research centres, including the one established by the University of Oxford, in developing vaccines for COVID-19 which are undergoing crucial third phase tests before they can be administered. The WHO has spearheaded efforts such as COVAX to promote and coordinate efforts to reduce human losses caused by the virus as well as forestall what is described as ‘Vaccine Nationalism’ and ‘Vaccine Apartheid’ in order to ensure equitable access to the life-saving vaccines by the poor all over the world.

COVID-19 hit Pakistan while the government was trying to cope with urgent security and socioeconomic priorities. It was able to enhance the country’s inadequate health facilities, especially Intensive Care Units (ICUs) and ventilators.

Pakistan’s medical community has valiantly responded to the challenge of looking after the victims of COVID-19 and in the process risked their own lives.

By the end of last month [November 2020], more than 10,000 health professionals - doctors, nurses, and support staff - had contracted the virus. More than 100 health professionals have lost their lives.

The National Command and Operation Center (NCOC) has done a commendable job of monitoring evolving patterns of the proliferation of the deadly virus and of guiding and coordinating national response measures. The government’s performance in providing cash support to nearly 15 million poor, unemployed and daily wage earners who had lost their basic means of livelihood under the Ehsaas Kafalat Program and Benazir Income Support Schemes also deserves appreciation and support.

Pakistan is currently [December 2020] going through the second and more deadly phase of the Coronavirus marked by a surge of cases in all the provinces. The Federal and Provincial Governments have been
trying their utmost to respond to an increasingly challenging situation. These efforts deserve the whole-hearted cooperation of our people in their own interest.

Discussions during the SDC will focus on assessing the immediate and longer-term impacts of COVID-19, the effectiveness of the responses hitherto taken by the government and other stakeholders, and identify lessons for coping with future disasters, such as those caused by climate change.

I wish to thank all our partners from within and outside Pakistan who have extended support to SDPI for organising this Conference. I hope all those attending the discussions during the Twenty-third SDC will find them useful.

Thank you.
Introductory Remarks*

by

Dr Abid Qaiyum Suleri, Executive Director,
Sustainable Development Policy Institute

Good morning, Good afternoon, Good evening, Ladies and Gentlemen, depending on which part of the world you have logged in from to be part of today’s virtual Inaugural Plenary.

First, let me extend a very warm welcome to you for being part of this historic Sustainable Development Conference (SDC). I am using the word ‘historic’ because this is the first time that we, at SDPI, in fact, in Pakistan are having a completely virtual conference, which is not just a one-day event with a few panels or handful of speakers, rather a much more mega event.

In fact, initially, we were bit reluctant that this whole business of going virtual may not be very successful, but as you would see when the agenda unfolds over the next four days that we have 43 sessions, including seven plenaries. We have 236 panellists, including 62 from

* These Introductory Remarks were delivered at the Inaugural Plenary of the Sustainable Development Policy Institute’s Twenty-third Sustainable Development Conference titled ‘Sustainable Development in the Times of COVID-19’ on 16 December 2020.
26 countries covering a vast array of subjects from the economy, health, social protection, gender, tourism, museums, art, history, literature, education, water, environment, and poverty alleviation.

For this Inaugural Plenary, on this virtual platform alone, we have more than 142 participants with more logging in every minute, and many more who are watching us live on Facebook, YouTube, and other social media platforms. So, a very warm welcome to all of you from Pakistan!

Now, the idea of organising the SDC and this year’s theme ‘Sustainable Development in the Times of COVID-19’ remains very pertinent, especially if I step back a year to the Twenty-second SDC where our agenda was ‘Sustainable Development in the Age of Digital Transformation.’

At that time, no-one among us knew that we would have to digitally transform ourselves and do a lot of the things which we were recommending during that SDC - from online offices, online businesses, online virtual meetings, to tele-health and tele-schooling etc., in a matter of months, not years!

So much so that we have entered an era where discussions nowadays often focus on whether COVID-19 has been a blessing in disguise given such rapid digital transformations or whether its curse; and of course, how to balance the two.

There is no doubt that this pandemic has affected the global Sustainable Development Agenda of 2030. It has resulted in loss of precious lives, livelihoods; it has forced students to stay away from classrooms; and caused lack of access to healthcare for non-COVID patients, amongst so much more hardship.
At the beginning of the pandemic, international experts warned of three crises - health crisis, global economic recession, and food crisis. Pakistan did extremely well on all these fronts as compared to its peer countries. Pakistan’s response strategies to COVID-19 have been a success story of balancing lives and livelihoods.

Vibrant nations turn challenges into opportunities. If we take the Sustainable Development Goals (SDGs) as a proxy of Sustainable Development, all the major goals have been negatively affected by COVID-19 such as ‘No Poverty’ (SDG 1) with many more millions going below the poverty line and workers being laid off. For SDG 2 ‘Zero Hunger’, food inflation and disruption are a new normal. The impacts on SDG 3 ‘Good Health and Well-being’ due to COVID-19 have been deadly for nations. For education, 22 million are out of classrooms, and around 40 million have no stable internet connection or even smart devices to come online for their classes. For SDG 5 ‘Gender Equality’, increase in Gender Based Violence has been observed leading to vulnerability of women and girls under a ‘Shadow Pandemic’. For SDG 6 ‘Clean Water and Sanitation’ while frequently washing hands has become mandatory for safety of the masses, 1/3rd of the global population has no access to clean water.

This SDC, will hence, discuss these SDGs and shed light on the impact of the pandemic. We will be talking of how the economy is getting affected, institutional arrangements and policy responses to COVID with Governor of the State Bank of Pakistan Dr Reza Baqir as well as Dr Ishrat Husain. We will discuss food security and transforming the food system for the new normal. We have three panels on health where we would be joined by Dr Nosheen Hamid, Parliamentary Secretary for Health and the Country Representative of the World Health Organization. We have curated three panels on education, one on higher education, education needs in the times of COVID-19, and on education methodology. Our panel on gender will focus on gender development during the pandemic; two panels will also look at urban water governance and access to water.
We have tried to curate a demand-driven SDC, where we are going to discuss in detail different challenges that COVID-19 has brought for Sustainable Development but also to discuss different silver linings like the fact that not only Government of Pakistan, but governments all over the world, now have to bring their radar back on the agenda of Social Sector Development.

This is a silver lining for those countries whom I used to classify into ‘4Ds’ in terms of government expenditures - Defence & Security, Debt Servicing, Day-to-Day Administration, and Development - where the budget on development had to be compromised every year.

Expenditure on the 4\textsuperscript{th} D was earlier an obligation. Now, it is mandatory for governments to invest in human development, especially in the time of COVID-19. The ‘D’ can no longer be a ‘discretion expenditure’ because the pandemic has taught governments that if they invest in Human Capital, if they invest in Social Protection Systems, their countries can better survive such sudden, debilitating adversities.

Another positive aspect of the pandemic has been its impact on the environment and climate change - less carbon emissions and less pollution. Even a gathering like this each year had a heavy carbon footprint. But, this year, I can say that it is almost a zero carbon emissions conference. In fact, if a ‘Black Swan event’ like a pandemic can occur in this century, maybe now, leaders around the globe will also start understanding that climate change can also be just as catastrophic. In fact, severe environmental changes, ozone depletion, water scarcity are already a reality that can no longer be ignored, like COVID-19.

How we, in Pakistan, turn this pandemic into an opportunity is all dependent on ‘preparedness’ which will depend on how quickly vaccines become available for the most vulnerable and our frontline workers; on the strength of our collective resilience and bouncing back mechanism; on how ready we are to avail the opportunities of trade and export orders that are being redirected from Bangladesh and India.
to our country; and how rapidly we adapt to the Fourth Industrial Revolution by moving to a digital era.

Being a non-partisan think tank, SDPI has worked with and given policy input to every government since its inception. We have abundance of access, formidable human resources and have never compromised on research quality. Through policy-focused events like the SDC, we hope to make an even greater difference to fight our collective battle against COVID-19.

I can see light at the end of the tunnel if we reinforce and refocus our attempts toward Sustainable Development which is the broader theme of this year’s conference.

I thank you all for joining us.
Pakistan’s Response to COVID-19*

by

Senator Shibli Faraz, Federal Minister for Information & Broadcasting, Government of Pakistan

Thank you very much for inviting me to participate in the discussions and opinions of the illustrious speakers at this year’s virtual SDC.

This is a very interesting and very important subject that you are discussing especially given our present times as Charles Dickens said ‘It was the best of times, it was the worst of times’ so COVID-19 and the subject you are touching upon ‘Sustainable Development in the Times of COVID-19’ is definitely for us.

It is for the first time in our living memory that people have been affected [by a pandemic] around the globe. It has been a pain which is shared by everybody, and not just limited to a certain geography. This [pandemic] not only created opportunities but, at the same time, it also created a lot of challenges because once everybody is suffering from the same pain, it also becomes very challenging to fix the problem for

* This speech, delivered live and online, was part of the Closing Plenary of the Sustainable Development Policy Institute’s Twenty-third Sustainable Development Conference titled ‘Sustainable Development in the Times of COVID-19.’
Pakistan, being a country where the health infrastructure is not very adequate, is not very modern and has never seen such a situation affecting hundreds en masse, I must say with a lot of satisfaction and pride that despite the fact that we got affected by COVID-19, it was a timely and very wise decision of the Prime Minister of Pakistan, H.E. Mr Imran Khan, to focus on saving both lives and livelihoods of people. Thus, he strategised and initiated ‘smart lockdowns.’

There were, obviously, some differences of opinion among some provinces, nevertheless, the PM’s vision was largely implemented, and we saw through the first wave of COVID-19. That time also gave us an opportunity to improve our healthcare system and, simultaneously, have a mechanism in place, a very organised one, in which a team of specialists was created under the name of ‘National Command Operation Center’ (NCOC).

The NCOC’s purpose was to collect data, process it and on scientific basis, give facts and figures [for analysis and necessary actions], along with [relaying] SOPs and other related information. It was a very affective mechanism which obviously led to good results.

[During the pandemic], we were in a situation where hospitals were not very well-equipped, and personal protective equipment and other apparatus which we required, had to be imported. But now, I am very happy to say that not only are we manufacturing it ourselves, but we are also exporting it. Now, these are the things which one calls ‘rising to the challenge.’
During this pandemic, the livelihood aspect was also something that the Prime Minister was very deeply concerned with, and it is probably for the first time, that we created a mechanism, which has helped us, and will probably continue to help us in the future as well, to identify the lower tier of society and those whose livelihoods either got affected or they completely lost all opportunities of earning. In this background, the Ehsaas Program, introduced by the Prime Minister, was something which gave the government a very effective mechanism of reaching the lowest tier of our society through cash disbursements in order to mitigate their pain and difficulties.

After the first wave of COVID-19, our economy was deeply affected as it impacted many industries and value chains. The Prime Minister’s housing initiative was rooted in his efforts to uplift the lower segment of society, the daily wagers, those who were unable to sustain themselves through prolonged inactivity in business. So, the construction sector was pushed with rigour. This gave the poor, and the labour class, an opportunity, and a lot of incentives to encourage the construction sector so that it may also trigger industrial activity of over 30-40 other linked industries. We managed to move an important sector of our economy and the Prime Minister is consistently monitoring it on weekly basis. He is taking stock of progress of all the projects that are on ground so that we enable people, especially the poor, to get involved in the construction sector.

Pakistan’s preventive measure of enforcing ‘smart lockdowns’ has been appreciated across the world, among others, by the World Health Organization (WHO). Other international institutions also endorsed and appreciated this move. It was commended to such an extent that it was [claimed] as probably [one of] the best ways to handle the Coronavirus and its effects on the people and on the economy.

Now, we are confronted with the second wave [of COVID-19]. This is also the time when we are talking about the vaccine. Pakistan, like other countries, is also expected to get them. When? How? How many? These
are difficult questions, but at least, there is some hope that people get after hearing that a vaccine is being developed and will come out. Now, while we wait for the vaccine, what is challenging [during this second wave] is that people are not as disciplined as they were in the first wave. This has created a lot of problems due to which our mortality rate has gone up, and even our hospitals are now under pressure due to a significant increase in the number of patients. We are witnessing deaths of patients belonging to the upper and middle class.

The biggest challenge, at the moment, is how to convince people to observe the SOPs because the political activities of the opposition party has also aggrandized the spread of the virus, and this is causing a lot of anxiety within the government and the people.

We hope, and we are trying our best through campaigns, public awareness programmes, media, to make people realize that not following COVID-19 SOPs is very dangerous, and they should take all the precautions to combat this pandemic.

Now, I would like Dr Abid Suleri to share with us the various issues that have been debated by the learned participants, their experiences, and what is it that our government can learn, what is that you can all recommend to us for implementation and to push those initiatives which have come up in your discussions. I hope that the government will have something concrete and something new, and I hope that this would be no different than the past [conferences]. I am looking forward to hearing the recommendations and ideas that have been discussed in this moot.

So, thank you very much for bearing with me and I hope to see you all soon.

Thank you very much!
Clean & Green Post-Pandemic: Government of Pakistan’s Climate Change Agenda

by

Malik Amin Aslam, Prime Minister of Pakistan’s Advisor on Climate Change*

I would like to congratulate the Sustainable Development Policy Institute on holding this very important Conference on ‘Sustainable Development in the Times of COVID-19’, especially Dr Abid Suleri and Ambassador Shafqat Kakakhel, who worked very hard to make this possible in these challenging times. We have had 23 countries, and over 43 foreign delegates, participating in this international event, which is a big achievement for SDPI and for Pakistan.

These challenging times the world is collectively going through have taught us two very important lessons. The first lesson is that we need to rebalance our act with nature because if we do not do that, nature is going to react.

* These remarks were delivered on 17 December 2020 at the online Closing Plenary of the Sustainable Development Policy Institute’s Twenty-third Sustainable Development Conference.
We have seen this during the COVID-19 pandemic when humans endangered the habitats of animals, and in doing so, a disease, which was purely an animal disease, was caught by humans. This is called a ‘zoonotic pandemic’ and we have seen how quickly it spread all over the world showing our interconnectedness not only with each other but also with nature. I think it is very important to learn this lesson and rebalance our relationship with nature. We are constantly reminded of this when talk about other bigger issues, including biodiversity as well as climate change, both of which are issues in which we disturbed nature’s balance. We need to act fast before nature reacts to these issues also.

The second lesson this pandemic has taught us is that a better world is possible - of ‘building back better’ through nature-based recovery.

We have seen countries talk about these issues and one thing is clear: we cannot get out of this situation by remaining on the same path that led us to it in the first place. We need to go on a nature-positive path.

Pakistan’s government focused on one particular aspect during the middle of the pandemic, which was the ‘Green Stimulus Initiative’. This was announced with two clear objectives: one was to create opportunities for jobless people, the unemployed who were migrating to urban areas for whom we wanted to create green jobs; and the other objective was that we wanted to do it in a nature-positive manner.

During this pandemic, we chose three intervention areas - one was the ongoing ‘Ten Billion Tree Tsunami Project’, happening all over Pakistan under which we created about 85,000 jobs for people to set up nurseries and protecting forests from fires. This did two things: it was spurring the economy and was nature-positive. The second area was the ‘Protected Areas Initiative’, where we reaffirmed our commitment to increase protected areas from 12 to 15% by 2023. This initiative was kick-started with the announcement of 15 national parks. Once again, this was linked to creating jobs because we also launched Pakistan’s first
institutional ‘National Parks Service’ which will protect and conserve them as biodiversity reserves and wildlife habitats. In the initial phase, almost 5,000 direct nature jobs will be generated for the youth to become the trained guardians and custodians of the parks in Gilgit-Baltistan. The third area is called the ‘Clean Green Initiative.’ This initiative was already underway before the pandemic hit under which we were collecting data from 20 pilot cities on solid waste and sanitation. However, during COVID-19, we expanded it to 80 pilot cities, thus, expanding the whole process and creating job opportunities for people.

We have learned important lessons from this pandemic. There were three main dimensions which were of great concern for every country - namely, healthcare, economic losses, and food security. Pakistan has been saved on all three fronts with the blessings of Allah and with a strong leadership that did not panic, nor created any chaos in this period, rather took decisions with a stable state of mind. Because of this, we have seen our economy improve. Our economy was not hit as adversely as compared to many other nations of the world. As for the health sector, during this second wave of the pandemic, we are still holding strong without [extensive] lockdowns in place and we hope to get out of this. On food security, we have also managed to weather the storm.

We had leadership in the form of our Prime Minister who was willing to take tough decisions with a stable mind without panicking, without creating chaos. An example of this is our textiles sector, which is booming right now because orders from our neighbouring countries shifted to Pakistan. The sector is running at full capacity right now and trying to meet demand. All this happened because other countries panicked, whereas Pakistan remained stable. So, we hope we can do that in the future as well as we have learned the sustainable way to do it, which is nature-positive, designed around nature-based solutions, and created jobs for our people while at the same time fighting this pandemic.
Lastly, I would like to say that even on the energy side, we announced big decisions during the pandemic. We announced our commitment to move towards 60% renewable energy by 2030. We are going to be announcing our ‘Electric Vehicles Policy’ next week approved by the Economic Coordination Committee yesterday which targets 30% shift towards EVs (Electric Vehicles), and we announced that Pakistan is no longer going to be using coal for power production and closed two 2600 megawatt projects and shifted toward hydro projects under the China-Pakistan Economic Corridor (CPEC).

All these positive developments took place during this challenging time of the pandemic and they are pointing towards a sustainable development future for Pakistan.

Thank you very much!
COVID-19, Regional Connectivity & Collaboration: Through SCO’s Lens

by

Vladimir Norov, Secretary-General, Shanghai Cooperation Organisation (SCO)*

His Excellency President of the Islamic Republic of Pakistan, Dr Arif Alvi,

Dear Dr Abid Qaiyum Suleri, Executive Director, SDPI,

Distinguished Participants, Ladies and Gentlemen, ﷽

I express my gratitude to the organisers for inviting me to participate in the Twenty-third Sustainable Development Conference. The theme of the event is dedicated to the application of the digital economy, telemedicine and distance learning opportunities to achieving the Sustainable Development Goals (SDGs) during the COVID-19 pandemic. The theme is relevant and very timely. I highly appreciate the initiative by the Sustainable Development Policy Institute in

* These Special Remarks were delivered live and online at the Inaugural Plenary of the Sustainable Development Policy Institute’s Twenty-third Sustainable Development Conference titled 'Sustainable Development in the Times of COVID-19' on 14 December 2020.
organising this Conference, which is a leading research, information, and analytical centre in Pakistan on important issues of socioeconomic dimension and implementation of SDGs.

We all know that the COVID-19 pandemic has caused enormous damage to public health and the global economy as well as provoked instability in the global food market because of disruptions in supply and production chains. Many companies, especially small and medium, have gone bankrupt, and unemployment and the number of poor people has been increasing in most countries around the world, including the Shanghai Cooperation Organisation (SCO) member countries.

At the same time, despite all the negative consequences, the Coronavirus pandemic has brought new opportunities into our world.

Above all, the pandemic crisis has accelerated the process of digital transformation in virtually all sectors of social and economic life. Global online retail sales are increasing, and additional jobs are being created, for small- and medium-sized businesses. These are convenient conditions for engaging in cross-border e-commerce.

In these areas, the digital economy and cross-border e-commerce will play an increasingly important role in rebuilding the world economy after COVID-19 in terms of contributing to achieving the United Nations SDGs, increasing economic competitiveness, and improving the quality of life of people.

Last November in 2019, the SCO approved a new programme of multilateral trade and economic cooperation, which places special emphasis on digitalisation and introduction of high technologies into the trade and production industries of Member States. Earlier, on 14 June of the same year, the Council of the Heads of State of SCO Members adopted the ‘Concept of Cooperation of the SCO Member States in Digitalisation and ICT.’
During this pandemic, there has also been significant growth of cargo transportation by rail from China to Kazakhstan, Russia and further to Central Asia, Europe and the Persian Gulf as well as in the opposite direction. To increase the transit potential of SCO countries, a project proposal by Uzbekistan and Kyrgyzstan, for construction of the China-Kyrgyzstan-Uzbekistan railway as well as transport of goods by road along a new Tashkent-Andijan (Uzbekistan) — Osh (Kyrgyzstan) — Kashgar (China) automobile corridor will have a positive impact on the volume of trade between Central Asia and Afghanistan. Similarly, it is vital to complete the Mazar-i-Sharif — Herat, Mazar-i-Sharif — Peshawar and Uzbekistan — Kyrgyzstan — China railway lines. These railways will become a major link in the East-West and North-South routes and provide seaport access for the landlocked Central Asian states and Afghanistan, and a new transregional corridor with access to ports in Pakistan, Iran, and India.

The implementation of these railway routes will undoubtedly contribute to the development of Afghanistan's economy and peace and stability in the long-suffering country. The member countries see stability in Afghanistan as inalienable for regional peace and economic development. Afghanistan shares borders with four SCO Member States and the stability of the country is crucial for peace and development in the entire region.

I would also like to emphasise that this year, since the outbreak the Coronavirus infection, the SCO countries have shown high-level of solidarity and mutual assistance demonstrating a common determination to participate in developing collective measures to overcome the epidemiological, political, and social economic consequences of the pandemic.

On 10 November, this year, the SCO Council of Heads of Member Countries was concluded in Moscow during which geopolitical and security issues were discussed, including impact of the pandemic on the modern world. One of the main outcomes was a document stating the action plan for the implementation of the SCO Development
Strategy 2025, which focuses on the early recovery of our economies from the COVID-19 pandemic. The ‘Concept of Cooperation on the Development of Remote and Rural Areas in the Digital Age’, as well as developing an action plan for implementing joint measures to counteract the threat of the epidemic in the region were also adopted.

The ‘Moscow Declaration’ adopted at the Summit advocated the further deepening of mutually beneficial cooperation and exchange of experiences in the field of digital economy and development of digital technologies and upholding the principles of fair competition when developing digital technology.

The ‘Statement by the SCO Heads of State Council on Cooperation in the Digital Economy’ sets forth coordinated approaches in this sphere. In this regard, I consider it extremely useful and timely to hold the China-SCO Forum on the Digital Economy Industry in Chongqing next year in 2021 as proposed by Chinese President H.E. Xi Jinping at the last SCO Summit.

The unity and solidarity among the SCO countries on many topical issues on the international agenda will fully contribute to the systematic implementation of the Sustainable Development Goals.

I wish all the conference participants, fruitful work.

Thank you for your attention.
Economic Growth, Social Protection & Healthcare amid COVID-19

1. Economic Growth, Social Protection & the IMF Program during COVID-19

2. Access to Healthcare & the Role of Competition Policy

3. Re-thinking Social Protection & its Sustainability in the Wake of COVID-19 in Pakistan
Economic Growth, Social Protection & the IMF Program amid COVID-19*

by

Dr Hafiz A. Pasha**

* This Keynote Address was delivered at the session on ‘Economic Growth, Social Protection, and the International Monetary Fund (IMF) Program amid COVID-19’ in collaboration with Friedrich-Ebert-Stiftung (FES) & knowledge partnership with Fatima Jinnah Women University at the Sustainable Development Policy Institute’s Twenty-third Sustainable Development Conference titled ‘Sustainable Development in the Times of COVID-19.’

** Dr Hafiz A. Pasha is Dean School of Liberal Arts and Social Sciences at the Beaconhouse National University, Lahore, and Vice Chairman of the Institute of Public Policy, Lahore, Pakistan. He is currently also serving as Chairman of the Advisory Panel of Economists to the Planning Commission, Convenor of the Economic Advisory Council of the Prime Minister of Pakistan and Chairman of the Tax Advisory Council of the Federal Board of Revenue.
Abstract

This chapter focuses on Pakistan’s record of economic growth since 2017-18, when there was a change of government and also attempts to quantify the impact of COVID-19 on the size of the Gross Domestic Product (GDP) in 2019-20. Thereafter, economic projections are made of the rate of growth of the economy up to 2020-21. Further, an attempt is made to derive the extent of enhancement required in the level of social protection due to the consequential increase in unemployment and poverty following the slowdown in growth. In this context, the feasibility of going back to the currently suspended External Fund Facility of the International Monetary Fund (IMF) is examined. The chapter is organised as follows: Estimates of GDP growth are presented for 2019-20 and 2020-21 in section 1. This is followed by section 2 on the case for and feasibility of expanded social protection. Section 3 looks at the contours of reforms and policies required to be able to re-enter the IMF Program and whether this is achievable given the prevailing economic and political environment. Finally, section 4 summarises the principal findings.

GDP Growth

The impact of the first attack of COVID-19 after 26 February 2020 on Pakistan has been moderate. As of 20 November 2020, the number of deaths per 100,000 population was 4, as compared to 10 in India, 6 in Nepal, 4 in Bangladesh and 1 in Sri Lanka (WHO 2020). However, the economy was beginning to flounder at the start of 2019-20 in the aftermath of the implementation of a strong stabilisation programme in 2018-19. This had already brought down the GDP growth rate from 5.5% in 2017-18 to only 1.9% in 2018-19 (GoP 2020c).

Measures had included, first, jacking up of the policy rate by the State Bank of Pakistan (SBP) from 6% to 13.25% (SBP 2020b). Second, the rupee was depreciated by as much as 34%. Third, an extraordinarily heavy budget was presented for 2019-20 involving almost PKR 700 billion of additional taxation and scaling down fiscal incentives for
exports and investment (GoP 2020a). Consequently, from July 2019 to February 2020, prior to the COVID-19 spread, the economy was already exhibiting negative signs. Output of the large-scale manufacturing sector was falling, investment was also on the decline while exports were showing only modest growth, as indicated in Table 1.

Table 1: Growth Rates of Key Macroeconomic Variables in Different Sub-Periods of 2019-20 & 2020-21 (%)

<table>
<thead>
<tr>
<th></th>
<th>2019-20</th>
<th>2020-21</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>July to February</td>
<td>March to June</td>
</tr>
<tr>
<td>Large-Scale Manufacturing</td>
<td>-3.0</td>
<td>-24.6</td>
</tr>
<tr>
<td>Investment*</td>
<td>-5.0</td>
<td>-16.0</td>
</tr>
<tr>
<td>Construction**</td>
<td>3.0</td>
<td>-38.5</td>
</tr>
<tr>
<td>Exports</td>
<td>2.7</td>
<td>-26.4</td>
</tr>
<tr>
<td>Imports</td>
<td>-17.4</td>
<td>-20.0</td>
</tr>
<tr>
<td>Rate of Inflation</td>
<td>12.2</td>
<td>8.9</td>
</tr>
<tr>
<td>FBR Tax Revenues</td>
<td>12.6</td>
<td>-10.0</td>
</tr>
</tbody>
</table>

*Based on the import of machinery | **Based on cement sales


Despite the relatively limited spread of the pandemic in Pakistan, it had a sizeable negative impact on the economy, especially the period from March to June 2020 when lockdowns were imposed. Consequently, during these months manufacturing output fell by almost 25%, while construction activity plummeted by over 38% (PBS n.d. various updates). Exports were badly hit by 26% (SBP 2020c) as export markets of Pakistan in the developed countries severely contracted due to the global spread of COVID-19. In fact, the negative impact of the pandemic on economic activity was much more sizeable than is generally perceived to be the case in Pakistan.

The agricultural sector was badly hit by heavy monsoon rainfall and locust attacks. This affected the output of cotton, wheat and sugarcane and several minor crops. The cutback in production in different sectors
reduced electricity consumption in the last four months of 2019-20 by 35%.

The Pakistan Bureau of Statistics has made the preliminary estimates of real GDP growth in 2019-20 at negative 0.4% (PBS n.d. various updates). As highlighted above, the decline is likely to be much larger. Not only was the economy performing somewhat poorly prior to the pandemic but also the impact during the peak period of its spread was much larger. The underestimates by PBS can also be attributed to the fact that the GDP estimate was based on data for the first nine months of 2019-20, prior to the full impact of COVID-19.

There are numerous cases of sectors where the growth rate of value added has been overstated.

**First**, the growth rate of the large-scale manufacturing sector was reported at negative 7.8%. By June, it had fallen by 10.2% (PBS n.d.(b)).

**Second**, the growth rate of the major crops sector was shown as relatively high at 3% (Ibid.). But more recent estimates of output reveal that the sector is unlikely to have grown at more than 1%, especially in view of lower wheat and cotton outputs.

**Third**, electricity generation, distribution and gas distribution sector was reported as showing an exceptionally high growth rate of almost 18%. Here again, electricity sales showed near zero growth by the end of the year.

**Fourth**, the volume of economic activity in the wholesale and retail trade and transport and communications sectors was lower given the smaller levels of traded and transported output of manufactured goods and agricultural commodities. Private sector services were also shown as achieving a high growth rate of 5.4% (GoP 2020c). However, the lockdowns had a relatively large impact on this sector. Overall, a more realistic estimate of the GDP growth rate in 2019-20 is negative 2.5%. The estimates of sectoral growth rates are given in Table 2. In effect, if
the GDP growth rate had been 1% in the absence of COVID-19, the loss of national income due to the pandemic is estimated at USD 9 billion or over PKR 1400 billion.

Table 2: Reported & Likely Sectoral & GDP Growth Rates 2019-20 (%)

<table>
<thead>
<tr>
<th>Sector</th>
<th>PBS Preliminary Estimate</th>
<th>Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Industry</td>
<td>-2.6</td>
<td>-7.4</td>
</tr>
<tr>
<td>Services</td>
<td>-0.6</td>
<td>-2.1</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.4</td>
<td>-2.5</td>
</tr>
</tbody>
</table>

Source: Author’s own estimates.

Turning to the likely growth rate in the ongoing financial year, 2020-21, numerous projections have been made by different agencies. At one extreme is The World Bank which expects the GDP growth rate to be as low as 0.5% (The World Bank 2020). As opposed to this, ADB (2020) and the SBP anticipate a growth rate of 2% (SBP 2020, various updates). The Annual Plan prepared by the Planning Commission projects the growth rate at 2.1% (GoP 2020d).

The process of recovery from the COVID-19 attack has been of a mixed nature. On the supply side, the large-scale manufacturing sector has shown a growth rate in the first four months of 2020-21 of over 5% (PBS 2020 various updates). However, the bulk of the growth has been concentrated in three industries, viz, cement, pharmaceuticals, and cigarettes, which have a share of only 20% in the sectoral value added (Ibid.).

The indications initially from the agricultural sector have not been promising. There has been a catastrophic failure of the cotton crop and arrivals are down by almost 30%. This alone can reduce the overall value added of the major crop sector by over 5%. The procurement price of wheat in Punjab has been raised from PKR 1400 to PKR 1650 per mound (The Express Tribune 2020). However, the international price of wheat, inclusive of the landed cost, is equivalent to almost PKR
1850 per mound. Therefore, there remains the risk of some smuggling out of Pakistan which will reduce domestic supply.

Further, with the ongoing second attack of COVID-19 intensifying, there are pressures for expansion of lockdowns to more activities of the type observed in the first round. This will retard the growth of private sector service activities. Also, growth in public administration and defence will be restrained by budgetary constraints in 2020-21. Overall, it will be a positive outcome if the GDP growth rate reaches 2% in 2020-21. However, if the pandemic spreads further and for a longer period in 2021, then, the growth rate could fall to 1%.

The position regarding the change in real per capita income since 2017-18 is extremely worrying, as shown in Table 3. Never in Pakistan’s history has there been a consecutive decline in per capita income for three years running. By the end of 2020-21, the real per capita income could fall by almost 5% in relation to the level in 2017-18. Therefore, the implications on the level of unemployment and poverty are very large. This impact is derived in Table 3:

<table>
<thead>
<tr>
<th></th>
<th>GDP Growth Rate</th>
<th>Population Growth Rate</th>
<th>Per Capita Income Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-19</td>
<td>1.9</td>
<td>2.1</td>
<td>-0.2</td>
</tr>
<tr>
<td>2019-20 (Estimated)</td>
<td>-2.5</td>
<td>2.1</td>
<td>-4.6</td>
</tr>
<tr>
<td>2020-21 (Projected)</td>
<td>2.0</td>
<td>2.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Cumulative</td>
<td>1.3</td>
<td>6.4</td>
<td>-4.7</td>
</tr>
</tbody>
</table>

**Social Protection**

The three-year change in the number of employed and the resulting unemployment is presented in Table 4. Fortunately, the last Labour Force Survey was in 2017-18, and as such, the base year magnitudes are valid for projections up to 2020-21 of employment levels by sector.
The methodology adopted is, first, if a sector has a positive growth rate, then, the employment elasticity to output is taken as 0.6. Second, if the growth rate is negative, then, the expectation is that there will be a proportionate drop in employment.

Table 4: Projections of the Level of Employment by Sector 2017-18 to 2020-21 (million)

<table>
<thead>
<tr>
<th></th>
<th>2017-18</th>
<th>2018-19</th>
<th>2019-20</th>
<th>2020-21**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour Force*</td>
<td>65.50</td>
<td>67.20</td>
<td>68.96</td>
<td>70.74</td>
</tr>
<tr>
<td>Employment</td>
<td>61.71</td>
<td>61.95</td>
<td>60.55</td>
<td>61.12</td>
</tr>
<tr>
<td>Agriculture</td>
<td>23.76</td>
<td>23.84</td>
<td>24.03</td>
<td>23.93</td>
</tr>
<tr>
<td>Services</td>
<td>22.71</td>
<td>23.22</td>
<td>22.73</td>
<td>23.07</td>
</tr>
<tr>
<td>Number Unemployed</td>
<td>3.79</td>
<td>5.25</td>
<td>8.41</td>
<td>9.62</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>5.8</td>
<td>7.9</td>
<td>12.2</td>
<td>13.6</td>
</tr>
</tbody>
</table>

* Growth rate of 2.6%
**Growth rates in 2020-21: Agriculture, -2%; Industry, 4%, Services, 2.5% of value added

Table 4 reveals that there has been a persistent increase in the number of unemployed workers since 2017-18. The unemployed consist of workers who have been laid off and of new entrants into the labour force who are unable to find jobs.

The number of unemployed workers was 3.8 million in 2017-18 (PBS 2018). It is likely to increase by over 150% and reach 9.6 million by the end of 2020-21. The increase estimated in the number of workers without jobs was 1.5 million in 2018-19 and reached a peak of 8.1 million in 2019-20, especially after the impact of COVID-19. The projected rise in 2020-21 is 1.2 million. Overall, the unemployment rate is likely to rise from 5.8% to 13.6% by 2020-21. Such a high unemployment rate has never been observed before in Pakistan.

The mushroom growth in the number of unemployed workers is bound to have severely aggravated the poverty situation in Pakistan. Historical econometric analysis of trends in poverty reveals the determinants of poverty and their quantitative contribution as follows:
\[
g_{POV} = -1.289 \, g_{RCPY} + 2.742 \, (g_{FP} - g_P) - 0.065 \, g_{PPE} + 1.262 \, g_{INEQ}
\]

\[(-5.03)^* \quad (10.00)^* \quad (-2.31)^{**} \quad (12.73)\]

\[R^2 = 0.974, \quad D-W \text{ Stats} = 2.167, \quad F-\text{Statistic} = 149.4\]

*\(t\)-ratio significant at 1% level | **significant at 5% level

Where,

\(g_{POV} = \text{growth rate in the incidence of poverty, } g_{FP} = \text{growth rate in the Food Price Index, } g_P = \text{growth rate in the overall Consumer Price Index, } g_{PPE} = \text{growth rate in real pro-poor spending, } g_{INEQ} = \text{growth rate in the level of inequality.}\)

The above equation indicates that the vulnerability to poverty is a function of the rate of change in real per capita income, the difference between the rate of inflation in food prices and the overall price level, the rate of increase in real pro-poor expenditure and the rate of change in the level of inequality as measured by the Palma ratio.

Between 2017-18 and 2020-21, the real per capita income is projected to fall by 4.7%, as shown in Table 3. There is consistently higher inflation in food prices since August 2019, while pro-poor expenditures have flattened out in real terms. However, inequality is showing a declining trend due to the low rate of economic growth. The resulting projections of the incidence of poverty are given in Table 5. The number of poor could increase by almost 20 million between 2017-18 and 2020-21. In the latter year, the number of poor in Pakistan could exceed 80 million. The largest increase has been in 2019-20 of over 13 million.
Table 5: Projections of the Incidence of Poverty in Pakistan
2017-18 to 2019-20

<table>
<thead>
<tr>
<th>Year</th>
<th>Incidence of Poverty (% of Population)</th>
<th>Number of Poor (million)</th>
<th>Annual Increase (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-18</td>
<td>28.8</td>
<td>59.81</td>
<td></td>
</tr>
<tr>
<td>2018-19</td>
<td>27.6</td>
<td>58.54</td>
<td>-1.27</td>
</tr>
<tr>
<td>2019-20</td>
<td>33.1</td>
<td>71.69</td>
<td>13.15</td>
</tr>
<tr>
<td>2020-21</td>
<td>36.2</td>
<td>80.03</td>
<td>8.34</td>
</tr>
</tbody>
</table>

*Source:* Author’s own estimates.

Overall, the above results reveal that in three years after 2017-18, the number of unemployed workers increased cumulatively by 5.8 million and the number of poor by over 20 million, with the biggest increases in 2019-20 due to the impact of COVID-19. Clearly, the Social Protection Programmes in the country need to be substantially scaled up in view of the big impact on lives and livelihoods of the people. There is need to review the measures taken to alleviate the negative impact, especially after February 2020, in the immediate aftermath of the spread of COVID-19 in Pakistan.

The Federal Government has, in an efficient and transparent manner, scaled up in a big way the number of beneficiaries of cash transfers under the Ehsaas /Benazir Income Support Program. The transfer per recipient was PKR 12,000 for a period of four months (GoP 2020b). By end-November 2020, 14.8 million beneficiaries received the transfer and the total amount disbursed was PKR 179.2 billion (Ibid.). From the viewpoint of sustaining the liquidity of exporters at a time of declining receipts, refund payments have been accelerated by PKR 100 billion. Further, the subsidy to Utility Stores Corporation has been increased and three-month deferment allowed in payment of electricity bills by small-and medium-sized enterprises (SMEs).

The SBP has moved in a commendable way to tackle the unemployment problem and limit the layoff of workers. A number of financing schemes have been announced, including the deferment of loan repayment, short-term loans to cover wage payments, investment financing at lower interest rates, especially to private hospitals and,
more recently, a subsidising financing scheme for low-cost housing, so as to promote employment in the construction sector.

By now, almost PKR 1300 billion of either deferment of loan repayments or extension of new loans has been achieved under various financing schemes (SBP 2020a).

Following the second wave of COVID-19, there is need now for sustaining the above initiatives of social protection and moving to new programmes especially for employment generation and lower food prices, particularly for the poor. Unfortunately, the 2020-21 Federal Budget contains drastically reduced allocations for subsidies and grants. An announcement has already been made that the number of beneficiaries in the next round of cash transfers will be reduced by half to 7.5 million. This must be avoided, and the number maintained at 15 million in at least the next two rounds in view of the impact of the second wave of COVID-19. Further, access to the various special financing arrangements by the SBP must be continued till June 2021, with a special effort made to reach out to SMEs.

The IMF Program

Pakistan entered into an Extended Fund Facility (EFF) of 39 months with the IMF of 210% the SDR quota, equivalent to USD 6 billion in July 2019. An initial amount of transfer was made of USD 1 billion, and after the successful first review, an amount of USD 452 million was released. Thereafter, the Program has been in a state of suspension since the second review in February 2020 due to failure to meet the performance criteria and implement the reforms committed. Fortunately, after the COVID-19 attack, the IMF has been very supportive and has given access to the Rapid Financing Facility, whereby an amount of USD 1.4 billion was received in June 2020 (IMF 2020a). The IMF continues to provide an umbrella to Pakistan. Consequently, there has been an enhanced inflow of financing by The World Bank, ADB and international commercial banks and also debt relief by the G-20.
Table 6: Macroeconomic Projections for Pakistan's Economy by the IMF

<table>
<thead>
<tr>
<th>Variable</th>
<th>2019-20</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2020-21</td>
</tr>
<tr>
<td>GDP Growth Rate (%)</td>
<td>-0.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Investment (% of GDP)</td>
<td>16.4</td>
<td>13.8</td>
</tr>
<tr>
<td>Rate of Inflation (%)</td>
<td>10.7</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Budget (% of GDP)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>15.1</td>
<td>16.1</td>
</tr>
<tr>
<td>Expenditure</td>
<td>23.1</td>
<td>22.8</td>
</tr>
<tr>
<td>Budget Deficit</td>
<td>-8.0</td>
<td>-6.7</td>
</tr>
<tr>
<td>Primary Deficit</td>
<td>-1.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Public Debt</td>
<td>87.2</td>
<td>86.0</td>
</tr>
<tr>
<td><strong>Balance of Payments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth Rate of Exports (%)</td>
<td>-3.0</td>
<td>11.8</td>
</tr>
<tr>
<td>Growth Rate of Imports (%)</td>
<td>-13.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Current Account Deficit (% of GDP)</td>
<td>-1.1</td>
<td>-2.5</td>
</tr>
</tbody>
</table>

*Source: IMF 2020b.*

The fundamental question is when and how Pakistan should effectively re-enter the IMF Program? The Fund’s latest projections about Pakistan’s economy are included in its publication, *World Economic Outlook 2020* and shown in Table 6. From 2020-21 to 2022-23, expectations are as follows:

1. The GDP growth rate is expected to be low in 2020-21 at 1% due in particular to the lasting effects of COVID-19. However, the economy is expected to recover in 2021-22 and reach a growth rate of 4%. Similarly, a revival is anticipated in the level of investment. Also, the inflation rate is expected to moderate to 6.5% by 2022-23.
2. The fiscal position is expected to improve substantially. The total revenues to GDP ratio are expected to rise by 2.6% of the GDP by 2022-23. The increase required in the ongoing financial year is 1% of GDP. More than 100% of this increase is due to tax revenues, as non-tax revenues are likely to fall after the peak
attained in 2019-20 due to the record SBP profits. In effect, the growth rate expected in FBR revenues is of 24%. The level of public expenditure of the Federal and Provincial Governments combined is projected to fall from 23.1% of the GDP in 2019-20 to 21.7% of the GDP by 2022-23. Half of the decrease is expected from non-debt servicing related expenditure and the other half from a reduction in the debt servicing burden. Consequently, the budget deficit is expected to fall very sharply from 8% of the GDP in 2019-20 to 6.7% of the GDP this year and to only 4% of the GDP by 2022-23. This will imply a transition from a primary deficit of 1.7% of the GDP to a significant surplus of 1.6% of the GDP. This will facilitate a reduction in public debt to GDP ratio from over 87% of the GDP to 78% of the GDP by 2022-23.

3. The IMF anticipates a strong recovery in exports and imports in 2020-21, especially as the world economy improves and commodity prices rise significantly. However, the expectation is that the current account deficit will rise from 1.1% of the GDP to 2.5% of the GDP annually from 2020-21 onwards.

Given the above projections and the expectations thereof of the IMF, it is essential to compare these with the developments in the first five months of 2020-21.

First, there is evidence of a somewhat stronger recovery, and the GDP could increase by 2% as compared to the 1% anticipated by the IMF.

Second, the current account deficit position has improved fundamentally. In the first five months, a surplus, rather than a deficit, has been generated of USD 1.6 billion. Even after some increase in oil and agricultural imports, it is highly unlikely that the current account deficit will be as high as 2.5% of the GDP, equivalent to almost USD 6.8 billion. Of course, the Fund may argue that this large improvement is due primarily to the phenomenal growth in home remittances, which may be only transient in character. Also, there has been some worsening of the financial account of the Balance of Payments.
Nevertheless, there has been a significant reduction in the foreign exchange requirements for 2020-21.

Given the above perspective on the economy, the real structural problem is with the budgetary position. FBR revenues have shown only 4% growth in the first five months of 2020-21. There could be a shortfall of over PKR 400 billion in attainment of the annual revenue target. On top of this, there is pressure to incur higher expenditure on subsidies and grants to manage the situation, especially after the second COVID-19 wave. Consequently, there is the likelihood that the budget deficit could approach or even exceed the deficit in 2019-20 of 8% of the GDP. This implies that the target could be missed by 1% of the GDP or more in 2020-21.

The current economic situation, especially after the increasing impact of the second wave of COVID-19, coupled with the rising confrontation between the united opposition parties, in the form of the Pakistan Democratic Movement, and the government makes it extremely difficult to implement tough reforms. Escalation in tax rates and utility tariffs could add to more inflation and worsen the already difficult environment in the country. As such, there appears no option in the short run except postponement of reforms.

The recommended posture of the government may be to seek extension in the time to get back to an operational IMF Program up to June 2021. There is need for enough time for recovery from the second wave of COVID-19 and for the political issues to be resolved. A commitment ought to be made for a strong budget for 2020-21, which will focus on wide-ranging and progressive tax reforms, steps to right size the Federal Government, reduce losses of state-owned enterprises and take measures to prevent any growth in the circular debt of the power sector. Meanwhile, the IMF may be requested to continue providing an umbrella so that the foreign exchange requirements are fulfilled.
Conclusion

Pakistan has witnessed the worst period in its economic history since 2018-19. The GDP growth rate has turned negative after the COVID-19 attack and prospects for a strong recovery have been dimmed by the second wave of the pandemic. Consequently, after 2017-18, the real per capita income is likely to fall by almost 5% by the end of 2020-21. This will lead to over 5 million unemployed workers and to 20 million people falling below the poverty line, the bulk of which has already happened.

Inevitably, the government will need to sustain and even expand its Social Protection Programmes to protect lives and livelihoods, especially at a time of growing political agitation. Hopefully, normal conditions will be restored in the second quarter of 2021 and negotiations can be finalised for return to the IMF Program. This should be followed by a strong budget for 2021-22 and implementation of wide-ranging reforms. In effect, the current IMF projections for 2020-21 should be made applicable for 2021-22.

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Access to Healthcare & the Role of Competition Policy*

by

Pradeep S Mehta, Garima Sodhi &

Ujjwal Kumar**

* This chapter has been approved as a Policy Brief by the referee.
** Mr Pradeep S Mehta is Secretary General, CUTS International. Mr Garima Sodhi is Senior Fellow, CUTS Institute for Regulation & Competition & Mr Ujjwal Kumar is Policy Analyst, CUTS International.
Abstract

In the healthcare sector, Competition Policy and Law can play a significant role in improving access to affordable healthcare, and hence assist in achieving the Sustainable Development Goal (SDG) of ‘ensuring healthy lives and promoting well-being for all at all ages.’ Among other things, due to lack of generic competition, there arise concerns regarding affordability and accessibility of medicines. In the healthcare sector, many anti-competitive practices like cartels, fixing trade margins, restricting supply, tie-in agreements, pay-for-delay, excessive pricing, frivolous litigation are prevalent in many countries. Similarly, certain Mergers and Acquisitions (M&As) can also pose competition concerns. This chapter endeavours to illustrate how accessibility to affordable healthcare could be achieved through Competition Policy and Law. It first discusses the nuances of patent law and drug regulation from a Competition Policy lens and how it may affect the healthcare market. In later sections, the authors discuss various competition enforcement issues in the healthcare and pharmaceutical sector, which hampers access to affordable healthcare. In the end, authors suggest some policy recommendations to mitigate the problems discussed.

Competition Policy Approach

The answer to the issue of delivering quality healthcare services at lower costs is greater competition through better policies (Dash and Meredith 2017). Competition policy has two elements: it suggests a set of policies for the ex-ante considerations of competition concerns and competition laws to provide for the prevention of anti-competitive practices (Dhal 2004). Thus, apart from implementing competition law, there is a need for a policy that creates an empowering environment for market players while removing entry barriers and mitigating market distortions.
**Patent and Competition Policy**

Two major stakeholders in the pharmaceuticals field are the originator companies and the generic medicine producers, along with authorisation bodies, doctors, and patients. The balanced approach for the first two will facilitate access to innovative and affordable medicines (Gurgula 2020). Thus, incentive and protection must be given to both.

Mainstreaming generic products in the pharmaceutical industry can add substantially to the existing competition and may lead to better access to medicines and healthcare. Estimates show that generic versions reduce the cost of the medicine by 20-30%, and it can decrease up to 90% with more generic entrants in the market. It further reduces the market share of originators by up to 80% (Qaqaya and Lipimile 2008). In this regard, patent laws of a country play a major role in setting generic competition in the pharmaceutical market. For instance, existence of a vibrant pharmaceutical industry in India is attributed to the change in its patents law in 1970, which resulted in creating high generic competition. The changed law recognised only process patents for pharmaceuticals and not product patents. This allowed manufacturers to reverse engineer the patented product and use a different process to manufacture the same product in a cost-effective way. Generic competition significantly enhanced access to medicines not only among poor Indians, but also those in various other parts of the world. It also significantly added to economic growth, and later made India the largest generic medicine supplier in the world (Issa 2020).

However, the 2005 amendment of the Patent Act (to fulfil obligations under the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) of the World Trade Organization (WTO), restored the product patent for pharmaceutical products. India fully incorporated the negotiated pro-competition provisions of the Agreement (called as TRIP’s Flexibilities) in its patents law, i.e., The Patents Act 1970. This helped India maintain a good level of generic competition. Using the
transition period mandated under TRIPs for Least Developed Countries (LDCs), Bangladesh has also developed a good domestic pharmaceutical manufacturing base. India has one of the most innovative ways of addressing TRIP’s flexibilities. Under the Indian Patents Law, the discovery of a new form, use, or property of a substance that does not contribute to the enhancement of the known efficacy is not considered as an invention (Section 3(d) of The Patents Act 1970 (Ind.)). This provision checks the practice of ‘ever-greening of patents’ – a strategy to extend the life of patents by applying for secondary patents over related or derivative technologies. It is often used for trivial changes to the invention – by providing stricter patentability criteria.

Novartis, a multinational pharmaceutical company, challenged this provision in courts alleging that the same is unconstitutional. In the case of ‘Novartis AG v Union of India’ (Novartis AG v. Union of India (2013) 6 SCC 1), the Supreme Court of India, while rejecting the petition, reasoned that the patent cannot be granted on mere modification of an existing drug if it does not provide for any enhanced efficacy. This case is famous for affirming the constitutionality of Section 3(d) of The Patents Act, discussed above.

There are many other pro-competition provisions in the TRIPs Agreement, which if implemented under domestic laws could engender generic competition in the market. For instance, while TRIPs provide conditions for the grant of compulsory license, it leaves the ground to be used by the member states. Similarly, member states can include certain exemptions related to Research and Development (R&D) in their domestic laws and can decide upon the scope of exhaustion of Intellectual Property Rights (IPR). Countries, like India, have also interpreted the provision of data protection under Article 39.3 of TRIPs and used them under its domestic law in a pro-competition manner. Whereby the drug regulator can rely upon the clinical trial data submitted by the originator firm to give market approval of its generic equivalents.
Some international instruments such as the *Doha Declaration on TRIPs Agreement and Public Health* (WTO 2001) and *Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property* (WHO 2011), mandates countries to use such TRIPs flexibilities for increasing access to drugs. Thus, for better generic competition, countries should use TRIP’s flexibilities to the fullest and should avoid bilateral, regional, or pluri-lateral trade agreements that tend to reduce such policy spaces. The developing and LDCs, therefore, need to be careful while signing any bilateral or regional agreements having provisions which curtail TRIP’s flexibilities, generally termed as TRIPs-plus agreements. The competition authorities, using their advocacy, need to caution their respective governments regarding the same.

It would not be out of place to mention the ‘Communication’ by India and South Africa at the WTO (WTO 2020). They called for a temporary waiver from the implementation, application and enforcement of Intellectual Property (IP) protection on copyright, industrial design, patents and undisclosed information under the TRIPs Agreement for ‘prevention, containment or treatment’ of COVID-19. The idea is that Intellectual Property Rights (IPRs) do not create barriers to timely access to affordable medical products or to scaling up R&D, manufacturing, and supply of such products to combat COVID-19. The proposal specifically flags difficulties that many countries, particularly those with insufficient or no manufacturing capacity, may face due to TRIPs Article 31bis. The latter prescribes a cumbersome and lengthy process for the import and export of pharmaceutical products under compulsory license. The proposal is still under discussion at the TRIPs Council, where it is attracting support from many countries.

**Regulation and Competition Policy**

The pharmaceutical sector is one of the most highly regulated sectors in most countries, which includes market approval and price regulation. From completion perspective, such regulations need to be optimal, i.e., they should not be more restrictive than needed to meet the given objective. For instance, generic competition in new-age
biological drugs suffers due to over-regulation for biosimilar marketing approval (Sengupta 2018). Similarly, one can find price regulation of drugs where several generic versions are available in the market. This results in reducing contestability in the market. Price regulation should come in only when there is market failure.

Prescription practices of doctors can also pose hurdles to competition in the pharmaceutical market. For instance, in India, doctors mostly prescribe drugs using the brand name instead of the generic drug name. In support of such prescription practices, doctors argue about their ‘trust’ in the quality of branded drugs. However, there also exists an unholy nexus between prescribers and pharmaceutical companies (CUTS 2011). Investing in better quality regulation by governments could establish confidence of prescribers in all available generic substitutes in the market. Such change of perception could encourage doctors in prescribing generic names, which in turn can promote competition in the market. Similarly, having a standard treatment guide could have pro-competition effects because of enhanced transparency by lower information asymmetries.

Last, but not the least, the regulatory environment should be such that it does not pose unnecessary barriers in the establishment of new hospitals and medical colleges. These projects have high initial establishment cost and long gestation period to achieve breakeven. Government policies that facilitate land requirements, import of medical devices, penetration of health insurance etc., could enhance competition in the healthcare market, which in turn can make it more affordable and accessible.

**Competition Enforcement**

This section discusses anti-competitive practices in the healthcare and pharmaceutical sector and their rectification by competition authorities around the world.
Pay-for-Delay

In the last two decades, several cases of pay-for-delay or reverse payment settlements have emerged in various jurisdictions, particularly the United States (US) and the European Union (EU). This is practiced by brand name pharmaceutical companies to prevent competition from generic drug makers by compensating them to delay their market entry in order to continue charging higher prices for their drugs. These are essentially patent dispute settlement cases, but they involve competition issues as they deter entry, and result in loss of consumer welfare by depriving them of the cheaper generic versions. For instance, after the expiration of GlaxoSmithKline’s (GSK) anti-depressant drug ‘Paroxetine’, Generic UK and Al pharma attempted to produce its generic versions. However, GSK sued them for infringing its process patents and eventually entered a payment settlement delaying their entry into the market. The UK Competition and Markets Authority ruled that this agreement was anti-competitive and imposed a penalty of GBP 44.99 million on the parties involved. This decision was upheld by the EU Court of Justice in January 2020 (Schmidt-Kessen 2020).

A similar case involved Lundbeck’s anti-depressant medicine ‘Citalopram.’ Its patent had expired, but the company possessed some process patents against which it sued the companies that were looking to launch their generic versions of the drug. Eventually, the company entered into a settlement agreement compensating them to keep the drugs off the market. The European Commission ruled that the agreement was anti-competitive and imposed a penalty of Euro 93.8 million on Lundbeck and a total of Euro 52.2 million on four generic companies involved (European Commission Competition DG 2013 Case AT.39226 - Lundbeck). This decision was upheld by the General Court (H. Lundbeck A/S and Lundbeck Ltd v European Commission, 2016),1 and later upheld by the highest court - Court of Justice of the European Union in H. Lundbeck A/S and Lundbeck Ltd v European

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1 See, InfoCuria Case-law 2016.
Commission (2021). The Commission continuously monitors such payment settlements and several cases pertaining to pay-for-delay involved scrutiny and imposition of penalties.

In the US, the pay-for-delay cases rose after 2005 when the Eleventh Circuit ruled that the pay-for-delay settlements were generally immune from antitrust scrutiny (Fialkoff 2014). The ‘Federal Trade Commission v. Actavis, Inc.’ (2013) 570 U.S. 136 is a landmark case where the Supreme Court established the application of rule of reason for such cases.2

The starting point of solving the anti-competitive effect is to set up a monitoring system as well as a transparent, well-reasoned investigation process, rather than simply ‘intensify competition scrutiny.’ A monitoring system prior to competition scrutiny on settlement agreements between originators and generics should focus on three things. These can be:

1. content and amount of the reverse value transfer (likely to be an excessive payment or not),
2. restriction imposed on the generic, and
3. status of the disputed patent (main substance patent or process patent).

For monitoring, parties could be requested to disclose certain relevant information after a settlement is reached. For the investigation and assessing process, any formalist approach may demotivate innovation. Thus, an approach like the US ‘rule of reason’ is better. Competition authorities need to evaluate the contracts’ terms carefully to understand the implicit intention behind the agreement.

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2 See, Supreme Court of the United States 2013.
Frivolous Litigation

Pharmaceutical products come with certain risks. To ensure the safety of its consumers, they are heavily regulated at each stage from testing, to manufacturing, down to distribution. This also involves protection via IPRs. While regulations are necessary for an efficient functioning of the industry as well as consumer safety, they also give an opportunity to various actors to indulge in vexatious litigation. The latter is done by inappropriate use of legal rights or regulatory processes to cause harm to competitors. However, given the complexity of the safety and efficacy of the products and regulatory processes, it is difficult to identify sham litigation without sufficient evidence.

In India, in the case of ‘Biocon ltd. v. Roche Products & Ors.’ (2017), filed with the Competition Commission of India (CCI), the Roche Group was alleged to have indulged in frivolous litigation. Alleged intention was to restrict the entry of new players in the market of its cancer drug ‘Trastuzumab’. The CCI observed that every party has a right to initiate legal proceedings, which does not indicate any ulterior motives. However, Roche’s letters to various regulatory authorities as well as hospitals and doctors, challenging the safety of the biosimilars, appeared to be an attempt to influence them, and thus, called for an in-depth investigation.

In another complaint filed by the Federal Trade Commission (FTC) in the Federal Court in the US, it was alleged that Shire had abused the Food and Drug Administration (FDA’s) regulatory process in order to delay the entry of generic versions of ‘Vancocin’ capsules. It was ruled that FTC failed to provide evidence to prove that Shire was about to violate any law. On the other hand, the European Commission fined AstraZeneca Euro 60 million for abusing its dominance. The abuse was done by fraudulent acquisition of exclusive IP rights for its drug ‘Losec’ to prevent Generics and Scandinavian Pharmaceuticals from producing its generic version Generics (UK) (Scandinavian Generics v. Generics (UK) (Scandinavian Generics v.

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See, Competition Commission of India 2017.
Access to Healthcare & the Role of Competition Policy


Such litigation claims are filed with mala-fide intentions to delay the entry of generic drugs, thereby reducing competition. The intervention of competition authorities is essential in such cases. The objective and subjective two-part test was established in the 'Professional Real Estate Investors v. Columbia Pictures' (1993). 113 S.Ct. 1920. It spelled out the following essentials to be termed as frivolous or sham and can be used by competition authorities to identify sham litigation:

- Objectively baseless: no reasonable litigant could realistically expect success on the merits,
- Subjectively improper, i.e., conceals an attempt to interfere directly with the business relationships of a competitor,
- Only if the challenged litigation is objectively meritless, may a court examine the litigant's subjective motivation, and
- Proving that litigation is a sham merely strips a litigant of antitrust immunity, it does not impose liability by itself.

Once the litigation is identified as frivolous, competition authorities must penalise them heavily to discourage such acts in the future.

Cartels

Cartel is a formal or informal agreement between competitors whose objective is to increase their collective profits. Fixing prices, restricting output, market sharing, and/or bid rigging may achieve this. Most jurisdictions, consider cartels as illegal per se. The US and some other jurisdictions also have a provision of criminal sanctions for cartels. In one of the cases in the US concerning an antibiotic ‘Doxycycline Hyclate’ and an anti-diabetic drug ‘Glyburide’, the US Department of Justice (DoJ) charged two former executives of Heritage

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4 See, Commission of the European Communities 2005.
5 See, InfoCuria Case-law 2020.
Pharmaceuticals for price fixing and disrupting the customer base of its competitors. The two generic pharmaceutical companies involved, Heritage Pharmaceuticals Inc. and Rising Pharmaceuticals Inc. faced criminal sanctions and civil damages (Office of Public Affairs 2016). The pharmaceutical sector has also witnessed collusion to prevent competition by spreading misleading information about the safety and efficacy of drugs. Another way to achieve this is by influencing doctors and healthcare providers against the use of said drug.

An interesting case in the EU was of collusion between Hoffman-La Roche and Novartis to prevent the commercialisation of ‘Avastin’ by spreading misinformation about it. It is a cheaper substitute to their ophthalmic drug. The Italian Competition Authority imposed a penalty of Euro 180 million on the two companies (European Commission 2014).

Recently, Japan’s Fair Trade Commission ordered cease and desist and fined Koa Isei Co. Yen 1.37 million for a price-fixing cartel regarding a generic drug 'Lanthanum', which is used to treat hyperphosphatemia in kidney patients (JFTC 2019). This was the first generic drug cartel case in Japan.

India has also witnessed a plethora of collusion cases in the pharmaceutical sector. Several trade associations in different Indian states have been found guilty of limiting and controlling the supply of drugs and/or fixing trade margins (Belgaum District Chemists & Druggists Association 2017).

A strong intervention from the competition authorities is warranted in horizontal agreements cases. It is observed that in some countries, such as India, the role of drug associations is prominent in restricting competition. A continuous monitoring system is required for the restrictive practices of drug associations. Such practices include mandatory requirement of the ‘No Objection Certificates’ before

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6 Competition Commission of India 2017a.
appointing any new stockists and distributors and fixing ‘trade margins’ by distributor associations. Such practices should be investigated and discouraged.

As discussed above, there are several instances of drug price fixing cartels. A regular monitoring of drug prices and inspection visits to pharmacy chains and their supplies should take place. To avoid the instances of bid rigging, a transparent and competitive system of central and local government procurement should be created. Leniency programme is also useful in busting cartels. It provides for full or partial immunity from fines if the companies provide information about the cartel in which they participated. Several competition authorities do have a leniency programme in place.

**Vertical Restraints**

These are agreements between producers/distributors at different levels of the supply chain. These agreements include resale price maintenance, exclusive distribution agreement, exclusive supply agreements, tying and bundling agreements etc. There may be certain agreements that may restrict or distort competition, while some may be pro-competitive, as well. Thus, they are not considered anti-competitive *per se*.

China has witnessed several cases of Resale Price Maintenance (RPM) as well as exclusive distribution agreements. One of the cases involved Smith & Nephew plc., which was penalised for fixing the resale price of their over-the-counter medicine used for treatment of scars. Further penalty was also imposed for selling it through an exclusive distributor in China. The company, in fact, set the resale price at each level of distribution (Fells et al. 2016). In another case, Medtronic, a company manufacturing medical devices was held liable for RPM practices in its sale of medical devices for cardiovascular treatment, restorative therapy, and diabetes. Medtronic had directly fixed its resale prices by sending price lists with the fixed resale prices to its distributors and also by fixing the gross profit margins for its e-commerce platform.
distributors. It specified a minimum bidding price in its distribution agreements and the distributors had to seek Medtronic’s approval before deviating from those prices. It also imposed a minimum price for resale of products to hospitals. It further prohibited cross-regional sales and prohibited distributors from selling to competing distributors. China’s National Development and Reform Commission imposed a fine of USD 17.2 million on Medtronic (Emch 2016).

On the other hand, the US mostly orders to cease and desist from such activities without any penalties in cases of this nature. In a landmark case, the company sold implant-grade ‘Polyether Ether Ketone (PEEK)’ to medical device-makers through exclusive supply contracts to impede competition and maintain high prices. The FTC prohibited Invibio, Inc. and Invibio Limited, along with their corporate parent, Victrex plc, from implementing any agreement or policy that results in exclusivity with customers. The FTC also prohibited them from preventing current customers from using an alternate source of PEEK in new products. The order also required the companies to allow current customers to modify existing contracts to eliminate the exclusive supply requirement (Victrex, Invibio Limited, and Invibio 2016)7.

A primary study by CUTS International in 2011 found the presence of collusive behaviour and vertical relationships between doctors/hospitals and pharmacies/diagnostic centres. An extremely high frequency of referrals combined with the prevalence of ‘cuts’ for referring doctors was noted (Sengupta 2011). Ex-ante regulation, like strong quality checks of generic drugs to reduce information asymmetry and credibility of generic drugs, would be useful. Along with that investigation of alleged practices of such tie-in arrangements can be made with imposition of fines to discourage them. As the vertical agreements may also have some pro-competitive effects, competition authorities must ensure efficiency and consumer welfare

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because vertical integration outweighs any adverse effect on competition.

**Excessive Pricing**

Dominant pharmaceutical and medical device manufacturing companies sometimes raise the prices of their products excessively, abusing their dominant position. However, it is often difficult to prove it.

An interesting case from Italy involves Aspen’s critical off-patent cancer drugs. In this case, Aspen indulged in aggressive negotiation with the Italian pharmaceutical regulator to reclassify its drugs from class ‘a’ to class ‘c’ by threatening to leave the market if Italian Medicines Agency (Agenzia italiana del farmaco, AIFA) denied. Aspen, then, implemented the price increase ranging from 300 to 1500%. The Italian competition authority held Aspen guilty of violating competition law and imposed a fine of Euro 5.2 million as well as ordered it to reduce the prices (OECD 2018).

In another case from the EU, CD Pharma AB was found to be in violation of competition law for charging excessive prices of DKK 945 per package of ‘Syntocinon’ in Denmark with an increase of approximately 2000%. The Competition Council issued cease and desist, but could not impose a fine as it is considered a criminal penalty in Denmark (Dittmer 2018).

Excessive pricing is a complex matter as it is difficult to prove. The issue may be addressed better through optimal regulation than competition enforcement. While on the regulatory front, proactive price monitoring, price regulation of certain essential medicines in case of market failure and compulsory licensing in exceptional circumstances may be useful. On the competition enforcement side, competition advocacy should be strengthened to address information asymmetry. Competition assessment of the healthcare sector should be done regularly.
Mergers & Acquisitions (M&As)

Some Mergers & Acquisitions (M&As) have a tendency to lessen the competition. For instance, if two of the three market players merge creating a duopoly market structure, the consumers are left with fewer alternatives, giving the market players power to increase prices. In such cases, competition authorities do not block the deal, but remedy it through some conditions such as divestiture.

Bristol-Myers Squibb (BMS) and Celgene Corporation is a landmark case with the largest divestiture valued at USD 13.4 billion. In this case, BMS had planned to acquire Celgene in a cash and stock transaction valued at USD 74 billion. The FTC observed that this acquisition could lessen competition in the US market for the treatment of patients suffering from moderate-to-severe psoriasis. The divestiture of Otezla by Celgene to Amgen, a California-based pharmaceutical company, addressed the concerns of the FTC. ⁸

Another landmark case is that of Novartis and GSK. A three-part merger transaction – the first being GSK’s acquisition of Novartis’ global human vaccines business and excluding the influenza business. The second being GSK and Novartis collaborating in a new venture of their global activities in Consumer Health (i.e., their non-prescription business, also called over-the-counter or OTC). Followed by the third part, i.e., Novartis’ acquisition of part of the GSK oncology business portfolio. The European Commission observed that the transaction would lessen competition and remedied it through divestiture, exclusive licensing, and some other conditions. ⁹

Conclusion

Healthcare is a public good and all the countries strive to make it accessible and affordable for people. However, due to the technical

⁹ See, European Commission 2015.
nature of the sector, information asymmetry and regulatory challenges, it is prone to anti-competitive practices that render healthcare products and services expensive and restrict their availability. Anti-competitive practices like cartels, fixing trade margins, restricting supply, tie-in agreements, pay-for-delay, excessive pricing, frivolous litigation are prevalent in many countries. The competition concerns in the sector cannot be addressed by competition enforcement alone. The sector also warrants a whole-of-government competition policy approach, including optimal *ex-ante* regulation. Along with targeted *ex-ante* regulation and competition enforcement, the competition authorities must also engage in continuous monitoring, market studies, compliance training, and above all, policy advocacy in the health sector in order to make healthcare accessible and affordable for all.

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Re-thinking Social Protection & its Sustainability in the wake of COVID-19 in Pakistan

by

Dr Bushra Yasmin

* This chapter has been approved as a Policy Brief by the referee.
** Dr Bushra Yasmin is Associate Professor of Economics and Faculty Advisor, Faculty of Arts and Social Sciences, Fatima Jinnah Women University, Rawalpindi, Pakistan.
Abstract

The importance of Social Protection Programmes (SPPs) increases when a country is faced with an unforeseeable shock in the form of natural calamities and unforeseen health emergencies. The COVID-19 pandemic was one such catastrophe which was neither predicted nor was a country like Pakistan ready for this shock to such an extent. This left the country with devastating socioeconomic consequences, especially for vulnerable and poor households. Although, the existing SPPs in Pakistan were fortified through various measures by the government and International Financial Institutions (IFIs), nonetheless, limited access, low coverage and lack of pro-crises arrangements raised questions about the sustainability of such programmes. This also led to the realisation to expand and manoeuvre the existing SPPs by incentivising foreign investment, re-directing resources to pro-poor planning and strategic crises management policies, not only to expand the existing capacity of such programmes, but also to make them sustainable in the future and to address the socioeconomic implications of such crises effectively.

Introduction

Social protection is defined as 'A provision by the society to individuals and households through public and collective measures to guarantee them a minimum standard of living and to protect them against low or declining standards of living arising out of a number of basic risks and needs' (Pakistan Business Council 2011: 8).

Social protection is considered a right of individuals belonging to a welfare state. According to the United Nations (1948), every member of society is entitled to have social security through protective pre- and post-crises measures. The International Labour Organization (ILO), through its Convention (1952; 102), lays emphasis on a minimum standard of social security to be maintained which encompasses three significant indicators - livelihood protection, health-related provisions, and benefits for family with children.
Given this backdrop, Social Protection Programmes (SPPs) are expected to be capable of generating and hence, offering employment opportunities, minimising the loss of human capital and protecting households from falling into extreme poverty in the wake of crises (Khan 2014). With the support of such measures aggregate productivity of a household can be noticeably improved which can stimulate aggregate demand resulting in high economic growth.

It is generally considered a state’s responsibility to provide, extend, and monitor SPPs and its enclosed measures in an equitable and efficient manner. Other than certain short- and medium-term interventions, the government and all stakeholders must carry out long-term planning to handle unpredictable shocks/crises effectively and to make SPPs more dynamic and sustainable.

The concept of social protection is not new, and neither was the pandemic. However, there was lack of preparedness and adequate pro-crises measures to manage issues pertaining to the pandemic that hit countries hard in the form of the Coronavirus outbreak, especially in the health and education sectors and the informal economy. The Coronavirus brought short- and long-term socioeconomic consequences for the whole world generally, and Pakistan typically.

According to The World Bank estimates, 40-60 million additional people are likely to become victims of extreme poverty as a result of COVID-19. The crisis resulted in job losses, intensified unemployment in the informal sector, caused disruption in supply chains, increased inflation, led to slowdown of industrial and service sector activities and overall reduction in trade and Foreign Direct Investment (FDI). Accompanied with a lack of risk management strategies and pro-poor planning in the health sector, the pandemic had serious implications on the socioeconomic well-being of the masses in Pakistan.

Looking at the SPPs in Pakistan, it was a top priority of the government to improve existing programmes and in a vow to turn the country into a welfare state, it has remained committed to achieving the United
Nations Sustainable Development Goals (SDGs) in a timely manner. In this regard, the government focused particularly on three dimensions of Human Development:

1. Long and healthy life,
2. Access to knowledge, and a
3. Decent standard of living.

Herewith, the country introduced various reforms in SPPs which included social security programmes as well as social assistance schemes. The Government of Pakistan (GoP) adopted the National Social Protection Strategy (NSPS) in 2007 with the aim to target the poor by not only protecting them against certain risks and adverse shocks, but also to promote human and physical capital investment for increasing productivity and future growth. PKR 36 billion was reserved for this purpose at that time with a manifold increase within five years.

The multi-sectoral Poverty Reduction Strategy that encompassed targeted interventions included the Benazir Income Support Programme (BISP) as a hallmark initiated in 2008 and played a crucial role in targeting the poor through a direct cash transfer programme and improved access to microfinance. Similarly, geographical targeting was adopted for the Internally Displaced Persons (IDPs) in Swat and flood victims through the National Database and Registration Authority (NADRA). The expenditure on pro-poor sectors stood at 9.5% of GDP in 2016-17, with a slight drop to 9.2% and 8% of GDP in 2017-18 and 2018-19, respectively.

Pakistan’s Social Security Programme includes the:

- Government Servant Pension Fund,
- Provincial Employees Social Security Scheme,
- Public Sector Benevolent Funds and Group Insurance,
- Workers Welfare Funds (WWF),
- Workers Children Education Ordinance, and the
- Employees Old Age Benefits Institutions (EOBI).
While, Social Assistance Schemes are in the form of:

- Zakat,
- Pakistan Bait-ul-Maal (PBM),
- Benazir Income Support Programme (BISP), and,
- Microfinance Institutions.

BISP/Ehsaas is a federal unconditional cash programme for the poorest segments of society. Its allocated budget increased from PKR 102 billion to PKR 180 billion over four years (2016-20). Under this programme, there are some 4.5 million beneficiaries. Similarly, another unconditional cash programme ‘Kafalat’ provides monthly cash stipends of PKR 2000 and the number of beneficiaries was estimated at 7 million by 2020 (GoP 2020).

These programmes have contributed to socioeconomic uplift of the poor, but once we look at them from a macroeconomic viewpoint and under the COVID-19 crisis, facts and figures do not provide a very promising picture.

According to the Pakistan Economic Survey (2019-20), Pakistan scored 0.560 out of 1 in the Human Development Index (HDI) as compared to the average value of South Asia, i.e., 0.642 and the world’s average of 0.731 (GoP 2020). Total government expenditures remained less than 3% of the country’s GDP on social protection for the poor population. Furthermore, the country scored a negligible value in the Social Protection Index (SPI) - 0.047 - which is lower than South Asian countries’ average SPI score of 0.061 (ADB 2019).

On the other hand, roughly 56% of households in Pakistan were classified as socioeconomically vulnerable due to COVID-19 (The World Bank n.d.), and even as far back as 2013, it was estimated that more people would fall below the poverty line (The World Bank 2013). Vulnerability arises from socioeconomic inequalities and poverty along with lack of awareness. However, natural disasters and unforeseen calamities accentuate the vulnerability of households,
especially when the latter and countries have not laid down effective disaster management policies and practices.

Keeping in view Pakistan’s meagre performance in the HDI and high vulnerability of poor households, social safety net programmes become very crucial and demand expansion for wider and far-reaching impact, especially during crises like COVID-19. As poor households are likely to be highly vulnerable to natural disasters and unpredictable risks, social protection schemes should be planned in a way which can reduce the aforementioned risk intensity during such crises. Literature criticises SPPs for their scope, accessibility, and sustainability. ShuHong et al., (2017) highlighted various factors responsible for scanty performance of SPPs and expounded that such programmes are generally devised for the employed group of the labour market and exclude workers in the informal sector. Despite government spending on social security programmes, the distribution mechanism is also not well-structured to offer trickledown effects due to lack of pro-poor approach in policies and programmes. Such programmes are also highly biased which widens the gender and rural-urban disparities (Ibid.).

According to the Labour Force Survey (2017-18), the informal sector accounts for 71% of employment, excluding the agriculture sector in Pakistan. The informal economy was hit harder by the COVID-19 pandemic than witnessed in previous shocks such as the global financial crisis. Besides, unemployment of women was higher than that of men because of downturn of the services sector and large proportion of women workers in frontline occupations such as health and social care (SANEM 2020). Hence, the pandemic has particularly intensified such disparities. As only 2-3% of the total population is covered under SPPs, where almost 25% live below the poverty line, The World Bank indicators suggest that the latter in Pakistan were working worse than their capacity. Limited accessibility to rapid assistance programmes has also remained a major challenge. That said, the informal sector workers, daily wage earners, migrants and women should be at the centre of such programmes and safety nets.
Interventions by the Government of Pakistan and IFIs during the COVID-19 Pandemic

Turning to the performance of GoP and support provided by International Financial Institutions (IFIs) in the wake of the pandemic, SPP measures were wide ranging and not only undertook prompt action to halt community spread of the virus, but also to safeguard poor and vulnerable groups from falling into extreme poverty through cash transfer schemes. The social safety net programmes were strengthened to provide immediate relief to the highly vulnerable groups through expansion of existing programmes and higher disbursements. Through 'Ehsaas'/‘Kafalat’ cash transfer programme, an instant cash relief of PKR 12000 per household was provided to almost 12 million poor families of daily wage earners whose livelihood was at stake due to the pandemic, for a period of four months. The said programme was aimed at collating the existing social safety net programme under one umbrella. The assistance to expand Ehsaas came from The World Bank which approved USD 600 million, financed by the International Development Association (IDA), under the Crisis-Resilient Social Protection Program (CRISP). The objective was to especially safeguard vulnerable households and to increase their resilience to economic shocks like COVID-19. The World Bank also supported Pakistan’s Social Protection Strategy, including the national healthcare system to provide optimum care by strengthening the intensive care system, increasing the capacities of test laboratories, training medical staff, and procuring protective equipment and medical supplies to manage COVID-related health risks effectively. Moreover, a Securing Human Investments to Foster Transformation (SHIFT) programme was also introduced to support policy reforms in helping Pakistan’s COVID-19 emergency response and safeguarding investment in human capital. Pakistan was ranked one of the top countries in Asia having the highest response to social protection amid COVID-19 crises according to a study conducted by the United Nations (UN), United Nations International Children’s Emergency Fund (UNICEF) and the International Policy Centre for Inclusive Growth (IPC-IG).
The study concluded that this was attained through the Ehsaas Emergency Cash that provided urgent cash payments to households. Moreover, safety net programmes worth USD 1.25 billion were also rolled out speedily designed for instant relief to the poorest and hardest hit families. A digitalisation move was also started via conjoining internet connectivity, phones and National Identity Cards which enabled a digital, demand-based social-protection system to support those suffering from the pandemic and in need of emergency cash support (Imran 2020).

Besides, an economic stimulus package worth 1.2% of GDP was introduced by the government to manage the health emergency and support economic activity. The coverage of Prime Minister’s Health insurance scheme was extended by providing Sehat Insaf cards (Dawn 2019) to 80 million people. Healthcare was further reinforced by eliminating taxes on essential health machinery and equipment. Additionally, daily wage earners were supported by establishing PKR 200 billion funds for the most affected workers and Utility Stores Corporation network was strengthened by enhanced financing for food security.

Regarding crises management plans, the National Disaster Management Authority (NDMA) of Pakistan, a focal agency to combat COVID-19, was provided with more funding to purchase additional equipment. A contingency fund was also generated to further strengthen the agency. Furthermore, State Bank of Pakistan played an effective role by adopting a timely set of measures - it lowered the policy rate and provided new refinancing facilities to support liquidity and credit conditions and defend financial stability.

In the pursuit of measures taken up to handle the pandemic, authorities continued to implement growth-friendly inclusive policies along with following structural reforms to lift potential growth and improve resilience in the process of strengthening social safety nets.
On the other hand, the International Monetary Fund (IMF 2020a) put in place measures promptly by increasing health spending and strengthening social support, to cover the impact of the shock and sustenance of economic activity. A Rapid Financing Instrument worth USD 1.386 billion was launched to address the economic impact of the pandemic shock (IMF 2020b). In post-COVID phase, authorities renewed commitment to implement policies in the existing Extended Fund Facility (EFF) to support recovery and to strengthen resilience.

Turning towards Pakistan’s foreign investment position, a comparative look at the post and pre-pandemic pattern shows FDI and workers’ remittances remained unabated in the first quarter of fiscal year 2019-20. Pakistan managed to attract foreign investment in the debt market specifically due to lucrative investment opportunities in fixed-income securities by offering high interest rate and portfolio investment almost doubled in treasury bills and Pakistan Investment Bonds. However, the pace was turned down and foreign investment declined to PKR 337 billion in March 2020 after the outbreak of the Coronavirus. Globally, the conservative drop in global FDI from 15 to -15% in 2020 was expected to contract further from -30 to -40% in 2021, according to UNCTAD revised forecasts.

Despite various measures taken up by the GoP to improve the investment climate, COVID-19 outbreak curtailed FDI. The country faced serious challenges on the Public Sector Development Program (PSDP) which put grave pressure on finances. In a plea to international donors and IFIs, the government urged for a global (financial) solution to the global problem and requested debt reliefs for keeping the economy away from deep recession. Cash transfers can smooth out negative macroeconomic shocks as a fiscal stimulus by dispensing money directly to poor households who have high marginal propensity to consume and are more vulnerable to the pandemic. However, Pakistan needs to have additional conditional and unconditional cash transfer programmes supported by donors and IFIs. With less than 1% of GDP as health expenditures and standing at 150 out of 189 countries in the Human Development Index (HDI), Pakistan needs to be more
vigilant in revamping its SPPs and maneuvering them through international donors and FDI.

**Conclusion & Recommended Policy Measures**

Neighbouring India introduced a rights-based welfare system in 2005 which played a vital role in dealing with pandemic-related devastating impact as well. Similarly, the Public Distribution System (PDS) and National Employment Guarantee Act (NEGA), guaranteeing one hundred days of employment to the poorest citizens, also proved to be beneficial. Bangladesh’s Public Works Program supported seasonal agricultural workers by providing subsidiary employment.

The pandemic hit every sphere of life very hard in three waves (March 2020 and April 2021) directly claiming 17,811 lives in Pakistan, with 820823 confirmed cases till 30 April 2021 and resulted in a socioeconomic disaster, especially for the poor and vulnerable. Major indicators of standard of living, including health and education, were compromised largely for the same group. Like its regional neighbours, in Pakistan, various measures were adopted to counter COVID-19-related challenges by providing support to existing SPPs, with a major focus on direct cash transfer programmes for social protection with the understanding that cash is considered a neutral unit which is less likely to distort purchasing choice of people.

Looking at the facts and figures discussed in earlier sections, existing SPPs need to be more dynamic and sustainable to face any such crises in the future. Following measures can be adopted to make such programmes more inclusive:

- Medium and long-term planning is required to make the socioeconomic setup sustainable in the wake of COVID-like crises. A broad socioeconomic sectoral development plan and

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1 Especially when existing programmes are limited in offering support to the education and health sector, particularly during crises. These sectors have largely remained secondary in SPPs.
an ecosystem to harness existing programmes by encouraging entrepreneurship for a vigorous and sustainable business environment can be supportive in this regard.

- Social risk management needs to be a core strategic policy to deal with such crises. There is a need to put serious efforts to make it more dynamic. Devolution of the Social Risk Management Strategy and implementation of a National Disaster Risk Management Framework at provincial, regional, district and municipal levels need to be promoted to deal with disaster-related issues efficiently and in a timely manner. Despite the emerging significance of provincial social welfare plans, Pakistan’s provinces lack the resources for implementation of effective planning. After the 18th Amendment, a substantial portion of social welfare provision, including healthcare and education, has been devolved to the provinces but devolution is required to be political, administrative, and financial as well. A low or moderate level of fiscal decentralisation cannot bring in the potential benefits of devolution plans. Regulated empowerment, along with responsibilities and accountability, can yield better outcomes.

- From the educational perspective, a global Educational Security Index like the Global Health Security (GHS) should be devised that can reflect collective national and international preparedness during epidemics and pandemics. In the GHS scores, Pakistan stands at 105 out of 190 countries and its overall score is 35.5 out of 100 with the world score at 40.2 (Global Health Security Index 2019).

- Education has remained a secondary objective in social protection programming and a more inclusive plan is required. This can include the provision of education subsidies and fee waivers to offset costs. Moreover, a long-term funding plan, institutional coordination and enhancing capacity building for sustainable social protection for education is also required. Additional incentives and complementary support to reduce the gender gap in education sector is also a need of the hour.
Social protection interventions must be informed by a risk and vulnerability assessment and analysis and a re-assessment and evaluation of current policies and SPPs.

With the technological evolution, the world saw a progressive move towards digitalisation and this progress helped countries equipped with sound technologies to handle COVID-19 more effectively. Pakistan needs to allocate more resources on technological advancement as well.

Inviting foreign investment in the health and education sector is a least priority area. Pakistan needs to provide foreign investors specifically targeted incentives in these sectors. Domestic resources can also be diverted to e-health, e-learning and e-delivery that will uplift the technology/IT sector as well.

Given financial vulnerability and stagnating trade, with the World Trade Organization (WTO) predicting a plunge of 13-32% in world merchandise trade, COVID-19 poses a serious threat and the promotion of foreign investment in this area requires urgent attention.

Other than continuing existing liberalisation, promotion and facilitation, strategies to attract foreign investment, aligning and streamlining new investment opportunities with global shocks is required for a sustainable future.

**References**


Role of ICTs during COVID-19 & Beyond

4. Opportunities and Challenges for Pakistan: An Overwhelming Role of ICTs during COVID-19 & Beyond

5. Success Factors for Implementing ICTs in Large Organisations: Observations from Pandemic Operations in the Public Sector
Opportunities and Challenges for Pakistan: An Overwhelming Role of ICTs during COVID-19 & Beyond*

by

Parvez Iftikhar **

* This chapter has been approved as a Research Paper/ Scholarly Article by the referee.
** Mr Parvez Iftikhar is an ICT Consultant advising governments and regulators in Asia and Africa (14 countries so far) on behalf of The World Bank and International Telecommunication Union (ITU), amongst others. In Pakistan, he serves mostly pro bono, as member of ‘Prime Minister’s Task Force on IT and Telecom’, and various other committees and fora. Formerly, he was CEO Universal Service Fund (USF) and Telecom country-head of Siemens in Pakistan.
Abstract

During the COVID-19 pandemic, it was the Internet that enabled global economies to keep functioning. According to estimates, post-COVID-19, most of this is going to continue. However, its penetration in Pakistan is 45%, with almost 98% of the population (100 million out of 103 million) relying on not-the-best quality wireless broadband (3G/4G) (PTA 2021). Alarmingly, Pakistan ranks below all its neighbours, except Afghanistan, in almost every international Information and Communications Technology (ICT) Index. Internet needs ICT infrastructure, and all ICT infrastructure investments in Pakistan are made by the private sector. Sadly, the State, instead of helping it grow, treats it as just another cash cow. ICT infrastructure consists of a spectrum (for wireless) and optic fibre cables (for wired) communications. Whereas, spectrum is a natural resource available with the State, waiting to be used by service providers, the case of optic fibres is different. Fibres need high investments with painfully slow returns, particularly, when burdened with high taxes, cumbersome and expensive Rights-of-Way (RoW), and so on. The business model followed in Pakistan so far is that every service provider lays his own infrastructure – no matter what the cost. In most of the developed world, the states now get the passive networks laid by ‘infrastructure providers’, then the ‘service providers’ (SP) share those networks for providing services to the citizens. The main concern here is the lack of knowhow and retention of experts in the country, coupled with bad past experiences of the public sector. That is where Public Private Partnerships (PPPs) come in. This study attempts to explain how such a business model can be successfully adopted in Pakistan where the Telecom Infrastructure Providers (TIPs) are facilitated to lay infrastructure, while the SPs ride on it to compete with others providing the same service using the same infrastructure.

Introduction

If ever there were any doubts about the criticality of broadband internet for the nation, the horrific COVID-19 laid such doubts to rest.
The pandemic illustrated the importance of broadband when those with good broadband connections continued to work and attend online classes and sell their goods, and those with poor connectivity got even more cut off than they were before. Moreover, the pandemic amply demonstrated the importance of such sectors as tele-medicine and e-learning.

Even during normal times, broadband networks are important for education, healthcare, governance, financial inclusion, innovation, competitiveness, preparing the workforce, environmental sustainability, and overall economic development. Independent studies sponsored by The World Bank have shown that every 10% increase in broadband penetration in low and middle-income countries, increases per annum GDP by up to 1.35% (Minges 2016).

**Figure 1: Impact of Broadband Internet Penetration on GDP (%)**

![Figure 1: Impact of Broadband Internet Penetration on GDP (%)](image)

*Source: Minges 2016.*
The broadband infrastructure consists of several elements, but none more important than optic fibre cables. With massive increase in data communications, optic fibre cables in the backhaul networks have become centre stage. One strand of optic fibre cable can carry 12,500 times more data than microwave radio. If microwave radio can carry up to 2 Giga BPS (bits per second), then fibre can carry 25 Tera BPS (Yogeeswaran 2020). From a national strategic perspective, optic fibre infrastructure is now comparable with conventional infrastructure such as roads and railways. Fibre represents a future-proof technology for fulfilling the broadband needs of businesses, schools, libraries, institutions, government agencies, households, and a necessary means for present and future services - including wireless service that need fibre to deliver high speed internet.

However, some governments do not yet recognise optic fibres as an infrastructure for public good, along with the traditional infrastructure such as roads and utilities. Lack of ICT infrastructure is a major obstacle towards digital transformation and a digital economy. A United Nations E-Government Survey 2020 notes, ‘Some cities, especially those in developing countries, are not able to deploy new technologies because they lack the appropriate ICT infrastructure, weak bandwidth and low internet speed are preventing cities from taking full advantage of frontier technologies’ (UNDESA 2020: 102). As described by Benton Institute of Broadband and Society (Hovis et al. 2020), fibre optics represent the most scalable long-term broadband infrastructure option. Fibre infrastructure represents long-term, prudent investment for a public entity with significant potential use and impact.

In a population of 220 million, there are 176 million cellular subscriptions, and out of those 93 million are mobile broadband subscriptions; only 3 million broadband subscriptions are of the fixed variety (PTA 2021).
Over the last couple of decades, Pakistan has fallen behind its neighbouring countries, particularly with respect to the ICT infrastructure. Worryingly, all, except Afghanistan, and in one case Nepal, are ahead of Pakistan in the global ICT indices (see Table 1). The data offers a more than fair depiction of the poor digital infrastructure in the country where investments are lacking in a big way. In this case, the most important part of the ICT infrastructure, i.e., optic fibre cables. In Pakistan, this number is actually below 10%. This means that the backhaul data traffic of over 90% of the towers travels via point-to-point microwave radios, which have severe capacity limitations as the use of data grows.

\[1\] Status can also be checked by comparing how many cellular towers are connected with optic fibres.
Table 1: Pakistan Lags behind in all Global ICT Rankings

<table>
<thead>
<tr>
<th>Index</th>
<th>Malaysia</th>
<th>Thailand</th>
<th>Sri Lanka</th>
<th>Iran</th>
<th>India</th>
<th>Bangladesh</th>
<th>Nepal</th>
<th>Myanmar</th>
<th>Pakistan</th>
<th>Total No. of Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDESA E-Government Development Index 2020²</td>
<td>47</td>
<td>57</td>
<td>85</td>
<td>89</td>
<td>100</td>
<td>119</td>
<td>132</td>
<td>146</td>
<td>153</td>
<td>192</td>
</tr>
<tr>
<td>The Economist Inclusive Internet Index 2021³</td>
<td>42</td>
<td>49</td>
<td>77</td>
<td>57</td>
<td>49</td>
<td>82</td>
<td>83</td>
<td>80</td>
<td>90</td>
<td>120</td>
</tr>
<tr>
<td>UNDESA Telecommunication Infrastructure Index 2020⁴</td>
<td>50</td>
<td>62</td>
<td>110</td>
<td>81</td>
<td>144</td>
<td>137</td>
<td>124</td>
<td>112</td>
<td>164</td>
<td>192</td>
</tr>
<tr>
<td>WEF Global Competitiveness Index 2019⁵</td>
<td>27</td>
<td>40</td>
<td>84</td>
<td>99</td>
<td>68</td>
<td>105</td>
<td>108</td>
<td>NA</td>
<td>110</td>
<td>141</td>
</tr>
<tr>
<td>Network Readiness Index 2019⁶</td>
<td>32</td>
<td>56</td>
<td>83</td>
<td>80</td>
<td>79</td>
<td>101</td>
<td>106</td>
<td>NA</td>
<td>104</td>
<td>121</td>
</tr>
<tr>
<td>B2C E-commerce Index 2019⁷</td>
<td>34</td>
<td>48</td>
<td>86</td>
<td>42</td>
<td>73</td>
<td>103</td>
<td>112</td>
<td>126</td>
<td>114</td>
<td>152</td>
</tr>
</tbody>
</table>

*Source:* Compiled by the author.

² UNDESA 2020a.
³ The Economist 2021.
⁴ UNDESA 2020a.
⁵ Schwab 2019.
⁷ UNCTAD 2019.
However, now is the time to correct all this. This study first looks at the current status of ICT infrastructure in Pakistan, tries to establish where there is an apparent market failure, discusses relevant international models, and offers recommendations on how to resolve the situation.

**ICT Infrastructure in Pakistan**

Various parts of the national ICT infrastructure are as follows:

**International**

Pakistan connects to the rest of the world over six undersea Optic Fibre Cable networks, namely SeaMeWe3, SeaMeWe4, SeaMeWe5, IMEWE, AAE-1, Transworld, SRG-1 (under construction), and PEACE (in final stages, expected to be ready for service in Q3, 2021) (TeleGeography n.d.). After commissioning of the last two, the total international capacity will increase from 70.9 Tera BPS to 180.9 Tera BPS.

![Figure 3: Percentage of Mobile Towers connected with Fibre](source: Author's own.)
In addition, there are overland optic fibre links to all the neighbouring countries, but they do not carry any significant amount of traffic.

**Domestic Inter-city**

All over the country, there are optic fibre cables providing connectivity to each and every town, down to every tehsil (sub-district) headquarter. These are the optic fibre backbones.

The main providers of long-haul optic fibre cables are Pakistan Telecommunication Company Ltd. (33,581 km), Wateen (30,890 km), CMPak (17,323 km), Telenor (13,339 km), LinkdotNet Telecom Limited (13,318 km), Multinet (6,536 km), and WorldCall (1,843 km).
**Figure 5: Long Distance Optic Fibre Cable Network in Pakistan**

![Map of Pakistan with optic fibre cable network](image)

*Source: ITU n.d.*

### Backbone/Backhaul within the Cities

The current fibre networks provide connectivity mainly to large corporate clients, banks, some mobile base stations (towers), and households in affluent areas of large cities etc. This represents poor optic fibre penetration. The lack of penetration of high-speed, high-volume fibre connectivity in the cities needs to be addressed, especially for the future. Without fibre in the backhaul, 4G service is of poor quality, let alone 5G.

### Last Mile

The ‘last mile’ broadband in Pakistan is predominantly mobile. As of June 2021, with 93 million mobile broadband subscribers against less than three million fixed lines, i.e., fixed lines constitute only around 3% as the last mile of total broadband subscriptions in the country (PTA...
2021). These fixed line customers, enjoying fibre connectivity, are found mainly in big cities, and there too in areas with large businesses and/or high-income households.

**Types of Telecom Licensees**

There are two main types of licensees – those for service provision, and those for providing infrastructure for the service. The Service Providers (SPs) may install their own infrastructure, but the Telecom Infrastructure Providers (TIPs) are not supposed to provide service to the end users. This is to ensure that they do not become competitors of their own customers, i.e., the SPs.

**Service Providers (SPs)**

There are 16 licensed Long Distance International (LDI) SPs, and only a few have their own domestic long distance optic fibres. At times, they also provide fibre connectivity within the cities, connecting hubs – not end users. End user service is provided by 196 ‘Local Loop’ licensees, which include four Mobile Licensees (PTA 2017). Other than the four mobile, all others (mostly inactive) are fixed-line SPs. Out of these over 200 telecom licensees, few are actively providing service. There are many reasons for most of them being inactive, but mainly, it is because every SP has to invest in highly capital-intensive ICT infrastructure, which is not possible for most.

**Telecom Infrastructure Providers (TIPs)**

In Pakistan, the type of license for infrastructure provision is called ‘Telecom Infrastructure Provider’ (TIP) license. There are 19 TIP licensees (PTA 2020) out of which three got their licenses in 2019. There are 18 Telecom Tower Licensees too, who could also be considered as Infrastructure Providers, but, as the name suggests, they provide Telecom Towers, and not optic fibre cables.
Infrastructure vs Service Providers

In the relatively developed (and also increasing number of developing) countries, the ICT infrastructure (mainly towers and optic fibre cables) and the ICT Services (broadband internet) are often provided by separate types of licensees as described earlier. However, in Pakistan every SP installs his own infrastructure where he sees demand. That is why it is common to see four cellular towers standing side-by-side at one place. Each one of them enjoys a competitive advantage of having their own infrastructure – as long as it lasts. This demand-driven approach has many disadvantages:

- Over time, all competitors install their own infrastructure, eroding any competitive advantage.
- Installing and managing infrastructure diverts time and resources of the SP away from his core business, i.e., service provision.
- A huge amount of SP’s capital gets stuck in infrastructure assets.
- When a single SP is able to install his own infrastructure, he becomes a monopoly, who may share it with his competitors but only at a high cost.
- The entry barrier for new entrants is unsurmountable.
- When every SP installs his own infrastructure, it contributes towards redundant national waste of resources.
- In areas with very low returns, it is not viable for any single SP to invest in his own infrastructure. Consequently, service quality suffers, as is happening in Tier 2 and 3 cities of Pakistan, where fibre connectivity to towers is lacking.

However, with rising costs, and increasing competitive pressures on prices, it is becoming imperative for the SPs to save capital cost of infrastructure and instead rent it from TIPs. In particular, with the rising need of connecting towers with fibres, this trend is gaining traction for fibre connectivity to the towers. However, sadly this is happening mainly in Tier 1 cities.
A comparison between Telecom Infrastructure Provider-owned network vs. Service Provider-owned network, is given in Table 2:

**Table 2: Comparison of Telecom Infrastructure Provider-owned vs Service Provider-owned Network**

<table>
<thead>
<tr>
<th>TIP-Owned Infrastructure</th>
<th>SP-Owned Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Only one TIP has to invest in infrastructure and Right-of-Way (RoW), only once.</td>
<td>Every SP has to invest in infrastructure and get fresh RoW.</td>
</tr>
<tr>
<td>2 Consumers (and also MNOs) get a choice of several SPs.</td>
<td>Consumers’ choice is limited to those SPs who invest to lay their own infrastructure.</td>
</tr>
<tr>
<td>3 One-time digging of streets by the TIP.</td>
<td>Every SP digs the streets afresh.</td>
</tr>
<tr>
<td>4 Entire buried investment can be utilised by several SPs. No/less wastage of investment.</td>
<td>Capacities are almost never fully utilised by owner SPs (avoid sharing with competitors). Huge wasted buried investment.</td>
</tr>
<tr>
<td>5 Only one network, saves OpEx. TIP keeps it in good shape as that is his core business.</td>
<td>Several networks maintained by several SPs, result in high overall OpEx. Malicious fibre cuts by unscrupulous competing SPs.</td>
</tr>
<tr>
<td>6 There can be as many SPs providing service in a city, as there are in the country.</td>
<td>Only SPs who can afford – and build – their own infrastructure can provide service or by leasing costly from competitors.</td>
</tr>
<tr>
<td>7 New entrants can easily become SPs, just by paying rent to the TIP.</td>
<td>Potential new entrants have to invest heavily in infrastructure in order to become SPs.</td>
</tr>
<tr>
<td>8 Government charges TIP to provide real fibre access to SPs - not just paper permissions.</td>
<td>Government charges RoW for permissions only (purely rent-seeking). No real fibre access in return.</td>
</tr>
<tr>
<td>9 Hundreds of deprived small cities in the country, particularly their non-affluent areas,</td>
<td>To avoid TIP behaving as a monopoly in a city (acting as SP himself) strict regulations will be needed, e.g., formulas of tariffs and their escalations. In addition, the private owned TIP should have no guarantee that there would be no second competitor TIP investing from his own resources.</td>
</tr>
</tbody>
</table>

*Source: Author’s own.*
Obstacles to ICT Infrastructure Investments

Irrespective of who invests – SP or IP – there are several obstacles to investment in ICT infrastructure in Pakistan. On the other hand, ever since the telecom sector was privatised in 2005 (when management control of T&T Department, now Pakistan Telecommunication Company Ltd. (PTCL), was handed over to a foreign private company), all investments in ICT infrastructure in the country are made exclusively by the private sector. There is no public funding made for ICT. But, the private sector faces multiple obstacles that prevent investments in ICT infrastructure. The main ones are described below:

*High CapEx with Slow Returns*

The CapEx of ICT infrastructure, in particular the optic fibres, is very high with long payback periods – typically 15 to 20 years (Conradi et al. 2020). High CapEx is partly because the cost of equipment (including taxes) is high, and partly because of the high cost of deployment (civil works, along with RoW charges and other related expenses). On the other side, the return on investment in case of telecom infrastructure is typically in the range of 10 to 15 years. Therefore, in countries like Pakistan, ICT investments mostly take place in lucrative areas of large urban centres where quicker returns are guaranteed.

*Right-of-Way (RoW)*

Right-of-Way (RoW) is essential to lay optic fibres (or to install towers) and it is given by the relevant custodian of RoW, like, Highway Authorities, Railways, Tehsil and Municipal Administrations, Cantonments, Development Authorities (e.g., Capital Development Authority), and Housing Authorities (e.g., DHAs), etc. So far, RoW is not only difficult and cumbersome to get (sometimes takes over half a year), it is costly too. It is charged at the time of deployment as well as on an annual basis. In return, the RoW custodians offer no service of any kind. It is purely rent-seeking. The processes/SOPs for granting RoW are not uniform, even in cities of the same province. Wherever
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some rules do exist, the officials interpret those differently – normally in their own favour. On many occasion, it is not enough to get RoW permission from just one agency. If optic fibre is being laid in a city (after getting all permissions), and a railway track or a highway has to be crossed, separate permissions are required from them.

At times, disputes of demarcations and jurisdictions within the cities or its suburbs result in duplication. Even some influential (particularly political) private property owners believe that any telecom cable passing in front of their doorways (even if buried five feet deep) is an opportunity to make money. Often shop-owners, or even house owners, stop the work and demand ‘compensation.’ In January 2021, the Ministry of Information Technology and Telecommunication (MoITT), together with the Prime Minister’s Task Force on IT and Telecom, had a ‘Policy Directive’ approved by the Federal Cabinet. One of the main stipulations of the Directive is that RoW fees should be ‘cost based.’ The Policy Directive appears to be a very positive step towards resolution of the problem of RoW, but its impact is yet to be seen. It will take almost a year before every stakeholder becomes familiar with it.

Lack of (Apparent) Demand in Smaller Cities

Apart from about a dozen Tier 1 cities, there are about 120 Tier 2 cities that have high concentrations of low Average Revenue Per User (ARPU) customers. In these cities, the broadband use by individuals (as against organisations and businesses) is predominantly for entertainment and social media. More ‘serious’ applications like knowledge work, e-education, e-governance, e-agriculture, and e-health are yet to be taken seriously. The federal and provincial governments are themselves not big users of broadband. Therefore, for the majority, the inexpensive low quality mobile broadband appears to be enough – for now. Gradually, as the data traffic increases, the quality of mobile broadband has been deteriorating. This is due to lack of investments in infrastructure. Those applications that have gained some traction (like
ride-sharing, freelancing, online shopping, e-commerce, branchless banking, online gaming, etc.) are still relatively less used.

Unlike many countries, provision of broadband to every school has not yet been decided. When over 500 children log in at 100 mbps each, using their laptops/tablets in a school simultaneously, the bandwidth required would be enormous, which could only be delivered over large data pipes (read optic fibres) to the schools. In 2019, UNICEF and ITU jointly launched a global initiative ‘Giga’ to connect every school to the Internet by 2030 (ITU and UNICEF n.d). In partnership with governments, Giga has started mapping connectivity demand, identifying where there are connectivity gaps. This information, combined with existing ITU mapping data, allows countries to take stock of their existing infrastructure and assess wired and wireless availability when assessing appropriate solutions for connecting schools. Already more than 800,000 schools in 15 countries have been mapped (Ibid.). Considering that a large number of students need to connect online simultaneously, at a reasonably high speed, it would be important for each school to be connected with a large data pipe, i.e., optic fibres. Similarly, there are many other applications that are slowly gaining importance, but need high speeds and better quality than is currently available:

- E-commerce and online businesses.
- Branchless banking and financial applications.
- Automation of factories and businesses (both large firms, and small and medium enterprises (SMEs); and
- Work From Home (WFH) and Learn At Home (LAH), etc.

All these would contribute towards increasing demand.

**High OpEx (Operational Expense)**

Not just capital expenditure, the operational expenditure of broadband infrastructure is also high. Well-trained technicians and engineers have to be hired and retained. Fibre cables do get damaged/cut even when
they are buried five feet deep because of development projects running in the cities. The SPs complain that no one from the city administrations informs them if some civil works are going to take place that may potentially damage their expensive fibres. The aerial fibre cables, which have a slightly lower CapEx, are not used precisely because of these reasons. The damages/cuts to aerial fibres are more frequent, which raise the OpEx even higher.

**Legal Barriers**

There are over 4,000 cable television licensees in Pakistan in large and small cities and towns (PEMRA 2020: 17). In order to quickly acquire already installed fibre network, a large broadband SP could buy out a smaller cable television operator and provide service, just like it happened in countries like the United States. However, there is a legal barrier here. A PTA-licensed foreign investor may own 100% of a telecom company, with full management control, but Pakistan Electronic Media Regulatory Authority (PEMRA) Ordinance 2002, does not permit majority foreign shareholding of a cable television company.

**Lack of Awareness**

Urban planners appear to be unaware of benefits of laying cable-ducts under new roads nor under the ones being renovated/restored. This could tremendously help investments in ICT infrastructure. No city in Pakistan is doing this so far.

**ICT not a Priority for Local Governments**

Local governments, particularly of smaller cities, have no interest in ICT infrastructure like optic fibre cables. The only attraction appears to be in the revenue generating potential of the RoW. The usual priorities of city governments are construction and repair of streets, sanitation, wastewater disposal, etc. - not broadband internet.
Lack of Information about Existing Buried Services/Infrastructure

The ICT investors complain that while city authorities are eager to charge high RoW, on the ground there are no urban plans to help them. No proper street maps exist that indicate to the new diggers as to where the existing services, gas pipelines, old PTCL copper cables, sewage pipes, etc., lay buried. It is only seldom that markers/identifiers are found to indicate where not to dig. It becomes even more difficult when different underground services crisscross. Most of the time, it is the optic fibre investors who pay for the repairs, and face delays. However, the consequences have to be borne by citizens, businesses, other service providers. The city government staff is not well-versed with technical matters, and often is the source of avoidable delays. At times, their own departmental rules and regulations are unclear to them.

Risk of Monopoly

When an SP invests in ICT infrastructure in a small city, he becomes a monopoly infrastructure owner there. If he ever allows a competitor to share the infrastructure, he ensures that the competitor is at a disadvantage. After PTCL was privatised, it was to 'un-bundle' the copper cables in the last mile, to share those with private new entrants. This did not work, as PTCL saw all new entrants as its competitors in the last mile.

International Models

There are various models that have led to successful ICT infrastructure developments in various parts of the world. A few prominent ones are given below:
Incumbent Infrastructure Providers

Japan and South Korea have been very successful in installing optic fibre cables in every household. State-owned incumbent operators lay these cables to every premises, and then share those with other service providers, fairly and non-discriminately. Denmark has a variation of this model where the incumbent’s network does not go up to the premises of the end-customers, rather it delivers the wholesale internet traffic to the last mile retail service providers who have their own infrastructure in the last mile. In this model, in order to prevent unfair competition in the last mile, between the incumbent and other SPs, the incumbent either gives up the last mile business, or completely separates it (arm’s length) from the incumbent’s wholesale business. For the incumbent infrastructure provider model to succeed, the incumbent should be owned and managed/controlled by the state. This is not the case in Pakistan, as PTCL has been privatised in a way that the state has no control over it. The same SPs who may have utilised PTCL’s wholesale infrastructure, have to compete with PTCL in the retail business of the last mile. Therefore, the SPs are unable to use incumbent PTCL’s infrastructure. Several developing countries use this model (like India).

Independent Infrastructure Providers

Sweden, which ranks no. 1 in Network Readiness Index (Dutta and Lanvin 2019) follows one of the most successful models in the world, called Stokab. Stokab is an independent company owned by Stockholm City (Stokab n.d.). It has nearly 10,000 kms of fibre cables installed underground, connecting various parts of the city and its surroundings. Stokab provides ‘competition-neutral’ (open) access to the unused strands of fibre, ‘dark fibre’ or ‘passive fibre’ connections between requested locations. Either the customers activate the passive fibre using their own equipment, or they buy bandwidth capacity from the ‘Communications Operators’ who have already leased dark pairs from Stokab and are re-selling bandwidth over it (Ibid.). Stokab has two types of customers, either the vertical SPs (last mile fixed and mobile ISPs,
and other big users like local authorities, banks, business houses, etc.); or the communications operators (who re-sell slices of bandwidth capacity to last mile ISPs and other users). Leasing agreements are structured on favourable terms to encourage ICT development and strong growth. Across the country, 94% of all people are served by such municipal networks (OSP Insight n.d.).

**Figure 6: The Stokab Model**

![Stokab Model Diagram](image)

*Source: Stokab n.d.*

The Stokab model is now followed by over 150 municipalities in Sweden, and many cities of several other countries, mainly in Europe. In the Netherlands, following the Stokab model, Reggefibre similarly rents out dark fibres, but it is not state-owned, despite its takeover by KPN (Koninklijke KPN N.V., also Royal KPN N.V.) - the Dutch landline and mobile telecommunications company, in 2014 (Dekker 2012). In the US, the same model is referred to as 'Municipal Fibre Network.'

A recent study by Arthur D Little Global (2020) highlights that such open access fibre is encouraging new investments from traditionally non-telecom players. Typically, up to 80% funding is being obtained from such third-party entities. More than half the fibre deals executed last year were open access fibre. This brings in fresh capital to the telecom industry and provides funding relief to the telecom sector.
Singapore, ranked no. 2 in the Network Readiness Index, was following a reasonably good incumbent-led model (like Japan and South Korea), yet the country considered it not open enough, as several intending operators were not getting easy access to the infrastructure. Therefore, in 2005, Singapore created a new neutral passive infrastructure provider by separating the infrastructure from service. It then awarded licenses for passive infrastructure (they call it ‘NetCo’) and for services/operations (‘OpCo’). Singapore reached full fibre coverage, and became the first country to offer 1GBPS nationwide, at affordable prices, confirming a strong business case of a separate passive infrastructure business.

The US is another story worth quoting, particularly in the context of small cities where the market failed. Internet quality in smaller cities was neither as good nor as cheap as in most European and Far Eastern countries, till 2010 when some cities (led by Chattanooga, Tennessee) started converting to city-owned open access model. Availability of better quality, ubiquitous and affordable internet gave birth to many new businesses. A study published by the University of Tennessee noted that Chattanooga’s network created USD 1 billion in economic benefits for the city between 2011 and 2015. Crawford (2018) describes how leaving ICT infrastructure entirely to the private sector is a mistake. She advocates that the city governments should own the passive infrastructure, and then lease ‘dark fibres’ to broadband ISPs. About 800 locations in US are getting into PPPs and building their own passive networks (Crawford 2019).

**Non-Telco Third-Party Infrastructure Providers**

A ‘non-telco’ infrastructure provider can provide full open access to all the big and small SPs because its interest is to fill its fibres with as many bits and bytes as possible, rather than competing with the SPs in the last mile. For example, Google’s Project Link, now spun off, into an independent company, called CSquared (n.d.) was hugely successful in providing over 800 km of fibres in Kampala (Uganda); 180 km in
Monrovia (Liberia); and 840 km in Accra (Ghana) and two other Ghanaian cities.

**Figure 7: Google’s Metro Optic Fibre Infrastructure in Kampala, Uganda**

In the US, after a gap of four years, Google Fibre is looking to expand again. In West Des Moines, it is working to bring Gigabit Internet to its citizens and businesses (Telecompaper 2020). ‘Facebook Connectivity’ is another example of a non-telco model, which also provides optic fibre infrastructure in Nigeria (approx. 800 kms fibre deployed) and Uganda (approx. 800 kms of fibre deployed), besides countries of Latin America and Association of Southeast Asian Nations (Facebook Connectivity n.d.).
Options for Pakistan

After looking at several business models across the globe – including those 45 Middle/Last Mile models discussed in The World Bank Group’s (2018) ‘Innovative Business Models for Expanding Fibre-Optic Networks and Closing the Access Gap’, four types of business models are described as options to choose from in Pakistan:

Public Incumbent Infrastructure Provider

In this model, the optic fibres in the cities are laid and owned by the public sector incumbent broadband infrastructure provider, who rents out either dark fibres (or bandwidth capacity) to the service providers. For example, in India the state-owned incumbent BSNL provides optic fibre connectivity for fibre-to-the-village programme BharatNet. In the opinion of many stakeholders across the world, affordable internet can be provided to the masses only if the state takes over this responsibility, just like the state does for conventional infrastructure of roads and railways. However, in Pakistan, there is no state-owned/managed ICT incumbent infrastructure provider. After the ‘strategic privatisation’ of the incumbent PTCL, the state has no management control over it. Secondly, a public sector entity has its own efficiency issues that do not inspire a lot of confidence in the public as well as in the SPs. Therefore, to increase optic fibre penetration, the option of a public sector incumbent-led model is not recommended for Pakistan.

Consortium/Association of Fibre Operators

The optic fibre operators/investors get together in a consortium/association and invest in fibre infrastructure, with each operator sharing ownership of fibre assets. Such a model is being tried in Pakistan where 28 private fibre operators have joined hands to form the Pakistan Telecom Access Providers Association (PTAPA). To some, it also gives the impression of an exclusive club of operators/investors, which goes against the principle of open and fair access to the fibres.
PTAPA is having issues with those operators who got left out. In March 2020, one such operator wrote a letter to the mayor of Karachi, complaining that PTAPA’s purpose was ‘to monopolize the business.’ He wanted that such an infrastructure should be the property of Karachi Municipal Corporation (KMC). In any case, PTAPA has started with the most lucrative areas of the largest cities in the country. They may never reach the non-lucrative smaller cities, where the expected return on investment is far lower. Therefore, the option of a PTAPA model is also not recommended in this case.

Neutral (Non-telco) Private Investor Model

A big private investor who has no link to any of the existing SPs can play the role of a neutral infrastructure provider who offers equal access to all providers. The examples of Google in Ghana, Uganda and Liberia, and Facebook in Northern Uganda, have already been described earlier in this chapter, where they act as passive non-telco private investor infrastructure providers in cities. However, such big non-telco private investors are exceptions, and it’s hard to convince them to invest.

Public Private Partnership (PPP) Model

An ITU Report of September 2019 on ‘Digital Infrastructure’, recommends that ‘Policymakers, where the market has failed, may consider stimulating fibre investment and passive assets through PPPs, investment funds and the offering of grant funding, etc.’ (ITU 2019: 46). In this model, a PPP has been worked out between the government and a licensed infrastructure (not service) provider, to create a ‘concessionaire’ who builds, and runs the infrastructure. The government contributes with some agreed amount of funding and plays a passive role of a facilitator. The concessionaire leases out three possible services to the interested SPs:

1. Duct capacity, so that the service providers may pull their own cables;
2. Dark fibres; or

The revenue is either shared with the government, or the *concessionaire* pays a fixed recurring amount. SPs then ride on the infrastructure to serve end customers (Figure 8). SPs must also have access to real-time information about cables, such as where they are installed. As networks expand, knowing how much capacity exists is essential for growth planning by the SPs. Such information can be kept on a website for everyone to see.

**Figure 8: How the Proposed PPP Model Works**

The PPP model may be governed by relevant PPP laws. For example, the PPP Authority Act 2017, read with Public Private Partnership Authority (Amendment) Ordinance, 2020. The Ordinance introduced a new concept of ‘qualified project’, which means a PPP project which requires any government guarantee, Viability Gap Fund, support from
Project Development Facility or declared by Public Private Partnership Working Party (P3WP) qualifies as a project. In this sense, the role of the Authority is restricted to the extent of qualified projects only. Any project not requiring either of the above is a non-qualified project by implication of law thus, falling outside the scope and ambit of the Authority.

The Implementing Agency though is entitled to undertake the project on its own and through obtaining administrative approvals as are applicable to it. However, even in such cases, the role of the Authority as a facilitating entity and provisioning of advisory services can still be obtained by an Implementing Agency under the provisions of the Act and the Ordinance. This modified PPP model is the recommended option for Tier 2 and 3 cities of Pakistan.

_Pros & Cons of PPP Model_

Since PPP is the recommended model, its further pros and cons are given below:

**Pros**

a) For Provincial/City Administrations

- A primary benefit of municipal fibre networks is that they help provide a 'level playing field.' Any ISP can come, use the fibres, and serve.
- The administrations earn revenue by renting access to fibres and ducts, rather than charging merely for giving RoW permissions (which amounts to rent-seeking).
- Provinces/cities continue to receive revenues.
- With better quality broadband internet, new jobs, and business opportunities get created in those cities. In the West, many cities build fibre networks to attract talent and tech pioneers.
Avoids frequent road diggings because when the SPs use the infrastructure laid by the concessionaire, there will be no need for others to dig.

b) For Service Providers

SPs do not have to spend any CapEx and/or OpEx, as that is then the job of the concessionaire. They only pay the rent for using the ducts/fibres.

SPs get easy access to fibres. The business interest of the concessionaire is based on renting out his installed ducts and/or fibres.

Concessionaire sells capacity to entities other than SPs too, like safe city installations, banks, corporates, etc.

The concessionaire keeps the infrastructure well-maintained – it is in his interest to do so.

c) For End Users

End customers get to choose among competing SPs to get the best quality reliable and affordable high-speed broadband.

They get better quality and lower tariffs due to competition, and due to savings in CapEx and OpEx for the SPs.

d) For National/Provincial Governments

Governments are able to ensure that fibre networks are not confined only to lucrative areas.

Optic fibre penetration creates jobs and new businesses.

Helps in providing online learning and e-government services to citizens.

Helps meet goals of the digital economy.

With deeper optic fibre penetration, cities get prepared for 5G.
Saves wastage of national resources that go into redundant network elements.

e) For New Entrants

Entry barriers are lowered – they do not need to invest in fibre infrastructure. They pay the prescribed rent to the *concessionaire* and start operating.

**Cons**

a) Whereas the government has some experience of PPPs in civil infrastructure projects, it is an uncharted territory for infrastructure and service providers in Pakistan.

b) There is a general hesitation in getting into such an agreement with the government (any government).

c) An infrastructure provider may start acting as the SP (even via proxy). All other SPs will be disadvantaged in such a scenario.

d) Any currently operating SPs, who have invested in fibre in those cities, may be disadvantaged, as newcomers riding on the PPP infrastructure will erode their competitive edge.

e) Lack of funds to fulfil the government’s part of the PPP obligations during build phase may become an obstacle, unless some donor funding is arranged.

f) Almost all current SPs strongly oppose any role of the Government, beyond that of a facilitator/enabler. The SPs also do not want that the built infrastructure should ultimately belong to the State – as it happens in all classical PPPs.

The last ‘con’ stated above may be a deal breaker. The SPs are of the view that the State should not have an equity in the infrastructure created as a result of the PPP. However, for any such arrangement to work, it is essential that all stakeholders are on board. Therefore, it is proposed that instead of giving grants to the infrastructure providers, they should be given concessional loans. The loans will be returned, and the State will have no rights over the assets thus created.
Recommendations

Following recommendations for supply and demand sides, aimed at increasing fibre penetration, are submitted:

Supply Side

Licensed Telecom Infrastructure Providers should be made to lay a comprehensive *passive* optic fibre network in the Tier 2 and 3 cities having following parameters:

**Figure 9: Enhancing Fibre Penetration in Cities**

□ The government should enable/facilitate (like in PPPs) licensed Telecom Infrastructure Providers (TIPs) so that the task of installing and operating optic fibre infrastructures in the cities is done in a professional manner.

□ Ducts for optic fibre cables, equipped with optic fibres, should be laid by TIPs, selected through competition, in every Tier 2/3 city, terminating at various sites like the mobile radio base stations (towers), schools, healthcare centres, government offices, and streets etc.

□ The above optic fibre infrastructure must be available equally to all (mobile and fixed) broadband SPs, and other interested users, on payment of pre-determined rents.

□ The SPs, or other users, may have the choice of renting either duct space (to pull their own fibres), or dark fibres (to light those with their own equipment) or ready-to-use bandwidth capacity.

□ The partner infrastructure provider in the PPP must not provide service to the end customers on its own – only to licensed SPs.

**Demand Side**

For the broadband to proliferate, the demand side must be addressed, not only to create appetite for the investors, but also because there are public institutions that need to be connected now, like schools, healthcare facilities, government offices, Public Facilitation centres and Safe City locations etc. Connecting institutions like schools would provide SPs with ‘anchor customers’, from where they will be able to cover their basic costs, and thus, sell services at affordable rates to all other end customers. Demand creation not only helps improve the Internet, but also improves delivery of government services like education, governance, and healthcare etc.

**Funding**

In such a PPP model, normally a contribution of the government is the RoW. However, it is recommended that the TIP should pay the payable
RoW so that the RoW owners also have a stake in the venture – as opposed to treating TIPs as those who took away their source of revenue. In view of the fact that TIPs and SPs are all opposed to equity participation of the government, a slightly modified form of PPP model will have to be devised, i.e., something akin to the BOO (Build Own Operate) model, rather than a BOOT (T = Transfer) model. This is possible if the government’s contribution to the PPP is in the form a concessional loan rather than a grant/subsidy. Sources of funding from the government could be the annual budget and donor financing.

References


Success Factors for Implementing ICTs in Large Organisations: Observations from Pandemic Operations in the Public Sector*

by

Dr Faisal Haq Shaheen**
Abstract

Pandemic planning across the Urban North has forced state and non-state actors alike to absorb disruptions to operations and service delivery. Whether adopting 'Work From Home' (WFH) models to sustain operations or alternating shift workers from 'Remote Locations' to ensure adequate coverage in service delivery, Information and Communications Technology (ICT) networks and applications have been tested beyond their normal operating capabilities to manage peak service delivery patterns across increasingly dense service areas. The question now emerges for many organisations as to how to keep pace with technology and ICT demands during pandemic operations and once a 'return to normal' occurs. Many organisations have proactively adjusted ICT planning to conform to contemporary IT wisdom, embarking on enterprise-level ICT journeys in an effort to adopt unified technology platforms to support best in-class applications and their infrastructure needs. However, larger and more complex projects are vulnerable to governance and security pressures, which often sidetrack deployment efforts and push customised solutions while negating much needed, better practices into system configurations (Lutchman 2004). The result can be sub-optimal implementations, wasted resources and inadequate solutions and systems of record (Lloyd 2014; Campbell and Reyes-Picknell 2006). This is a challenge for developing countries as well, where the depth of talent, project management, solution delivery and governance as a whole, is weak.

Evidence from a survey of large enterprise deployments points to the importance of documenting and validating specific end user business scenarios and requirements as 'anchors' for project management and business analysis (PMI 2013; IIBA 2009). These 'anchors' or 'artifacts' can facilitate knowledge transfer and asset management priorities as

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1 The problem many large organisations struggle with involves the growing financial costs of managing legacy solutions, which are not integrated nor offer flexible, user-friendly interfaces. This is further complicated by the higher costs which licensed, cloud based solutions impose on larger organisations, in an effort to balance the needs of updates and security.
part of the end user-vendor dialogue; and insulate business needs from the chaos of security measures, corporate/consultant objectives and pandemic planning priorities. Given the challenges presented by the latter and the strained future (post-COVID-19) financial environment, it will be critical for new and inflight projects to experience optimal deployments (whether they follow a waterfall or agile approach) which will efficiently transition into sustainable ICT leveraged solutions.

Furthermore, current pandemic operations are revealing that substantial emphasis is being placed on enabling Geographic Information System (GIS) technologies as a means of tracing incidences and outbreak levels accurately informing inter-governmental programme coordination and policy decisions (EMA 2018). This chapter summarises key findings and recommendations from municipal case studies across North America and suggests better practices and policy directions for developing countries, such as Pakistan. At the national level, Government of Pakistan’s (GoP) ICT policies must emphasise a commitment to data integrity, transparency, and openness. Accountability needs to be decentralised to the Project Management Offices (PMO), which are at the front lines of service delivery. Whether these offices are situated at the provincial or municipal levels, a close proximity to end users should be accompanied by a focus on out-of-the-box (OOTB) functionality, GIS mapping solutions and end user experiences, which break the chains of technology dominated path dependency.

**Introduction**

Before we venture into the North American public sector IT and pandemic operations context, let us outline the challenging setting within which ICT and IT projects are situated, specifically larger enterprise solutions. It should be noted, that as with most public sector entities, IT solution provision is dominated by technology implementers rather than ‘service providers’ (*the business*) and end users. This ‘techno-centric’ approach has constrained the infusion of end user objectives into design discussions as sector specific ‘blinders’
have compromised project outcomes for several years and across many sectors. Of course, these issues tend to be avoided by proponents of project management and to a lesser extent, business analysis, as they are deemed the responsibility of project sponsors and executives. While governance relationships are a long and drawn out discussion, one must make note that what matters most for developing country settings (such as Pakistan), is that the complex convergence of various interests, without a strong institutional framework or governance structure to guide them, mimics the vary conditions we find in Pakistan today. This section will explore the complex setting, which municipalities in particular, are mired in.

Our North American study survey focuses on local government departments, specifically municipal service delivery providers, and heavily regulated utilities in particular, which face several challenges in successfully implementing and administering enterprise solutions.\(^2\) Their challenges have been further complicated by the ‘physical distancing’ and ‘virtual project management’ mandated across integrated and apparently transformative ICT facing initiatives. One of the most critical tasks faced by municipal public servants (technocrats, as many of them are professionals by nature) in an increasingly fast-paced IT sector is ensuring that software solutions keep pace with the demands of compliance, efficiency and service delivery, despite the restrictions of COVID-19.\(^3\)

Project management ‘thinkers’, among them management theorists, digital operators and organisational behaviouralists in particular, have introduced a plethora of new management terms and approaches in an

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\(^2\) The focus of this chapter is on public sector projects due to the highly regulated and scrutinised operating environment, which they exist in. Lessons can be gleaned from project management challenges where funds are scarce as opposed to Greenfield implementations or migrations in private sector environments, where funding is abundant.

\(^3\) Home grown, in house, heavily customised legacy systems abound in many public sector organisations where cost cutting has left many siloes and orphaned systems running independently without much in the way of integration.
attempt to identify the most efficient methods of solution deployment success factors. The result of applying such 'accelerated' approaches has been to overlook documentation, end user needs, stakeholder communication and governance management; in favour of intensive and concentrated working sessions, which take a truncated and isolated 'techno-centric' approach to implementation. The result for larger, politically heavy organisations has been disastrous, where projects have lagged and even failed.

Practical experience from recent case studies across municipal North America reveals that the opposite of rapid, undocumented, unsubstantiated, process facing approaches is needed. In fact, the focus proposed by field experts and municipal operators has now shifted back to establishing common requirements with end users to ensure the meeting of current and forecasted business needs, where stakeholder needs are central to the implementation. Current practices have been revisited and made more robust in light of COVID-19 pandemic operations which have demanded heightened levels of information and data analysis, rolling up to the global reporting characterised by the World Health Organization (WHO) and Johns Hopkins updates.

Recent experiences from a survey of North American municipal stakeholders with respect to procuring and introducing enterprise software solutions points to the importance of documenting and validating specific and inter-divisional (inter-departmental) needs as 'anchors' for project management. Effective project management and stakeholder governance, in a changing landscape, benefits from

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4 Disciplinary evidence cites the field of Reliability Engineering, Technology Solution Development and Utility Management across Municipal North America, where asset intensive industrial and manufacturing settings have moved away from a technology-centric approach to solution deployment, to one which looks at people and processes first.

5 The findings presented in this chapter are the result of discussions, presentations, workshops and roundtables engaged in with consultants, software architects and business analysts familiar with larger complex organisational settings.
documented ‘artefacts’ that are updated throughout the project lifecycle. Key learnings reveal that the absence of such artefacts leaves direction open to political forces. Not only do such gaps then permit changes in scope, but the landscape of corporate and divisional responsibility for enterprise solution deliverables can be altered.

The benefits of segmenting a project into defined stages with key decisions bound to deliverables can ensure that adjacent projects (procurement, human resources) are not lost and are kept in focus. It can also ensure that a critical view of the technology be adopted through the engagement of third-party implementers who are experts in solution development, rather than simply extensions of solution owners. For example, a software provider may offer a base solution, which they claim can perform function A along with B and C. An independent implementer, with experience in deployment across different organisational settings, would be able to focus on the strength of A, and perhaps offer alternate third-party solutions for functions B and C, if the requirement ‘artefacts’ and documentation were in order.

Before we leave the political context within which municipal IT projects are situated, it is worth emphasising a key learning which has emerged from the reliability sector (operations experts and end users of IT solutions in industrial settings) in recent years. Up and until the 2010s, it was thought that technology could force the transformation of processes prior to the engagement of people. We now know that most of those projects were fraught with challenges post ‘Go-Live’ and as a result, required substantial rework at great expense. What is actually required, is the engagement of people, documentation of their

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6 By engaging consultants with a scope which centres on representing business needs, the ‘one-size-fits-all’ approach of OOTB technology providers can be avoided.

7 It should be noted that these costs are rarely reported through techno-centric studies by consultants, software manufacturers and developers as they require the engagement of solution owners, clients and sustainment teams.
processes prior to the selection and implementation of a technology solution.

Recent reflections and evidence from sustainment efforts reveal that if the end user is engaged early on in the development of the solution, they will be more likely to invest the necessary efforts in contributing to its success, rather than putting up resistance and simply waiting for it to ‘die on the vine’ post go-live and let the costs of rework be absorbed by the balance sheet. The chapter will now explore the organisational environment and unpack the challenges faced by solution owners within the public service.

**Challenges to Implementation**

As outlined earlier, challenges to the effective implementation of enterprise software solutions emerge from two key variables:

1. Complexity of solution functionality (which emerges from end user requirements), and,
2. Maturity of organisational culture within which they are deployed.

Municipal administrations are vastly understudied clusters of often diverse service delivery areas with varying levels of operational complexity and organisational maturity (EMA 2018). Ensuring that the enterprise solution’s functionality meets the needs of all service delivery providers (operating divisions) while remaining sensitive to individual divisional practices and levels of development is critical. It is a goal that no doubt, extends beyond the deployment of the solution and well into the resource-based discussions and plans for system sustainment. There are numerous variants of the implementation challenges outlined, but a few of the more prominent ones, facing

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8 Sustainment refers to the ongoing maintenance of the software solution and support provided close to the end user.
enterprise implementation at the municipal\(^9\) level in the present COVID-19 pandemic mode of operations, are:

- Cross-divisional operations (asset facing) are rarely homogenous and are often characterised by different functional needs, stemming from regulatory pressures and diverse asset bases and maintenance needs (Campbell and Reyes-Picknell 2006). Road maintenance is different from water and sanitation operations, which also differs from public health and emergency services.

- Varying levels of staff capabilities (staff trades, crafts, and skills) exist across operating divisions. More advanced divisions are looking to implement advanced technologies – mobile, augmented reality, machine learning, hydraulic modelling, asset management and GIS-enabled information management, while others have yet to move away from paper-based or manual processes.

- Support service providers are equally heterogeneous in their composition and are rarely integrated with business solutions leave alone with each other. Human resources, financial services, accounting, and payroll all operate on different platforms. These stakeholders need to be engaged early on for ease of integration approaches (ideally, using Application Programming Interface or API).

- The need to work remotely has increased exponentially due to COVID-19, resulting in many employees working independently, often without consultation or consensus building. This in turn, is raising the risk of unnecessary customisation as opportunities to collaborate are strained and deltas of transformative change diminish.

- Resistance to change will be complicated by tighter budgets in an ‘age of austerity’ and the likely budget squeeze which will

\(^9\) Studying the municipal sector is valuable for SMEs in developing countries and IT settings as the complexities incurred by service delivery demands and bureaucracy are unparalleled. Hence, the value of the learnings.
follow pandemic operations. This is further complicated by pressure for showing deliverables and overall project progress.

Similarly, a number of organisational issues pose challenges to enterprise solution deployments. An enterprise solution’s scope, sponsorship, and resourcing are a reflection of the recognition of different interests and understandings of technology which constitute an organisation’s hierarchy. There are obvious differentials in complexity and maturity across any organisation which have to be factored into project scope and planning. An example of how these differentials remain unaddressed is when IT projects are initiated and the gap between business users and IT functionaries (at different levels of their respective organisational hierarchies) prevents sufficient engagement and confidence in solution provision. The power dynamic and pressure of painting a ‘rosy picture’ that ‘all is well’ while delays and gaps persist across project management is all too common. This is no different than what we find in developing countries, such as Pakistan and its municipal settings, where hierarchies stifle communication, talented technology staff are often underpaid and projects churn results from turnover.

Large public sector organisations have a history of challenges which are not limited to the following critical barriers:

- Vertical and horizontal power relations combined with conflicting scopes and levels of authority in governance stifle communication and effective decision-making.
- Organisational turnover (internal and contracted staff) and institutional memory loss (retirees) results in lost requirements and understudied decision points.
- Loss of capacity and the absence of political recognition for resource allocation.
- Project vs. programme mode and when to transition capital funds towards the operational side for sustainability.
Given the range of both enterprise system implementation and organisational challenges, there is a need to anchor project (end user) needs within a resilient framework which is part of a strategic plan/development process.

Situating projects around the organisation’s data (the currency and greatest risk to security breaches) offers a refuge within which large organisational project managers may find shelter.

Utility managers and supporters of enterprise solution architecture across North America are familiar with the tendency for organisations to be ‘data rich but knowledge poor.’ There continues to be a lack of capacity for municipal actors to reflect on their operations and optimise solution performance to the benefit of end users. Ironically, customer facing goals of transparency have led to the ‘open data’ economy where the public service is now under pressure to leverage their knowledge of information to demonstrate operational excellence. The more progressive municipalities in North America have leverage NPM inspired strategic planning exercises to bind their strategic, operational, tactical, technology, asset, regulatory, emergency and environmental plans together. As such, many municipalities have adopted better practices in the drafting of the ‘enterprise solution roadmap’ and ensure that the broadest reach of their business needs are reflected in their technology project plans. This approach should also be adopted by project managers in large public sector organisations in Pakistan, to ensure that information, data and quality can be engaged and analysed within the public realm, to improve organisational efficiency, service delivery and public policy. Such an approach will also show to executive sponsors, that technology solutions are not scoped within narrow parameters, rather have actively engaged the needs of a broader group of business stakeholders.
Assessing Better Practices

Now that the more prominent implementation and organisational challenges have been outlined, this chapter will now examine and unpack some of the better practices which have emerged through various experiences in ICT solution implementation. Beginning with a survey of insights and experiences from larger municipal settings which have, under pressure from looming asset management requirements, legislation and capital project planning, accelerated plans to implement enterprise solutions.

Experiences of enterprise implementations have been captured by IT (infrastructure and management perspectives), operations, and consultants and more recently, system architects (Wireman 2011). A number of tech-centric buzz words have been introduced in recent years (‘big data’, ‘refresh’ and ‘disruptive management’), in an attempt to stimulate thinking around accelerating solution deployments (Saliola and Islam 2020). While such approaches may be effective in smaller settings with limited scope, municipal managers are certainly familiar with the contexts which have inspired such views. However, there are many institutional considerations, legacy systems, asymmetrical design options and path dependencies which can limit the approaches taken. In this background, large organisations must take into account the entire ecosystem of solutions which interact in any organisation both between and across internal stakeholders and with the external environment (Lutchman 2004).

In order to ensure that larger, enterprise projects and programmes ‘stay the course’ and adhere to the long-term end user vision, municipal stakeholders and end users need ‘anchors’ or guiding posts which remind technology implementers of requirements and the ‘TO BE’ vision which ensures that the project stays ‘on track.’ Maintaining a

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10 For instance, conferences offer expert advice at a pace which is far more accelerated than the reflections and learnings cycles of solution developers and operational managers at utilities across North America and with respect to large cities, across the world.
business relevant project vision requires alignment with organisational forces that challenge change and continuous improvement (PMI 2013). As discussed earlier, they range from operational indicators to organisational behaviours and must be met head on. In developing an approach to the enterprise programme (set of projects) at the municipal level, it is critical that an approach be established which binds key project goals from diverse disciplines and stakeholders together (Shaheen 2019).

First, there is a need to frame the overarching IT infrastructure and configuration objectives and speaking in the software’s language during the process of solution development (WRF 2013). This includes:

- Establishing a common approach across (and within) divisions will substantially reduce the need for customisation.
- Establishing common work management scenarios that encourage operating divisions (again, from diverse origins and evolutionary backgrounds) to speak a common language from asset hierarchy to work management and resource utilisation.
- Agreeing upon an enterprise deployment strategy which at the multi-org, multi-site, multi-tenant or single-site level; permits the future configuration and administration of solutions with ease for the end user.

Second, there is a need to ensure that the requirement gathering process and artifacts are operationally relevant to current end user needs (IIBA 2009):

- End users are not even remotely concerned with IT infrastructure and system coding. They are concerned that their pain points are addressed. This should be captured and communicated at every stage of the requirements gathering process.
- Sustaining momentum through updates to end users and their representatives. A day in the field is worth a week at the desk fighting fires if stakeholders are uncomfortable or in the dark.
Workshops and face-to-face meetings are key to easing the routine of communication and understanding between end users of different disciplines, roles, and responsibilities.

Binding new initiatives (GIS, mobile, customer service relevance) to the requirements gathering process so that stakeholders and end users see that the project management team and software implementation group is moving with the times and simply not replicating needs from legacy requirements.

Reminding staff that the project meets the needs of several corporate and division-wide strategic drivers (as discussed during the 'Enterprise Roadmap' section of the introduction). By making documentation available to staff through content management software and online portals, the project’s vision and progress can survive the process of organisational change.

Third, sufficient time needs to be given to integration planning and management. This will ensure that the following benefits can be realised:

- Corporate solutions, which cannot be replaced, are integration ready.
- Middleware designs are set up in advance, and
- Applications, databases and other repositories of information which are sources of unilateral and bilateral data flow are not orphaned (IBM 2021).

Over time, implementation experts and software developers have come to realise that binding of a range of operationally relevant elements into an otherwise benign IT ‘Reference Architecture’ can generate potential for implementation, training, testing and communication (Shaheen 2019; WEF 2011; WRF 2013). Similar lessons learned have been supported by several other municipalities across North America which have gone through the process of solution deployment (WEF 2011).
The approach which many North American municipalities have taken, reflects the combination of a set of ‘Foundational Practices’ (reflecting optimised business flows) with an enterprise ‘Reference Architecture.’ Let us now turn to a brief discussion of the value of investing in the operational and technical discussions around these two documents.

The basis of the ‘Foundational Practices’, which reflect ‘guide posts’ for the effective management of resources as applicable to a range of operational business scenarios, provides a generic template for the documentation of detailed business processes. It allows the business end user to ‘own the requirement’ which are more detailed than a best practice, yet easy enough to understand and adapt to a specific application (Lutchman 2004).

The ‘Reference Architecture’ provides a methodology, which logically orders various levels of detail into documented flows from the simplest reactive scenarios as well as proactive scenarios (WEF 2011). It also allows utilities (and asset intensive organisations) to frame all requirements from high-level customer facing scenarios to detailed fields of entry, simplifying the exercise for the end user (Ibid.). It also allows utilities to objectively identify opportunities for process improvement and remedying painpoints along with focusing on the general way of managing business. Most importantly, the ‘Reference Architecture’ segregate roles and responsibilities around end user operation, administration and sustainment in so far as business scenarios within the technology solution can be configured. All non-technology stakeholders can then identify with the requirements of a scenario, and how end user roles and responsibilities impact the lifecycle of the asset (utilities) as well service delivery (WRF 2013).

While the process of establishing and framing a ‘Reference Architecture’ can be long and arduous, the benefits of bridging the gap between end users and technology implementers is immense. Such as out-of-the-box (OOTB) functionality and better practices can be realised. Moreover, executive sponsors can focus on realising objectives which are aligned with ‘Strategic Planning and Budgeting’ process.
This very brief discussion illustrates how investing in the documentation of business practices (through ‘Foundational Practices’) and technology architecture (‘Reference Architecture’) can bridge the gap between end user and software programmer. With respect to the interests of project managers, ‘Foundational Practices’ and ‘Reference Architecture’ documents can also provide financial security and insulation from cost overruns.

**Critical Milestones**

In order for organisations to realise better practices in project management terms, a number of key ‘milestones’ are described in this section which if framed appropriately, can contribute to establishing a true ‘Corporate Enterprise Management Solution’ and ensuring returns on ICT investments. Some of these tasks can be performed in parallel but should appear within the broader Statement of Work (SOW) (PMI 2013). While this list is not exhaustive nor does it claim to be comprehensive, it is shared across several North American municipal project experiences in their work with solution providers ranging from IBM to Oracle and ESRI (WEF 2011; WRF 2013).

- Establish *cross divisional working groups* and *functional teams* for knowledge sharing and requirements documentation on an enterprise scale.
- Engage an external consultant (independent implementer) on best practices, and facilitate an executive discussion on the benefits of moving forward with an enterprise solution. *Foundational Practices*, *Reference Architecture* and *Business Scenarios* should be documented well.
- Establish a *methodology for business requirements documentation* based on the ‘Reference Architecture.’
- Develop a separate procurement process (Request for Proposal or shortlisted Request for Quotations) for technology as well as implementation. This will ensure better practices which are business facing, are not eclipsed by OOTB configurations.
Software solutions should be shortlisted through a cross-divisional evaluation process. In other words, asset owners and divisional stakeholders should be part of the evaluation and selection process so as to ensure change management starts early.

Discovery and readiness assessment.
Organisational change management.
Integration planning and implementation of training.
Testing and staggered sustainment planning, and
Go-live plan and sustainment.

A survey of North American municipalities reveals that these milestones have been achieved in an environment of organisational change where retirement and staff turnover at the senior management and operational levels have threatened progress. These milestones, particularly the documentation of requirements, have also survived several corporate reorganisations which have transferred projects across operating settings. In turn, once budget consolidation efforts, political agendas and cost-cutting objectives have been realised, the 'non-value added overhead' of projects (corporate support or shared services costs) have been effectively removed.

Now that we have surveyed some of the better practices and outlined a series of critical milestones for project managers to consider, we turn to the more relevant focus of the study, i.e., the state of affairs in terms of pandemic operations and the ICT response and relevance to COVID-19.

A Survey of IT Practices in Municipal North America and Support to Pandemic Operations

Pandemic operations have eclipsed the day-to-day routines of municipal activities across North America and perhaps more persistently, Canada. A number of IT initiatives have been launched by municipal health departments to ensure that critical levels of state and non-state collaboration can track and manage the spread of COVID-19.
Some of the learnings which have emerged from pandemic operations across municipalities are discussed in this section, in the light of enterprise solutions and better practices outlined earlier. It is worth emphasising at the outset, that several municipalities have leveraged ICT and GIS mapping informed analysis to track COVID-19 incidences, outbreaks, case load, testing and fatalities, among other indicators.

Enterprise initiatives and pandemic operations across larger cities in municipal North America have supplied various learnings in governance, scope, stakeholder engagement, requirements framing and implementation design. Observations in emergency information management and governance can certainly influence the ways in which smaller scoped efforts or limited scale initiatives can implement enterprise solutions. If one examines the experience of COVID-19 in larger municipalities in North America (such as Toronto), one finds an interesting perspective along the frontlines where reporting is informed immediately by policy directions and day-to-day realities. Of most interest is perhaps how ICT mobile solutions are now being associated with being GIS-ready. Given below are some reflections on aligning business and IT requirements for longer-term sustainment. Reflections are organised by application objectives.

**Enabling an ICT Policy Environment**

There is a central role of national and provincial governments in enabling an ICT policy environment within which municipal departments and service providers can operate. This is necessary as the state consumes, analyses and reports out on the most data out of all stakeholders and is under immense pressure from private sector actors and public health concerns through the media. To this end, national and provincial governments should focus on ensuring that open data, data governance, data accountability and traceability form the basis of a very practical digital transformation policy.

At the municipal level, data quality and digital transformation programmes need to be articulated for frontline staff who are central
to data collection. This should, make it as easy as possible for solution end users to be able to gather data efficiently and accurately without diverting attention away from the work at hand.

The work of inter-governmental data management and governance should in turn, enable citizen engagement within the IT public policy realm, via app development. For example, in transportation, most of the mobile apps available which track congestion are outside of municipal IT departments and are freelance programmers who develop apps for mobile solutions.

Under COVID-19, data analysis and reporting on outbreaks in long-term care facilities and schools needs to be contained within the public realm. As such, policies should enable ‘data utility’ where open data increases robust reporting and decision-making. Integrated data, within the state should inform aligned budgets and performance. In summary, at the:

**Federal/National Level**

- Analyse, enable and inform data across all jurisdictions.
- Focus on business intelligence and policy analysis.
- Encourage ICT policy and strategic planning across sectors. This should in turn, during COVID-19, inform the provision of subsidies and support to sectors in most need.

**Provincial Level**

- Facilitate municipal shifts.
- Strategise digital government and service transformation.
- Across rural and urban settings, ensure that subsidies are reaching citizens in most need.
- These portals should in turn, encourage the engagement of People, Innovation and Platforms (public engaging). Again, during COVID-19, data gathering, and reporting has been contained within the public realm.
Municipal Level

- Ensure service delivery and engaging public data through centralised data repositories.
- Citizen-Service delivery should be migrated to online experiences where information is disseminated, and data collected to track service delivery gaps and vulnerabilities. These data sets should complement divisional efforts to improve city service processes.
- At the frontlines, security concerns will be paramount, and it should be ensured that protocols are in place to safeguard a secure and innovative environment.

If inter-governmental coordination is built upon these critical roles, a platform which supports innovation and engagement of the private sector, creative solutions to public sector problems has a better chance of emerging. This can only happen if project requirements are gathered in a rigorous and transparent manner.

Requirements Framing

Of central importance to solution deployment during COVID-19 pandemic operations is calling out administrative conflict, especially where there is overlap in areas of responsibility. As part of the requirements framing process, documentation and ownership by internal stakeholders needs must be established through accurate consensus of ‘pain points’ and ‘opportunities for improvement.’

During this process, projects can clarify the stages where involvement of different actors will be required. Once solution design stages are reached, project managers can then point to potential areas of solution expansion.
**Requirements Gathering and Validation**

Systems should be deployed and integrated and based on end user experiences and stories. Key observations across enterprise projects reveals that the absence of such artefacts not only permits scope creep (the expansion of project goals beyond their initial objectives), but also results in the inefficient allocation of scarce resources and missed milestones. Unfortunately, many IT projects fail as too much energy and emphasis is placed on a project’s political deliverables rather than discussing and referring back to administrative and technical documents.

![Figure 1: Political-Administrative Continuum](source: Shaheen 2020)

An investment in divisional subject matter experts early on can leverage the creation of stakeholder forums where frontline input into solution design, can inform and optimise resource engagement. Taking such perspectives alongside architectural review and management approval, broader themes and divisional objectives can be coordinated across otherwise isolated operating units (Figure 2):
User group forums, training materials, testing protocols reflecting original requirements scenarios, reduced time for testing and ease of integration are among the obvious benefits. The development, update and maintenance of these artefacts can aid in sustainment in the long-term. The risks of implementing long-term public sector IT projects, with changing governance structures, can be mitigated by leveraging documented ‘artefacts’ during decision-making. However, when such timelines cannot be maintained, it is critical that scope be managed.

**Timelines**

Project scope and the manipulation of requirements into solution design and implementation plans should be segregated into logical work packages and phases. This will ensure that the capabilities of software vs. integrator can be balanced, and timelines are realistic (where slack and drag are experienced).

**Organisational Change Management (OCM)**

While timelines are progressing and independent tasks are being processed, organisational change management (staff and SME engagement) can be initiated through stakeholder forums and business process review (moving from ‘as is’ towards ‘to be’ end states). If the
focus is on ‘people’ rather than ‘technology’, the engagement of business requirements needs to be take place first. Then documentation of processes can be followed by the introduction of technology. The Subject Matter Experts (SMEs) can then influence processes that reflect on IT solution design. On the end user side, project evidence reveals that SMEs who are involved own the project and are more likely to use and support the system in the long-term contributing to an optimal pace of Organisational Change Management (OCM).

**Controlled Pilots**

When accelerated approaches to deployment (‘agile’, etc.) are well managed, documented, and minimum, viable products can be finalised at the end of focused ‘project sprints.’ The resulting environments (Development Environments and Demonstration or Sandbox environments) can be used as prototypes and demo settings which end users can leverage for business transformation and organisational change can be created. These incubators of Applications in Development environments are useful to keep end user interest alive while production environments are being prepared. The use of sandbox environments allows end users to try out functionality and prime early adopters to understand what the solution can do, as it is being developed.

**Mobile and GIS Pieces to the Enterprise Puzzle**

Mobile solutions are becoming a key feature of operational IT platforms and ecosystems. Cloud-based solutions rely increasingly on the flexibility of allowing multiple field devices to capture information and store it within virtual servers. This simplifies the process of data collection and storage in systems of record, licensed for use in the Cloud. If the OOTB solutions focus on simplicity and ease of entry (drop down menus, auto populate and smart data entry), data can be mapped and the power of field data entry can be leveraged in real time. In parallel, remote working can be central to operations and citizen
Success Factors for Implementing ICTs in Large Organisations: Observations from 139 Pandemic Operations in the Public Sector

engagement (through public facing portals) can be made easier. This, in turn, permits corporate IT departments to focus on ensuring that infrastructure and integrations are functioning. One can appreciate that with recent technology developments, the focus is increasingly on governance and infrastructure where OOTB solutions (cloud-based) simply pull information from mobile devices and manipulate data using GIS technology.

ICT (mobile) devices and GIS strategy needs to focus on improving asset/system performance and resource management. With such information capture, end users in the field can quickly draw on established asset inventories, focus on proactive work and facilitate reactive or emergency work where necessary. In all cases, ICT should be supported by mobile interfaces, bilateral information flows, communications with management and inputs into decision-making which empowers the end user or field practitioner.

Administration and Sustainment

The combination of technology strategy and 'New Public Management' thinking has drawn administration and sustainment discussions into more tense, silo-based discussions than techno gurus had ever imagined. In smaller organisations, sustainment is seen as minimal cost to support system upgrades and maintenance. In larger organisations, the situation is more foreboding. Large corporate departments act as 'gatekeepers' stifling creativity, end user problem solving and front-line support, as departmental IT support teams struggle to keep pace with ensuring that field workers are operational. Regardless of the politics which drive many of these asymmetries, separating IT roles and responsibilities (administrator, infrastructure, super user or field operator, among others) is challenging. The bigger the organisations get, the harder and yet more necessary it is, to clearly separate these roles.

The idea behind enterprise solutions is that scaled up 'systems of record' could displace legacy solutions and manage 'big data' through
GIS layers within cloud solutions. As a result, technology footprints could be reduced while costly upgrades to the multitude of duplicated systems could be eliminated. There is a need for dedicated resources for such initiatives. To work off the side of a desk is financially prudent, but in the long run, many opportunities are missed for instilling organisational change into the mix. The Achilles’ heel in this vertical ecosystem, is the challenge posed by ‘hackers’ and system vulnerabilities. Security is ever more important as vulnerability of data is now on the rise (malware, etc.).

ICT COVID Policy Enablement

Now that the context has been set around enterprise solution learnings and municipal utility operations, this section will focus on the real lessons being learned from COVID-19 operations and the tracking, monitoring, analysis and decision-making that has emerged from settings in municipal North America. The key role of GIS and mapping analytics as a critical component of ICT across all levels of government cannot be overstated.

At the federal level, open data release across Canada and the US has been coordinated across provinces and states, rolling up to international reporting to multilateral institutions (WHO), academia (Johns Hopkins), think tanks and a host of public-based, open applications. To this end, data integrity has been fundamental. According to practitioners, data must be accurate and must mean something, otherwise do not release it.

At the provincial level, geospatial value and location-based information has never mattered more than any other time in the history of information management. Reporting on the ‘good and bad’ has greatly assisted in informed decision-making, resource allocations and has revealed the failures of past public policies around the isolated information management of healthcare (such as privatisation of certain sectors). Since the pandemic spread across North America, key indicators around infection rates, fatalities and hot spots have been
immediately reported out on by local health service providers and communicated through the media, vis-à-vis information questions and policies around restrictions, closures, and lockdowns. Many of North America’s municipalities have struggled to balance economic impacts with risks to public health and infrastructure. GIS-informed ICT data has guided decision-making, in matters of resource allocation, emergency funding, military assistance and support for healthcare practitioners. While many cities struggled with anti-vaccine lobbyists, those cities which were able to communicate the extent of the pandemic’s impacts fared far better in gathering support and resources than their less organised and ‘knowledge poor’ counterparts. In the post-pandemic environment, the focus of ‘Building Back Better’ will determine which sectors will need more support over others alongside preparing for future strains and mutations.

**ICT COVID-19 Programme Delivery**

ICT and GIS-based technologies have been showcased at the municipal level across North America in the most groundbreaking ways, in so far as public policy and service delivery are concerned. While delays around data validation (institutional, demographic, and geospatial locations) are to be expected, large municipal service delivery providers across North America have largely adhered to the regularly reporting and presenting of data in ways which have been largely internally facing in the past.

GIS facilitated, ICT mobile input data sets have been among the most powerful tools in asset management, systems reporting and overall monitoring of the resilience of the healthcare system and infrastructure in OECD nations. Among the key indicators, which have constituted the reporting portfolio, include:

- Resource maps for urban COVID-19 monitoring and infrastructure status
  - Health of treatment centres, geographic areas of outbreaks, numbers of community transmitted vs. sporadic cases; and
Health infrastructure status and resource mobilisation,

- Number of hospitalisations, numbers of new vs. resolved cases, numbers of fatalities and reproduction number \( R(t) \) have all been tracked and mapped by geographic location.

These are some of the key indicators which through ICT mobile data entry, have driven decision-making and prioritised interventions, all the way up to inter-governmental modelling for strategy in North America. Of perhaps most importance has been the careful and routine coordination of daily updates from the national, provincial, and municipal levels of government in Canada for instance, all in response to policy directives and information which has been informed by this framework of inter-governmental data collection and coordination. Needless to say, ensuring the tight messaging through media networks and up to inter-governmental and multilaterals is of utmost importance. In order to cut through the usual myriad of red tape, emergency data and preparedness efforts are leveraging map-based technology. Emergency services across municipalities have been using geospatial tools. It is expected that in developing country settings, effectively deployed and tightly scoped enterprise solutions could probably leverage the GIS-informed data entry of ICT facing mobile devices, bypassing missing infrastructure and improve coordination/reporting. Essentially doing for cities and regions, what the cell phone has done for village business models.

On the public facing side, municipalities have had to provide staff, institutions and residents with better information in a timely manner, especially as lockdowns are announced and restrictions are loosened with implications for municipal licensing and by law enforcement. This has also meant a tremendous amount of data which has been generated for the purposes of research.
ICT COVID-19 Research

In order to coordinate policy actions, responses and reactions, North America’s municipalities have been in need of data analysis and consumption. The following key areas of research and data generation are among the more prominent ones, which have underpinned decision-making:

- Geospatial - Communicable disease trajectories (Real Time)
  - Neighbourhood level data has been segregated and itemised by the following attributes and characteristics:
    - Demographic, socioeconomic, community make up, ethnic groupings.
- Access to resources such as testing and institutional support have been informed by:
  - Positive tests at the individual level segregated by:
    - Neighbourhood, historic vs. recent, forecasting, by gender, by schools (public/private), school district, industrial areas, high density housing, mosques, nursing resources, churches and places of worship among others.
- Proportionality and rates have also been determined by:
  - Mobility data (ICT) vs. case data. Where are sporadic cases vs. outbreaks occurring?

The power of GIS data and mobile entry is clearly evident in the more prominent of data sets and attributes which are being used at the present time in Toronto.

Case Study: City of Toronto Public Health

A number of reports are available which profile daily health facility status, epidemiological cases and feature self-guided neighbourhood
maps, monitoring dashboard, active outbreaks and information by ethno-racial groups (income and infection).\(^\text{11}\)

Clearly, a number of municipal health practitioners and levels of analysis are leveraging from and benefitting from coordination in response to the first wave. What remains to be seen is how quickly state and the non-state practitioners can mobilise to contain the second wave and future strains which are expected well into 2021 and beyond.

**Conclusion**

Now that we have an appreciation of the dynamics which frame ‘Enterprise Solution Development’ and the insights which have emerged from GIS-enabled ICT solution deployment in light of COVID-19, the benefits of applying the people, process, technology framework of implementation can be understood. The orderly analysis of needs and documentation across these three stages of technology solution development is needed for synergies across public sector departments to be realised. This is most evident at the municipal level. Not only must end user needs be understood up front, ease of access and data entry must be enabled, specifically for the purpose of geospatial analysis and GIS-based mapping. This will be a product of how well documented and formalised municipal business processes and logic is. The examples from the utility and healthcare sector are self-evident. However, in considering Pakistan and other developing countries, specific policy areas and programme delivery benefits need to be assessed unit by unit. The experiences and benefits of mapping and reporting during COVID-19 have also shown how powerful solutions were drawn once ICT and GIS were merged.

Developing country settings, in particular, highly dense and urban Pakistan, can leverage the simplicity of ICT and GIS-mapped data

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capture and mapping for informed decision-making. The task of mapping institutional mandates, data sets and jurisdictions; and sifting through updates, sustainment plans and data governance plans fall to local actors across the civil and civic society sectors. The Urban Units in Punjab and potentially Sindh have held promise in theory, and knowledge should be leveraged to move public policy forward.

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Education Systems during the Coronavirus Era: Emerging Needs & Challenges

6. Challenges and Adaptations for Teaching & Learning Practical Subjects Online during COVID-19 in Pakistan

7. Evaluating the Impact of COVID-19 and Online Education on Student Happiness & Well-being through a Systems Thinking Approach
Challenges and Adaptations for Teaching & Learning Practical Subjects Online during COVID-19 in Pakistan*

by

Ar. Aamina Shahid**

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* This chapter has been approved as an Essay by the referee.
** Ar. Aamina Shahid is a Visiting Assistant Professor at the Department of Architecture, COMSATS University, Islamabad, Pakistan. She is a licensed Architect who specialises in Urban Development Research and Practice. Her interests focus on design education, socio-spatial analysis, and action-oriented design research.
Abstract

Online education during COVID-19 has imposed considerable limitations on practical aspects of learning, calling for innovative measures to address these challenges. This chapter explores the challenges and responses for imparting professional education of subjects particularly reliant on hands-on learning and equipped workspaces to achieve their academic and training goals, during the pandemic crisis. The main arguments are based on personal experience of teaching practical and theoretical subjects of design and architecture at the university-level, student surveys, and faculty interviews along with study of secondary data. The main challenges and adaptations have been categorised under academic revisions, pedagogical support, and psychological scaffolding.

To cope with the limitations posed by lockdowns, we need to rethink our approach towards education by accepting adaptive modes of content delivery and developing more relevant and practical curricula. The measures which can help make online practical education more feasible include flexible course arrangements and modes of assessment, rotational access to workspaces and technical equipment, tutor training through institutional support, and accommodating lack of interaction through individualised tutorials. The study concludes that substantial changes in the methodology of teaching practical subjects can help in attaining the desired learning standards and outcomes. It also highlights new vistas of learning and prospects of professional education for students facing cultural and economic constraints.

Introduction

The Coronavirus pandemic forced governments the world over to impose social distancing and lockdowns to prevent further spread. These measures drastically altered many routine life functions and also disturbed academic activities. According to the United Nations (UN), the Coronavirus pandemic has been one of history’s most severe
challenges, disrupting education access of all levels for nearly 1.6 billion students globally (UN 2020: 2). While nearly all countries have been affected to varying degrees, the disruption of education is a particularly sensitive matter for developing and low-income countries already battling with economic crises and professional disparities. Highlighting the learning losses to children, Geven and Hasan (2020) reported that such crises are likely to cause more than 900,000 children to be deprived of earlier stages of school and increasing the out-of-school share from 27.3% to 28.6%. Therefore, for countries like Pakistan, where nearly 40 million students were affected by school closures, prompt and appropriate measures became crucial to sustain education during school closures.

All educational levels require immediate attention from the Government of Pakistan (GoP). Higher Education Institutes (HEI) imparting professional skills should remain a top priority when considering national development. Negligence of professional education during this crisis in an already vulnerable education system may cause the emergence of a socioeconomic skills gap, particularly for the less privileged learners (UN 2020: 8). Professional education not only ensures that individuals are able to pursue their careers, but skilled and trained experts also play an integral role in the country’s economic development and social progress. It is crucial that the strategies developed for this phase do not exasperate existing socioeconomic disparities.

Just like other countries, the Ministry of Federal Education and Professional Training, GoP and Higher Education Commission (HEC) gave the directive to continue education online where possible, particularly emphasising higher-level professional education (Rasheed 2020). These decisions had their own implications for developing countries because of the fact that nearly 88% of school students in South Asia remain unconnected from the Internet at their homes (UNICEF 2020), whereas in Pakistan only 36% of the country’s population has access to the Internet (ISPak 2021). Undoubtedly, the decision of online education faced a lot of criticism from students and tutors in
Pakistan, as seen on social media slogans such as #WeRejectOnlineEducation, due to the infrastructural inequalities which online education imposed upon them (Raja 2020; Singh 2020). However, most prominent universities were prompt in bringing their teams together and devising new policies and procedures for online learning (HEC 2020f).

Shifting education online posed several challenges to the academic world, perhaps the central one being how to enable students to access multiple fields of education without compromising on quality and equity. While the expected challenges of appropriating learning content and developing digital infrastructures emerged, the questions of quality assurance, faculty preparedness, and student well-being also came to the forefront. These factors were particularly challenging for the fields of professional education which require hands-on practical training and interactive learning environments such as Architecture, Design, Engineering, Medicine, etc. These practical programmes achieve their academic and training goals through reliance on designated and equipped workspaces which cannot be accessed or recreated online. For this reason, this chapter looks at the issue particularly from the standpoint of creative fields such as Architecture, Industrial Design and, Arts. The 100% respondents (students and tutors) of the survey undertaken in this study agreed that it was academically and psychologically challenging to undergo courses which relied on physical demonstration, via online portals. These concerns have also been acknowledged by the HEC in their education directives (HEC 2020d:7). For this reason, this chapter particularly looks at the challenges and solutions for imparting professional education of practical subjects during the pandemic crisis. It concludes that certain changes in the methodology of delivering and assessing courses can help in attaining the desired outcomes.

The next section covers the methodology and scope of research followed by a section with detailed review of the categorised challenges and solutions pertaining to academic revisions, pedagogical support,
and psychological scaffolding. The final section consists of conclusions from the research and consolidated recommendations.

Methodology and Scope

The research is inspired from the teaching experience of both practical and theoretical subjects of Design and Architecture at the university-level in Pakistan during the pandemic lockdown. It also includes some reflections on the experience of post-lockdown hybrid-mode education under social distancing SOPs allowed by the HEC. The main portion of exploration and findings are based on the results extracted from a primary data survey. The student survey questionnaire and tutor interviews aimed to understand the difficulties and improvisations during online education of practical subjects. This survey inquired about various specific aspects such as stress and exhaustion, innovation in assessment and content delivery, limitations in student productivity and creativity and possible rotational access to campus facility. Furthermore, it inquired about helpful teaching strategies, inclusive learning methods and technical/logistical support provisions by the institutes. The data includes received responses from five universities in Pakistan conducting higher education design courses, based in Islamabad, Rawalpindi, and Lahore. The survey was circulated among approximately 100 students of Architecture, Industrial Design and Fine Arts, and involved 60 participants while approximately 18 tutors were invited for interviews and 10 participated.

The primary data helped to extract the trends in challenges faced across few HEIs in Pakistan conducting such courses online. This research also used secondary data including newspaper articles, agency reports, policy guidelines and webinars, to understand the issues of online education in the national and international context. The main challenges deduced from primary and secondary data have been classified under three categories of required actions namely:

1. Academic Revisions,
2. Pedagogical Support, and
3. Psychological Scaffolding.

Additionally, solutions are also proposed to address these challenges. It must be noted that the issues of this learning phase are quite recent, so a lot of information is based on observations and ongoing experimentation. Therefore, the long-term success or impacts of the educational response to COVID-19 have not yet been properly documented or analysed. The complexities of other technical fields requiring practical workspaces such as Engineering, Medicine, etc., are beyond the scope of this study.

Academic Revisions

Changing the mode of education from in-person to completely online, has drawn our attention to how most programmes are designed for specific, and often rigid, teaching patterns and environments. This shift has revealed that several revisions and readjustments in the curriculum were required to make the learning content better adapted to the limitations of distance learning.

Curriculum Adjustments

Setting up education digitally is much more complex than simply transferring files to Google Drive or running lectures on Zoom as someone outside academia may assume. In fact, creating an efficient and healthy virtual learning environment can involve multiple factors such as adjusting course outlines and lesson sequences, recalibrating methods of delivery and adaptive revision of assessment policies. All tutors participating in this survey had made these adjustments, which varied from changing project durations to exploring alternate materials for students. This often led to much longer time spent on lessons than planned. Moreover, innovative techniques had to be introduced to compensate for interactive learning. Several tutorials in these courses were harder to deliver online due to lack of in-person demonstration,
therefore, keeping deadlines flexible and breaking longer projects into smaller tasks was helpful.¹

It can be argued that the richness of courses, purely based on practical hands-on work, was compromised in the effort to run them online, especially when students were unable to access the required craft materials due to market closures. Teachers hold different opinions on whether students’ productivity and creativity got hindered when attempting to conduct these courses via online mediums, especially for junior courses where digital software was discouraged. A participant of the survey who conducts Design Studio,² believes that ‘students should be taught digital tools/software earlier in their education...with more tools at their disposal, students can easily adjust to any dramatic shifts.’³ However, this opinion stays under question, as allowing students to design handcrafted projects through 3D modelling software could prevent them from the necessary developmental stages of their degree. Teachers agreeing with this decision advise running these courses at a later point, as ‘there is absolutely no alternative to the hands-on experience of a studio.’⁴

When comparing the instruction of the Design Studio with the delivery of theoretical courses, the latter seem to be at an advantage during distance learning. This is because the Design Studio not only consumed more time online, but the curricula also underwent greater compromise compared to theoretical content which was more effectively taught. Probably for this reason, a popular adjustment in course outlines was the substitution of practical 3-Dimensional modelling projects with 2-Dimensional or research-based analytical assignments.⁵ However, it must be noted that no adjustments in curriculum can be sufficient on their own to continue education online,

² The Design Studio is a format of learning where students engage in hands-on projects in a flexible open-plan interactive working space.
³ C Qureshi 2020, pers. comm., 24 September.
⁴ H Zafar 2020, pers. comm., 24 September.
⁵ M Akram 2020, pers. comm., 25 September.
rather a strong backing of digital infrastructures is crucial for making it possible.

**Digital Infrastructures**

When looking at developing countries, the question of digital infrastructures starts with basic access to internet connectivity in cities, particularly in remote areas. Shifting education to online mediums requires that governments take immediate action to develop stronger digital infrastructures for connecting institutes to their faculty and students. The HEI(s) could extend their resources to collaborate with technical support teams and private service providers to remove technological barriers and increase digital outreach.

A good precedent for such a collaboration is the *Ilm Exchange*\(^6\) programme developed by the Centre for Economic Research in Pakistan in which they have ‘worked with multiple education technology partners, national NGOs and content creators to curate a library of digital educational resources and build simple technology’ (CERP 2020). Such programmes help address the issues of disadvantaged students, because unequal access to the Internet or appropriate learning platforms can be quite burdensome.

Along with internet connectivity, comprehensive learning platforms offering facilities for online teaching/learning such as lecture delivery, file submissions, and virtual classroom environments etc., need to be established if they are not already in place. Universities should ideally have their own portals developed for faculty to conduct classes and examinations smoothly. Where such a facility is absent, several free or purchased software applications such as *Teams*, *Skype*, *Zoom* etc., can facilitate delivery and assessment to meet the desired quality standards. To facilitate higher education in Pakistan, the HEC developed a *Covid-19 Technology Support Committee*,\(^7\) which provided extensive guidance on


\(^7\) Details available at <www.hec.gov.pk>.
suitable technology solutions such as Microsoft Teams, Moodle, and Learning Management System (LMS). HEC also offered universities wishing to use the Virtual University LMS, a financial waiver for the first 6 months (HEC 2020a). However, considering the concerns raised by faculty and students about practical subjects, the elaborate features of the LMS and similar software still seem to fall short of compensating for the absence of designated study spaces and guided practical tutorials.

To assess the availability of software with the general success of courses, comparison has been made between the HEC data on ‘Online Readiness’ (HEC 2020b and e) with the ‘Complaints About Online Teaching’ (see HEC 2020c:4). While ‘Overall Readiness’ appears to touch 85%, nearly 25% of the student complaints ‘pertain to the perceived quality of the online instruction mode’ (Ibid.) related to courses being ineffective or teachers not being trained enough. This further confirms that technical facilitation alone is insufficient.

Quality and Innovation

Among the many concerns rising with digitalisation of education, a prominent one pertains to maintaining quality and fairness. The environment of distance learning is very different from on-ground classrooms and examinations, making it a sensitive matter to ensure that academic content and monitoring of students’ progress is not compromised. While several high-stake exams such as Matriculation and Higher Secondary exams were postponed the world over and in Pakistan (UNESCO 2020), most HEIs chose to continue with their examinations to avoid disruption in students’ course succession. The respective examination bodies and faculty were pushed to quickly adjust courses for alternate modes and methods of assessment. While these adjustments posed multiple threats and challenges to the academic community, it is also believed that ‘this crisis has stimulated innovation within the education sector’ (UN 2020: 1). The teachers experimented with teaching methodologies and quickly understood that flexibility in methods and formats would help increase resilience
and outreach of education. Along with such adaptations, counselling and guidance also proved useful in extending better opportunities to students during this learning phase.⁸

Being innovative in designing, engaging and individualistic tasks was certainly burdensome for university faculty, however, many tutors saw this as a learning opportunity for streamlining the teaching process. 'Hands-on studio learning usually is better taught in person [however]... processes can be altered as long as faculty are clear on the aims and objectives of the course.'⁹ In the Design Studio of one of the sample universities, students were encouraged to recycle materials available at home for project models, and to experiment with hybrid mediums for presenting their work during virtual feedback sessions. The tutor’s attention moved from assessments based on objective learning or rigid project deliverables, towards comprehension and analytical skills of the students. Similarly, where comprehensive learning platforms were missing, teachers resorted to exploring the array of software available to them. For example, one tutor,¹⁰ who teaches Architecture Thesis students, shared that she ‘used Polly for class feedback surveys and Flipgrid to generate debates. [I] also interestingly learnt that PowerPoint could be a very potent tool with animations and music etc.’

Assessing students’ understanding and learning ability rather than content retention called for innovative methods such as open book exams, research-based assignments, personal sketchbook tasks, and alternative materials. Such assessment methods were also advised and endorsed by the HEC in its Guidance on Assessments and Examinations (HEC 2020d), explaining that ‘the underlying principle is that answering questions requires application of knowledge rather than recalling memorized information’ (Ibid.). However, these different adaptations practiced by the faculty seem to have taken place independently without much guidance by the departments on teaching methodologies. The guidelines provided by the HEC pertain mainly to

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⁸ M Abdullah 2020, pers. comm., 24 September.
⁹ A Edroos 2020, pers. comm., 23 September.
¹⁰ U Kabir 2020, pers. comm., 22 September.
assessment policies, while the *Monitoring and Evaluation*\textsuperscript{11} guidelines provided by the academic departments also seem to be generic and more focused on documentation and reporting. Little attention is paid to the on-ground issues encountered in actually conducting the courses, such as teaching limitations or assessment difficulties, for which more efficient correspondence between the educators and the policymakers needs to be established. Such a change can shift the focus of current mechanisms from monitoring of faculty towards actively assisting them.

**Pedagogical Support**

In combination with academic revisions, there are multiple pedagogical support structures required for smooth functioning of education via online mediums for students in both near and far-off locations. Pedagogical support structures can include professional training, technical assistance and provisions of platforms appropriated for teaching various subjects. It also concerns the accessibility and inclusiveness of academic content with regards to disadvantaged members of academia.

**Teacher Training**

Considering that education has been a top priority of all governments, educators should ideally be recognised as ‘frontline workers’ and facilitated accordingly (INEE 2020:7). Educators, having adequate pedagogical support, are key in achieving the agenda that education ministries have set for distance learning. However, it has been noted that, ‘even in contexts with adequate infrastructure and connectivity, many educators lack the most basic ICT skills, meaning they will likely struggle ... with facilitating quality distance learning’ (UN 2020: 15).

\textsuperscript{11} Guidelines provided for regulating learning content submissions via university e-portals.
After the decision to continue education online was taken, teachers were tasked to implement the modalities of the online medium. This started without sufficient pedagogical support structures in place, whereas it is essential ‘that teachers and communities be better prepared and supported if equitable and inclusive learning ... is to be guaranteed’ (UN 2020: 23). Teachers being under-prepared and technologically under-equipped to fully perform their tasks, can be detrimental to the learning process. It could lead them to feel excluded from the process or deliver low standards of education.

Education agencies declare that ‘innovations in technology and infrastructure are most often focused on learners but focusing on teachers is just as necessary’ (Inter-agency Network for Education in Emergencies 2020:9). Without resources being proportionally allocated, distance education becomes subject to individual capacities of teachers to arrange the necessary technology and connectivity. Adapting to these unforeseen circumstances will not be easy but by providing appropriate training and equipment to the teachers, the country can cope with some of the current education crisis (Raja 2020, para. 5).

Teacher-training workshops are a highly recommended measure for equipping and preparing the faculty, both technologically and pedagogically. Similarly, organised interactive sessions between the tutors help in coping with unprecedented challenges that the digital mode is bringing forth. It is clear that this shift has been particularly strenuous for teachers conducting practical courses in the absence of labs, workshops, and studios, etc. These programmes may have complex requirements for developing online learning packages, in addition to the basic ICT tasks such as managing online databases, recording lectures, and employing digital media for presentations and live assessments etc. Some tutors suggested that ‘detailed video
tutorials’ and ‘a month or so of rigorous training’ would have been helpful.\textsuperscript{12}

This research also shows that faculty from institutes with in-house IT support teams felt much less stressed compared to one-time trainings because, other than technical assistance, the tutors also need confidence for taking up innovative digital techniques. However, it needs to be pointed out that the HEC Technology Support Committee had issued a detailed working paper which aimed to ‘assist the senior leadership of universities in easing the transition to virtual instruction’ (HEC 2020a). According to the survey results, such guidance may not have been properly communicated to teachers through the institutes. This draws attention to the possible lack of communication and coordination between the HEIs and the HEC Committee issuing the policies.

\textit{Addressing Inequality}

One of the main issues intended to be addressed through pedagogical support is possible disadvantages faced by faculty members, and also students, for being away from educational environments. Studies indicate that ‘distance learning in high income countries covers about 80-85\%, while this drops to less than 50\% in low-income countries’ (UN 2020: 37). Looking at connectivity statistics in Pakistan, approximately 36\% of the population currently has access to the Internet, whereas less than 1\% has a fixed broadband facility (ISPAK 2021). This leaves a great number of students from the remaining percentage at a loss, especially those residing in areas with minimal or absent internet infrastructures such as remote/rural areas (Raza 2020). This digital divide further tallied with access variation between provinces further reinforces that distance learning can reveal limitations of ‘haves and have nots’ (Raja 2020). Both students and tutors come from various socioeconomic backgrounds and regions with varying internet facilities and technical

\textsuperscript{12} H Zafar 2020, pers. comm., 23 September; and U Kabir 2020, pers. comm., 22 September.
capacity, and some may need extra support during the lockdowns to keep from being excluded (INEE 2020: 24). All of the teachers present in the survey, also seemed aware of some students feeling disadvantaged during this phase - the major issues faced were internet connectivity and mental stress.

The issue of connectivity was due to students facing power outage or being in remote areas. The mental stresses could be attributed to illness from the virus, isolation from family/friends or the lack of proper workspace. 13

Considering that live lessons/tutorials can be insensitive to these issues, a tutor shared that their ‘institute had maintained a log for all the studio recordings so the students could go back and listen.’ 14 Simultaneously, another tutor explained that ‘there was little that could have been done for students from remote areas of Pakistan’, 15 exposing the lack of comprehensive and standardised policies for such common issues.

Pertaining to the issue of workspaces, nearly 50% tutors indicated that education should have been managed via hybrid mode, where faculty and students could access lab/studio/workshop facilities on a rotational basis. Currently as the lockdown eases, the hybrid-mode being practised has led to students feeling better supported and facilitated despite controlled access to the campus. It can be quite burdensome for the administration and faculty to manage the implementation of social distancing SOPs during practical instruction sessions, but even the minimum interaction has given students a healthier and equitable work environment. For teachers and students unable to access the campus, remote labs could be set up through software like TeamViewer which enable users to virtually access campus computer systems for their higher processing capacities. Other important forms of assistance that the government and the HEIs could look into are funds for purchasing

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13 M Akram 2020, pers. comm., 22 September; and C Qureshi 2020, pers. comm., 24 September.
14 H Zafar 2020, pers. comm., 23 September.
portable internet connectivity devices and offering the facility of laptop loans,\textsuperscript{16} which is not uncommon in universities around the world. Overall, nearly all tutors found that in the absence of logistical support, being empathetic to individual issues and reducing workload helped students cope with the difficulties they were experiencing. However, such approaches relied almost entirely on the tutors’ consideration and personal discretion.

\textit{Open-Source Digital Access}

Online databases of open-source learning material are an important component of online education, as students cannot access the resources available in departments or campus libraries. Such databases can be developed within the HEIs, and also in collaboration with different institutes to share learning resources nationally and internationally. While policy and curriculum documents will be specific to the HEIs, a number of resources for related subjects can be shared nationwide to promote knowledge exchange and transparency. Several such platforms have also been promoted by the Pakistan’s Ministry of Federal Education and Professional Training, including Sabaq Foundation, Noon Academy, Taleemabad, etc. (MOFEPT 2020), which are openly accessible to students of various grades. These initiatives help in extending learning content to students who cannot participate in live learning, or to compensate for not being able to access school/university libraries. It is also important that education ministry and councils make it necessary to provide online access to necessary curricula so it may remain transparent and open to the public (UNHCR 2020). The culture of open-source learning reduces the burden on faculty and parents and promotes equity in academic access. While unlimited content may be available over the internet, the HEIs should invest in creating focused and accredited databases for their students and faculty to take support from.

\textsuperscript{16} M Abdullah 2020, pers. comm., 24 September.
Psychological Scaffolding

The pandemic has been a source of stress and uncertainty, negatively impacting the psychological well-being of people from all age groups and professions. One of the highly affected fields has been academia ever since the abrupt decisions to adjust learning activities on online mediums. According to various studies, during online learning in higher education, ‘the toll of the virus, isolation, increased workloads, and other associated effects are rising among many students, staff and faculty members’ (Schroeder 2020, para 1). It is also noted that ‘isolation from their peers, teachers, extended families, and community networks is creating a negative psychological outcome’ (India Today 2021, para 6).

Nearly 88% of tutors and 85% of students in this study also agreed that online learning of practical courses was psychologically burdensome and challenging. It is deduced that the combined pressures of mental unpreparedness, limited knowledge of digital alternatives, physical isolation from the community, etc., negatively impacted the students’ and tutors’ well-being. Psychological health is closely linked with compromised learning outcomes and decreased academic success (VanderLind 2017) which indicates that such negative impact may have lessened creativity and passion towards learning. Therefore, to maintain well-being during online learning, it is crucial to strategise the provision of emotional support and psychological scaffolding.

Extended Time and Exhaustion

Without the facility of typical learning environments that accommodate physical interaction and spontaneous discussion, lesson delivery and discourse can become very time-consuming. This is particularly common in cases where lessons are being pre-recorded for students to be able to access later, depending on their internet availability, as real-time access may not be possible for all. Extended hours are also required in cases where tutors must adopt innovative substitutes for instructing lessons that have previously relied on
physical demonstration and engagement. A great percentage, i.e., nearly 88% students and 60% tutors in the survey shared that learning online/distance-learning consumed longer hours than routine in-person work/classes. This exhaustion is also multiplied because of exceeded screen-time causing ‘a wide range of other physical and mental health issues’ (Hulick 2020, para. 5). This, in turn, can cause immense stress and burnout for tutors who may need ‘socio-emotional support to face the extra pressure resulting from moving to distance learning and ensuring student learning and well-being’ (INEE 2020:24). Furthermore, to reduce unnecessary burden, tutors also recommended that administrators should reduce the excessive documentation and reporting to academic committees during online classes.17

Overall, the tutors’ accounts show that measures for addressing psychological stress such as in-house counselling support proved to be very helpful in one of the sample institutes, but seemed near absent from local academic policies. It is suggested that similar programmes for ‘counselling on adaptability and resilience’ would be highly beneficial if incorporated in all institutes.18 Innovative and integrated strategies for online counselling and academic support can be devised based on successful precedents from the world such as the approach of the Online Education Initiative (OEI) Ecosystem19 practiced by the California Community College (CCC) System, one of the world’s largest higher education systems. The ecosystem approach proposes an organised hub where several dozen institutes collaborate to ensure student support in online education programmes.

The OEI and CCC’s approach to an online holistic student support system is comprised of easily accessible services that are designed to help learners acquire critical skills and competencies and build their confidence and resilience (Peters et al. 2017: 14).

17 A Edroos 2020, pers. comm., 23 September.
18 U Kabir 2020, pers. comm., 22 September.
19 Comprehensive information available at <www.teachonline.ca>.
Interaction and Communication

Psychological support happens in multiple ways simultaneously, between the department and the faculty, the faculty and students and students and students. Informal interactive sessions with education counsellors and colleagues, within and across institutions, can be very helpful for sharing difficulties and devising solutions together.

This may help create a more relatable environment for everyone, helping them feel less isolated and perform better. This is mainly why learning platforms which facilitate peer-learning and group work via audio/video channels (such as Microsoft Teams, Zoom Education, Google Classroom, etc.) are highly encouraged during lockdowns as they help create more comfortable learning environments.

The research revealed that all of the students were aware of some peers finding it harder to keep up and developed their own support mechanisms to compensate for aspects that faculty could not assist with. A student shared that, ‘to motivate each other, we used to be on video call almost all the time when working which aided us to a great extent.’ Based on similar accounts referring to informal engagement with students, it can be deduced that imitating classroom environments can help revive the lost spirits and low productivity of students.

The survey also revealed that another issue posed by distant learning is of students becoming reserved or overwhelmed, resultantly not sharing their queries openly on online platforms. A successful strategy for Design Studios to prevent this issue was multiple discussion sizes - ‘by having the varying sizes, we were essentially trying to cater to all students, some felt comfortable in large groups, while others in much smaller ones.’ At times, the students require individual attention, especially in courses such as Art and Design, where projects are often individually conceptualised and developed by the students. That is why

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20 Student-B 2020, pers. comm., 22 September.
21 C Qureshi 2020, pers. comm., 24 September.
such sessions can create a more inclusive and flexible opportunity for students to participate, along with addressing their varying comprehension levels or individual challenges. These measures indicate that to build resilience within education, knowledge and engagement must be paired with empathetic communication in order to properly understand and address the issues being faced by both the tutors and students.

Conclusion and Recommendations

This chapter explored the challenges of teaching and learning subjects like Design and Architecture via online mediums during the COVID-19 pandemic lockdown, primarily using data sources from Pakistan. The deduced challenges, along with their proposed solutions, are grouped into three main sections. It has been noted that nearly all courses at Higher Education Institutes (HEIs) have had difficulties delivering education online, but courses relying on practical demonstrations and deliverables have been particularly challenging for both teachers and students. Various innovative initiatives have been taken by the faculty to prevent students’ productivity and creativity from becoming limited when dealing with practical projects, but these can become very exhausting and stressful. While the Higher Education Commission (HEC) directed maintaining quality of online education, few policies appear to address the issues of disadvantaged faculty and students during the lockdown. The consideration of faculty and students’ feedback, when establishing or revising policies for these learning phases, is crucial in getting direct insight of challenges on-ground. This can help in understanding specific programme needs and making policies relevant for a larger range of professional courses.

The important learning taken away from the research is that flexibility and adaptability in methods of delivery and assessment have been vital to develop resilience in education during crisis situations. Another important learning is that while academic revisions are very important, they cannot be sufficient without pedagogical and psychological support structures. Observing the nature of the various challenges
encountered, it can be deduced that more active collaboration between the HEC and HEIs needs to be in place to develop effective and holistic strategies for educational support.

Overall, online education has been a positive and prompt decision which can be better regulated with inclusive policy development and efficient readjustment of finances during the campus full/ partial lockdowns. Notwithstanding the challenges, conducting education online has exposed the country to the potential of its outreach to students unable to reach university campuses. The research shows that the faculty of practical degrees felt that this period allowed educationists to re-conceptualise the delivery of education and experiment with alternative methods of learning.

Based on the above analysis, the main recommendations have been summarised as follows:

- Running programmes in hybrid mode with rotation-based use of campus facilities could be a viable option for providing equitable workspace, if managed properly.
- HEIs providing faculty and students with connectivity devices and remote lab access is an important and economical step which requires urgent policy attention.
- Education councils and ministries must actively collaborate with technical service providers to improve connectivity outreach and subsidise required technical equipment for academic staff, faculty, and students.
- Practical work can be substituted with analytical or research-based work during the online phase and intensive workshops for practical work may be carried out when educational institutes reopen.
- Innovation in teaching/learning methods needs to be encouraged and supported technologically by developing and teaching relevant educational software applications.
Teacher preparedness via trainings, ongoing technical support and integrated learning systems must be in place to reduce excessive burden on faculty.

Flexible and adaptable learning formats for students can help promote inclusivity, such as recorded lessons and open book assessments, as well as online shared libraries/ databases.

Maintaining interactive and engaging environments through collaborative work and easily approachable counselling are crucial to check tutors’ and students’ well-being during the burnout and isolation caused by online learning in COVID-19 lockdowns.

References


Challenges and Adaptations for Teaching & Learning Practical Subjects Online during COVID-19 in Pakistan


Evaluating the Impact of COVID-19 and Online Education on Student Happiness & Well-being through a Systems Thinking Approach*

by

Umme Ammara & Hassan Bukhari**

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* This chapter has been approved as a Perspective / Argument Essay by the referee.
** Ms Umme Ammara is a research enthusiast, undergraduate junior year student of BS-Economics with Data Science at Information Technology University, Lahore, Pakistan. She heads the Young Peace & Development Corps at ITU, working for peace promotion through youth-led and youth-responsive approach. Mr Hassan Bukhari is a Teaching Fellow at Information Technology University, Lahore, Pakistan. He is interested in systems research.
Abstract

The impact of shifting university education to online platforms is multifaceted. Possible impacts include a change in the quality of teaching, compromise on the integrity of results, and a reduction in opportunities for socialisation and peer guidance. Each of these elements influences and reinforces the others. On top of this is the pressure from COVID-19. This study uses a Systems Thinking approach to analyse the impacts of online education during COVID-19 in a holistic way. Using causal loop diagrams, it maps the various pathways of impact and describes key governing system archetypes and identifies possible areas of high leverage. Using this approach, the authors attempt to highlight the human perspective and predict how student happiness, self-esteem, stress, and wellness will be affected over time if lockdowns and online education continue. These scenarios and associated policy options present a novel way of modelling and understanding the impacts of COVID-19 and online education on mental health and happiness.

Introduction

With the global spread of COVID-19, communities around the world were put under lockdown. The expected risks due to a globalised world caused the World Health Organization to declare the spread of the virus a ‘pandemic’ by which over 31.3 million people were infected (Blake and Wadhwa 2020).

Countries have been compelled to lockdown normal activities to avoid the uncontrolled spread of the novel disease. This has had many pervasive consequences on economic, social and political activities at a global scale. Not only are countries suffering from a global disruption in supply chains, the lockdowns due to COVID-19 have also played a huge role in adding to the panic surrounding the issue. From 18 March 2020, 107 countries had to move to nationwide school closure (Viner et al. 2020). In Pakistan, during the same time, more than 300,000 schools were forced to close. Umbreen Arif, Technical Advisor for
Ministry of Federal Education and Professional Training, Government of Pakistan stated that more than 50 million school and university students were at risk of falling behind in education (Malik 2020). In fact, school closures affected 600 million students worldwide and in Pakistan, there were 46 million affected learners (UNESCO 2020).

On the other hand, the global pandemic has also created a unique opportunity for re-thinking solutions to complex problems. According to United Nations Secretary-General, António Guterres, ‘Investing in education is the most cost-effective way to unlock progress on all 17 Sustainable Development Goals’ (Li and Lalani 2020).

During Severe Acute Respiratory Syndrome (SARS) and Influenza outbreaks, the number of psychological issues increased. A survey conducted by Brooks et al. (2020) under the Department of Psychological Medicine, King’s College London, found that among those who were quarantined during SARSs, only 5% reported feelings of happiness. Learning from past pandemics, there is a need to take timely actions to examine student health, happiness and well-being. This chapter uses Systems Thinking (ST) approach to analyse university student life with the aid of ST tools like causal loop diagrams and system archetypes. This research maps how online education during COVID-19 lockdown impacted student well-being and happiness and further changed the way of learning. Systems Thinking, contrary to traditional open-loop thinking, allows understanding of underlying root causes, the wrong fixes, and unintended consequences, so more robust solutions can be developed. The study recommends that the government relief packages and measures to address the current pandemic should target educational institutes independently as the education sector has the potential to pave the way for the country to move forward. Moreover, particularly Small and Medium Enterprises (SMEs) can come up with innovative solutions to ease learning at home. There is a need for long-term planning in policymaking processes in terms of strengthening an already fragile education system rather than relying on so-called efficient systems. Using non-traditional
approaches can help answer unsolved challenges of the Twenty-first Century, which have been accelerated with the COVID-19 pandemic.

School Closure Impact on Student Learning

To estimate the effects of school closures due to COVID-19 pandemic, results of previous studies on measuring the causal effect of school closure on skills have been extrapolated. Carlsson et al. (2015) surveyed one of the Swedish schools in which randomly selected young men were allotted a different number of days for test preparation. The result of the test scores showed that those with greater number of school days scored higher on the test requiring crystallized intelligence. Test scores increased by 1% of standard deviation with 10 extra school days. Using these non-trivial results to estimate the COVID-19 impact, it implies that 30 days of school closure may result in lower scores by 3% of standard deviation. Likewise, decreased hours of teaching subjects such as Mathematics, Science and Language also affect student test scores. With one less hour of lectures per week, test scores declined by 6% of standard deviation (Burgess and Sievertsen 2020). Time devoted to schoolwork has been replaced by entertainment activities. A survey of parents in Germany reported that per day, time for school activities has reduced from 7.4 to 3.6 hours, however, per day, time for television, social media, computer, and mobile games increased to 5.2 hours (Hanushek and Woessmann 2020).

School closures not only affect student learning but also results in the loss of economic growth in terms of Gross Domestic Product (GDP) in the long run. Loss of a one-third year of schooling could lower the country’s GDP by 1.5%. Less skilled labour leads to a lower productivity rate which impacts GDP. Incomes would also be lower by 3% in the years ahead for students of grade 1 to 12 as one additional year of schooling increases economic earning by 7.5-10%. Moreover, the underdevelopment of socio-emotional skills due to social distancing also negatively influences economic potential (Hanushek and Woessmann 2020).
With that, public spending diverted from the education sector to economy and health and continued reduced educational spending will affect the access to education and widen the global inequalities, especially marginalised communities in low-income areas are most vulnerable. It also hampers the success of target 4.5 of Sustainable Development Goals, ‘eliminate all discrimination in education’ (UNESCO 2020).

Following school closures, shift to online learning also comes with its challenges, especially given the digital divide within and between countries. For instance, 95% students from Austria, Switzerland and Nordic countries have a personal computer in contrast to 34% of Indonesian students. In the United States, students above 15 years of age belonging to advantaged families have a computer, and 25% of students from disadvantaged backgrounds do not have access to computers (Li and Lalani 2020). If access to quality education depends on digital access and technologies, the gap between socioeconomic classes will likely inflate further and give rise to new challenges of equality.

**Systems Thinking (ST): An Introduction**

‘Systems Thinking is the art and science of linking structure to performance, and performance to structure — often for purposes of changing structure (relationships) so as to improve performance’ (Richmond 1994). To understand the systemic interconnections in contrast to traditional reductionist thinking, which emphasises analysing a problem by understanding the parts, ‘Systems Thinking’ (ST) views the underlying non-linear problem symptoms, non-obvious causes and indirect effects as a whole by mapping multi-causal delayed feedbacks. Using a ST lens, one can foresee the complex interconnections of unintended consequences using the big picture approach, anticipating the results of well-intentioned fixes, and identifying policy intervention points.
Table 1 presents a precise introduction of ST and how it differs from conventional thinking. The chapter views different components of online education through this ST lens.

**Table 1: Comparing Conventional vs. Systems Thinking**

<table>
<thead>
<tr>
<th></th>
<th>Conventional Thinking</th>
<th>Systems Thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model of thinking</strong></td>
<td>Linear, causal, open-looped, &amp; immediate feedback</td>
<td>Non-linear, multi-causal, close-looped, &amp; delayed feedback</td>
</tr>
<tr>
<td><strong>Cause of problem?</strong></td>
<td>Obvious &amp; easy to trace, External to the system</td>
<td>Indirect &amp; nonobvious, Internal to the system</td>
</tr>
<tr>
<td><strong>How to optimise?</strong></td>
<td>By optimising the parts</td>
<td>By optimising the relationship among the parts</td>
</tr>
<tr>
<td><strong>How to resolve problems?</strong></td>
<td>Cure the symptoms</td>
<td>Fix the systemic causes</td>
</tr>
</tbody>
</table>

*Source: Senge (2006) and Stroh (2015), as cited in Yaqoob et al. (2018).*

ST maps feedback processes, ‘the situation of X affecting Y and Y in turn affecting X, perhaps through a chain of causes and effects’, and so communicates the underlying story behind the story. There are two types of feedback processes: balancing (B) or reinforcing (R) loops. When the relationship between variables is stable, the loop indicates a balancing process shown by B; and when the process is unstable and accelerated, the loop signifies a reinforcing process shown by R (Senge 2006). Moreover, when there are an odd number of negative signs or Opposite (O) labels in the whole loop, indicating an indirect relation between two variables, the loop is balancing; and, when there are even numbers of negative signs or all positive signs or Same (S) label, stating a direct relationship between two variables, the loop is reinforcing (Sterman 2010).

**Systems Thinking Tools**

*Causal Loop Diagram (CLD)* presents non-linear causal interconnections between variables with the help of feedback loops discussed above. It is a qualitative tool of ST that depicts the iterative causes and effects of a complex problem. For example, in the population CLD shown in
Figure 1, S signs between births and population and population and births show a direct relationship between variables. The process is accelerating, thus, the loop is reinforcing. The relationship between population and deaths is direct whereas indirect between deaths and population gives stability in the loop, hence, it is a balancing loop with an odd number of O labels.

**Figure 1: Population Causal Loop**

![Population Causal Loop](image)


Stock and Flow Models are quantitative tools to provide an in-depth analysis of the rate of change between variables. Elements in the model are stocks that accumulate over time; flows that can increase or decrease the stock level at a particular rate; and connectors, which further provide modification to the rate of changes (Sterman 2010). For instance, happiness is a stock that can increase or decrease with the stress rate that is a flow; and social labelling, quality of sleep and exercise are converters which influence the inflows and outflows, and thus stocks.

In the population stock and flow example in Figure 2, population is a stock with births as inflows and deaths as outflows. Birth rate and life expectancy are converters influencing the inflows and outflows, respectively.
Figure 2: Population Stock & Flow Model

Another effective tool is *System Archetypes* which give insights into the systemic behaviour of the system events. They help identify the underlying causes of the system’s behaviour over time and prospect the unintended consequences, so alert project managers about the merits and demerits of their decisions (Braun 2002). With the help of this useful tool, we can pinpoint the leverage points by pondering over the variables identified by archetypes as an intervention point. Some of the commonly used archetypes are:

- **Fixes that Fail** which point to quick fixes responsible for unintended consequences in the long-term.
- **Shifting the Burden** identifies the addictive solutions which reduce the need to implement the fundamental solutions.
- **Limits to Growth** depicts such a system behaviour that grows and suddenly hampers.

In the next section, these tools have been applied in the context of education during and beyond COVID-19. The study takes inspiration from Ammara et al. (2020)’s analysis on COVID-19 related misinformation through the lens of ST. The current study extends the use of similar tools for studying the education system. ‘Causal Loop Diagrams’ and resulting ‘System Archetypes’ are used to evaluate the impact of online education. This provides a tool to describe a
qualitative phenomenon and develop links and relationships between activities. For modelling through ‘Stock and Flow Models’ additional data would be required that is not available in this novel phenomenon.

Methodology, Context and Study Findings

The discussion in this section, although applicable to most educational organisations, draws on the experience in a second-year undergraduate classroom at Information Technology University, Lahore, Pakistan. First, the authors sketched a model which depicted the various interconnections among different domains, as shown in Figures 3-12,1 ranging from health, socialisation, studies workload, financial and societal pressure and its effects on fourth-semester students’ education after the shift to online classes due to COVID-19 lockdown. A summary description of the archetypes applied in the chapter are given in Table 2:

Table 2: System Archetypes Identified in Systems Dynamics with Education Examples

<table>
<thead>
<tr>
<th>Systems Archetype</th>
<th>Examples</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixes that Fail</td>
<td>Curriculum Reform &amp; Drug Usage</td>
<td>A quick fix leads to unintended long-term bad consequences.</td>
</tr>
<tr>
<td>Shifting the Burden</td>
<td>Counselling to Drug Usage</td>
<td>Short-term quick solutions are favoured by systems behaviour.</td>
</tr>
<tr>
<td>Success to the Successful</td>
<td>Mathew Effect - Winner Getting All</td>
<td>System supports the rich and undermines the poor.</td>
</tr>
<tr>
<td>Limits to Growth</td>
<td>Hobby as a Limit to Happiness</td>
<td>There is improvement for a short time and then suddenly hampers.</td>
</tr>
</tbody>
</table>

1 All figures have been developed by the first author using Systems Thinking software, Stella.
**Fixes that Fail**

The Causal Loop Diagram in Figure 3 illustrates how students’ poor performance leads the top management to implement curriculum reforms. These curriculum reform programmes lead to improved performance of students (SGPA), which reduces the need and frequency of curriculum reform (illustrated by B5). On the other hand, the new curriculum may reduce teacher interest in innovating and teaching which will reduce student performance. The *Fixes that Fail* archetype, depicted by B5 and R11 loops in Figure 3, shows how students’ poor performance reinforces the top management to implement curriculum reforms, but it works as a wrong fix in the long run (Senge 2006). As communicated by the archetype, teachers lose interest and motivation to innovate with the curriculum reforms by top management after online classes which, in turn, decreases the students grade points and raises the need for further implementation of reforms in curriculum and lowers grade points instead of improving students’ performance, thus stress levels increase. The shift to online classes causes an abrupt and massive change in curriculum (captured by the curriculum reform tab in Figure 3).

**Figure 3: Curriculum Reform: A Wrong Quick Fix Source**

*Source: Authors’ own.*
Further Fixes that Fail

With the prolonged stress level due to bullying, university workload, grades, financial crisis, health conditions or any other external factor, a student is more likely to adopt a quick fix of drugs under peer pressure and to maintain happiness. Epidemiological studies prove that stress induces drug usage and, thus, could turn a student into a drug addict (Bruns and Geist 1984). When a person ends up at the unintended consequence i.e., drug addiction due to a quick fix of drug usage, it accelerates social pressure to get rid of drugs, and worsens the stress gradually as represented in the Fix that Fails archetype in B4 and R6 loops.

Figure 4: Drug Usage Fix that Fail

In this archetype, the problem symptom is the stress level which increases and decreases as the quick fix to address the problem generates an unintended consequence i.e., drug addiction which exacerbates the problem in the long run. A steadily worsening scenario is displayed by the use of this archetype. The reinforcing loop depicts unintended consequences of drug usage, a quick fix, that instead of
fixing the problem of stress contributes to a steadily deteriorating stress level.

**Figure 5: Attempted Fix for Stress through Drug Usage Exacerbates the Stress**

![Graph showing the attempted fix for stress through drug usage exacerbates the stress.](image)

*Source:* Authors’ own.

**Student Health**

When a student feels healthy, the effort towards a healthy lifestyle increases and, thus, the student stays healthier and happier. The student starts to devote time to exercise and meditation which, in turn, increases sleep quality shown in the R5 loop ‘Sound Body.’ However, a shift to online classes may reduce opportunities and motivation for exercise, and thereby, increase the resistance to exercise, resulting in the loop reinforcing poor health outcomes and affecting student happiness as a result. According to the Harvard School of Public Health, healthy people are 20% more happy, and unhealthy people are 8.35% less happy and content than the average person (Rimer 2011). Health also contributes to stress. Enhancement of sleep quality reduces stress and eventually increases happiness.
Shifting the Burden

Afterwards, prolonged workload stress makes the student dependent on drugs. Drug dependency deepens psychological and physiological problems and lowers the pressure to adopt solutions like counselling or rehabilitation as shown by ‘Shifting the Burden’ archetype depicted by B3, B2 and R7 loops. Such health problems further contribute to decreasing grade points and intensifies when the excessive use of drugs turns the student into a drug addict, and he or she has to bear societal pressure to get rid of addictive medicinal drugs along with the health problems which also increases the overall stress level. The use of drug substances during or prior to adolescence triggers stress levels (Bruns and Geist 1984), hence, while drug usage temporarily reduces stress levels, it works as a wrong fix in the long run.
Adopting a symptomatic solution i.e., drug usage is used to reduce pressure to implement a fundamental solution, i.e., counselling or rehabilitation. Some improvement in performance is experienced temporarily; however, the underlying problem continues, as depicted in Figure 7, (Ammara et al. forthcoming) and the reappearance of inconsistent happiness due to stress level invariably happens as shown in Figure 8:

Figure 7: Shifting the Burden from Counselling to Drug Usage

Figure 8: Shift from Fundamental Solution to Temporary Wrong Fix
Imposter Syndrome

Furthermore, prolonged stress affects grades and induces fear of imperfection which may compel a student towards unethical practices acts such as plagiarism. The more the instances of plagiarism found, the stricter the university policies will be, and a student remains trapped in an 'Imposter Syndrome.'

Figure 9: Strictness leads to Imperfection

Matthew Effect

This situation intensifies when teachers appreciate only the bright students and under-performing students are labelled as dull that causes them to lose self-esteem. Hence, grade points fall further, and the vicious cycle continues as depicted by the Matthew Effect loop, so education reforms fail to contribute to learning - the ultimate goal.

Figure 10: Winner Getting All

Source: Authors’ own.
Labelling the student as a hard worker motivates him or her. As a result, the student devotes more effort in study. On the other hand, a negative label is demotivating, trapping the student in a self-fulfilling prophecy. Hence, it rewards the winners which puts them on the path to win again and penalises the losers.

**Limits to Growth**

Limits to Growth, applied to student life demonstrates that hobbies appear as a factor that increase as well as decrease happiness. For instance, gardening may make a student happy, so he or she buys more variety of plants for their garden, but the limiting condition is the holding capacity of the house for plants that causes a fall in demand for plants which will reduce happiness, as shown in B1 and R1 loops (Figure 11). There may be the existence of various hobbies, but for the sake of simplicity in the model, this study assumed that the student’s hobby was gardening which is increasing as well decreasing happiness.

**Figure 11: Hobby as a Limit to Happiness**

As a student devotes his or her free time to hobbies, such as gardening which induces happiness, the goal, the increase in happiness level motivates a student to pursue the hobby passionately. On the other hand, there may be limits that could cause happiness to diminish. For
instance, in this example of gardening, if the demand for plants exceeds the financial capacity of the student or area restriction to accommodate more plants. Hence, as the loop approaches the reinforcing process of expansion, it will encounter a limit as a balancing process.

**Impact of COVID-19 and Online Learning**

Listed below are some additional impacts of COVID-19 and the shift to online learning:

- Digital inequality
- Negative habits consolidation
- Reduced rate of physical exercise
- Strict university policies
- Peer support
- Financial problems
- Socialisation
- Participation in co-curricular activities.

Additionally, the impacts of COVID-19 pandemic have been incorporated into the model. The study mapped how lockdown policies, stressing social distancing could be a cause of negative habits consolidation, such as smoking which builds resistance to exercise and hence, may affect health and happiness in the long run.

As students were at home most of the time due to the pandemic, it also triggered addictive habits such as video games’ addiction. A study conducted among Chinese children and adolescents found that due to COVID-19, excessive internet usage caused internet addiction triggered by depression, anxiety and stress due to the pandemic (Dong et al. 2020). The long stay at homes has changed the habits of students which has ultimately impacted their learning.

Moreover, the shift to online learning is also likely to widen digital inequalities. According to the Pakistan Telecommunications Authority, only one million school-going children have digital devices out of 70
million children (Malik 2020). This digital divide also contributes to decreasing student self-esteem. A lower level of self-esteem induces egoistic behaviour that contributes as a hurdle in task execution and lowers happiness level as depicted in R4 loop or Ego Management loop (Figure 12). On the other hand, if a student maintains self-esteem, he or she remains motivated to work harder, improves Grade Point Average (GPA), which results in increasing his or her happiness.

Online classes, internet connectivity, and peer support affects student class participation rate and online classes acceptance rate which then impacts the motivation of teachers. The shift to online learning changed the way teachers teach, and students learn as there is no physical interaction. Moreover, online distractions also become an issue when students are on technological devices.

Focused hours also play an integral role in making a student work harder or become careless as depicted in R9 loop. The more focused study hours a student has, the less leisure time he or she has for hobbies and social activities which reduces distractions and increases of a student, and thus, improves grades. On the other hand, if a student chooses leisure over study time continuously, it eventually reduces self-confidence and self-esteem achieved from hobbies that limit participation in extra and co-curricular activities. Although low participation in social activities decreases distractions, a student then only focuses on getting grades. This process can proceed in an opposite direction for a careless and irresponsible student, shown in R9 loop. It can also lead to ‘Overshoot and Collapse’ in hard-working students which may lead to burnout. Mental well-being also plays an integral role in altering health, happiness, and social life.

B6 loop (Figure 12), depicts how increased mental well-being leads to increased happiness, energy level and, thus productivity and focused study hours. This reduces the leisure time devoted for socialisation, weakens social skills and hence, decreased socialisation lowers mental well-being. Mental well-being also influences physical health as it increases happiness, boosts energy level, and reduces the resistance to
exercise. Thus, with the increase in physical exercise, sleep quality enhances, and physical health and mental well-being also improves in tandem with happiness as shown in the R13 loop.

The well-known archetypes, along with interconnected loops that revolve around human happiness are sketched together in a holistic Causal Loop Diagram by using a systems simulation software ‘Vensim.’ Various interconnections among different domains ranging from health, socialisation, studies workload, financial and societal pressure are shown in Figure 12.
Figure 12: A Holistic Causal Loop Diagram of COVID-19 Pandemic Effects on Student Happiness & Well-being

Source: Authors’ own.
Note: The links in black show the effect of COVID-19 on student education.
Recommendations

Based on the understanding of the underlying causes identified via mapping of circular connections using ‘Causal Loop Diagrams’ and ‘Archetypes’, the study recommends that:

□ Educational institutes should move towards addressing the internal causes of students’ underperformance rather than resolving the obvious negative symptoms with the help of professional counsellors and psychologists. Immediate actions like one-to-one counselling sessions should be initiated before those symptoms trigger major syndromes when students try to sort out their psychological distress through drug addiction, smoking and other unhealthy habits.

□ Senior leadership of educational institutes should not focus on strict curriculum reforms alone. Freedom should be given to teachers to introduce individualised student-centric approaches.

□ University/school management should conduct evaluations of teachers in online classes to ensure that favouritism or bias does not impact teaching and grading.

□ Universities/schools should look into providing online mental, emotional and physical training sessions by mental and physical health experts to keep students emotionally and physically fit.

□ There should be awareness campaigns with counsellors by university/school societies to alert students and parents to keep a check on student habits and online behaviour.

□ Faculty should be extra vigilant and empathetic while conducting online lessons so that if students are struggling with studies, they feel encouraged by their respective teachers to discuss their issues and can be guided in the right direction.

□ There should be faculty training programmes to equip teachers/lecturers with the latest online teaching skills to keep students motivated in online classes.
Conclusion

This study presents a unique application of the ‘Systems Thinking' (ST) approach regarding modelling dynamics of student life. It does not attempt to present a valid model rather proposes the plausibility of ST - an underutilised approach. With the help of ST tools, one can anticipate unanticipated causes and effects that may be internal to complex systems, and by addressing those, one can avoid consequences of naïve interventions and obtain the big picture view of student life.

References


Urban Water Governance Post-COVID-19

8. Improving Urban Water Governance: Stormwater Management in Karachi – An Introduction to the Asset Ownership Model

9. Access to Water & Sanitation in a Post-COVID Pakistan
Improving Urban Water Governance:
Stormwater Management in Karachi – An
Introduction to the Asset Ownership Model*

by

Dr Faisal Haq Shaheen**

* This chapter has been approved as a Policy Brief by the referee.
** Dr Faisal Haq Shaheen serves as Manager of Information Systems with the City of Toronto’s Water Division in Canada. He also serves as a Lecturer with Ryerson University’s Department of Politics and Public Administration. His research interests include comparative policy studies, specifically local governance, water utility management and green infrastructure.
Abstract

An increased frequency of severe weather events and overland flooding has had disastrous consequences for urban centres across the Global South. Pakistan’s port city of Karachi, a repeat victim of severe flooding, has been the subject of policy discussions around flood management and wet weather risk mitigation in recent years. At the heart of any hopes for change, are the much-needed governance reforms to allocate and manage scarce resources for risk mitigation in anticipation of these climate change induced events. Karachi’s governance challenges can be unpacked in both political and administrative terms. On the one hand, there is ongoing malaise at the political level while a sheer lack of capacity prevents any robust development in terms of administrative capability. This necessitates the engagement of non-state actors in stormwater solution development. Any solutions to flooding, in general, will have to factor in the geography, asset owners and administrative jurisdictions into policy planning. How these factors can be supported through ‘co-management’ models across Karachi will have to be accounted for and framed. This chapter proposes a deeper analysis and engagement of solutions by assigning ownership of stormwater management assets for policy and programme consideration. In order to frame such a discussion, four critical areas are highlighted - dealing with core aspects of operations, funding, asset management and decision-making. In so far as Karachi’s stormwater management is concerned, a working group is proposed to develop an Asset Management Strategy and plan for stormwater infrastructure. Depending on the assembly of stakeholders, proposals ranging from small to medium pilots at the site level to large neighbourhood drainage basin management efforts may be researched, based on comparisons from jurisdictions outlined in this chapter.

Introduction

This chapter engages some of the concerns and policy challenges raised during the ‘Urban Water Governance’ panel at the Sustainable
Development Policy Institute’s (SDPI) Sustainable Development Conference in 2020. None of these challenges are particularly new, except that they continue to receive widespread attention in the wake of torrential rains and flooding, which predictably overwhelms the limited infrastructure and unplanned urbanisation of municipalities. Due to its density and urban sprawl (along with other governance challenges), attention on Karachi tends to bring the stormwater management policy discussion into the national limelight. This chapter, therefore, focuses primarily on engaging the governance structure of the city in light of lessons learned and struggles being encountered in similarly situated municipalities in the Global North. The planning concerns and focal points which are turned to, are especially pressing given the growth of other large cities in Sindh as well as Punjab in Pakistan.

From a conceptual standpoint, the study focuses on the policies and programmes specific to stormwater management from an asset-based perspective. In working from the asset level up (bridges, creeks, drainage conduits or *nullahs*, ditches, ponds, etc.), it employs an approach which looks at ‘governance from below’, enabling the asset owners, departments, institutions, and community-state partnerships to monitor and maintain stormwater infrastructure (green or grey). Any assessment of the asset ownership framework must confront the weak institutional landscape of water and sanitation associations, boards and authorities which influence their management.

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2 Assets, in this context, are commonly defined as physical, engineered structures which require investment, maintenance and/or commissioning in order to serve a purpose, which is part of the state (in this case municipal) service delivery commitment. A more thorough definition will be expanded upon later on in the chapter.
During the SDC’s ‘Urban Water Governance’ panel, two key themes emerged during the largely Karachi-centric discussion and focused on the:

1. Roots of mal governance which cannot check the risks of flooding and ongoing water theft.
2. Need for partnerships between community monitoring and government planning.

At the outset, it must be stated that for the majority of developing country cities struggling with climate change, overwhelming flood events simply cannot be planned for. The absence of infrastructure funding and coordinated master planning alongside policy bias makes any allocation of sufficient resources impossible. Furthermore, investing twice as much into capital funds for dams and stormwater controls to prepare for a once in 75-year storm as compared to a once in 25-year storm is a luxury which is simply unavailable to most cities the world over, let alone developing ones.

However, addressing and mitigating water loss (theft, declining revenues), seasonal flooding (and the accompanying health impacts) which can free up funding for wastewater and stormwater drainage systems (addressing poor solid waste management regimes) is a logical and critical first step which has been emphasised by experts on water, sanitation, planning and development across Karachi and the region. While notable activists like Perween Rahman (22 January 1957-13 March 2013), and contemporaries linked to the Orangi Pilot Project-Research and Training Institute (OPP-RTI) family of institutions have drawn attention to water resource mismanagement, many experts have struggled with mobilising resources and drawing attention to stormwater management. Furthermore, solutions to these challenges have increasingly involved customised, location specific solutions which can deal with the topographical, source water body, receiving body, socioeconomic context of the urban setting. In order to implement an effective solution, a clear understanding of the
stormwater assets is needed framed within the complexities of Karachi, its relationship with Sindh and the overall governance picture.

The situation in urban Pakistan is desperate, as most of the emphasis on urbanisation in recent years has been on extending the reach of engineered infrastructure, physical and impervious, across buildings, streets, highways, and the Rights-of-Way (RoW). Arif Hasan, along with a number of urban practitioners, have long sounded the alarm on the impact of unplanned development on the drainage system. Natural drainage channels, already clogged with solid waste, have inevitably choked the city’s natural stormwater management system (Hasan 2020). As a result, rainwater has nowhere to go and once severe weather events occur, existing infrastructure in its marginalised state of disrepair, is overwhelmed.

In Karachi, the ongoing tensions between urban and provincial interest groups and political parties, has also challenged policy designs (Shams 2020). While decentralisation to local authorities to enable improvements has been called for, for such severe weather events, it is questionable as to how effective it will be. Some of the more recent efforts to channel stormwater through newly constructed infrastructure, seem to simply be excuses to evict the poor from informal settlements (while sparing no expense to protect utility infrastructure) rather than holistically approaching stormwater drainage management (Dawn 2020). As Maher (2015) laments, thinking is now so paralysed by the compulsion to join the fruitless marathon for ‘world class city’ status that urban planners cannot imagine an ordinary city setting with indigenous networks for development.

This study introduces the framework of stormwater asset management challenges into the urban sustainability discussion, specifically through the addition of asset monitoring and maintenance between state and non-state actors. The combination of community-based monitoring and improved inter-departmental coordination can contribute to improvements in water conservation as well as flood mitigation, by forcing state and non-state actors to focus on key areas of drainage
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An Introduction to the Asset Ownership Model

system renewal. The solution, regarding the right policy sub-system and community engagement, is being grappled with across North American cities, as will be subsequently discussed.

Policy Context

Historically, the responsibility of stormwater management has resided with provincial authorities. Over time, as cities have grown, these responsibilities were shared between transportation and works departments, as rural areas grew into villages and eventually townships and small cities.

As cities grew, the responsibility was completely offloaded by the provinces to local works departments and has in recent times, moved between urban forestry, road works and water and sanitation departments. At first glance, it might seem that the offloading to local levels might prove useful in ensuring that accountability and transparency is maintained. As such, sustainability experts and practitioners have enthusiastically pursued solutions through pilot projects (low impact development, green streets, etc.) with the intention of resolving wet weather flow problems under the umbrella of green economic development and growth.

However, in light of the various assets involved, responsibilities between divisions, solution development and sustainment has been far from simple. A host of actors are required for consensus building, code development and endorsement of design. This is difficult to establish at the local site level, let alone broadly across any municipality. Furthermore, given the impact of austerity measures (budget cuts which seek to stimulate economic growth) and a COVID-19 budget crisis (emergency funds will likely be used in the short-term to buttress healthcare services) in parallel with climate change imperatives, resources will likely be even more scarce than usual. This situation is arguably, no different than what happens in developing cities, except that labour costs and social capital are less costly and should be
harnessed (in spite of management constraints and resourcing) to maintain locally designed and operated systems.

The solution, in returning to the developed city context, has in recent years been to separate asset classes and bases between clearly defined and designated departments. This would, at the very least, isolate costs (along with the funding sources) and ensure that maintenance practices are adhered to in a way which supports the long-term viability, longevity and return on investment of green infrastructure assets. Most importantly, it permits the separation of solutions into those which can be easily sustained internally with city resources versus those which could be part of a more community-based approach to Green Infrastructure (GI) management.

This should be of particular importance to students and community-based activists, who can simply apply GI, water harvesting and low impact development to their own institutions, adding themselves to the growing numbers of ‘green buildings’ which are present in many rich urban settings. There is no reason why civil society actors, multilateral institutions, Community-Based Organisations (CBOs), universities, schools and other public facing establishments cannot apply GI principles to their design and management in order to beautify local surroundings and improve on stormwater management as applicable to the local drainage basin. Before this study expands on the discussion of asset management and maintenance with non-state actors, it defines in some detail, the different terms linked with stormwater management, GI, and ownership models which are typically found in the asset management world.

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3 Green Infrastructure (GI) is defined as naturally existing plant species and soil profiles which do not require engineering or construction from a human-centric perspective. GI is now seen as a solution to trapping stormwater in an environmentally friendly manner without incurring significant capital costs.
**Stormwater Management Terms and Definitions**

A number of terms are used in stormwater management policy discussions. For the purposes of this study, a technocrat’s understanding of these definitions is outlined below, with specific reference and elaboration on the various policy stages in which their use may be relevant to the urban context of a developing country and urban setting as found in Pakistan.

**Stormwater Management**

This refers to any series of practices designed to ensure that above average periods of precipitation can be easily absorbed by the urban form and ecosystems, minimising property damage related to flooding, erosion, and other adverse impacts. In Pakistan’s major cities, this could refer to any of the triggers and programmes involving portable pumping stations and emergency diversion procedures when and where ponding occurs (City of Toronto 2015).

**Wet Weather Flow**

These are referred collectively to the flow rates and patterns of wastewater and stormwater across a city during periods of precipitation. In urban Pakistan, this would refer to those channels which carry combined sewage and stormwater flows or those which are otherwise dry. Wet weather flows are often monitored as they identify low lying areas where excessive flows and ponding typically takes place. Community-based monitoring has been encouraged in many cities where citizens are requested to clear blocked catch basins in an effort to ensure that flows are distributed across the urban form.

**Dry Weather Flow**

This refers to flow rates and patterns of wastewater and stormwater across a city during periods of no rain. In developing country cities such as those in Pakistan, these flow rates would reveal where
wastewater flows are most frequent. Blockages and points of constriction are typically identified during dry weather flows, in order that preparations and contingencies can be made during wet weather periods (CVCA 2011).

**Green Infrastructure (GI) in a Green Streets Perspective**

Also known as Low Impact Development (LID), GI is an infrastructure system designed to emulate the pre-development water cycle in an urban setting (i.e., reducing runoff, and improving in-situ stormwater infiltration). Any infrastructure which mimics the natural environment and presents the urban form with a storage, or holding capacity, is considered to be part of the GI suite of instruments (CVCA 2012). GI also benefits the city holistically through air quality improvement, public space beautification, urban heat island mitigation, biodiversity improvement, and public health (Johns 2019).

**Asset Management**

This refers to the collection of tools and instruments applied to ensure the appropriate planning, financing, and resourcing of critical assets within a system, which have a value and need to be sustained in order to ensure the long-term operation of an entity. This means assets owned and operated by a water and sanitation authority or board. A database of all assets and relating attributes are mainly used for planning and administrative purposes. A work management system manages work orders, mainly for operation and maintenance purpose. With respect to stormwater management, the operation of pumping stations, below ground tanks, storage facilities and filtration instruments (natural or engineered) are part of the assets dedicated to stormwater management.

**Asset Ownership**

This refers to the default primary decision-maker in issues relating to the asset. Owner(s) is/are responsible to plan, manage, and support
lifecycle activities of the asset(s) to achieve/maximise its intended function. In this situation, this study poses that urban assets related to stormwater management need to engage municipal water authorities, and where necessary, transportation and urban forestry departments. Clear understanding of the ownership model ensures maintenance and investment in order to ensure a state of good repair and operation.

**Separate Ownership Model**

This model refers to a single divisional owner responsible for managing and maintaining such assets (CVCA 2012). This has been the asset management status quo in Karachi. As such, each division has adopted different work/asset management systems.

**Shared Ownership Model**

Assets are co-owned by the three main asset owners of the city. For example, Transportation Services; Water and Sanitation; and Parks, Forestry and Recreation. Currently, this model does not exist in many cities and partnership agreements are required. As they can be complex, the Service Level Agreement (SLA) is often deferred to, as discussed below.

**Service Level Agreement (SLA)**

This is an agreement between city divisions exchanging funds for services of another division. It is used to leverage expertise of other divisions where capacity is scarce. For example, the Department of Transportation may assign mobile road management crews to inspect and report out on the status of stormwater drainage catch basins managed by the Water Department. The reason being that the efficient function and diversion of stormwater from the roadway will reduce deterioration, cracking and the need for surface maintenance, patch repair, and inevitably, repaving. These relationships are managed through inter-divisional charge backs which are agreed upon by both departments. The use of this Shared Ownership Model as well as the
SLA, where different parties come together to agree on green asset management, is a foundational requirement for GI to be sustained.

**Asset Ownership Model**

Now that the various definitions which pertain to stormwater management have been discussed, let us turn to the ownership of ‘Green Infrastructure Assets’ which in the case of urban Pakistan, can frame stakeholder discussions as part of the proposed workshops. A survey of large municipalities engaged in GI management, reveals the main departments involved: a) Transportation and Roadworks; b) Water and Sanitation; and c) Urban Forestry. GI assets can easily be assigned and mapped out to departmental owners (and third-party contractors where necessary) in any urban setting, most certainly in Karachi and Lahore.4

‘Green Streets’ is seen as a replicable model by which parcels of land, along segments of urban throughways and corridors, can be made more ‘green’ and meet the needs of stormwater management and wet weather resilience through the adjustment of asset types. GI Assets, as framed by ‘Green Street’ (ICPI 2011), oversees three major asset types:

a. Permeable Grey Surfaces
   - Porous asphalt road/boulevard
   - Porous concrete sidewalk/boulevard
   - Permeable paver (porous matrix)
   - Permeable paver (inter-paver aggregate)

---

4 Each of these large cities has experimented with city beautification projects which have led to great success and accolades. The recommendation is that local arborists and gardeners from the formal and informal sector be engaged as third-party contractors for the maintenance of GI where possible.
b. Stormwater Tree Pits (tree pits with inlets designed to capture runoff)

- With soil cells
- Without soil cells
- Other technologies (e.g., Permavoid)

c. Bioretention Facilities (defined by use of engineered soil media)

- Bioswales (linear, non-sod)
- Enhanced grass swale (linear, sod)
- Bioretention bump out (point)
- Bioretention planters (point)
- Bioretention garden / Raingarden (point)

The main asset with ownership certainty is permeable surfaces, usually owned and maintained by transportation and road works (CVCA 2012). The remaining two classes – Stormwater Tree Pits and Bioretention Facilities are effectively uncategorised asset types for the city and warrant a discussion regarding ownership and maintenance responsibility. This is challenging, for in more dense areas of the city, where solutions are more intricate, there is a lack of clear definition as to which divisions own the asset and have the expertise to maintain and ensure its operation and performance.

As stormwater management system and GI solution discussions move from design stages of policy development towards implementation, there is substantial discussion between departments regarding ongoing maintenance, management, and funding (Johns and Shaheen 2015). Out of all of the discussions which are typically seen in developed cities, the following are frequently brought up in GI ownership discussions and are summarised here:

1. Operations and Maintenance – Logistical Demands & Delivery
2. Funding Model – Capital and Lifecycle Cost
3. Asset Management Technicalities
4. Decision-making and Responsibility.

These areas of discussion will, of course, contribute to different strategies, decision points and outcomes in urban Pakistan (reflecting on the separation of responsibilities between provincial bodies, local government departments and tehsil/ward offices).

In light of the potential offered by GI, this study recommends the creation of a ‘Working Group’ which examines these issue areas and acts upon recommendations (across state and non-state settings) for the increased creation and sustainment of GI for stormwater management (refer to roadmap outlined in Appendix A).

The next section looks at each of the asset ownership issues, found to be common to most municipalities, and comments on how they might be resolved in urban Pakistan.

**Issue Areas and Options**

The following list of issues and options provides an overview of concerns which stakeholders in urban Pakistan should consider in managing stormwater and GI assets. As municipal departments and the public service across Pakistan have access to more resources (ample access to labour, organic fertilizer, and a favourable climate), the emphasis here is to draw more attention towards the role of cooperation between operational groups and staff resources rather than solutions, necessarily. A list of GI assets is outlined for discussion at the workshops (see Appendix B).

**Issue 1: Operations and Maintenance – Logistical Demands and Delivery**

A reliable maintenance programme is critical for any GI assets to perform as intended. Most GI (except permeable surfaces) is comprised of three main sub-systems – vegetation, drainage, and
supporting hard surfaces. This creates an asset class that demands expertise and support from all transportation, water and sanitation and parks and forestry operations teams to deliver a serviceable GI maintenance programme. In urban Pakistan, informal sector labour, with some level of supervision from a qualified gardener and landscape designer, could perform routine maintenance tasks (trimming, pruning, recharging with organic fertilizer, etc.)

While participation of all three operations groups is required, the asset owner(s) is ultimately responsible to oversee delivery of the maintenance programme. In a ‘Shared Asset Model’, all three operational areas are accountable to the overall programme’s success; while in a ‘Separate Ownership Model’, each division is only accountable for its ‘related’ asset. In Pakistan, a separate group of contracted labour is recommended to pilot the maintenance of a ‘Green Street’ project or network of civil society institutions.

From a risk management perspective, it is in the GI’s interest to have operation crews be accountable for its overall performance. This can be achieved through a ‘Service Level Agreement’ regardless of ownership model. Institutions and public departments alike should receive reports and images of GI asset maintenance. It will be the asset owner’s responsibility to ensure that Level of Services are appropriately met end-of-day. The maintenance crews of labour (regardless of their home department or contracted group) should have clear practices and accountability around sustainment. An elaboration of current GI operations and maintenance gaps/challenges are listed in Appendix C.

**Issue 2: Funding Model – Capital and Lifecycle Cost**

While capital costs and funding sources are important, they are typically shared 50-50 by departments through agreements between operational groups (transportation, water/sanitation and parks and forestry). In Pakistan (at least in Punjab), the provincial authorities are best assigned to provide capital funding for such landscaping and GI
investments. The challenge is, of course, who will own the routine maintenance commitments which are ongoing and can be costly, depending on the GI assets commissioned. The Capital Development Authority of capital city Islamabad holds such initiatives in high regard and might be a candidate for more sophisticated GI projects. Even in Lahore and Karachi, operational costs of GI should not be a major concern given the ample supply of labour (complexity of GI solutions notwithstanding).

Lifecycle costs (or operating costs) include staff and equipment to manage, monitor, maintain, repair/rehabilitate, and replace/decommission these GI assets. This can be a major resourcing gap for most cities due to unclear ownership between water and sanitation and transportation, for example. The default assumption is for the asset-owning divisions to fund the lifecycle cost of each asset. The owning division(s) are also responsible for any ad-hoc costs in the case of unforeseen failure. Under the ‘Shared Ownership Model’, a shared funding model would be required for divisions to determine cost-share of asset lifecycle expenses. Under the ‘Separate Ownership Model’, as these assets are still deeply interlinked (e.g., underdrain impacts ponding and tree roots), an SLA will still be required as a bare minimum to ensure that each division’s assets are protected. Given below are the minor differences of each ownership model from a lifecycle cost perspective:

**Shared Ownership**

- Encourages viewing the asset as a holistic system.
- Higher inter-divisional coordination is required.
- Financial risk is shared between divisions.

**Separate Ownership**

- Interest of GI system is segregated.
- Familiarity and expertise by asset owners.
- Gap regarding ambiguous assets persists.
Across urban Pakistan, such operational and maintenance revenues to fund GI could come from private sector sponsorship (advertising and funding of private parks and boulevards along the right of way) as well as higher tier provincial and federal funding (as part of beautification and urban development efforts). Again, much of the lifecycle cost around maintenance should be minimal if the appropriate labour resources can be engaged.

**Issue 3: Asset Management Technicalities**

In a best case scenario, all operational groups (transportation, water/sanitation and parks and forestry) would have a common asset management and work management system, enabling them to coordinate work, mapped ideally, through a GIS integrated database for ease of mapping. The key issue is then integration across different solutions. Examples of complexities that may arise from integration across systems include:

- Decoupling of asset hierarchy: An existing asset class (e.g., catch basin) may be deemed a component of a separate asset class (e.g., tree pits) which leads to confusion when assets are updated in terms of maintenance of the whole asset or specific subclasses.
- Same asset, different maintenance need: Assets that exist outside of GI (e.g., sidewalk, trees), may require different level of service compared to GI-related asset. This has to be reflected in the software solution or work management system.

In short, while GI can be configured for ‘Shared Ownership’, operational groups (transportation, water/sanitation and parks and forestry) tend to prefer a ‘Separate Ownership Model’ for its relative simplicity and clarity of accountability. The recommendation for pilot projects in urban Pakistan is that any management solution adopted should be GIS-based and ensure the open access to each of the political and administrative stakeholders involved with sufficient oversight from municipal coordinating bodies.
As such projects are rolled out across the city, it is expected that more analysis of equity across neighbourhoods (involving political leaders), analysis of other sites (engaging administrative staff), drainage basin impacts (engaging Water and Sanitation Agency [WASA] management) and remedies might also be discussed as part of analysis. A GIS mapping of asset ownership would help to educate and inform any decisions.

**Issue 4: Decision-making and Responsibility**

Ownership reflects power and responsibility over the assets. Currently, ‘Green Streets’ already mimics a ‘Shared Governance Model’ as reflected by the presence and dominance of some operational groups over others (transportation, water/sanitation and parks and forestry).

- A ‘Shared Ownership Model’ democratises the governance of the programme. By ingraining collaboration in the process, the city is able to create a more robust Green Streets programme. However, there is an inflection point where the benefits diminish due to coordination inefficiencies.
- A ‘Separate Ownership Model’ provides divisions the flexibility and control over familiar assets, which may result in better management and higher efficiencies. However, this model sets up a compliance/reactive-based status quo for the programme and relies on divisional champions to address gaps that may be deemed ‘out-of-scope.’

There is merit to both ownership models and warrants a higher-level discussion between senior management teams. In urban Pakistan, the asset owner (key actor in the maintenance of GI assets and stormwater management) should be consulted regarding any asset management tasks and changes. As funding will likely emerge from the province – any and all reporting on progress should include sponsors and funders from the provincial layer of governance. This model essentially assigns ownership of stormwater management to the urban department now held responsible for the assets. As a starting point, the ‘Working Group’
of GI actors (assembled as part of the workshops specified in Appendix A) might consider piloting GI and LID solutions on privately held property or as permitted by local government. It is strongly advised that civil society actors like the Sustainable Development Policy Institute (SDPI), as a start, develop a network of ‘green facilities’ which are striving to adopt energy efficient and stormwater management relevant projects and initiatives for their own buildings. At the outset, this will allow for the showcasing of GI assets and how they contribute to beautification efforts and local stormwater management.

**Recommended Next Steps**

Now that the four key issue areas, along with some options to be considered by stormwater management and GI advocates and asset owners, have been highlighted, this section returns to the context of urban Pakistan and an approach to developing local sites of stormwater management systems.

At a very local and ‘street level’, what is needed is modelling around the key asset classes of GI and the GIS enabled mapping of location IDs so that urban managers and practitioners can better coordinate work and sustainment practices by city actors, community groups and third-party actors where necessary. Once that is complete, a number of scenarios may ensue which would benefit from GI stakeholder discussion, as outlined in Appendix A. Assessment of existing GI should begin with:

1. **GI Survey**
   a. Ideally, this should take place within a particular topographical zone, ideally a stormwater drainage basin, which discharges through a creek or *nullah* to a river into one of the five main tributaries or into the Indian Ocean. For instance, local practitioners and advocates should consider looking at a few drainage basin study areas in Karachi where any stormwater infrastructure or GI can easily be monitored, against flow rates which enter and exit the basin.
b. A list and the identification of assets could be conducted as per Appendix B.

2. Modelling of Wet and Dry Weather Flows
   a. An assessment of risks and vulnerabilities using grey and green infrastructure should be employed. For instance, local researchers should measure the differences between periods of dry weather and wet weather flow to see where a substantial delta and improvement in stormwater retention/diversion might take place.
   b. The mapping of differences in flow rates should be compared across communities and study sites.

3. Assessment of GI within the Asset Management Cycle
   a. Once the assets have been identified, clarity around ownership and the four issue areas should then be initiated by local researchers, advocates, and practitioners. Namely, how the following areas would be engaged by state and non-sate actors:
      i. Procurement
      ii. Operation
      iii. Sustainment
      iv. Renewal

4. Workshop and Assignment of Roles and Responsibilities for Assets
   a. Once the four areas have been discussed as part of the local authority and research efforts, there should be a discussion as to who owns such existing assets and who might own future assets. Owners could fall into the following groups:
      i. State Actors – ideally municipal with provincial support
      ii. Profit-Based Actors – private business and commercial areas
      iii. Not-or-Profit Actors – civil society actors and independent groups
      iv. Residential Actors – individual estates, homes and housing cooperatives
b. Engagement of Stakeholders
   i. Development of a series of knowledge gathering sessions
   ii. Soliciting of participants from groups in 4a

c. Establish a series of study areas, pilots and GI system projects across parks or green streets
   i. Look at differences between dry and wet weather flows and assess where ideal pilots might illustrate the benefits of stormwater management and GI
   ii. Evaluation over a period of time

5. Report Back
   a. Assess data from pilot areas
   b. Revise and replicate pilot areas to other interested study areas and participants.

The result of such an exercise is the bottom-up governance and management of assets related to stormwater management, tied to specific functions related to preventing flooding.

**Conclusion**

Closely linked to an improved asset management model for stormwater management and green infrastructure, is a very practical green partnership between local departments (Water and Sanitation Agencies – WASAs - or related delegated authorities) and non-state actors (private sector operators, institutions, commercial areas, industries, housing societies and developers) to coordinate a shared model of stormwater management and green infrastructure development.
References


Appendices

Appendix A - A Roadmap for GI and SWM Development

The Sustainable Development Policy Institute (SDPI) and its partner organisations across urban Pakistan are well situated to hold a workshop among interested parties, formulate pilot projects and coordinate a report back, monitoring and intervention into policies with a more national scope. The following table outlines a high-level roadmap for making this happen:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Months</th>
<th>Task</th>
<th>Location</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>3</td>
<td>Draft and develop background paper on piloting GI and SWM in urban Pakistan</td>
<td>Islamabad</td>
<td>SDPI with International and City Partners</td>
</tr>
<tr>
<td>I</td>
<td>1</td>
<td>Hold a national workshop and roundtable on SWM and GI challenges and local level solutions</td>
<td>Islamabad or Karachi</td>
<td>SDPI with International and City Partners</td>
</tr>
<tr>
<td>II</td>
<td>1</td>
<td>Provincial city-level workshops</td>
<td>Karachi, Lahore, Quetta, Peshawar</td>
<td>Major City Partners with provincial cities invited</td>
</tr>
<tr>
<td>III</td>
<td>1</td>
<td>City proposals for GI pilot projects</td>
<td>Islamabad or Karachi</td>
<td>City Partners with SDPI</td>
</tr>
<tr>
<td>IV</td>
<td>1</td>
<td>City proposal review and funding discussions</td>
<td>Islamabad or Karachi</td>
<td>City Partners with SDPI</td>
</tr>
<tr>
<td>V</td>
<td>3</td>
<td>GI pilot project construction and monitoring</td>
<td>Karachi, Lahore, Quetta, Peshawar</td>
<td>City Partners</td>
</tr>
<tr>
<td>VI</td>
<td>1</td>
<td>Report Back and additional phase discussions</td>
<td>Karachi, Lahore, Quetta, Peshawar</td>
<td>City Partners</td>
</tr>
</tbody>
</table>

5 Approximate duration with subject matter expert support from local and international sources.
6 Phases 2 to 5 could run concurrently, with report backs held at an annual roundtable which rotates between cities.
7 Given the profile of city beautification projects, it might be suitable for Islamabad to set a standard for pilot initiatives with the number of stakeholders from interested cities determining which follow-up pilots are to be held and where.
8 Given the experience of international cities, it is strongly recommended that in parallel with city authority and provincial sponsorship engagement, that civil society institutions develop a network of green building partners – all striving to build sustainability into stormwater management, green infrastructure and sustainable building design and maintenance.
<table>
<thead>
<tr>
<th>#</th>
<th>Key Assets</th>
<th>Description</th>
<th>Existing</th>
<th>Proposed Attributes (related to GI)</th>
<th>Asset Classes likely connected to</th>
<th>Asset Classes May Be Connected to</th>
<th>Owner</th>
<th>Owner</th>
<th>Owner</th>
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<th>Owner</th>
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<tbody>
<tr>
<td>1</td>
<td>Bioretention System</td>
<td>A swale/pit/plantar/garden that is filled with engineered biofiltrative soil and covered with vegetation (soil, hort, and/or tree). Typically has pre-treatment rocks near inlet to reduce erosion &amp; filter road debris. Under the biofiltrative soil (Biomedia) is a granular layer, and potentially impervious liner if soils are contaminated. Underdrain systems may be incorporated to prevent pooling.</td>
<td>N</td>
<td>Vegetation cover type, Biomedia spec, granular layer spec, impervious liner, pre-treatment type, barrier type (curb/fence/weir), monitoring well, aesthetic elements</td>
<td>-Curb inlet -CB inlet -Tree pit</td>
<td>-Underdrain System -SWM infiltration/Storage system</td>
<td>Transportation</td>
<td>Transportation</td>
<td>Transportation</td>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Road &amp; Sidewalk Inventory</td>
<td>City’s conventional road &amp; sidewalk inventory. Database in line format, depth layers of road recorded as attribute.</td>
<td>Y</td>
<td>Permeable Surface type (Permeable pavers, porous concrete, porous asphalt), Granular layers spec</td>
<td>Underdrain system</td>
<td>-Inlet connection -Underdrain System -SWM infiltration/Storage system</td>
<td>Transportation</td>
<td>Transportation</td>
<td>Transportation</td>
<td>Transportation</td>
<td></td>
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<tr>
<td>3</td>
<td>Trees</td>
<td>Tree is a woody perennial plant, typically having a single stem or trunk growing above the ground to a considerable height and bearing lateral branches at some distance from the ground; includes root system that typically lies below the surface of the soil.</td>
<td>Y</td>
<td>Soil spec, tree guard, pit cover type, barrier type, monitoring well</td>
<td>Tree pits</td>
<td>Tree pits</td>
<td>Urban Forestry</td>
<td>Urban Forestry</td>
<td>Urban Forestry</td>
<td>Urban Forestry</td>
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<tr>
<td>4</td>
<td>Tree Pits</td>
<td>Tree Pit is a defined below grade structure intended to contain soil and a tree root system and to allow for ample growing space for tree roots. Constructed on site. Cannot be moved. May include above grade extension elements. Only elements related to tree (covers, grates, fences, etc.) are owned/maintained by PFR-UF.</td>
<td>Y*(UF) N(TS)</td>
<td>Tree species, soil spec, tree guard, pit cover type, barrier type, monitoring well</td>
<td>Soil cells -Soil cells -Underdrain pipe system</td>
<td>-Tree pit</td>
<td>Transportation</td>
<td>Transportation</td>
<td>Transportation</td>
<td>Transportation</td>
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<td>5</td>
<td>Soil Cells</td>
<td>Polygon data of Soil Cells (i.e., Silva Cell) for trees. Typically connects multiple tree pits to provide soil volume necessary for healthy tree growth. Typically, catch basin &amp; trench drain systems will direct stormwater to distribution pipes - where water is distributed throughout the cells for tree evapotranspiration. The underdrain system channels excess stormwater away from the cell to prevent flooding of cell &amp; tree root rot. These systems also work in tandem to reduce excessive build-up of salt in soil cell.</td>
<td>N</td>
<td>Dimensions (depth), volume, vendor, age, utilities within soil cell, number of trees.</td>
<td>-Tree pit -SWM infiltration/Storage System -Underdrain pipe system</td>
<td>-Trench drain system</td>
<td>Transportation</td>
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<td>Transportation</td>
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<td>6</td>
<td>Curbs &amp; Curb cut-out inlet or drop curb</td>
<td>Protective element of GI/Tree pits. Parts of the curb may be cut out to direct road/sidewalk runoff into the GI.</td>
<td>A</td>
<td># of cut-outs, connection to GI (yes/no)</td>
<td></td>
<td></td>
<td>Forestry</td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>Catch basin Inlet</td>
<td>Similar to a conventional catch basin, but channels stormwater to a GI. May have different maintenance requirements vs. conventional catch basins. All GI-connected catch basin are designed with an overflow system where runoff will be channelled straight to the sewer system if the GI is saturated.</td>
<td>A</td>
<td>Depth, type, connection to GI (yes/no)</td>
<td></td>
<td></td>
<td>Water</td>
<td></td>
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<tr>
<td>8</td>
<td>Trench Drain System</td>
<td>A water-input system. Gather runoff from road/sidewalk surfaces into GI or distribution pipes. May come with a proprietary catch basin that pre-treats runoff entering the system.</td>
<td>N</td>
<td>Vendor, width, cover type</td>
<td></td>
<td></td>
<td>Transportation</td>
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<td>9</td>
<td>Distribution Pipe System</td>
<td>A water input system for trees in soil cells. As the name suggest, its role is to distribute water from input source (e.g., 1 catch basin) to the whole length of the GI/soil cell. Typically used in trees in hard surfaces with catch basin inlets. Has aeration pipes visible at the tree pit that doubles as an access/flushing point. To enable flushing for maintenance, two access points must be provided.</td>
<td>N</td>
<td>Pipe length, dimensions, materials, aeration cap type, inlet position</td>
<td></td>
<td></td>
<td>Water</td>
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<tr>
<td>10</td>
<td>Underdrain Pipe System</td>
<td>A water output system for all GI. Essential component for sites with insufficient infiltration to prevent GI ponding. Typically connects to storm sewer system or another storage system. May contain an overflow inlet to prevent excessive ponding on surface. May double as distribution system in bio swales. To enable flushing for maintenance, two access points must be provided.</td>
<td>N</td>
<td>Pipe length, dimensions, material, overflow inlet specs, overflow inlet cap specs, orifice (if present)</td>
<td></td>
<td></td>
<td>Water</td>
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</table>
Appendix C - Green Streets Operations and Maintenance

Gaps/Challenges

Some assets (e.g., trees, horticulture, catch basin, roads) have an existing maintenance programme and only require minor refinements to level of service. These assets can be managed through routine trimming, pruning, watering, organic fertilizer deposit and inspection for any disease/fungus. Informal labour can be engaged on a large-scale for such efforts. Other assets (e.g., soil cells, trench drains) however, do not have an existing programme and can be more complex to maintain and operate. It is of utmost priority to build such a programme to maintain these new assets. Some engineering expertise, along with heavy equipment for dredging and pumping, may be required for such assets, to ensure that they are operating properly. An annual inspection and maintenance programme needs to be set up with third-party contractors.

Depending on the partnerships needed to maintain these ‘Green Street’ systems (corporate sponsorship, informal sector alliances and arrangements, city management, private contractor), the gaps and actions may change. Major gaps and action needed:

1. **‘New’ GI Asset Type**: Verification of external resources to create standard maintenance programme. This needs to be completed using an external third-party actor with governance from the provincial government.

2. **Existing GI-related Asset**: Implement indicator of GI relation to reflect required Level of Service – catch basin, sidewalk, roads. For those assets which are simple to maintain (tree pits), the engagement of informal sector labour and employment creation may be sufficient. However, where bioretention systems and other more complex solutions are required, a contract with skilled labour or a specialised contractor will be necessary along with a preventative maintenance schedule.

3. **Training and Education** for operations team working with GI (from analyst to maintenance crews).
Access to Water & Sanitation in Post-COVID Pakistan

by

Dr Imran Saqib Khalid &
Talia Asim Shehzad

* This chapter has been approved as a Policy Brief by the referee.
** Dr Imran Saqib Khalid is Director Governance and Policy at World Wildlife Fund (WWF) Pakistan. He is also a Visiting Fellow at the Sustainable Development Policy Institute, Islamabad, Pakistan. Ms Talia Asim Shehzad is a government and public policy student at the National University of Sciences & Technology (NUST), Pakistan.
Abstract

Goal 6 of the Sustainable Development Goals (SDGs) of the United Nations highlights the importance of water and sanitation. It talks about ensuring access to water and sanitation for all. A few of the targets that it sets to achieve by 2030 include ‘achieving universal and equitable access to safe and affordable drinking water for all’ in addition to providing ‘adequate and equitable sanitation and hygiene for all.’ It also involves bringing ‘an end to open defecation all while paying special attention to the needs of women and girls and those in vulnerable situations.’ Given the fact that all SDGs are interconnected, virtually none of the SDGs can be wholly achieved without achieving the targets under SDG 6. It is in this context that a panel discussion was organised to develop an understanding of the state of water, sanitation, and hygiene in Pakistan.¹ This chapter is primarily derived from the discussion that took place as part of the event with the aim of providing recommendations to the relevant authorities for the provision of WASH facilities. As such, the discussion was transcribed and then common themes were identified and extracted.

Introduction

Hygiene practices, especially frequent hand washing with soap has emerged as the first line of defence against the spread of COVID-19. However, according to estimates provided by UNICEF (2020), 3 billion people globally are deprived of hand washing facilities in their own home. Moreover, 2.2 billion people do not have access to safe drinking water, while 4.3 billion people lack proper sanitation services. Nearly 300,000 children under the age of five die annually from diarrheal diseases that result from poor sanitation, poor hygiene, and unsafe

¹ The session sponsored by WaterAid was held during Sustainable Development Policy Institute’s annual Sustainable Development Conference held in December 2020. The participants included Mr Basharat Saeed from The World Bank; Ms Zofeen Ebrahim, an environmental journalist; Mr Niaz Ahmed from WaterAid; and Mr Salman Sufi from Sufi Foundation. The session was moderated by the lead author.
drinking water supplies (UN Water n.d.). Goal 6 of the Sustainable Development Goals (SDGs) talks about ensuring access to water and sanitation for all. A few of the targets that it sets to achieve by 2030 include ‘achieving universal and equitable access to safe and affordable drinking water for all’ in addition to providing ‘adequate and equitable sanitation and hygiene for all.’ It also involves bringing ‘an end to open defecation all while paying special attention to the needs of women and girls and those in vulnerable situations.’ Given the fact that all SDGs are interconnected, virtually none of the SDGs can be wholly achieved without achieving the targets under SDG 6.

State of Water Sanitation and Hygiene (WASH) in Pakistan: An Overview

In Pakistan, the situation surrounding the provision of clean water and access to sanitation for all is dire. To begin with, access to water and sanitation is not explicitly declared as a fundamental right in the Constitution of Pakistan. Over the past decade, there has been an increased access to clean water and reduced open defecation in Pakistan (UNICEF n.d.). However, we have not witnessed a comparable decrease in the prevalence of diarrhoea and stunting among children or improvement in the nutritional indicators.

In 2018, the Clean Green Pakistan Movement (CGPM) was launched by Prime Minister of Pakistan that seeks to strengthen the institutions that govern WASH facilities and to bring about a behavioural change in society. CGPM is a flagship 5-year movement that aims to tackle the following five components: solid waste management, hygiene, plantation, safe drinking water and total sanitation. However, the movement is primarily focused on citizen engagement and ranking cities and neighbourhoods based on how they score on various indicators instead of providing any solid framework for the expansion and maintenance of WASH services.

Research shows that only 25% of households in the country have access to piped water (The World Bank 2018). The rest of the people have
access to water through a water supply scheme or an outlet close to their place of residence. However, the water quality is not safe for consumption. Furthermore, only 60% of the people in Pakistan have access to sanitation facilities such as a functioning toilet. As such open defecation remains one of the major challenges in the country. Moreover, less than 1% of the municipal wastewater is being treated (The World Bank 2018). This has dire repercussions for land and water bodies that receive the untreated wastewater. What this shows is that Pakistan has a long way to go before achieving its goal of ensuring that everyone in the country has access to safe water supplies and adequate sanitation facilities. The decrepit state of WASH in Pakistan impacts health as well as the economic well-being of the country.

These impacts are expanded upon in the next section.

**Health Impacts**

In recent years, there has been an increased emphasis on improving food security and nutrition in Pakistan. However, all the nutritional outcomes that the government talks about and wants to achieve are adversely affected by the lack of safe sanitation and wastewater treatment. Due to inadequate sanitation facilities, people resort to open defecation. The unmanaged faecal waste gets transferred to food supplies, drinking water, is ingested directly or is carried in large concentrations by flies and animals to human settlements. Once these pathogens are ingested, they can have lifelong effects on the health of the people, especially for children under the age of five. Through the process of environmental enteropathy, the mechanism of the body through which it absorbs nutrients from food is destroyed over time by ingesting faecal matter. This, then becomes the main subclinical culprit, which leads to the high rates of stunting and other nutritional deficiencies in children and young adults in Pakistan. According to The World Bank study (2018), 38% of all children in Punjab, 47% in Sindh, 49% in Khyber Pakhtunkhwa, and 53% in Balochistan are stunted in Pakistan. Stunting impacts the cognitive as well as physical
development of a child. This can lead to learning impairments and has the potential to impact their productivity as an adult.

As this is a nutritional issue, the focus of investments on stunting campaigns in Pakistan has been on improving nutrition, ensuring people have access to food of a particular nutritional quality as well as improving the health infrastructure. However, the underlying issue remains poor WASH services and management of faecal waste. If a child is ingesting faecal pathogens, even the best nutritional campaign would not be able to address the underlying causes that result in that child losing the ability to absorb nutrition from the food.

It is also to be noted that being financially well-off does not translate into protection from the impacts of poor sanitation in the country. Beyond a certain critical threshold of environmental contamination, wealth only offers limited protection. Research has shown that if the Pakistani population is analysed on the basis of financial well-being in relation to WASH-related incidences of diarrhoea, it is found that there is very little fluctuation across the social strata.

This happens because if the broader living environment or neighbourhoods are contaminated with unmanaged faecal waste, there are various ways through which it could impact even those who might seemingly be protected due to their wealth. At this point, wealth has little impact on the situation and the issue becomes a very ‘democratic’ problem as it affects everyone.

**Economic Impacts**

According to The World Bank study (2013), the cost of poor sanitation for the year 2006 was USD 5.7 billion. This is equivalent to approximately 4% of Pakistan’s Gross Domestic Product (GDP). These costs are primarily health related. In particular, health impacts result in enhanced healthcare costs, productivity loss, and time lost in caring for family members. Accessing safe water supplies involves setting up household water treatment systems, procuring bottled water for home
use and time lost in travelling long distances to bring water, especially in rural areas also adds to this. Costs are also incurred in terms of school and work-related absences due to lack of sanitation facilities. Similarly, inadequate sanitation facilities impact tourism as tourists may avoid visiting the country due to these reasons or shorten their visit due to illness.

**Hurdles in Achieving WASH Objectives**

A number of hurdles exist in terms of realising the goals and targets set by the Government of Pakistan (GoP) for achievement of SDG 6 by 2030. These are discussed as follows:

**Lack of Budgetary Allocation**

Historically, there has been very little investment in sanitation and wastewater treatment in Pakistan. Budgetary allocation to provide people access to safe water and sanitation is not adequate. Researchers estimated that it would take approximately USD 12.3 billion a year for Pakistan to achieve just target 6.1 and 6.2 of SDG 6, out of which around USD 7 billion would be needed for capital investment and USD5.3 billion for operations and maintenance. The annual total WASH budget, however, was just USD1.1 billion (as of 2017), of which the GoP provided a meagre USD 973.4 million (WaterAid 2020). Another issue is that while there has been investment with regard to increasing the access to water, there have not been comparable investments in monitoring and ensuring that the water is of adequate quality. Similarly, the lack of investment in sanitation and wastewater treatment is what adversely impacts the outcomes of different water access related initiatives. As such, there is a need to focus on investment in wastewater treatment in urban as well as rural locales.

**Lack of Institutional Sustainability**

There are numerous institutions and departments working in the provinces that are involved with the sanitation and water facilities with
different jurisdictions and roles and duties. The 18th Constitutional Amendment has shifted responsibilities associated with the WASH sector to the provinces. As such any plans and policies that might have been developed earlier at the national level are held in abeyance. In the provinces, it is not uncommon that the mandate is divided between two ministries. Then, there are local governments and independent bodies that are also stakeholders. The situation in the urban centres is just as complex. For example, in Karachi alone, there are over six institutions that are involved in the provision of water and related services to the people. Moreover, there has been very little emphasis on the institutional sustainability of water and sanitation services. There needs to be a service delivery orientation amongst public institutions, as opposed to capital investment and development of stand-alone schemes. The focus on infrastructure alone means that community involvement in such projects is kept to a minimal, thus, resulting in their lack of sustainability.

The policy frameworks are also not clear when it comes to water and sanitation and the provision of such facilities. There exist a number of laws and frameworks which often overlap and cause ambiguity as to who is responsible for what facets of decision-making. For example, four acts were introduced in Punjab concerning the provision of water and sanitation. According to the ‘The Punjab Local Government Act 2019’ in the rural areas, tehsil councils have the mandate to provide water and sanitation services. Then, there is the ‘Village Panchayats and Neighbourhood Councils Act 2019’ according to which the village panchayat also has a role to play in water and sanitation. Pakistan also has the stand-alone act known as the ‘Aab-e-Pak Authority Act 2019’ which calls for the creation of an Authority known as ‘Aab-e-Pak’ having a service delivery function as well as research and capital investment. Finally, there is the ‘Punjab Water Act 2019’ which lays down a regulatory framework under which a ‘Water Commission’ is to be created for the province as well as a ‘Water Services Regulatory Authority.’ It further details that there will be licences given to service providers, who upon getting the licenses will be responsible to provide water and sanitation facilities to a given area. Hence, while there exists
a complex network of rules and laws, the various acts lack clarity as to how these bodies will coordinate and work with each other, what will be the financial and technical arrangements, who will be dealing with customer complaints, and who will monitor the quality of the service provided etc. While the urban areas are choked with overlapping mandates and laws, in rural areas, there is no concept of regular water and sanitation facilities. The lack of consideration for hydrological parameters and water quality parameters coupled with the fact that there is no dedicated budget or institution that is responsible for performing the operation and maintenance functions of the water related schemes is a major reason for the decay in rural water and sanitation infrastructure.

**Social Concerns**

Behavioural aspects and customs are often neglected in terms of project planning. While availability of public toilets is a major issue across the country, even those areas that have public toilets are lacking in terms of their complete utilisation. It is common to see individuals openly urinating and defecating within sight of such installations in major cities. Moreover, women do not use these facilities.

According to Zofeen Ebrahim, a public toilet facility was set up in Karachi, but although the facility was near a bus stand, not many people used it and some men even defecated in the open, right next to it. None of the women were using the facility and neither were the people who had set up their shops in that area. A few men who did use the facility were happy that it was a free and clean and was better than the facility that they were using before which was always dirty and wet. A shocking discovery that she made was that the few people who did use the facility were not aware of all that it offered. A man she spoke to admitted that he was not aware that there was a washbasin installed where he could wash his hands with clean water and soap. Moreover, she observed that although the initiative lays specific focus on the transgender community, there were no separate bathrooms for them. She also shared that they could use the female bathrooms but it could turn out
to be problematic as women could be reluctant to use the bathrooms if transgenders were also using them. Similarly, they could not find female janitorial staff for the female section of the bathroom. Hence, it is essential that people are made aware of the importance of good hygiene and WASH facilities and for that, it is necessary that the government take stakeholders on board such as the women and transgenders and get to know what their needs are and how they can increase engagement.

Increasing engagement becomes challenging when people are reluctant to participate in conversations that discuss their bathroom routines. The problem is more profound with women, who even if they are talking to a fellow female exhibit reluctance to talk about such issues. In terms of the challenges, Pakistan lacks the budgetary resources, the political will, and there is no desire to adopt a consultative and participatory approach towards service delivery.

While some good things have happened in Pakistan such as the adoption of the SDG agenda and the commitments made around the SDGs, however, the state has issues around provincial coordination to work on these agendas. What is required is dealing with WASH issues in a cohesive way, with an integrated approach. To achieve sustainability, Pakistan needs to focus on behaviour change and focus efforts on reaching out to people so that they are more receptive and proactive. The struggle is to come up with a model that is feasible technically, is suitable and adaptable to local needs and is ultimately affordable through a combination of public funding and consumers contributing to the system.
Box 1: The *Saaf Bath* Initiative

Public sanitation and toilets are a big issue in Pakistan. However, this issue has always remained off the radar of governments. The Sufi Foundation took up this initiative and travelled to various cities like Lahore and Karachi and found out that only a handful of public toilets are available in these mega cities and even they are not functional. The problem of unavailability and lack of maintenance of public toilets is even worse for women who are more prone to contracting diseases from dirty toilets that severely affect their health.

*Saaf Bath* public toilets have been set up in Karachi and Lahore and are available not only for men and women, but also for transgenders and disabled citizens. Changing stations and baby chairs are also available for infants in these bathrooms. The most important aspect of these bathrooms is that they are maintained and kept clean by trained janitorial staff who ensure that cleanliness and hygiene is maintained. *Saaf Bath* is set to expand its operations in other cities as well.

A major issue that they encountered was the attitude of people using this facility as they have to be trained and instructed as to how they are supposed to use it in a way that it is usable and clean for the next person. However, with the passage of time, the communities and people who use these facilities have started to take a more active role and have come to take ownership of the initiative.
Conclusion & Recommendations

Despite a reduction in poverty rates across Pakistan as well relative improvements in access to water and sanitation over the past decade, comparable improvements in children’s health have not been witnessed. Nearly 40% children remain stunted across the country. Lack of budgetary allocation towards the broader WASH sector as well as institutional and governance-related gaps and behavioural issues present significant hurdles in addressing this challenge. It is in this respect that the following recommendations could prove useful:

1. Recognise water and sanitation as a fundamental right in the Constitution of Pakistan. In addition, the legislative and policy framework on WASH needs to be improved at the national and provincial level. Legislators should effectively perform their representational, legislative and oversight role to bring improvements in the legal and constitutional framework as well as make the Executive accountable for provision of effective WASH services.

2. Clearly demarcate jurisdictions and responsibilities as to who does what in terms of institutional structures so that there are no overlapping mandates and resources are allocated more efficiently.

3. Financial allocation of resources needs to increase so that Pakistan can reach the targets of SDG 6 by 2030.

4. There is a need for adequate systems, in rural as well as urban areas, to ensure that human waste is contained, transported, treated, and is disposed off in a safe and sustainable way in urban as well as rural locales.

5. Greater, and continued, engagement of all stakeholders, across the social strata and genders is needed for sustainability of WASH initiatives. This requires risk management and
communication plans as well as capacity enhancement initiatives at the local level.

6. Behavioural change is important and for that awareness needs to be raised through door-to-door campaigns for teaching proper sanitation and hygiene practices using informal videos and public talks on how proper sewage systems work and why they are essential. State and non-state actors need to design an effective community engagement strategy supported by a media that conveys information to the masses constructively.

7. Ensure that along with technical feasibility, financial sustainability is built into WASH initiatives and projects. Any such mechanism should be in line with the needs and capacities of all relevant stakeholders, including the local community.

References


Perspectives on Community Resilience to Violent Extremism


11. Countering Violent Extremism during COVID-19
Religious Extremism in Pakistan & the COVID-19 Pandemic: A Counter Narrative Analysis in the light of Islamic Guidelines

by

Dr Musferah Mehfooz

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** Dr Musferah Mehfooz is Assistant Professor of Islamic Studies at the Humanities Department, COMSATS University, Lahore, Pakistan.
Abstract

The Muslim world is facing false accusations of violence, extremism, socioeconomic and political marginalisation due to misinterpretation of Islamic narratives. More often, Quranic texts are read and understood completely out of context and prophetic traditions are misinterpreted without taking into consideration historical factors, circumstances, and evidence. Most religious scholars provide merely literal interpretation of Qur’anic text and Hadith without contextual understanding of their underlying meanings. This situation has become more adverse during the Coronavirus pandemic, when many religious scholars have claimed that the current deadly virus is divine punishment or curse on humanity, without realising the contagious nature of the disease and history of pandemics that occurred during the early period of the Muslim empire. Radicalism and racial bias have done more harm to Islam and the Muslim Ummah today than at any time in history. Religious scholars need to act unanimously to remove the tag of extremism in their teachings and sermons and offer logical reasons behind the pandemic and Islamic ways of countering it. In this study, ‘Modernisation Theory’ of development is used to examine religious extremism in sermons and speeches delivered by religious scholars regarding the spread of the Coronavirus. Inductive reasoning is employed for the evaluation of Islamic narratives and countering religious extremism during the current crisis. Recommendations are offered for the Government of Pakistan to apply a uniform strategy for tackling religious extremism during the pandemic.

Introduction

Humanity faces an existential threat from countless global issues - for instance, global warming, ecological disasters, environmental calamities, pollution, famine, poverty, and cold wars, etc. These challenges are real threats to human existence on the planet and above all, man-made wars, religious extremism, intellectual conflicts, or conflicts of thoughts are creating more threats today than ever before. The Coronavirus pandemic has also become an existential threat.
religious scholars believe that such global phenomenon cannot be accidental nor coincidental occurrences rather there must be some divine wisdom and rationale behind them. For example, why did God send an infectious disease like COVID-19 to humanity? Does God allow evil to inflict humanity? Is this deadly pandemic a divine punishment or a divine warning to humanity? (Rifai 2020a). Atheists and rationalists argue that if God is Omnibenevolent, why does He allow suffering? If God is Omnipotent, why does He not stop a calamity like this?

As a faithful Muslim community, how should we read, analyse, and examine the Coronavirus pandemic that has befallen humanity? It is not the objective of this study to bring all arguments in theodicy, rather the chapter briefly presents an Islamic perspective on natural calamities like the Coronavirus. Most religious scholars have publically claimed that this calamity is divine punishment. Others argue it is a test and divine warning to humanity due to sins. Theologically, it is not appropriate for any Muslim to question divine actions and activities. Divine actions and activities do not come under any human decree, rather human actions and activities come under divine jurisdiction.

During the early period of Islam, the Quraysh used to fear smallpox because of its infectious nature like Ṭāʿūn (Hisham 1995). Ibn Saʿd (d. 230/845) indicates that when Abu Lahab died due to smallpox, his family waited for three days and then they prepared his body for the funeral. A man from their tribe commented to his son, ‘Woe on you! Shame on you! Your father’s dead body is in your house but you do not go near him.’ After the backlash, they hired some slaves who dragged the body of Abu Lahab out of Mecca (Ibn Saʿd 2001).

Ibn Qutayba (d. 276/889) in his Kitāb maʿārif, narrated the history of infectious diseases during early Islam, and specified two major infectious diseases including leprosy and plague (al-Dinawari 1987). ʿAl-Kindi (d. ca. 256/870) provided an important essay about the causes of endemics called Of Vapours that Cleanse the Air of Pestilence (R. fī l-abkhirah al-muslihah li-l-jaww min al-awbā) (Ibn al-Nadim 1998). Al-Asqalānī’s book Kitab Al-Twā’in, produced by Ibn Abī al-
Dunyā (d.281/894), is an extensive work on the plague (al-ʿAsqalānī 1981).

In *Kitāb fī al-iḍāʾ*, Qustā ibn Lūqā (d. 297/910 or 308/920) cited the occurrence and nature of contagions (Fahandrich 1987) and Ibn Saʿīd al-Tamīmī (d. 380/991), a native of Jerusalem, published *Muddat-ul-Baqāʾ fī Islāh Fasad il-Hawā w-al-taharruz min Darar-il-Awbāʾ* for his Fatimid advisor and friend Yaʿqub ibn Killis. He accentuated that purification of air is an important factor to avoid pandemics and viruses (Ullmann 1970). Furthermore, *Al-Tib al-Masnūn fī Dafaʿ al-Taʿun* by Ibn Abī Hajlah (d.764/1362) is also a substantial work on the subject of viruses. Ibn Khāṭima al-Ansārī (d. 770/1369), inscribed a dissertation on the plague titled *Tahsīl Gharad al-Qāsid fī Tafsīl al-Marad al-Wāfid* (The Attainment of the Goal of the Seeker for Information Concerning the Epidemic) (Cambra 2013). This classification of the types of epidemics is similar to that of modern scientific classification as ‘Pneumonic pest’, ‘Bubonic pest’ and ‘Septicemic pest’ (Salyers and Whitt 1994). Several dissertations were written by Jewish, Muslim, and Christian scholars and physicians based on the principles of Galenic medicine. Most of the work emphasised preventive measures and remedies for infectious diseases (al-Dīnawārī 1987). Archival research about these pandemics and infectious diseases shows the link between contagious diseases during the Medieval Age (Huremović 2019). A close assessment of the chronicles reveals historical data about these epidemics and leads to a reasonable record of contagious diseases during the period (Mehfooz et al. 2020).

The main objective of this study is to draw the line between the actual nature of contagious diseases and their outbreak by providing the brief history of pandemics during the early Muslim empire along with the assessment of knowledge and attitudes of earlier Muslim scholars as well as ones in the current COVID-19 pandemic. The findings showed a lack of awareness of Muslim scholars towards the contagious nature of the pandemic outbreak was the result of their misconception and impractical attitudes towards the COVID-19 outbreak.
Contagious Nature of Diseases

Terminologies such as ‘communicable’ and ‘contagious’ are used as interchangeably (Aronson 2004). Contagious or communicable diseases can rapidly spread from one person to another via direct or indirect contact like ‘touching a person who has the infection’, ‘touching a contaminated object’ or ‘inhaling droplets made when a person who has the infection coughs, sneezes, or talks’ (WHO 2020). Currently, COVID-19 produced by a new kind of virus SARS-CoV-2 is also contagious (Cascella et al. 2020). It is a major pathogen (e.g., a bacterium, virus, or parasite) (Remuzzi and Remuzzi 2020) and was first noticed in the city of Wuhan, China, in late 2019 and then quickly spread around the globe (Mehta et al. 2020). The World Health Organization (WHO) acknowledged COVID-19 as a pandemic based on its rigorous spread around the globe (Waris et al. 2020).

It is important to highlight the difference an epidemic and a pandemic. An epidemic is when an illness spreads unexpectedly in a limited area (Bedford et al. 2020), while a pandemic spreads rapidly among people in a wide area (Harrison 2017). Abram Benenson defined an epidemic as ‘the occurrence in a community or region of cases of illness (or an outbreak) with a frequency clearly above normal expectancy’ (Benenson 1995: 247).

According to the Oxford University, ‘epidemic [occurs]... over a very wide area and usually affecting a large proportion of the population’ (Last 1988: 94), and a pandemic is used to indicate the presence and spread of epidemics across the wide area and globally (Morens et al. 2009). In 1666, the word pandemic was referred to as “‘Pandemick’ or ‘Endemick’ or rather a ‘Vernacular Disease’ (a disease always reigning in a Country)” (Harvey 1966: 2-14). After two centuries in 1828, the first edition of Webster’s Dictionary considered ‘pandemic’ and ‘epidemic’ as synonyms. In history, the Plague of Justinian (541–542) was the first known recorded pandemic (McNeill 1976). During the last few decades, researchers re-examined the overall impact of the pandemic in the Middle East, Central Asia, and European countries.
During the mid-Twentieth Century, scholars’ interest increased in pandemic and contagious diseases such as AIDS, Swine Flu, Avian Flu as they were unpredictably serious at that time (Stearns 2009).

Brief History of Pandemics: Early Period of the Muslim Empire

The Muslim Empire faced several devastating plague outbreaks (al-Dinawari 1987). According to historian al-Madāʿinī, the plague of Shirwiyh (Tāʿūn Shirwiyh) was the first plague pandemic during the initial period of Islam (al-ʿAsqalānī 1981). During the rule of the last Sāsānian king, Yazdegerd III (AD 634-642), there was a Plague of ʿAmwās (Tāʿūn Amwās) in Syria (al-Suyūṭī 1997). During the period of Caliph Umar (13-23/634-44) in Syria, the outbreak of Plague of ʿAmwās (Tāʿūn Amwās) wildly spread to neighbouring countries (Iraq and Egypt) and affected 25,000 Muslim soldiers (Ibid.). During the period of Ibn al-Zubayr in Shawwāl (69-70 /688-689), the Plague of the Torrent (Tāʿūn al-Jāirīf) occurred (al-Tabari 1992).

After that, during the period of ʿAbd al-Malik ibn Marwān, the Plague of the Maidens occurred (al-Dinawari 1987). In Iraq and Syria in 99/716-717, the Plague of the Notables spread (al-Suyūṭī 1997). In the year 100, the plague of ʿAdī ibn ʿArtāh (Tāʿūn al-ʿArtāh) occurred (al-ʿAsqalānī 1981). There are signs of plague epidemics in Syria in 107/725-726 and 115/733-734; and, Syria and Iraq in 116/734-735 during the late Umayyād Period (Ibid.). During 131 in Shaʿbān, the Plague of the Crow (Tāʿūn al-Ghurāb) in Basrah 127/744-745 (al-Dinawari 1987), and the Plague of Salm (Tāʿūn al-Salam) broke out in Iraq (al-Suyūṭī 1997). al-Tabari (d. 310/ 923) recorded several epidemics of plague (al-Tabari 1992) during the Umayyād period (661-750/41-132). The most famous plagues in the early days of Islam were the Plague of ʿAmwās, Plague of the Maidens, Plague of the Torrent, and the Plague of the Notables as indicated by al-Madāʿinī (843/1258) (al-Asqalānī 1981).

The ‘Black Death’ killed a large European population from 1347-1350. ‘This second pandemic caused great social and economic upheaval.
Mostly whole families were wiped out and villages abandoned’ (Aberth 2011: 112). ‘Crops could not be harvested, travelling and trade became curtailed, and food and manufactured goods became short’ and when it passed, as one historian tells us, ‘the world seemed to be plunged into primaeval silence’ (Conrad 1982). The third pandemic caused the death of over 15 million people, and it affected the majority of the Indian population. In 1983, China and Tanzania faced a devastating plague outbreak. During 1992, in Zaire and during 1994 in Mozambique, India, and Zimbabwe, a major plague occurred (Frith 2012b). Moreover, in Africa, South America, and Asia, annually recorded cases of Yellow Fever were around 2,000 and the casualty rate has been evaluated from 5-15% globally (Frith 2012a).

**Misinterpretation of Religious Narratives: Breeding Ground for Violent Extremism**

Recently, there has been an increasing interest in the role of religion in human life (Brambilla et al. 2016). Guthrie (1993) observed that human beings project their attributes in the form of religion and religious beliefs/practices in this world. Kirkpatrick (2005) comprehends religion as a form of psychological attachment. According to him, religion is a way to express a powerful emotional relationship with a high deity. Many psychologists and social scientists found that religion has noticeable psychological functions (Ibid.). Religion and religious affiliations provide a sense of connectivity to believers. It helps to explain difficult abstract things, offers a code of life, relief to fight mental illness like depression, and fulfil the needs of attachment.

The word ‘religion’ is mentioned 92 times in the Holy Qur’an. It is a divine law and every kind of belief and claim to sacredness produced by man is considered false. In Islam, only the system sent by Allah through His sacred prophets is the true religion. In this way, man bowing down to man has been prevented and it has been established that all people are one and equal before Allah (Imam Muslim 2000, Hadith: 98).
The word ‘Din’ or ‘Deen’ or ‘Dīn’ has invariably been translated into English as ‘religion.’ It may be easy to understand what ‘Din’ is since the last Prophet Muhammad (PBUH) followed the command of Allah and established a society, a state, and a civilisation in the Arabian Peninsula. The term ‘Dīn’ surely means civilisation, way of life, code of conduct, and noble behavioural patterns (Israr 2020). However, some people misinterpreted religion and incorporated their desired values and thoughts which became a major cause of religious extremism.

‘Extremism is the vocal or active opposition to our fundamental values, including democracy, the rule of law, individual liberty, and respect and tolerance for different faiths and beliefs. We also regard calls for the death of members of our armed forces as extremist’ (Richardson and Bolloten 2014). ‘Religious extremism’ is a very distinct ideology that should not be mixed up with traditional religious practice. It is based on the slanted interpretation and distorted construal of Islam. The main aim of this ideology is to betray Islam’s peaceful principles. Islamist extremists created a plot of ‘them’ versus ‘us’, and their ideology embraces the rigid belief that those who do not agree with their uncompromising beliefs are not true Muslims (Gibbs 2005). Metaphorically, it might be said that extremism searches for freedom from communal constraints, and with success, it begins to restrain itself to achieve the very purposes for which it sought its freedom (Liebman 1983). To label ‘religious extremism’ as a product of ignorance, coercion, or psychopathology is to foster misunderstanding. To combat extremism with the powers of the state is to invite conflict. To support ‘good’ religion while repressing ‘bad’ religion is to invite violence (Iannaccone 1999).

Religious extremism, as defined here, is destructive of any communal structure. Extremism cannot exist in reality (Pratt 2013) - it is the willingness of religious adherents to assimilate themselves in their prescribed environment, to adapt their own behavioural and belief patterns to prevail in their desired culture and norms.
Religious extremism assumes a very high level of religious differentiation. All historical religions recognised the destructive capacity of extremism and sought strategies to constrain it. If at present, we are witnessing a rise in religious extremism, the explanation must lie in a weakening of the very forces that negated extremism in the past (Sageman 2008: 54).

**Modernisation Theory of Development**

The rise of religious extremism was quite unanticipated by the prevalent of modernisation theories of development a decade ago (Inkeles 1969). The establishment of any theory has a historical background. The formation of the Theory of Modernisation demonstrated a new trend of social thought in the Western world after World War II, and reflected the new aspects of international politics in the 1950s and 1960s (Moore 1993). The Western world was widely perceived to be at the highest developmental stage of human social evolution. It was believed that the non-Western world would use the West as an example to pursue ‘Westernisation’. In short, a progressive mood of optimism dominated the social thought of the Western world during the mid-and late-Nineteenth Century (Peng 2009). Modernisation Theory was developed by several social scientists, particularly a group of American scholars the most prominent of whom was Talcott Parsons (Hirschman 1987) and has its roots in the ideas of Émile Durkheim and Max Weber (Marius 2009: 231). According to them, the crucial question was how people combined in stable groups to form cohesive societies, and what was the nature of their relationship to one another as society grows and becomes more complex? (Etzioni 1993). Schwartz (1972: 76) draws upon Weber to define modernisation in terms of the expansion of man’s rational control over his physical and social environment. Modernisation Theory indicates that modern societies are more productive, children are better educated, and the needy receive more welfare (Rustow 1967). Smelser (1964) postulates that modern societies have a particular feature of social structural differentiation, which is to say a clear definition of functions and political roles from national institutions.
Modernisation is a homogenising process, in this sense, one can say that it produces tendencies toward convergence among societies (Goldfrank 1986). Levy (1967: 189-207) maintains that ‘as time goes on, they and we will increasingly resemble one another because the patterns of modernization are such that the more highly modernized societies become, the more they resemble one another.’ The similarities between classical modernisation studies and new modernisation studies can be observed in the constancy of the research focus on Third World development; analysis at a national level; use of three main variables: internal factors, cultural values, and social institutions; key concepts of tradition and modernity; and policy implications of modernisation in the sense that it is considered to be generally beneficial to society as a whole (Bergesen 1984).

Perception and Response of Religious Leaders to COVID-19

False religious beliefs are a major hindrance when it comes to realising the gravity of a situation (Khan et al. 2015). Islam is the official religion of Pakistan, and its population highly regards the advice of Muslim scholars. In many areas of the country, religious beliefs influence public opinion. The imam (cleric) of the local mosque is considered a central source of religious and cultural knowledge and is referred to for guidance on controversial matters, about facing new issues, particularly during a crisis (Khan and Chiau 2015).

During the devastating outbreak of COVID-19, a great misconception has been created about the pandemic by religious scholars, who claim that it is divine punishment or curse on humanity, without realising the contagious nature of the disease and history of pandemics which occurred during the early period of the Muslim empire. In addition, religious extremism and misinterpretation of Islam have misguided the Muslim community about the contagious nature of diseases on a wide scale.
Zaghlool Najar, an Egyptian geologist, and head of the Scientific Miracles Committee claimed that Muslim world leaders were following the Western world in every aspect of life. The virus was, therefore, divine punishment due to disbelief, injustice, aggression, exploitation, and corruption in the world (Rifai 2020a). Other Muslim scholars claimed that because the Chinese consume some animals that are prohibited in Islamic law like dogs, cats, snakes, etc., that is why this virus has spread (al-Modarresi 2020). Abdul Hakeem al-Murad, Dean of Cambridge Muslim College, UK - an institute which trains imams for British mosques - argued that the Coronavirus occurred due to excessive materialism and consumerism of the Western world. He further stated that ‘Bani Adam, released from the natural restraints urged by religion, has itself become a disease, in its planning and its wisdom no more intelligent than a microbe. We have become a Qarun-virus’ (Murad 2020).

Such commentary, like ‘May God punish China with death, as they had brought death to Muslims’ or ‘The virus is God’s army that destroys the kafir (infidels)’ or ‘Coronavirus, a soldier of Allah’, has been spreading in Muslim communities delivered by numerous religious scholars. Another recent news going around the world is that 53 Muslim countries could not do anything about the atrocities in Palestine, Indian Occupied Jammu & Kashmir and other parts of the Muslim world, so Coronavirus is a divine punishment as a warning to Muslim leaders and world leaders (Andrew 2020). An Arabic weekly newsletter Al-Naba’ presented COVID-19 as an act of vengeance and quoted the Qur’anic verse ‘Indeed, the vengeance of your Lord is severe’ (85:12) to support its claims (Azman 2020). It is worth noting that such statements and claims compel followers toward the adoption of stricter religious observance and irrational attitude.

Islamic policymakers, governments, and leaders reacted in a very contrasting way to the sudden outbreak of COVID-19 in the Middle East. The Islamic State of Iraq and Syria (ISIS) instructed their followers to abolish travelling to European states. Moreover, some clerics in Egypt, Iraq, Jordan, and Morocco debated that the outbreak of
Coronavirus was divine punishment against the non-believers. On the other hand, some Islamist parties cooperated with governments and actively offered practical advice to their followers to control the spread of the virus (Andrew 2020).

In Pakistan, a prominent religious scholar and preacher during a live interview on a national television channel claimed that Coronavirus was a form of repercussion for the ‘wrongdoing of women’ and their behaviour (Dawn 2020a). Such statements reinforce misogynistic thinking.

When Pakistan’s President Dr Arif Alvi held a meeting with clerics and tried to convince them to close the mosques for prayers as the Coronavirus cases were rapidly increasing across the country, the clerics rejected the requests. One cleric declared ‘We would not close mosques ... It is not possible in any circumstances in an Islamic country’ (Dawn 2020b). The Human Rights Minister of Pakistan used the social media platform Twitter to criticise the statement of the cleric. She wrote, ‘This simply reflects either ignorance about pandemics or a misogynist mindset.’ Moreover, the Human Rights Commission of Pakistan (HRCP) also reacted to the offensive statement against women and tweeted: ‘HRCP is appalled at his recent statement inexplicably correlating women’s modesty to the COVID-19 pandemic. Such blatant objectification is unacceptable and, when aired on public television, only compounds the misogyny entrenched in society’ (The News 2020).

Such false religious beliefs and prejudices are major barriers towards the actual understanding of the contagious nature of COVID-19 and its outbreak and have become a major hindrance to countering them rationally. In an attempt to address related issues about the contagious nature of COVID-19 effectively, Muslim scholars can play a significant role in spreading awareness about the real concept of contagious diseases from early Islamic literature and educate the public about its prevention.
Religious scholars can remove negative perceptions about the pandemic and play a positive role in its control. In order to do this, they need to have updated knowledge and deliver evidence-based information to the community.

**COVID-19 as Divine Retribution: Counter Narrative Analysis of Muslim Scholars’ Views**

The use of counter narratives is based on an intersectionality approach that draws upon historical and contemporary contexts to expose subordination based on multiple factors such as class, race, nation, ethnicity, citizenship, and gender. Such analysis is helpful in exploring the existential background of a debate, and in this case, the actual Islamic teachings and how to respond to radical approaches. Additionally, convincing textual analysis with a critical approach would help to evaluate the authenticity of religious scholars’ opinions about COVID-19 from an evidence-based Islamic perspective, and perhaps eventually come up with solid findings regarding the development of a rational approach about the contagious nature of this disease’s outbreak.

As discussed earlier, plague and pestilence are nothing new or surprising in Islamic history. More than 20 major pandemics and plagues have taken place in human history, including in Muslim countries and in places under Muslim rule.

In Arabic, the word ‘wabāʾ’ has been used for the outbreak of contagious diseases, and is a more general term for ‘epidemic’ or ‘pestilence’ (Ibn al-Qayyim 2018). *Wabāʾ* is more commonly defined as a ‘quickness, and commonness, of death among men,’ as ‘a corruption happening to the substance of the air’ (Ibid.: 84), as ‘a change affected in the air,’ and as ‘an un wholesomeness in the air, in consequence of which disease becomes common among men’ (Conrad 1982). Majūsī (d. 381/994) discussed in detail how through various ways the atmosphere can be corrupted and create ‘pestilential air’, which in turn causes ‘pestilential diseases’ to break out among people (Majūsī 1877). Ibn Battuta,
Religious Extremism in Pakistan & the COVID-19 Pandemic: A Counter Narrative
Analysis in the light of Islamic Guidelines

Describing the Black Death in Cairo, recorded that 20,000 people a day were dying; and the *imams* would cry out ‘Shahada, Shahada!’ The reference, no doubt, is to the authentically stated word of the Prophet Muhammad (PBUH) in Sahih Bukhari that ‘those who stay in a plague-stricken land, reckoning that nothing can befall them save Allah’s decree, will receive a reward equal to that of martyrs’ (al-Bukhārī, Hadith: 5782).

Historian Lane-Poole wrote the following about one medieval Egyptian hospital, ‘Cubicles for patients were ranged around two courts, and at the sides of another quadrangle were wards, lecture rooms, library, baths, dispensary, and every necessary appliance of those days of surgical science. There was even music to cheer the sufferers, while the reader of the Koran afforded the consolations of the faith. Rich and poor were treated alike, without fees, and sixty orphans were supported and educated in the neighbouring school’ (Lane-Poole 1906: 287).

No book has been misinterpreted and misread as much as the Holy Qur’an. Muslims and non-Muslims have been quoting from it out of context for many centuries. Sometimes, the Quranic verses are cherry-picked and interpreted wrongly without their historical and linguistic contexts. Very often, the Holy Qur’an is described by non-Muslims as a book of violence and terror without understanding its ethical and moral principles. One must have some contextual background, historical, and linguistic knowledge to understand the true meanings of the words in the Holy Qur’an. As a result of selected reading, many Muslims and non-Muslims alike make erroneous conclusions.

More importantly, a deep knowledge of the Arabic language and linguistic conventions is very important. One must read the Holy Qur’an objectively without any previously learned biased knowledge about Islam. It declares that it is revealed as guidance to humanity. Yet, to get guidance from it, one’s heart and mind must be spiritually pure and clean as well (Rifai 2020b).
The Holy Qur’an is a cure and remedy for all human illnesses. Yet, one must free oneself from different ideological background knowledge to understand its divine guidance. For instance, if a Communist would like to read the Holy Qur’an, first, he must free himself from communist ideology before reading it. Otherwise, he would not be able to benefit from reading it.

It is generally believed by the Muslim community that the Holy Qur’an and its supreme words are the sentences of God. It is a completion of divine messages that Allah sent to previous prophets. So, divine ideas are more supreme than man-made philosophical ideas (Rifai 2020a). Therefore, it would not be fitting to compare divine ideas with man-made philosophical ideas. A polluted mind with man-made philosophical ideas will not benefit from divine grace and guidance.

Muslim scholars should take some responsibility for wrong perceptions about the Holy Qur’an. For example, the Qur’anic verse ‘Indeed the vengeance of your Lord is severe’ (85:12) was revealed to the Prophet Muhammad (PBUH) in Makkah during a period when the persecution of Muslims was at its peak. al-Qurtubi (2000: 312) narrates that ‘this chapter mainly aims to assure believers that their resolve and steadfastness in the face of tyranny and oppression will be rewarded and that God’s vengeance upon their persecutors is absolute.’ However, several religious scholars have misinterpreted this verse without its historical background and quoted it out of context according to their own choice and interpretation. The Holy Qur’an advises Muslims to seek the advice of experts in their fields and guides that ‘(People) you can ask those who know if you do not know’ (al-Qur’an, 16:43). The public has no clue about the virology of infectious diseases, so, they should seek the advice of infectious disease experts.

In Pakistan, a cleric made an offensive remark about women and blamed women as a cause or a reason for the pandemic. His comment hurt the sentiments of people and they trolled the preacher on social media platforms and criticised his party. Pakistani women got blamed but not for the first time for a disaster. Unfortunately, in a society where
the birth of a baby girl is considered a calamity, the statement of the cleric reinforced misogynistic thinking. While some clerics debated that the outbreak of Coronavirus was divine punishment against non-believers, on the other hand, some Islamist parties cooperated with their governments and actively offered practical advice to their followers to avoid the virus (Andrew 2020). One cleric told the public that ‘The government is concerned about the current situation and we have assured it our full support in these times of crisis. I appeal to the people to stay at home and do not come out unnecessarily,’ adding that it was the teaching of Holy Prophet Muhammad (PBUH) to observe all precautionary measures in the wake of a pandemic and not to create problems for others (The Nation 2020).

One should also not make generalisations and claim that people of a certain nation have eaten unlawful things not allowed under Islamic law, therefore, they have been inflicted with this disease. They have been eating these animals for centuries and yet, this is the first time they have been inflicted with this disease. People in the Middle East and Africa do not eat dogs and snakes. Yet, they were afflicted with similar viruses such as MERS and Ebola – diseases that do not differentiate between Muslims and non-Muslims, omnivore, or carnivore, white or black. If anything, this is proven by the history of pandemics during which millions of people died in Europe, the Middle East and Asia due to Plague, Yellow Fever, Smallpox and Influenza (Frith 2012a).

**Recommendations**

In the light of the above discussion, the following policy recommendations are offered for the government and religious leaders to tackle religious extremism in the ongoing pandemic crisis:

- The government needs to develop clear plans and strategies to counter religious extremism in its response to the current COVID-19 crisis. It should also publish a new counter-extremism strategy urgently to ensure that it can strategically
respond to the religious extremism in Pakistan during the ongoing pandemic crisis.

□ Religious leaders also have a special responsibility to counter and address misinformation, misleading teachings, and rumours, which can spread rapidly and cause great damage. Religious leaders should also be aware of local and national health authorities’ websites and other information channels to access local guidance based on scientific knowledge. Sermons and messages should be based on factual information provided by the World Health Organization and national or local public health authorities.

□ Interfaith collaboration between both majority and minority faiths is crucial for peaceful co-existence during the COVID-19 pandemic, particularly through the sharing of knowledge, resources, and best practices where possible.

□ The government should remain abreast of global evidence-based information about COVID-19 and ensure that relevant information and facts are shared with communities and adopt a proper strategy to counter and address misinformation. For this purpose, the government should expand the use of television and radio channels.

□ Policymakers should work with researchers and practitioners to build a better understanding of ‘what works’ to counter extremism online and offline.

□ Educational institutes may be utilised for the dissemination of accurate information and to address the increasing stigma, violence, and incitement of hate during the ongoing pandemic.

Conclusion

Theologically speaking, it is not fitting for any Muslim to question divine actions and activities. Natural disasters such as earthquakes, landslides, avalanches, tsunamis, outbreaks of plagues and diseases are taking place due to physical and natural laws. Religious scholars should not try to rationalise divine wisdom behind such disasters through misinformation and propaganda. Countering religious violence and
misinformation is not a one person or one institution process, rather joint efforts are needed to deal with this social threat. Islam is a deen of unconditional justice, love, compassion, human dignity, equality, and universal human brotherhood which the Muslim Ummah should not allow extremists to distort through their ill-informed and biased teachings and propaganda.

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Countering Violent Extremism during COVID-19*

by

Dr Sehrish Qayyum**

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** Dr Sehrish Qayyum completed her PhD in Political Science from the Department of Political Science, University of Punjab, Lahore, Pakistan. Her research interests include strategic security and warfare tactics.
Abstract

Lockdowns and conspiracy theories surrounding the Coronavirus are impacting the mental health and well-being of masses as well as governmental response options. Frustration, online radicalisation and misinformation have made communities more prone to violent extremism, especially online (Von Behr et al. 2013). Stagflation is further worsening the situation (Zweifel 2020). In this study, a qualitative and quantitative analysis of COVID-19 challenges and their impacts on community resilience to violent extremism in Pakistan was conducted. This study suggests that Garmezy’s ‘Resilience Theory’ may help to counter active and passive violence in local communities, while Rutter’s ‘Challenge Model of Resilience’ may assist in promoting cultural identity, curbing social tensions, and eradicating mistrust of government. By combining ‘Resilience Theory’ and the ‘Challenge Model of Resilience’, the study offers recommendations for countering violent extremism and developing community resilience.

Introduction

In the ongoing COVID-19 crisis, global attention has been focused on human well-being and financial effects of the pandemic, while the dangers of violent extremism remain, and have in certain conditions been exacerbated during this crisis (Soherwordi 2020). While governments have invested their energies to tackle this health emergency and to prevent its further spread through forced lockdowns and halting in-person work (Farooq et al. 2020b), research shows that in recent weeks, violence, radicalism, and terrorist activities increased around the globe from gun violence and racial discrimination cases to depression, looting, militancy and far-right radicalism (Lynch, Mason and Rodriguez 2015).

With the closure of schools and recreational and social activities suspended, young people were limited to their homes and to online web-based content. Dismay and disarray, aggravated by the presence of increasing online radicalisation material, have made youth more
vulnerable to extremism and radical agendas (OCHA 2020). Conspiracy theories regarding the origin and spread of the pandemic further deteriorated the situation and governmental focus. These theories ranged from claims that the virus was generated in a laboratory to how it could spread through usage of 5G networks and gadgets (Chen et al. 2020); to how it was being used by private companies and tycoons like Bill Gates to track and trace individual’s movements; to how it was a biological weapon of the United States against China (Ibid.). Changing trends in strict community monitoring and regulations when it came to curtailing movement has also been problematic, especially for communities already living in smaller spaces and could be linked to violence. According to Rosand et al. (2020), slight carelessness could, therefore, exacerbate the ongoing pandemic if radicalisation and community violence also increased simultaneously. Protests were observed in countries like Uganda, Rwanda, Sri Lanka, and South Africa where the COVID-19 crisis revealed the stark reality of their poor health systems and governmental inability to provide people their rights (Ibid.). If more and more individuals become jobless, are deprived of education and the marginalised become more vulnerable, this global emergency could increase community violence. This can be especially difficult to manage when community resilience against violent extremism has reduced due to the ban on social, religious, and awareness campaigns (CTED 2020). Declining confidence in local authorities due to collapsing health systems during the pandemic can also lead to radicalisation, especially if extremist groups are the ones who fill the gaps left by the government in terms of service provision. Such cases have been observed in Nigeria, Sri Lanka and Pakistan, where separatists movements such as Balochistan Liberation Front (BLF), Balochistan Republican Army (BRA) and Baluch People’s Liberation Front (BPLF) served the people in their jurisdiction to counter declining health facilities provided to the victims of the pandemic (Rana 2020).

Therefore, investment in Countering Violent Extremism (CVE) must be increased during the ongoing global health emergency. Efforts such
as psychosocial assessments, counselling, awareness efforts, and in-person support are direly needed. For the time being, existing CVE activities could be changed by taking into consideration more coordinated programming, for example, on the web or e-platforms rather than in-person (van Agteren et al. 2020).

**COVID-19 & Pakistan’s Response**

Right after the identification of the first case of COVID-19 in February 2020, the Government of Pakistan (GoP) initiated stringent actions, including suspension of unnecessary and international travel, cancelling the Pakistan Super League cricket matches and the Pakistan Day celebrations (Farooq et al. 2020a). Besides, a public crisis was proclaimed, with lockdowns, social distancing, suspension of public transportation, closure of educational institutions, offices, OPDs in hospitals, and religious gatherings. The government tried to limit the negative impacts of the lockdowns with an ‘Emergency Cash Program’ to meet the essential demands of around 12 million of the most vulnerable individuals (Ibid.). Other measures included initiation of a volunteer taskforce named ‘Tiger Force’ to support government-launched counter-COVID measures (Krishankutty 2020). This initiative was based on the notion that more than 45% of the population resides in slums and more than 29% live below the poverty index (Farooq et al. 2020b).

In Pakistan, the health sector receives only 1% of the GDP due to which there is scarcity of medical equipment (Ibid.), especially ventilators and Personal Protective Equipment (PPE). To address these issues, contracts were promptly ratified for testing units, PPE, ventilators, and other fundamental clinical supplies, with international and national agencies (Ibid.). Moreover, an exceptional remuneration package was announced for the medical staff and new hiring of surplus medical staff was initiated to manage the crisis.

The media assumed a leading role in awareness campaigns, provision of updated data, promotion of the necessity of social distancing and
charity campaigns. Religious scholars also contributed in awareness campaigns via mosque announcements, along with provision of ablutions for dead bodies and respectful burial to curb the fear of virus spreading during last funeral rites of COVID-19 victims in society (UNDP 2020). COVID-19 also digitalised the world to a next level, and societies like Pakistan moved towards tele-health services, tele-education, e-learning (Afzal 2020). A ‘National Command and Operation Center (NCOC)’ was set up to collect updated information across Pakistan. It became a one-window to collate, analyse and process data according to the ongoing crisis to provide information to the masses at the earliest. The creation of tertiary care hospitals, isolation wards, quarantine facilities and increasing laboratory testing capacity were major efforts under NCOC to control the health emergency conditions (NCOC 2020).

During this period, focus moved away from Countering Violent Extremism (CVE). For example, Shi’a Muslims were accused of bringing the pandemic to Pakistan. While the government ensured safe passage of Shi’a pilgrims from Iran, it was accused of not handling the situation effectively since so many of the pilgrims had tested positive for COVID-19 upon pathological testing (Afzal 2020). In fact, at one point, the hashtag #ShiaVirus started trending on social media platforms. Furthermore, fanatic outfits also use cataclysmic events and different emergencies for their potential benefit by filling a vacuum left by the state. In this case, the state’s healthcare system by reaching out to suppressed communities and aiding them and in-turn recruiting them for their vested interests (Noreen et al. 2020). An annual mass congregation in Raiwind took place in March 2020 under the Tablighi Jamaat. Not long after, 27% of Pakistan’s COVID-19 cases were connected to individuals who had attended this congregation of almost 250,000 individuals (Afzal 2020).
Generalised Analysis of COVID-19 Challenges

*Psychological Impact of Conspiracy Theories & Lockdowns*

Since the World Health Organization declared COVID-19 a ‘pandemic’, many states and their citizens realised the gravity of the crisis and began isolation and quarantine protocols. Disruption in travel plans, inconclusive separation and isolation, alarm over scant resources and excessive reporting of the virus resulted in increasing tensions and sentiments of detachment. Rumors linking the virus to the plague and how it would destroy families who were in different parts of the world made the situation worse (McKenzie-McHarg 2020).

Paranoid fears, in general, develop immediately when something significant occurs. They emerge unexpectedly when there is an emergency or strife that individuals truly need to disclose and need to have answers for. Many conspiracies were fabricated during this worldwide COVID-19 emergency (Bergmann and Butter 2020). For instance, former US President Donald Trump declared that he had seen proof the virus and its origin in a Chinese laboratory even though his own office denied having any such proof. Venezuelan President Nicolás Maduro asserted that the pandemic was brought about by a bioweapon released on China without any proof of this (Chen et al. 2020).

These conspiracy theories and the tendency to believe them gave rise to psychological illnesses. Psychologists started a campaign in the US from April to July, in particular, to address the people via pamphlets and tele-transmissions to provide counselling services (Gao et al. 2020). Endless Coronavirus tele-coverage created fear of untold and miserable death. Stagnant quarantine routines made the situation worse by limiting work and entertainment options for the masses.

From anxieties and mental tension, interpersonal, domestic, and social violence increased. In fact, during the pandemic, while crime rate, riots
and combat deaths reduced, there was an increase in self-harm, suicides and people joining militant outfits due to unavailability of employment opportunities (Klein and Nera 2020).

**Online Radicalisation**

There are approximately 1 billion students worldwide who are not engaged in full-time learning and school education due to COVID-19 and are spending much of their time on the Internet (Ahmed 2020). The increase in the number of youngsters spending time in unguided and unchecked internet usage and gaming websites increases their vulnerability to terrorists wanting to spread their agendas to young minds. According to the Cybercrime Investigation Wing of the government and Law Enforcement Agencies, cases of violence and extremist behaviour have been rising during the COVID-19 crisis (Deutsche Welle 2020).

Various terrorist and violent outfits added COVID-19 into their ideological profiles and dissemination material with intentions to manipulate the lockdowns and create chaos (Rana 2020). COVID-19 fuelled extremist ideologies, reoriented their scorn towards specific social groups and heightened their Semitic, Islamophobic and anti-immigrant narratives (Buchanan 2020). These accounts have been combined with a variety of new or existing extremist notions, especially by the far right, including myths such as the linkage of 5G innovation to the spread of the infection. Opportunities of online radicalisation increased during the pandemic with more prospects of joining terror outfits like ISIS in Syria and Iraq. According to a RAND report on radicalisation in the digital era, the Internet creates chances of becoming radicalised as likeminded people are one-click away and available 24/7 (von Behr et al. 2013). If one applies this to COVID-19 lockdown situations, it is observed that due to a lot of free time at home, away from routine business and work matters, people have more time to spend on the Internet and with anxiety linked with joblessness or catching the disease, individuals may turn to radical elements. The Internet also behaves like an ‘echo chamber’ for radical thoughts and
extremist ideologies by accelerating one-to-one communication on social media and online forums. It provides opportunities for the spread of extremism without physical contact (Vicario et al. 2016).

**Stagflation**

Inflation and rising unemployment has created stagflation which in turn could also reinforce violent extremists to exploit the helplessness of social groups and youth. Cash influx demand and halted work opportunities resulted in a more vulnerable population (Zweifel 2020). Although the pandemic has not had the same level of financial impact as was observed during the 1970s oil shocks nor the recession of the 1950s (Arezki and Nguyen 2020), the question rises what will be the nature of COVID-related shocks and how they may affect the population? Two kinds of supply shocks appear to be conceivable. To begin with, labourers could request higher pay settlements. Second, a few products and enterprises could turn out to be more costly as manufacturers react to new guidelines forced by general healthcare concerns, e.g., rising food bills and transportation expenses to follow physical distancing to control the spread of the pandemic. Limiting global connections and trade ties could additionally harm supply units and rising prices of commodities resulting in inflation (Ibid.). Thus, young people who may now be jobless, underemployed, disappointed, under such push and pull elements could fall prey to recruitment by Violent Extremist Organisations (UNDP 2020). Radical groups are, in fact, exploiting COVID-19’s blowback by spreading paranoid notions that blend medical care information with philosophical publicity. Data has shown that skilled youth, encountering physical distancing and isolation from COVID-19, are more prone to getting involved in online radical forums and may become prone to disinformation.
Study Methodology

Mixed method approach was employed in this study to find reliable results for the survey conducted to highlight and measure the impact of factors increasing violent extremism during COVID-19. Qualitative survey, including interviews and questionnaires, helped to extract the factors having an impact on violent extremism in communities such as those discussed: psychological impact of conspiracy theories and lockdowns, online radicalisation, and stagflation. Besides interviewing representatives from different government department and NCOC, 121 questionnaires were filled out by individuals from various academic institutions, public offices, and health centres. The qualitative data survey helped to validate the quantitative results showing strong correlation (Table 1):

<table>
<thead>
<tr>
<th>Violent Extremism</th>
<th>Psychological Impact of Conspiracy Theories &amp; Lockdowns</th>
<th>Online Radicalisation</th>
<th>Stagflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.718**</td>
<td>.013</td>
<td>.779**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.899</td>
<td>.001</td>
<td>.872</td>
</tr>
<tr>
<td>N</td>
<td>121</td>
<td>121</td>
<td>121</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).  
*Correlation is significant at the 0.05 level (2-tailed).

Figure 1 shows a normal distribution curve, i.e., symmetrical and bell-shaped. 68% of the data falls in the first standard deviation which shows the normal distribution and linearly spread data affecting the dependent variable directly and with the one-unit shift in values of the independent variables.
The findings of this study suggest a high level of correlation and interdependency between the psychological impacts of conspiracy theories and lockdowns, online radicalisation, and stagflation during COVID-19 on violent extremism in communities.

Enhancing Community Resilience against Violent Extremism

There are three general classes of resilience models - compensatory, defensive, and challenge that clarify how versatility factors work to adjust the direction from hazard introduction to negative result. In the third model of strength, the ‘Challenge Model’ (Fleming and Ledogar 2008), the relationship between a danger factor and a result is ‘curvilinear’: introductions to both low and elevated levels of a danger factor are related to negative results, yet moderate degrees of the danger are identified with more positive (or positive) results. Youth exposed to direct challenging factors, for instance, might have gone up against enough of these factors to figure out how to defeat them, however, are not shown to such an extensive amount that overcoming them is inconceivable (Cook and White 2006). Many challenge models require longitudinal information. Analysts use them, for instance, to
follow how rehashed presentation to challenges prepares young people for managing misfortunes later. One use of the challenge model of versatility is given by Richardson (2002) for whom ‘resilient reintegration’ is the best result of a cycle including a person’s responses to some pressure or affliction. This happens when one finds insight because of an adversity. The ‘Disruptive Resilience Process’ is a way to get to this potential (Fleming and Ledogar 2008).

**Rutter’s ‘Challenge Model of Resilience’**

Michael Rutter set up a few standards for ‘Resilience Theory’ dependent on his broad exploratory study (Rutter 2013 and 1999). One of the standards Rutter holds fast to is that versatility is not identified with individual mental characteristics of predominant working, rather it is a normal variation given the correct skills (Rutter 2013). He scrutinises the thoughts of ‘super kids’ or ‘invulnerable’ and proposes that singular contrasts in versatility might be because of hereditary impacts that make a few kids reasonably helpless to ecological change or physiological reactions to ecological risks. He underscores that it is the situation, not the kid, that is the impetus for these traits.

Rutter raises the significant point that causal, interceding, and directing risk factors should be better comprehended, as not all presumed danger factors result in a risk in all conditions (Rutter 1999). Likewise, financial status is an interceding factor, as it does not have a straightforward negative impact on kids and young people, but has the possibility to drag them towards negative activities. The aberrant impacts of neediness that add to risk conditions include absence of resources, employment, or decreased admittance to medical services and food insecurities. He recommends that more work should be done to recognise these causal, interceding and directing risk factors (Rutter 1999).

One of the key focus of every one of Rutter’s papers is the defensive factor of mental stresses/activities. He proposes that people who have these psychological highlights have both control and accomplishment
on evolving occasions. A second defensive factor is the significance of social connections. Here Rutter discusses the importance of ‘turning point experiences.’ Transforming moments are minutes in a young individual’s life where there is an ‘intermittence with the past that eliminates disadvantageous former options/solutions and gives new choices to helpful change’ (Rutter 2013). So, Rutter’s challenge mode for resilience development in the ongoing COVID-19 crisis suggests understanding all social, individual, and psychological factors to develop resilience options in an affirmative way. COVID-19 lockdowns and quarantine compulsions for victims suddenly changes thought process and response behaviours all over the world, so it is a responsibility of the government i.e., state and local to coordinate and collaborate with all social strata. Close coordination will result in decline of trust deficit and strong hope for betterment during COVID-19.

**Garmezy’s ‘Resilience Theory’**

Garmezy was a clinical psychologist who worked on a series of genetic and environmental risk factors of schizophrenia, which was also a serious issue before and in 1970 (Luthar et al. 2000). These early investigations of risks showed that susceptibility adds to later negative results. ‘Vulnerability’ incorporated a scope of components, including a family background of psychological maladjustment (as an intermediary for hereditary weakness), challenges during pre-birth or neonatal period (e.g., maternal unhealthiness or smoking, or deficient neonatal consideration), issues in the family climate (e.g. conjugal disunity or poor child-rearing techniques), and issues in the more extensive social climate (e.g. neediness, wrongdoing, or war) (Shean 2015). To start with, Garmezy separated the world into the ‘vulnerable’ and the ‘invulnerable.’ This methodology of bifurcating the world into unmistakable gatherings is essential in resilience development research. Ann Masten separates the world into ‘maladaptive and ... versatile gatherings.’ There is a natural allure and convenience in this division. A broadly utilised occasion in youth research is the dichotomous variable NEET – ‘Not in Employment, Education or
Training’, which empowers a brisk and effective division of adolescents into NEET and not NEET. Those who are counted under NEET are considered having weaknesses and are more vulnerable to negative changes outside (Shean 2015).

Garmezy reasoned that flexibility (or capability) was connected to a lower number of dangers and higher number of defensive variables. Likewise, less versatile kids had total dangers and a lower number of defensive components. He wrote that ‘Government, by giving defensive elements, empowers some who might somehow, or another be lost to a productive life to move over the limit of ability expected to make do in an inexorably mind boggling, innovative society’ (Garmezy 1987; Shean 2015). He held a biological perspective on versatility. Considering this view, he argued that defensive factors at the individual and familial levels, and outside the family, all impact flexibility. A few of these impacts include:

- Singular elements – dispositional characteristics like personality (movement level), how one meets new circumstances (positive responsiveness to other people), and psychological abilities.
- Familial elements – family attachment and warmth (regardless of destitution or conjugal friction), the presence of a mindful grown-up without responsive guardians (like a grandparent), or a worry by guardians for the prosperity of their children.
- Backing factors – outside of family and incorporated the accessibility and utilisation of outer help frameworks by guardians and kids, a solid maternal substitute, a steady and concerned instructor, or an institutional construction that cultivates connections to the bigger local area (church, social labourer).

In any case, by and large, analysts ought to evade such an oversimplified division of the world. It is likely nobody is either strong or not tough. It is smarter to discuss a scope of results reaching out from more negative to more certain. Measurably, researchers will accomplish more nuanced and amazing outcomes if they measure
results on a persistent scale than dichotomously, on the reasons, that there is far more prominent affectability in estimation between a somewhat stronger result and a marginally less adaptable result (Shean 2015). Second, researchers are encouraged to be explicit about what results they are discussing to abstain from interpreting the general from the (deductive reasoning) in the view of Garmezy’s work during ongoing COVID-19, that is, the many uncertain reasons behind current vulnerability of the populace towards violence. Ann Masten researching the same category but on psychosocial reasons, characterised variation as indicated by three discrete divisions of - ‘scholarly accomplishment, fellowship, and rule-withstanding conduct’ explaining innovative approach, caring nature, and nobility of the individual. Third important consideration was that what good results are? Resilience development study demarcates ‘great’ and ‘awful’, or ‘better’ and ‘more terrible.’ The real results should be applicable to the current examination and social setting and formative phase of the members. The choice on which results to choose might be founded on subjective examination with an example of the members themselves to figure out what is generally essential to them, and how they characterise their own results. However, the standardising estimation of results stays a test (Shean 2015).

Applying Garmezy’s work on the COVID-19 crisis, one may observe that genetic lineage is one and somehow underminable factor in risk development or being more prone to risk condition. So, the second factor under his consideration was environmental factors i.e., firsthand relations, social situations, domestic factors, financial aspects, and interpersonal linkages. During COVID-19, all these factors have seen sharp variations with sharp inclination on the negative side. Due to sudden lockdowns, anxiety was instilled in the masses, secondly with loss of employment for daily wage workers and relieving of workforce from private companies due to financial stress was another factor towards distress. Thirdly, frustrations based on economic crisis and social turmoil resulted in domestic chaos and violence. Youth became open and vulnerable to violent and extremist outfits online. Where cash influx was observed, unemployed and educated youth seemed
inclined without demarcation of positive or negative means of influx. This situation can become extremely threatening for developing states like Pakistan, and third world countries where resources are meagre (Shean 2015) to cover all the negative fallouts of the pandemic.

Keeping in view Garmezy’s work, Walsh and Menjivar (2016)’s, concept of nine dynamics (Douglas and Sutton 2018) can be used for developing an action plan for Community Resilience Development against violent extremism (Figure 2):

**Figure 2: Walsh’s Nine Dynamics**

![Figure 2: Walsh’s Nine Dynamics](image)

*Source: Walsh and Menjivar (2016:10).*

These nine dynamic models are based on ‘projection’ behavioural response. Following are the nine dynamic aspects for developing resilience:

1. Figuring out difficulty – e.g., normalising trouble and contextualising it, seeing emergencies as reasonable and significant.
2. Having a positive standpoint – e.g., zeroing in on potential, having expectation and hopefulness.
3. ‘Spirituality and transcendence’ – e.g., developing emphatically from misfortune and interfacing with bigger qualities.
4. Adaptability – e.g., rearranging and restabilising to give consistency and coherence.
5. Connectedness – e.g., giving each other shared help and focusing on each other.
6. Assembling monetary and social assets – e.g., making budgetary security and looking for help from the network on the loose.
7. Sanity – e.g., giving each other data and steady messages.
8. Sharing feelings – including good and excruciating sentiments.
9. Tackling issues cooperatively – e.g., through joint dynamic, an objective centre, and expanding on victories (Walsh and Menjívar 2016).

These aspects from Walsh’s model and understanding of Garmezy’s approach to demarcate risk factors during COVID-19 may help to develop a positive outlook among the masses for developing cooperative and collaborative behaviour towards collective threats.

Recommendations

In view of the discussion on violent extremism situation and factors during COVID-19 that may be adding fuel to the ongoing fire of extremism, the following recommendations are being proposed:

- Resetting of relations between the state, local governments and the citizenry is a dire need of the hour to develop trust. The inclusion of well-respected voices will increase psychosocial attachment with state officials and the system may also become more accountable.
- A strong check on online resources and connections is needed at the government level to control the spread of violent narratives, misinformation, and propaganda.
Strict check on militant and extremist outfits via online sources needs to be done.

State must provide opportunities for people who have lost their jobs during COVID-19 by establishing an Online Workforce Information Centre (OWFICE) on similar footings as the NCOC to help converge scattered information about the workforce, such as who is unemployed in each category. This may also help to estimate work opportunities required.

Psychosocial counselling and training sessions at the community level should be initiated for helping people deal with their fears and anxieties.

e-Learning and distance learning quality must be improved by offering scholarships etc. so that youth engage in educational, productive activities online.

References


Sustainable Development in the Times of COVID-19: Policy Imperatives
Sustainable Development in the Times of COVID-19: Policy Imperatives*

The Sustainable Development Conference is one of South Asia’s largest congregation of academics, practitioners and legislators in the field of Sustainable Development. The Twenty-third edition of this annual conference was more important than any other since its inception because every region, every country, every society had in many ways become ‘equal’ in their desperate efforts to understand, tackle, and control the spread of the deadly Coronavirus that swept across the world in March 2019. From the 45+ sessions, ideas and policy-relevant solutions have been curated thematically in the following areas in the hope that they find their place within the right policy corridors at the right time:

<table>
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<tr>
<th>Recovering from COVID-19 &amp; Achieving SDGs in South Asia</th>
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<td>□ International cooperation and unity between various institutes and stakeholders like The World Bank, United Nations</td>
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Children’s Fund (UNICEF), World Health Organization (WHO), International Labour Organization (ILO), and the International Monetary Fund (IMF) is required to tackle the COVID-19 pandemic irrespective of political differences.

- South Asian countries should put aside their political differences to increase vaccination provision, trade and investment in food and energy; and sharing water resources. Among other issues, climate change also requires solutions that are coordinated at the international level to help move towards a low-carbon economy.

- The gaps between public sector bodies, academia and think tanks must be bridged through a collaborative approach. Quality research should be encouraged in academia as well as in the government.

- South-South or North-South cooperation should be the order of the day in areas like innovation, technology transfer, capacity building and knowledge sharing on issues like water, food, and energy.

- Enhance and build upon existing analytically rigorous evidence base for policy action, via statistics, indicators, and improved capabilities for data analysis.

- Regional integration is imperative for the survival of international trade and business. The World Trade Organization and international NGOs should come forward and play a leading role in guiding policymakers to cope with the current COVID-19 challenge.

- Governments of South Asian countries need to focus on:
  - Developing an integrated approach for financing economic interventions. Public Private Partnerships (PPPs) can play a crucial role for bringing desired changes in this regard.
  - Foreign Direct Investment policies and therefore revise their legal and institutional frameworks to overcome investment barriers to build back better from COVID-19.
  - Moving towards digitalisation in a post-COVID-19 world for boosting economic growth. Services like e-banking and online healthcare systems are now important more than
ever. Production capacities in the health sector should be prioritised in the region to deal with any pandemic in the future.

- Ensuring transparency in the money allocated to health facilities and controlling corruption. Systematic funding mechanisms should be developed to ensure transparency in fund utilisation in health and other sectors.

- Designing and implementing business reforms strategy, especially Capital Policy and management interventions. Technology and other ICT tools should be incorporated in designing, implementing, and monitoring tax policies to increase tax revenue and achieve desired targets linked with the SDGs.

### Future of Regional Connectivity & Economic Integration

- The Belt and Road Initiative (BRI) and the China-Pakistan Economic Corridor (CPEC) provide a functioning framework for win-win cooperation among nations. Extending the BRI to make it a global mechanism of cooperation could be a decisive factor in building a global healthcare system that is capable of facing such challenges as the COVID-19 pandemic and future health and environmental trials more appropriately.

- There is a need to enhance synergies in development, planning and implementation of key energy projects, as well as coordinating policies and mechanisms within governments of the Asia-Pacific region.

- China’s investment in building and developing infrastructure - transport, power, water, telecommunications - has made it a champion of development in the world. Countries in South Asia and even Africa can learn from this model to improve their development sectors and pump more finances in infrastructure enhancement.
Addressing Environmental Challenges Head-on

Climate Change & Energy Transition

- Governments need to come up with solutions to tackle climate change and make renewable energy equitable and accessible to all, thus evolving from carbon management to human development.

- South Asia, in particular, should transition towards cleaner energy. At the same time, job losses in fossil fuel/conventional energy sector have to be tackled with job creation in the renewable energy sector.

- Innovative solutions can be harnessed to address the climate crisis through more ambitious mitigation pathways such as increasing energy efficiency of industry and cities by 60-70%; decarbonisation of electricity; deep reductions in agricultural emissions; and advancing carbon capture, carbon storage and sequestration measures.

- Pakistan is on the right path by restricting coal power production. The country needs to shift its national energy mix to domestic clean resources by investing more in renewable energy generation, including hydropower and solar. This will help strengthen energy sector institutions to better manage a growing portfolio of renewable energy projects across the country.

- Pakistan should also focus on indigenous production of renewable energy materials and products to reduce the cost of renewable energy production.

Climate Change Negotiations

- Governments should work together to strengthen international energy and climate plans in ways that complement existing initiatives, support multilateral efforts to facilitate and enable Nationally Determined Contributions (NDCs) implementation, increase collaboration between experts across priority countries
and share relevant global expertise. Enhanced climate-energy policies will enable cleaner energy transition.

- South Asia needs to move and work together to solve its climate change problems by putting politics aside. In this regard, South Asian governments should refrain from making financial excuses when incorporating the issue of climate change into policymaking. Sustainability needs to be at the core of economic and social growth.

- In the age of adaptation, climate needs to be at the centre of all development and all humanitarian conversations. The humanitarian, development, and ecological challenges created by climate change ought to be tackled together with a global perspective.

- The international community must support Pakistan in new ways, recognising that tackling COVID-19 and transitioning to a net zero carbon future are vital global public goods that justify substantial increases in global financial support. This should involve actual cancellation of debt and increased aid and climate finance in grant form from Pakistan's bilateral and multilateral cooperating partners.

### Air Quality & Health Issues

- Governments should integrate air quality with the UN Sustainable Development Goals. Being transboundary issue, it needs to be addressed from a regional perspective with a multidimensional approach including technology, community-engaged research, proactive civil society, and social media platforms engagements to eliminate air pollution.

- South Asian countries, especially Pakistan and India need to enhance public education on air pollution. Policies announced by Pakistan, such as ‘no new coal power projects’ and ‘60% renewable by 2030’ need to be implemented in letter and spirit.

- The Government of Pakistan should introduce state of the art end-of-pipe measures to reduce sulphur dioxide, nitrogen oxides and particulate emissions at power stations and in large-
scale industry. There is need to improve efficiency and introduce emissions standards.

☐ International funds should be linked with targets towards improving air quality, especially in heavily populated regions. Air pollution needs to be measured accurately through real-time monitoring and the data shared publicly.

☐ It is vital to initiate advanced emissions standards in industries, e.g., iron and steel plants, cement factories, glass production, and chemical industries, etc.

☐ There is a need to manage agricultural residues by banning open burning; reducing NOx fertilizer emissions; upgrading brick kilns and initiating more local urban forestry projects/drives.


**Climate-induced Migrations**

☐ South Asian Association for Regional Cooperation (SAARC) and other regional forums should be the voice of climate change issues, especially climate-induced migration.

☐ The Government of Pakistan needs to channelise proper funds and resources to rural areas as well as increase the capacity of organisations to work on various issues for disaster prevention, at the local level. There must also be psycho-social support within programmes in order to minimise the effects of calamities in rural areas.

☐ Issues like resilience building, migration management and migration as an adaptation strategy should be addressed under a well-defined plan of action.

☐ Pakistan should work on a Climate Change Policy that includes internal migration, its socioeconomic dimensions and develop a Climate Migrant Registration System.

☐ There is a need to share cross-border research data on migration to improve evidence-based bilateral and multilateral policies.
Targeted policies towards migrants are the need of the hour which incorporate supporting farmers and rural women, making food systems more resilient, reviving local economies, and investing in public services, such as health and education, so that countries have a better chance of surviving this crisis and future threats. Safe shelters and camps are required for climate-induced migrants if detected with COVID-19. Healthcare facilities should also be provided to pregnant women and children.

More debate leading to some concrete research should be generated on cross border-migration in terms of COVID-19 and climate change.

Universities, local colleges, and research institutions can develop research programmes for climate change-induced migration patterns and linkages. There is a need to improve flow of information as well as access of microfinance to rural landless classes.

Making Ends Meet:
Digital Entrepreneurship & Job Creation

The pandemic has given a digital push to the world. Micro level entrepreneurial activities should be increased to boost economic growth. Online marketing and booming gig economy can play a vital role in encouraging e-businesses and reinvigorating the economy.

Inflation over the past two years, especially during 2020, has been a complex interplay of external, fiscal/monetary, structural, institutional and policy factors. Hence, the response needs to be multipronged. In the long run, pursuing sound macroeconomic policies that generate economic growth and employment in a low-inflationary manner is a potent way to insulate the populace from erosion of their purchasing power. A focus on improving yields in the agriculture sector should be a key pillar of the strategy in this regard.
Policymakers need to recognise that while large-scale job creation is not possible at the moment, focus should also be reoriented towards job preservation. This requires a rejection of an important element of the implicit underpinning of the neoliberal framework that IMF programmes are built on - the Schumpeterian concept of ‘creative destruction’.

A Social Risk Management Strategy that focuses on e-health, e-learning, e-delivery would be very beneficial, especially for countries in South Asia in the long-term. Domestic resources should, hence, be diverted to e-health, e-learning and e-delivery.

The Government of Pakistan needs to focus on attracting foreign investment during and post-pandemic. Specific incentives for foreign investment in the health and education sector with improved technology should be given.

Governments should avoid subsidising large firms directly or keeping large enterprises afloat that will not be viable in a post-COVID world, and instead devote scarce funds to work programmes or business facilitation which also supports the private sector.

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**Developing Gender-Responsive Policies & Models**

The Government of Pakistan should adopt evidence-based best practices from countries that have successfully formulated and implemented gender-responsive financial inclusion models and policies. It should develop and review all policies from a gender lens to ensure gender-responsive financial inclusion of women.

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It is important to focus on facilitating Ease of Doing Business and moving towards interventions conducive for women at the micro (household) and macro (policy) level. This includes investing in technology and adopting technological solutions, especially with regards to e-Commerce and digitalisation of payments to facilitate women in the business and finance sector.

Governments should design and implement gender-sensitive social protection interventions in which women can participate and benefit from food security and water management.

Policymakers should undertake special measures to support rural women’s economic activities in agri-food value chains; and adopt programmatic and policy-oriented measures to address gender-based violence.

Re-imagining the Role of Government

It is essential for national strategies to focus on building better rather than trying to re-establish the status quo preceding the pandemic. Governments need to have greater clarity and alignment between key institutions (finance, planning, industries, commerce) and departmental linkages. There must be increased coordination between the health sector and other key sectors for sectoral alignment.

Monetary and fiscal policies should be in sync.

There must be strong partnership between the government and the organisations working at the grassroots level for sustainable development in rural areas. A strong connection between policymakers and the local organisations needs to be established so that real problems and their potential solutions can be highlighted.
Using Evidence & Data in Policymaking

Given the rapid spread of COVID-19, relying on dependable, up-to-date data and evidence-based policymaking is of vital importance (especially for public health policies) to predict demographic impacts. Such data should also be gender disaggregated. Policy decisions must be based on an integrated top-down and bottom-up framework.

Optimal use of existing data being collected for and about COVID-19 needs to be investigated. Public sector bodies and entities must work in coordination with the donor organisations for evidence-based data collection. In this case, duplication in data collection must be addressed.

Government collected data should be easily accessible.

Every regional government’s top priority should be on adopting disaster preparedness and building resilience across the entire governance architecture and developing plans that depend on reliable and comprehensive data collection.

Setting an Agenda for Universal Social Protection

Universal Social Protection (USP) is a basic human right and an investment with high returns in economic and social development. Only 45% of the world population has access to any form of social protection. Only 29% are covered by comprehensive social security systems. In South Asia (and countries like India and Pakistan), there is need to increase healthcare access for all, including informal workers and workers in rural areas, and improvement of healthcare quality in rural areas, especially after the devastation caused by COVID-19.

The Government of Pakistan should revise and finalise its National Social Protection Framework and provincial Social Protection Policies; raise awareness of Social Protection Floor principles and promote commitments to compliance, as much
as possible, within existing social protection programmes/interventions.

☐ There is a need to formulate legislation and evidence-based policymaking on Universal Social Protection programmes with the coordination of national think tanks/research organisations such as International Labour Organization (ILO) and SDPI, in collaboration with the Ministry of Inter-Provincial Coordination. The ILO can provide much needed assistance to prepare knowledge products, undertake policy analysis and conduct impact assessments around social protection in Pakistan.

☐ Local governments need to be empowered for better implementation of social protection agendas. Local stakeholders should be included in the design phase of disaster preparedness policymaking.

☐ The COVID-19 crisis has highlighted the urgency and importance of ensuring that workers in all forms of employment (including those in the informal economy) have adequate social protection coverage, which should be adapted to their circumstances and in line with international labour standards.

☐ Social protection policies in Pakistan need to be transformative in nature with more focus on social security and social insurance. As these needs are not uniform across Pakistan, hence, social protection interventions must vary from region to region and be a decentralised system with an enhanced role of provincial institutions.

☐ Governments must consider social security every citizen’s right. They should link corporate sector with research organisations (especially while dealing with any national crisis) having authentic data to help revive businesses. Policies should be made through consultative dialogue with the corporate and private sector.

☐ Crowdfunding is on the rise as an important fundraising tool and needs to be used in Pakistan.
Structural reforms, universal healthcare coverage and in-kind provisions must be considered for a robust social protection system in Pakistan.

A health insurance scheme based on the principle of social solidarity through microfinance and Public Private Partnerships (PPPs) can be used to inject resources into the health system.

Private Social Investment & Philanthropy during Crisis

Records need to be made public as nearly half of the world economies do not release the Social Delivery Organisations (SDOs) annual reports and audited accounts publicly, thereby losing an important trust-building opportunity.

Fiscal measures such as tax deductions - gifts to charitable organisations that individuals or corporations can deduct against income tax or estate tax - can encourage greater systematic giving. They are a basic and critical pillar of a supportive fiscal policy.

Enacting regulations that facilitate non-profit registration and institute liability mechanisms is important, but the effectiveness of the regulations depends on how accessible they are. Ease of understanding laws is a precondition for acting lawfully. The extent to which laws and regulations are enforced determines their efficacy in increasing transparency and accountability. Greater trust can, in turn, unleash greater private social investment as donors gain confidence their funds are being used appropriately.

Granting SDOs exemption from corporate profit taxes allows their lean resources to go toward meeting unmet social needs in their entirety. Tax exemption is also a recognition of SDOs’ role in social service delivery, which sets them apart from a typical for-profit private sector firm.

Awarding SDOs and donors with recognition acknowledges their commitment to addressing social challenges. Institutional engagement with the social sector, particularly by corporates, strengthens the sector and signals broad support for it.
Health Solutions in Times of COVID-19

*Hospitals, Frontline Workers & Patient Care*

- Policymakers must work towards devising policies that focus on preventive healthcare.
- Research and development on COVID-19 needs to be ramped up which involves undertaking large-scale studies of infected cases.
- Hospitals should set up labs within COVID-19 wards for monitoring basic health conditions of patients. Health authorities should involve multi-specialty doctors for COVID-19 patients as they usually have other underlying health issues as well besides lung damage.
- Pakistan needs to increase the number of functional ambulances with necessary life-saving equipment.
- It is important to acknowledge the crucial role of health workers and recognise them as frontline heroes looking after patients while putting their lives at risk.
- To support those who are working to protect the rest of the population, more healthcare workers need to be trained about safety practices. In addition to training, they should be supplied PPE and motivational support through videos, television, and radio programmes. The media and government should introduce awareness programmes about the importance of social distancing; and not stigmatising self-isolation of patients.
- Mass testing should be introduced in Pakistan as in the United Kingdom. A trace and track system of COVID-19 patients as well as other people should be put in place.

*Healthcare & Competition Policy*

- The COVID-19 pandemic has shown that if cost of the required pharmaceuticals is not competitive and affordable, there can be a global health catastrophe. Recent steps taken by India and South Africa in the World Trade Organization (WTO) calling
for the suspension of protection of intellectual property rights to COVID-19 health products (though unsuccessful) signals the need to look broadly into measures necessary for equitable access to healthcare and acceptable pricing practices.

☐ The practice of fixing trade margins by distributor associations should be discouraged.

☐ The Government of Pakistan needs to integrate Consumer Protection Policy and Competition Policy to ensure justice in accessing healthcare while supporting healthy competition.

☐ Policymakers, sector regulators and competition law regulators need to prioritise affordable healthcare to ensure provision of the fundamental right of life to citizens.

**Psychological Impacts of COVID-19 & Mental Health**

☐ The services of psychologists and psychiatrists should be arranged for COVID-19 patients, attendants, and the medical staff.

☐ Health practitioners should make a distinction between general mental illness and COVID-related mental health responses. It is essential to retain access to regular mental health services for people with existing mental health problems or non-COVID related mental health problems to prevent a similar situation as with the regular health services and post-COVID backlog.

☐ To prevent COVID-19 overriding current healthcare systems, patient groups and patient needs should be structured: patients with existing mental health problems; patients who develop mental health problems unrelated to COVID; patients who develop mental health problems or COVID-Related Psychological Responses (CRPR).

☐ Pakistan’s National Command and Operation Center (NCOC) needs to also include mental health professionals for a joint, coordinated effort that integrates doctors as well as civil society to provide much needed support to communities at the grassroots level.
Relevant stakeholders working on mental health issues need to generate objective information and credible data because this is an area with dearth of information.

Not only women, children, too, are facing domestic abuse during the health crisis. Governments, with the support of local NGOs, can work on prevention of violence and access to essential services, such as health, justice and policing, social services, helplines and coordination of these services, to provide support to those who have experienced and/or witnessed violence.

**Targetting Tobacco Greenwashing**

In the wake of COVID-19, the Government of Pakistan should constitute a Tobacco Control Cell or Tobacco Control Board to effectively monitor and implement tobacco control policies.

In the presence of an increasing number of deaths across the world associated with tobacco use and more specifically because of e-cigarettes, it is time for Pakistan to start developing legislation controlling the import, transportation, and spread of e-cigarettes, through pre-emptive measures.

There is need for innovative, cross-country research on how to counter practices which are detrimental to the creation of sound/scientific knowledge/evidence related to the ill-effects of tobacco use on individual health, and health systems in countries like Pakistan and other South Asian countries.

There should be better coordination between provincial governments to develop consensus on policy interventions and methods to control tobacco usage in Pakistan.
Food security, water and sanitation should be recognised as fundamental human rights.

Despite the negative effects of COVID-19, the situation provides opportunities to find ways to increase resilience across food systems by identifying new market channels (e.g., e-commerce), improving storage facilities, decreasing losses from farm-to-fork, increasing the quality of food products, and increasing on farm biodiversity which are critical for healthy food, income of farmers and protection from climate hazards. Governments across South Asia should ensure women’s equitable access to productive resources, inputs, and services.

Food system transformation requires coordinated efforts by all stakeholders across multiple dimensions. Role of the public and private sector, donors and other development organisations is critical for ambitious targets of SDG 2 by 2030 with target-oriented interventions.

Greater engagement of all the stakeholders is required at the grassroots level to carry out tree plantation, organic farming, and wastewater disposal in a sustainable way. Governments should strengthen water governance, improve solid waste management and urban planning for improving water security. There is a need to introduce and encourage bottom-up best practices so that communities can also be involved in water conservation.

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A five-fold increase is required in government funding to Pakistan’s Water, Sanitation and Hygiene (WASH) sector with a strong focus on equity and sustainability. This five-fold increase in annual spending in the WASH sector should address the rapid decline of water resources, including groundwater, rivers, lakes, wetlands, and the Indus Delta.

The nexus between water and healthcare needs to be better understood at the policy level to control water-borne diseases and their associated expenditure. The Ministry of Information and Broadcasting should spread awareness related to WASH through media to educate the public about water-related issues.

The Government of Pakistan should consider setting up an innovation fund dedicated to attracting private finance to address needs of the WASH sector.

Putting Sociocultural Imperatives on the Agenda

Cultural Diplomacy

Cross-cultural linkages and communication are imperative for developing strong global institutions that aim to achieve global peace. Strategic communication can play a vital role not only in conveying messages of the state to the world but also to counter misinformation.

Countries should invest in cross-cultural/educational exchange programmes and online exhibitions to establish cultural diplomacy which a foreign audience can join to promote cross-cultural interaction.

Museums should be modernised to attract young people. Technology can be used to introduce virtual tours of museums, heritage sites etc. both as a substitute to actual visits and as alternate sources of revenue. It is time to digitalise the tourism landscape of countries like Pakistan, and to educate, empower and integrate thousands of underutilised service providers into the mainstream tourism ecosystem.
Foreign policies should incorporate cultural diplomacy to devise transnational ties in a better manner. In this matter, one can learn from the spirit of the United Nations and UNESCO.

**Revamping the Tourism Industry**

A key challenge in a post-Corona world will be transforming the tourism sector. A relatively innovative strategy can be to create ‘tourism bubbles’ or ‘free travel zones’ in Asia - agreements with neighbouring regions that allow for travel across borders for non-essential trips without quarantining upon arrival.

All governments - federal, provincial and local - should play their part for adequate, safe and green development of the tourism sector to promote a better image of Pakistan. The government needs to support, plan and upgrade tourist infrastructure and facilities (roads, museums, rest areas, heritage sites), offer tourism and hospitality training, and work on an overall policy and regulatory overhaul to enable private investment mobilisation with a focus on restoring livelihoods of small businesses linked to the tourism sector. The Ministry of Tourism can help build capacity of Online Travel Agencies (OTAs) and SMEs in this regard.

**Addressing Prejudice, Extremism & Gender-based Violence**

At the national level, in an attempt to promote peace, Government of Pakistan must develop a grand strategy for Countering Violent Extremism (CVE). The National Counter Extremism Policy Guidelines, National Security Policy 2018 and National Action Plan need to be consolidated and implemented in letter and spirit.

Provincial policies and legislation need to be developed to criminalise offenses such as sexual violence and murder of transgender people.
 Governments in South Asia need to check online resources to curtail the production of terrorist propaganda and misinformation material.

South Asian thought leaders need to increase employment opportunities in order to reduce socioeconomic stress on poor communities.

Psychological counselling for rehabilitation of former terrorists/criminals or those impacted by acts of terrorism is critically important to ensure better mental health.

Relevant stakeholders need to understand the micro and macro level causes of violent, radical behaviour to order to curtail its negative socio-psychological impacts on society.

Governments should invest in safeguarding rights of all citizens, especially the most vulnerable ones such as children and transgenders by providing customised health screening and medical care, sensitising law enforcement agencies and the judiciary.

Awareness campaigns need to be run to encourage tolerance and diversity, developing responsible media policies, and offering educational scholarships and trainings to improve the skills of marginalised groups in order to ensure their social security.

**Regional Languages, Oral History & Technology**

Concerned government authorities should provide support for research, publication and continuation of online literary forums, especially those in regional languages.

Government and private authorities should continue the patronisation of online mediums to promote linguistic diversity.

The Government of Pakistan must recognise the work done in indigenous languages of Northern Pakistan to spread awareness about COVID-19 and set up plans for the preservation and promotion of these sources of indigenous wisdom and history.
The academic community should also conduct research on the rich repository of work in indigenous languages.

☐ There is a need to promote oral history literature in South Asia, especially Pakistan, as well inculcating a culture of reading oral history. It is important to record these as ordinary people like labourers, handicraft workers etc. are not literate enough to write about their struggles and experiences.

☐ The culture of reading and writing autobiographies should be promoted among the young generation and books should be made available in PDF version so that they are easily accessible online.

☐ There is a need to form a common forum/platform where politicians, leaders, academics, ordinary citizens share their perspectives regarding oral history and personal observations/experiences.

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**Role of ICTs in Teaching & Learning during COVID-19**

☐ Comprehensive steps are required to overhaul the education system to meet the challenges of COVID-19. Online teaching is now the ‘new normal’ and educationists have to ensure that it is homogenous and well-developed.

☐ High level committees should be constituted to review and provide online certification for educational courses.

☐ Blended learning techniques (a fusion of face-to-face and online learning) should be adopted to meet the challenges of education in such exigencies. It will not only enable the academic institutions to continue their activities, but also reduce costs, increase flexibility, and enhance students’ access to multiple sources of education.

☐ It is essential that equitable and universal access to the Internet be ensured for e-learning in Pakistan. It is imperative that passive optic fibre networks should be laid in Tier 2 and 3 cities that several Service Providers may use to deliver broadband.

☐ Efforts should also be made to create demand by targeting schools and other academic institutions, healthcare facilities,
public organisations, etc., to further motivate investors - infrastructure and service providers. The government should promote Public Private Partnerships (PPPs) for these investments. The funding can come from annual budgets and/or from organisations like The World Bank, which are making funds available under their pandemic programmes.

- The Government of Pakistan, through intelligence gathering and multistakeholder analysis, should advise large public enterprises on data management solutions (mobile and GIS integration) based on better practices from other jurisdictions. For critical services, the government should provide wage subsidies, tax exemptions and grace periods on payments to ensure continuity of cash flow and service delivery.

- It is essential that access to technology be ensured by bridging digital divide across different segments. This would involve upgradation of IT infrastructure in the country.

- Pakistan should focus on domestic manufacturing of ICT equipment and environment-friendly arrangements should be made for the disposal of electronic junk and dead batteries because of their high rate of obsolescence.

- To face future challenges, Pakistan will need well-trained IT professionals. An effective training and development programme must be developed and implemented.

### Digitalising Education in Pakistan

- The Government of Pakistan needs to come up with policy incentives, a strong regulatory structure and facilitation for ensuring availability of favourable financing for the education sector. The Higher Education Commission (HEC) should recognise the need for hybrid teaching modes for rotation-based use of campus facilities. A critical pre-requisite will be to strengthen the internet bandwidth capacity and digital networks.
Pakistan needs to invest in ICT infrastructure financially in the form of capacity-building in a consistent, incremental, partnership-based approach applying an intersectional lens.

Higher Education Institutions (HEIs) should collaborate with technical/Internet Service Providers to improve and subsidise connectivity outreach. There is a need to maintain an uninterrupted, interactive, and engaging online learning environment to ensure the well-being of students and instructors.

Policymakers should encourage the private sector [schooling system] by tapping state institutions, households and the private sector for financial input, which will not only increase enrolment but will create competition among public and private educational institutions, especially in the rural areas of the country.

It is important to adopt and replicate higher education virtual methods at primary and tertiary school level as well. Education departments and schools can improve the quality of virtual education by using various mediums like Flipgrid, Vialogues, Thinglink, Edpuzzle and other video-based edtech apps and approaches.

The federal and provincial education departments should develop targeted remedial and catch-up learning support for marginalised girls and other vulnerable groups. Government should provide gender-equitable and inclusive distance learning to support all students for future school closures.

The Ministry of Education and Professional Training should facilitate partnership between financial sector, technology platforms and educational institutions to expand the network of quality education through affordable digital means. Government should encourage higher education institutions and private sector partnerships, give public higher education institutions greater autonomy and more responsibility for raising funds.
A culture of ‘Open-Source Learning’, through verified databases, should be encouraged by all stakeholders in the education sector.

Role of Media

The media industry has been hard hit by the COVID-19 crisis. Due to the closure of many media houses in the region and others with scaled down operations through workforce reduction, downsizing or reduced salaries, governments need to be more financially supportive of the work being done by the media.

Government and media houses should mutually devise collective SOPs until the pandemic ends. The media should act as a bridge between people, public health communications, and the local government for their problems related to COVID-19.

Media must communicate crisis information efficiently and effectively to the general public as failing to do so can lead to misinformation, panic, and fear.

Journalists should curate relationships with think tanks and academic community who have a history of non-partisan, objective, and scientifically rigorous work to provide accurate reporting. Scientific information, facts should be verified using WHO Guidelines and political statements should be kept separate from facts while reporting.

Think tanks and governments need to work together to build capacity of journalists to develop necessary skills and knowledge to effectively manage the prevention and resolution of crises and disasters.

‘Development Journalism’ and ‘Health Journalism’ should be introduced as disciplines in universities.
Annexures

a. About the Sustainable Development Policy Institute

b. About the Sustainable Development Conference

c. Acknowledgements

d. SDC 2020: Panels at a Glance
About the Sustainable Development Policy Institute

Charting the Course of Research Excellence

Born on 4 August 1992 in a small office in the capital of Pakistan, with a handful of dedicated employees, the Sustainable Development Policy Institute (SDPI) is now known as Asia’s leading non-partisan policy research organisation providing the global development community representation from Pakistan and the region as a whole. Over the past 29 years, it has remained staunchly committed to the mission it set for itself upon inception:

“To catalyse the transition towards sustainable development, defined as the enhancement of peace, social justice and well-being, within and across generations.

SDPI remains one of the few organisations in Pakistan that has been consistently ranked internationally by the Global Go To Think Tank Index since 2016.

Where We Come From

The Institute’s genesis lies in the Pakistan National Conservation Strategy (also known as Pakistan’s Agenda 21), which approved by the Federal Cabinet in March 1992, outlined the need for an independent
non-profit organisation in the country to serve as a source of expertise for policy analysis, evidence-based research and training services.

## What We Do

SDPI functions in an advisory capacity by carrying out robust research, policy advice and advocacy; and in an enabling capacity by strengthening other individuals and organisations with resource materials and training. Specifically, the Institute’s broad-based yet holistic mandate is to:

- Conduct evidence-based research, advocacy and trainings from a broad multidisciplinary perspective.
- Promote the implementation of policies, programmes, laws and regulations based on sustainable development.
- Strengthen civil society and facilitate civil society-government interaction in collaboration with other organisations and activist networks.
- Disseminate research findings and public education through the media, conferences, seminars, lectures, publications and curricula development.
- Contribute to building national research capacity and infrastructure.

## How We Do It

The diverse array of projects and programmes - from inclusive economic growth to institutional governance; from trade, regional connectivity, energy economics to climate change; from food, water and human security to education; from sustainable industrial growth to hazardous waste management; from religious tolerance to peace and gender equity, that SDPI has been involved in over the past 29 years, outline the following core activities:

- Providing policy advice to the government.
- Facilitating and organising forums for policy dialogue.
- Supporting in-house, local, regional, and international academics, students and researchers.
- Publishing critical research for public and private sector use.
- Acting as a conduit for North-South and South-South dialogue.
- Creating an environment for information dissemination and training.
- Campaigning for regional advocacy and networking.

**Why We Do It**

The Institute’s efforts remain unwavering in its vision to become a Centre of Excellence on sustainable development policy research, capacity development and advocacy in the country and in Asia by producing knowledge that not only enhances the capacity of the state to make informed policy decisions, but also engages civil society and academia on issues of public interest for the betterment of current and future generations.

**How We Reach Out**

Since its inception, SDPI has organised innumerable seminars and national and international conferences. The Sustainable Development Conference (SDC) series has become a flagship event of the Institute that not only provides a forum for highlighting SDPI’s own research, but also offers space to other academics from South Asia in particular and across the globe in general, to share their work and engage in constructive dialogue with fellow intellectuals, movers and shakers from the public and private sector, students and the general public.

To date, SDPI has organised **twenty-three annual conferences**. This collection, of scholarly papers, speeches, working papers, and policy briefs, was presented at the 23rd SDC held online for the very first time over a four-day period from 14 - 17 December 2020 in Pakistan’s capital Islamabad (see Annexure d for Conference Panels at a Glance).
About the Sustainable Development Conference (SDC) Series

Introduction

The Sustainable Development Policy Institute (SDPI) has been organising a series of Sustainable Development Conferences (SDCs) since the inception of the Institute. The first SDC was held in 1995. After every SDC, the Institute publishes peer-reviewed research work in the form of an anthology. The anthologies are, in fact, an outcome of the deliberations and discussions held during the different concurrent panels and plenary sessions at their respective SDCs. Following is a brief history of past SDCs and their outcomes:

First SDC (1995)

The First SDC titled The Green Economics Conference focused on the interaction between economics and environment. It included research papers on trade, fiscal policy, Environmental Impact Assessments (EIAs), green accounting, forestry, energy, industry, and urban environment. After this conference, an anthology titled Green Economics was published.
Second SDC (1996)

The Second SDC highlighted the broad theme of sustainable development, including pollution abatement, resource management, conservation of biodiversity, the transfer and use of technology, trade and environment, human development and poverty alleviation, and social capital and governance. The conference was successful in highlighting key issues facing Pakistan and bringing out the latest thinking and analysis to identify solutions. The anthology produced as a result of the conference is titled Pakistan – To The Future with Hope.

Third SDC (1998)

The theme of the Third SDC was A Dialogue on Environment and Natural Resource Conservation. The conference focused on stimulating dialogue on practical policy options for key environmental challenges being faced by Pakistan. The two broad thematic areas of Urban Environment and Natural Resources concentrated on urban pollution, water resource management, deforestation and sustainable agriculture with presentations by experts from Pakistan and South Asia. The anthology produced as a result of the conference is titled Can the Environment in Pakistan Wait?
Fourth SDC (2000)

The Fourth SDC titled *Discourse on Human Security* mainly focused on the changes and improvements in government policies and practice with regard to human security. The conference was designed to create awareness among senior policymakers, key federal and provincial government officials and civil society groups like the media and non-government organisations on security issues.

Fifth SDC (2002)

The Fifth SDC titled *Sustainable Development and Southern Realities: Past and Future in South Asia* re-examined the conceptualisation and implementation of sustainable development in its multiple dimensions: economic, political, social, and moral. The delegates scrutinised and consolidated some of the ideas presented at the World Summit on Sustainable Development in Johannesburg, and resituated debates in the South Asian context. The anthology produced as a result of the conference is titled *Sustainable Development and Southern Realities: Past and Future in South Asia*.

Sixth SDC (2003)

The overarching theme of the Sixth SDC was *Sustainable Development: Bridging the Research/Policy Gaps in Southern Contexts*. It focused on the problematique of knowledge production in the South. It explored policy/research gaps in two directions: in some places policy needs to be fed by better research; while in others, policy needs to take better account of existing solid research. It focused on the ways and means for translating this
knowledge into effective policy initiatives locally, nationally, regionally and internationally by identifying the multiple gaps between research and policies in different sectors. The anthology which came out as a result of this SDC is titled *Sustainable Development: Bridging the Research/Policy Gaps in Southern Contexts*.

**Seventh SDC (2004)**

*Troubled Times: Sustainable Development and Governance in the Age of Extremes* was the overarching theme of the Seventh SDC that took up the key questions such as whether there is sound governance around development and whether this is ensuring just development? Whether there is more sharing of resources, including natural and institutional? Is there a strengthening of regional and international institutions? How much progress has been achieved in South Asia vis-à-vis governance? Is government more transparent today than it was a decade ago? Have governments kept their promises to the marginalised, whether the poor, women or minorities? The anthology that came out as a result of this SDC is titled *Troubled Times: Sustainable Development and Governance in the Age of Extremes*.

**Eighth SDC (2005)**

The Eighth SDC titled *At the Crossroads: South Asian Research, Policy and Development in a Globalized World* examined the multiple facets of sustainable development in the context of South Asia. The speakers discussed how problems and issues in South Asia could be dealt effectively at various levels based on prior experience of successful policy interventions. The anthology that came out as a result of this
SDC is titled *At the Crossroads: South Asian Research, Policy and Development in a Globalized World.*

**Ninth SDC (2006)**

The Ninth SDC titled *Missing Links in Sustainable Development (SD): South Asian Perspectives* aimed at identifying the missing links in sustainable development for South Asia and proposed fillers for those. The region’s pool of cutting-edge academics was tapped and top researchers invited together with policymakers, activists and other relevant stakeholders for a vibrant three-day debate. The anthology that came out as a result of this SDC is titled *Missing Links in Sustainable Development (SD): South Asian Perspectives.*

**Tenth SDC (2007)**

The Tenth SDC titled *Sustainable Solutions: A Spotlight on South Asian Research* explored sustainable solutions to problems such as poverty, illiteracy, mortality and morbidity, environmental degradation and disaster management, gender inequality, insecurity, violence and history. It focused on looking at both innovative solutions, as well as indigenously developed alternatives that have survived generations of development. The anthology that came out as a result of this SDC is titled *Sustainable Solutions: A Spotlight on South Asian Research.*
Eleventh SDC (2008)

Peace and Sustainable Development in South Asia: Issues and Challenges of Globalization was the theme of the Eleventh SDC which discussed various issues such as where we stand in solving the dilemmas of inequality, poverty, climate change and energy scarcity, natural resources degradation, trade liberalisation policies, food insecurity, violence and conflict, re-writing history, and poor governance. The conference aimed to explore how resolving some non-conventional security threats may turn into added dividends for peace. The anthology that came out as a result of this SDC is titled Peace and Sustainable Development in South Asia: Issues and Challenges of Globalization.

Twelfth SDC (2009)

The Twelfth SDC titled Fostering Sustainable Development in South Asia: Responding to Challenges focused on the six ‘Fs’ crises - issues related to food, fuel, frontiers, functional democracy and the fragility of climate. Scholars from South Asia and other regions were invited to delve further on these issues and shared with the audience where South Asia stands today vis-à-vis coping with the six ‘Fs’ crises facing the region. Gender remained a crosscutting theme. The anthology that was published as a result of this SDC is titled Fostering Sustainable Development in South Asia: Responding to Challenges.
Thirteenth SDC (2010)

The Thirteenth SDC titled Peace and Sustainable Development in South Asia: The Way Forward deliberated on how economic challenges could be handled with positive results in terms of natural resources, while at the same time increasing the capacity and effectiveness of institutions. The panels covered themes such as post-flood situation in Pakistan, food insecurity, energy and financial crisis, the issue of land acquisition, trade and financial liberalisation, social protection, the eradication of violence against women, the role of think tanks in peace and sustainable development, sound management of chemicals, climate change, religious diversity, labour issues, etc. The anthology published as a result of this SDC is titled Peace and Sustainable Development in South Asia: The Way Forward.

Fourteenth SDC (2011)

The Fourteenth SDC titled Redefining Paradigms of Sustainable Development in South Asia featured a broad spectrum of themes: livelihood, governance, literature, Sufism, poverty, geopolitics, forest management, REDD+, social accountability, 18th Amendment, land rights, food security, education financing, feminism, economic non-cooperation, water governance, and, energy and sustainability. The anthology published as a result of this SDC is titled Redefining Paradigms of Sustainable Development in South Asia.
Fifteenth SDC (2012)

The Fifteenth SDC Sustainable Development in South Asia: Shaping the Future analysed how things will look 20, 30 or even 50 years from now, threw light on issues that will be looming large, made concrete suggestions on how to overcome future challenges, and, gave practical policy recommendations about a sustainable South Asia. The anthology published as a result of this SDC is titled Sustainable Development in South Asia: Shaping the Future.

Sixteenth SDC (2013)

Creating Momentum: Today is Tomorrow was the theme of the Sixteenth SDC, which highlighted our present position and inclination to forecast and potentially modify our decisions that may improve our tomorrow. Under various sub-themes, the conference brought to attention that failure to act urgently is premised on the argument that waiting for another tomorrow for action will result in wasting opportunities that may not be available ever again. The anthology published as a result of this SDC is titled Creating Momentum: Today is Tomorrow.
Seventeenth SDC (2014)

The Seventeenth SDC titled *Pathways to Sustainable Development* looked at leadership change in China, Pakistan, Iran, Bangladesh, India, and Afghanistan that could hold the key to shaping development pathways in South Asia. The region needs political and executive leadership that has a commitment to strategise for peace and human security and raise tangible safeguards for the political economy of the region, while engaging with the primary stakeholders, i.e. the people. In this backdrop, issues of climate change, migration, sustainable and inclusive economic growth, sharing energy resources across the region, environmental challenges, food security, human rights, women in the peace process, and regional connectivity were discussed and published in its peer-reviewed anthology titled *Pathways to Sustainable Development*.

Eighteenth SDC & Eighth SAES (2015)

The Eighteenth SDC titled *Securing Peace and Prosperity* had a thinkers’ agenda, a gathering of regional think tanks working closely with policymakers of their respective countries and representatives of existing and potential South Asian Association for Regional Cooperation (SAARC) member countries - a congregation of visionaries in Islamabad. It focused on understanding regional integration and the attempt of SAARC countries at various forums in 2015 to establish new corridors to achieve sustainable development in the region and beyond. Simultaneously, the Eighth South Asia Economic Summit (SAES) - the premier regional platform for debate and analysis of politico-socio-economic issues and problems facing South Asia, was also held. The Summit brought
About the Sustainable Development Conference (SDC) Series

The overarching theme of SAES was Regional Cooperation for Sustainable Development in South Asia. The anthology published as a result of the SDC and SAES is titled Securing Peace and Prosperity.

Nineteenth SDC (2016)

The overarching theme of the Nineteenth SDC was Sustainable Development: Envisaging the Future Together. It focused on cooperation between developed and developing countries for sustainable development, Sustainable Development Goals, and human centredness. The themes highlighted in this conference were recovering from conflict, SDGs, trade, economic growth, environment, sustainable energy, regional economic integration, minority rights, disaster management and preparedness, climate change, youth employment, gender and demography, gender and democracy, etc. The anthology published as a result of this SDC is titled Sustainable Development: Envisaging the Future Together.

Twentieth SDC (2017)

The Twentieth SDC titled Seventy Years of Development: The Way Forward will be remembered within and by the development sector of Pakistan and the region for some time as one of the largest congregation of the best and brightest minds coming together in 40 panels, roundtables and podium discussions, many of which were concurrent, including four plenary sessions. It examined 70 years of development in Pakistan and the region with participation from around the world. A total of 269 panellists
representing 16 countries became part of this mega event - Afghanistan, China, Ethiopia, Finland (via Skype), France, Germany, India, Italy, Nepal, Pakistan, Thailand (via Skype), The Philippines, Sri Lanka, Switzerland, United Kingdom, the United States of America. An audience of over 3,000 attended the three-day flagship event. The edited volume published as a result of this SDC is titled *Seventy Years of Development: The Way Forward*.

**Twenty-first SDC and Eleventh SAES (2018)**

The Twenty-first SDC and Eleventh SAES on *Corridors of Knowledge for Peace and Development* discussed not only economic corridors, but also corridors of connectivity and knowledge and how they could steer the region towards peace and development. During the 40 concurrent sessions, it was highlighted that while a few regional organisations and processes may have stalled, the road to development must go on. This growing trend should not be allowed to impact research and development efforts and learning from each other’s best practices. In fact, new collaborative partnerships need to be established on knowledge sharing and building bridges, while simultaneously strengthening old ones. 261 delegates attended these two joint events from 20 countries including Afghanistan, Australia, Brazil (via Skype), Brussels, Canada, China, Germany, Kenya, Maldives, France, India, Nepal, Sri Lanka, Switzerland, Tajikistan, Thailand, Pakistan and the Philippines, United Kingdom and the United States of America. While 204 delegates came from within the country, the remaining 57 represented the rest of the countries listed. An audience of over 4,000 attended the four-day proceedings. The peer-reviewed edited volume produced following these events is titled *Corridors of Knowledge for Peace and Development*. 
Twenty-second SDC (2019)

The overarching theme of the Twenty-second SDC Sustainable Development in a Digital Society was inspired by the Fourth Industrial Revolution and an era of digitalisation which has changed how human beings interact in the era of rapid revolution in technologies. It brought together scholars, researchers, policymakers, game changers, and members of the civil society to deliberate on ideas how to benefit from the Fourth Industrial Revolution where Artificial Intelligence is playing a lead role in our lives.

The Inaugural Plenary was held on 2 December 2019 at the Aiwan-e-Sadr with President of Pakistan Dr Arif Alvi as the Chief Guest who inaugurated the conference. The conference was attended by 223 panellists from 17 countries. Apart from 192 panellists from Pakistan, 31 speakers came from Afghanistan, China, Finland, France, Germany, India, Iran, Italy, Maldives, Nepal, the Philippines (via Skype), Sri Lanka, Thailand (via Skype), Turkey, United Kingdom and the United States of America. 150 male panellists, 69 female panellists, and 4 transgender panellists presented their ideas and views. The current anthology is a result of the deliberations and research presented and is titled Sustainable Development in a Digital Society.

Twenty-third SDC (2020)

SDPI’s Twenty-third SDC titled Sustainable Development in the Times of COVID-19 specifically focused on the impact of COVID-19 and a changing world order since the outbreak of the pandemic. Dr Arif Alvi, President of Pakistan, shared his views online at a Special Plenary on 16 December 2020 from Aiwan-e-Sadr. All the sessions of the Conference were
held online from 14 – 17 December 2020. A total of 45 sessions were organised of which nine were plenary sessions and, 36 concurrent sessions. The Conference was attended by 235 panellists from 25 countries. Apart from 174 from Pakistan, 61 speakers joined the sessions from Afghanistan, Australia, Austria, Bangladesh, Brunei, Canada, China, Ecuador, Germany, Hong Kong, India, Kenya, Nepal, Nigeria, Pakistan, Saudi Arabia, South Africa, Singapore, Sri Lanka, Sweden, Switzerland, Thailand, the Netherlands, the United Kingdom and the United States. All the sessions had a keen and interactive audience. Over the span of four days, the Conference was attended by an online audience of over 6,800 from 84 countries.

Note:

Previous anthologies can be downloaded for free from the following link: <https://sdpi.org/sdc-Anthologies/publications>.
Collaborations and partnerships allow organisations, especially those in the academic and development sector, to learn from and assimilate each other’s pool of collective intelligence and grow together for the ‘enhancement of peace, social justice and well-being, within and across generations.’

The Sustainable Development Policy Institute (SDPI) is grateful for the support provided by various donors and knowledge partners during the Twenty-third Sustainable Development Conference (SDC) 2020 titled *Sustainable Development in the Times of COVID-19*. They include:

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Fatima Jinnah Women University, Pakistan
National Rural Support Programme, Pakistan
Social Protection Resource Centre, Pakistan

SDC Anthology Review Panel

SDPI prides itself in producing valuable and credible research. The double-blind peer review process is, therefore, a crucial means of determining both quality and validity of the scholarly work which is published each year in the Sustainable Development Conference (SDC) Anthology. This Anthology also contains peer-reviewed papers presented at the Twenty-third Sustainable Development Conference.

While our Panel of National and International Referees grows each year, the editors of this book cognizant that reviewer selection is just as critical as the review itself and hence, we chose each one carefully based on their reputation and expertise.
Given how important and yet often invisible this activity is to the outside world, the editors truly appreciate the timely and enthusiastic feedback we received on the papers that were peer reviewed this year. Our gratitude is especially profound since COVID-19 disrupted so much of our lives, not just personally but also professionally. Despite the challenges, we feel privileged at putting this annual compendium of profound ideas and research together about Sustainable Development as it withstood the onslaught of the pandemic and working with so many dedicated scholars and practitioners.

The Institute and anthology editors wish to thank the following academics, researchers and professionals for their fair, constructive, and informative critique of the submitted works:

**Ar Aamina Shahid**

Visiting Faculty of Architectural Thesis at COMSATS University, Pakistan. She specialises in Urban Development Strategies with subsidiary focus on design education, socio-spatial analysis, and action-oriented design research.

**Aditya Bhattacharjea, PhD**

Professor of Economics at the Delhi School of Economics, University of Delhi, India. He has published papers on Industrial Economics, Competition Policy and Labour Market Regulation.

**Attiq Ahmad, PhD**

Associate Professor of Electrical Engineering at National University of Sciences and Technology (NUST), Military College of Signal Campus in Rawalpindi, Pakistan. He has published and supervised research on topics related to electrical/telecommunication.
Fareeha Armughan, PhD

Research Fellow at the Sustainable Development Policy Institute. She holds a PhD in Economics and has expertise in Financial Inclusion. Her other areas of interest are Evidence-Based Policy Design, Education and Health.

Fatemeh Kamali-Chirani, PhD

Iranian-German Visiting Fellow at the Sustainable Development Policy Institute. She also teaches Political Ideologies and Development Studies at the Quaid-i-Azam University in Islamabad. In 2019, she published her first book *Does Intercultural Dialogue Matter?*

Imran Saqib Khalid, PhD

Director Governance and Policy at World Wildlife Fund (WWF) Pakistan. His areas of expertise include Environmental Governance and Climate Change. Dr Khalid holds PhD in Environmental and Natural Resources Policy from SUNY College of Environmental Science and Forestry, Syracuse, New York, USA.

Mustafa Hyder, PhD

Assistant Professor at Faculty of Management and Administrative Sciences, University of Karachi, Pakistan. His main areas of interest are Organisational Behaviour, Social Science Research, Leadership, and Development Strategies. He has been engaged in many national and international research projects.
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Niaz Ahmed (aka Niaz Nadeem)

Head of Policy and Advocacy with WaterAid Pakistan. He is a development and governance practitioner by profession and a cultural and literary activist by passion. He has three literary books to his credit. He has also contributed to and supervised a number of research and evidence projects.

Rabia Tabassum

Senior Research Associate at the Sustainable Development Policy Institute. She has over six years of research experience in the areas of education, gender, digital transformation, and data for SDGs.

Sehrish Qayyum, PhD

Assistant Professor at Pakistan Navy War College (PNWC), Lahore, Pakistan. She has published and supervised research on Coordinated Border Management, Warfare and Strategic Studies.

Vaqar Ahmed, PhD

Joint Executive Director of the Sustainable Development Policy Institute. He has published and supervised research on topics related to Macroeconomic Policy, Public Finance, and International Trade.

Yasir Faheem, PhD

Associate Professor at the School of Electrical Engineering and Computer Science, National University of Sciences and Technology (NUST-SEECS), Pakistan. He holds a PhD and MS degrees in Networks and Information Technologies from France, and is interested in IoTs, cloud computing, distributed
networks, game theory, and developing cutting edge technologies for the betterment of humanity.

Anthology Editors

Apart from the guidance of SDPI’s Executive Director, Dr Abid Qaiyum Suleri, and Joint Executive Director, Dr Vaqar Ahmed, cooperation of panel organisers and the entire SDPI staff, the Twenty-third Sustainable Development Conference and this publication would not have been possible without the constant support of:

Uzma T. Haroon

Director of the Sustainable Development Conference (SDC) Unit; and Editor Journal of Development Policy, Research & Practice at the Sustainable Development Policy Institute. She has over 30 years of experience in media and communication and has been the tour de force behind SDPI’s annual international conference series since 2003. She is also co-editor of the past 18 SDC anthologies, including this one. Previously, she has worked with the UNDP’s project on ‘Portrayal of Women in Media’; and The Nation newspaper for over ten years where she was editor of a weekly magazine and was also their senior reporter covering the social sector. She has two Masters degrees - in Communication from the University of Hawaii, USA; and in Journalism from the University of Punjab, Pakistan.

Imrana Niazi

Senior Coordinator of the Sustainable Development Conference (SDC) Unit at the Sustainable Development Policy Institute. She is also Associate Editor of Journal of Development Policy, Research & Practice. She has been associated with SDPI since 2008. She has previously been associated as a lecturer with the Bahria University and Fatima Jinnah Women University (FJWU), Pakistan. She is a gold medalist in Master’s in
Communication Sciences from FJWU. Ms Niazi has co-edited 11 SDC anthologies, including this one.

Sarah Siddiq Aneel

Senior Editor at the Centre for Aerospace & Security Studies (CASS), Pakistan. She has two decades of research and publishing experience in the development sector. She has more than 36 edited books to her credit, including 18 SDC anthologies. Earlier, she was spearheading the publications and communications team at the Islamabad Policy Research Institute; and the Pakistan Environment Program – a Canadian-funded national-level environmental initiative of the Government of Pakistan, International Union for Conservation of Nature and the Sustainable Development Policy Institute. A Chevening Fellow and LUMS-McGill Fellow, she has studied Integrated Approaches to Sustainable Development Practices from the Earth Institute, Columbia University, USA. Her most recent publication was commissioned by the Pakistan Air Force titled *Shahbaz: Pakistan Air Force Leadership* (2021).

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Tayyaba Hanif Maken

Associate Coordinator at the Sustainable Development Conference (SDC) Unit at the Sustainable Development Policy Institute. She carried out the similarity review of the chapters, assisted in transcription of speeches and other related assignments pertaining to this anthology. She has a Master’s degree in Gender & Women Studies and an undergraduate degree in History and Political Science. Ms Hanif has 12 years of experience in communications and event coordination.
Abdullah Khalid

Project Assistant at the Centre for Private Sector Engagement at the Sustainable Development Policy Institute. He also assisted in transcriptions and is responsible for carrying out research, along with content creation for the institutional website. He has an MPhil degree in Government & Public Policy and undergraduate degree in Psychology. He has five years of experience in the developmental sector.

Danyal Haroon

The title cover of this anthology has been adapted from the SDC 2020 poster, both of which were designed by Danyal Haroon, graduate of Computer Science from the Lahore University of Management Sciences, Pakistan.
SDPI’s Twenty-third Sustainable Development Conference (SDC)
“Sustainable Development in the Times of COVID-19”
14 – 17 December 2020, Islamabad, Pakistan

Panels at a Glance
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<td><strong>Economic Growth, Social Protection, and the International Monetary Fund (IMF) Program amid COVID-19</strong>&lt;br&gt;in collaboration with Friedrich-Ebert-Stiftung (FES) &amp; knowledge partnership with Fatima Jinnah Women University</td>
<td><strong>Literature, Language and Technology in the Time of COVID-19</strong></td>
<td><strong>Book Launch “Rah Guzar to Dekho” by Karamat Ali</strong></td>
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<tr>
<td><strong>Moderator:</strong> Dr Vaqar Ahmed, SDPI, Islamabad, Pakistan</td>
<td><strong>Chair:</strong> Mr I. A. Rehman, Former Director, HRC, Lahore, Pakistan</td>
<td><strong>Chair:</strong> Dr Mubarak Ali, Historian Activist and Scholar, Pakistan</td>
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<tr>
<td><strong>Opening Remarks:</strong> Dr Jochen Hippler, FES Pakistan</td>
<td><strong>Moderator:</strong> Dr Humera Ishfaq, SDPI, Islamabad, Pakistan</td>
<td><strong>Moderator:</strong> Dr Abid Q. Suleri, SDPI, Islamabad, Pakistan</td>
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<tr>
<td><strong>Keynote Speaker:</strong> Dr Hafiz A. Pasha, former Federal Minister for Finance, GoP</td>
<td><strong>Speakers:</strong>&lt;br&gt;1. Mr Niaz Nadeem, ICF, Islamabad, Pakistan&lt;br&gt;2. Ms Nusrat Zehra, ICF, Islamabad, Pakistan&lt;br&gt;3. Mr Raza Naeem, PWA, Lahore, Pakistan&lt;br&gt;4. Mr Zubair Torwali, ED, IBT, Swat, Pakistan&lt;br&gt;5. Dr Humera Ishfaq, SDPI, Islamabad, Pakistan</td>
<td><strong>Welcome Remarks:</strong> Dr Syed Jaffar Ahmed, Director, IHSR, Karachi, Pakistan</td>
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<tr>
<td><strong>Distinguished Panellists:</strong>&lt;br&gt;1. Dr Bushra Yasmin, FJWU, Rawalpindi, Pakistan&lt;br&gt;2. Mr Sakib Sherani, Macroeconomic Insights, Pakistan</td>
<td><strong>Panel Organisers:</strong> Mr Ahmed Salim and Dr Humera Ishfaq, SDPI, Islamabad, Pakistan</td>
<td><strong>Speakers:</strong>&lt;br&gt;1. Ms Zahida Hina, Columnist, Novelist and Dramatist, Pakistan&lt;br&gt;2. Dr. Zafar Mirza, former Special Advisor to Prime Minister for Health, GoP&lt;br&gt;3. Dr Pervez Tahir, Senior Political Economist, Islamabad, Pakistan&lt;br&gt;4. Ms Mehnaz Rehman, Resident Director, Aurat Foundation, Pakistan&lt;br&gt;5. Mr Mohammad Tahseen, Founding Director, South Asia Partnership, Pakistan&lt;br&gt;6. Mr Parvez Rahim, Consultant/Trainer, Employee Relations, Karachi, Pakistan</td>
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<td><strong>Panel Organisers:</strong> FES, Pakistan; Dr Bushra Yasmin, FJWU, Rawalpindi, Pakistan; and Mr Asif Javed, SDPI, Islamabad, Pakistan</td>
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<td><strong>Concluding Remarks:</strong> Mr Karamat Ali, Founding Member, PILER, Karachi, Pakistan</td>
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<td><strong>Panel Organiser:</strong> Mr Junaid Zahid, SDPI, Islamabad, Pakistan</td>
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<tr>
<td>Role of Media amidst COVID-19 Outbreak: From Pakistan and Beyond</td>
<td>Education Methods in COVID-19 Response: Assessing Gendered Impact in collaboration with Malala Fund</td>
<td>Setting Pakistan’s Agenda for Universal Social Protection (USP) in collaboration with ILO</td>
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<td><strong>Moderators:</strong> Dr Abid Q. Suleri and Dr Shafqat Munir SDPI, Islamabad, Pakistan</td>
<td><strong>Moderators:</strong> Ms Rabia Tabassum, SDPI, Islamabad, Pakistan; and Ms Areebah Shahid, ED, Pakistan Youth Change Advocates &amp; Malala Fund Education Champion</td>
<td><strong>Chair:</strong> Ms Ingrid Christensen, Country Director, ILO Pakistan</td>
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<tr>
<td><strong>Speakers:</strong> 1. Mr Ram Sharan Sedhai, Senior Media Analyst, Kathmandu, Nepal 2. Mr Joydeep Gupta, Senior Media Analyst, New Delhi, India 3. Ms Asma Shirazi, AAJ TV, Pakistan 4. Mr Amir Zia, HUM TV, Pakistan 5. Ms Arifa Noor, Dawn News, Pakistan</td>
<td><strong>Special Remarks:</strong> Ms Umbreen Arif, Ministry of Federal Education and Professional Training, GoP</td>
<td><strong>Moderator/ Speaker:</strong> Dr Abid Q. Suleri, SDPI, Islamabad, Pakistan</td>
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<td><strong>Panel Organisers:</strong> Mr Saleem Khilji, Dr Shafqat Munir and Mr Muhammad Awais Umer, SDPI, Islamabad, Pakistan</td>
<td><strong>Speakers:</strong> 1. Ms Areebah Shahid, ED, Pakistan Youth Change Advocates &amp; Malala Fund Education Champion 2. Dr Fouzia Khan, Chief Advisor, Education and Literacy Department, Government of Sindh 3. Ms Wajeeha Bajwa, Advisor, NORRAG, Switzerland 4. Ms Fajer Rabia Pasha, ED, Pakistan Alliance for Girls Education, Islamabad, Pakistan</td>
<td><strong>Speakers:</strong> 1. Mr Lire Ersado, Practice Leader, Human Development, The World Bank 2. Ms Mariko Ouchi, Sr Spec, Social Protection, DWT/CO, ILO, New Delhi, India 3. Dr Faisal Rifaq, CEO, Sehat Sahulat Program, MoNHSRC, GoP 4. Mr Haris Gazdar, Director &amp; Senior Researcher, CSSR, Karachi, Pakistan</td>
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<td><strong>Concluding Remarks by Guest of Honour:</strong> Dr Fehmida Mirza, Federal Minister for Inter-Provincial Coordination, GoP</td>
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<td><strong>Panel Organisers:</strong> Dr Sajid Amin &amp; Mr Umar Ayaz, SDPI, Islamabad, Pakistan and ILO Pakistan Office</td>
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Day 1 - 14 December 2020
Inaugural Plenary:
Sustainable Development in the Times of COVID-19
Time 3:00pm – 4:30pm

Moderator:
Dr Vaqar Ahmed, Joint ED, SDPI, Islamabad, Pakistan

Welcome Remarks:
Ambassador Shafqat Kakakhel, Chairman BoG, SDPI, Islamabad, Pakistan

Introductory Remarks:
Dr Abid Q. Suleri, Executive Director, SDPI, Islamabad, Pakistan

Special Remarks:
Mr Vladimir Norov, Secretary-General, Shanghai Cooperation Organisation

About SDC Anthology & SDPI Journal
Ms Uzma T. Haroon, Director SDC, SDPI, Islamabad, Pakistan

About Vice Chancellors’ Consortium
Mr Shahid Minhas, SDPI, Islamabad, Pakistan

Launch of SDPI’s Publications:
- 22nd Conference’s Anthology: Sustainable Development in a Digital Society
- Poisons in Our Environment by Dr Mahmood A. Khwaja

Plenary Organisers: Mr Hassan Murtaza and Mr Shahid Minhas, SDPI, Islamabad, Pakistan
Concurrent Session A-7

**Impact of COVID-19 Pandemic on Higher Education: Challenges and Way Forward**

**Chair:** Dr Shaista Sohail, ED, HEC, Islamabad, Pakistan

**Keynote Speaker:** Mr Haroon Sharif, Former State Minister & Chairman, BoI, GoP

**Moderator:** Dr Saima Hamid, VC, FJWU, Rawalpindi, Pakistan

**Distinguished Speakers:**
1. Ms Rita Bruun Akhtar, ED, USEFP, Pakistan
2. Mr Amir Ramzan, CD, British Council, Pakistan
3. Dr Atta Ullah Shah, VC, Karakoram International University

**Discussant:** Dr Syed Muhammad Ali, VC, QAU, Islamabad, Pakistan

**Panel Organisers:** Dr Fareeha Armughan, Mr Shahid Minhas and Ms Ayesha Imran Malik, SDPI, Islamabad, Pakistan

Concurrent Session A-8

**Negotiating the Climate Amid COVID-19**

**Chair:** Ambassador Shafqat Kakakhel, Chairperson BoG, SDPI, Islamabad, Pakistan

**Moderator:** Dr Imran Saqib Khalid, SDPI, Islamabad, Pakistan

**Speakers:**
1. Dr Adil Najam, Inaugural Dean, Frederick S. Pardee School of Global Studies, Boston University, USA
2. Mr Harjeet Singh, Global Climate Lead, ActionAid, New Delhi, India
3. Ms Sobiah Becker, FCDO, Islamabad, Pakistan
4. Mr Hassaan Sipra, SRO, COMSATS University Islamabad (CUI), Pakistan

**Panel Organisers:** Dr Imran Saqib Khalid and Ms Zahra Khalid, SDPI, Islamabad, Pakistan

Concurrent Session A-9

**COVID-19: Air Quality and Health Issues**

**Chair:** Ms Farzana Altaf Shah, DG - EPA, Islamabad

**Moderator:** Ms Maryam Shabbir, SDPI, Islamabad, Pakistan

**Speakers:**
1. Dr Gabriel Filippelli, CUH, IUPUI, Indianapolis, USA
2. Mr Abid Omar, Pakistan Air Quality Initiative, Karachi, Pakistan
3. Ms Bharati Chaturvedi, Director, Chintan ERAG, New Delhi, India

**Concluding Remarks:** Dr Abid Q. Suleri, ED, SDPI, Islamabad, Pakistan

**Panel Organisers:** Ms Maryam Shabbir and Ms Khansa Naeeem, SDPI, Islamabad, Pakistan

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**Planetary Dialogue:**

**The Future of Sustainable Development in #Worldaftercorona**

_in collaboration with Pardee Center, Boston University, USA_

**Time:** 8:00pm – 9:30pm - Boston Time (EST): 10:00am – 11:30am

**Host:** Dr Adil Najam, Inaugural Dean, Frederick S. Pardee School of Global Studies, Boston University, USA

**Speakers:**
1. Ms Yolanda Kakabadse, BoD, WWF & Former Minister of Environment, Ecuador & President IUCN
2. Ms Alice Ruhweza, Africa Regional Director, WWF-International
4. Dr Sunita Narain, DG, CSE, India; & Editor Down to Earth magazine

**Plenary Organisers:** Ms Sahar Basharat, SDPI, Islamabad, Pakistan; and co-hosted by the Pardee Center at Boston University, USA
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<td><strong>Government of Tomorrow: Re-imagining the Role of Government after COVID-19 in collaboration with UNESCAP</strong></td>
<td><strong>Time 9:15am-10:45am</strong></td>
<td><strong>Getting SDGs Back on Track: Innovative Solutions of Post-Pandemic Recovery Virtual Roundtable</strong></td>
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<td><strong>Moderator:</strong> Dr Hamza Ali Malik, Macroeconomic Policy and Financing for Development Division, UNESCAP, Bangkok, Thailand</td>
<td><strong>Chair:</strong> Dr Khaqan Hassan Najeeb, Advisor to Ministry of Finance and Former Executive Director General of Implementation &amp; Economic Reforms Unit</td>
<td><strong>Moderators:</strong> Mr Maaz Javed and Dr Vaqar Ahmed, SDPI, Islamabad, Pakistan</td>
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<td><strong>Distinguished Speakers:</strong></td>
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<td>2. Dr Dushni Weerakon, ED, IPS, Colombo, Sri Lanka</td>
<td>2. Dr Zubair Iqbal Ghouri, CEO, TRA Associates; &amp; Former Member, Planning Commission, GoP</td>
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<td>3. Dr Fahmida Khatun, ED, CPD, Bangladesh</td>
<td>3. Dr Syed Hussain Shaheed Soherwordi, AP, Dept. of IR, University of Peshawar, Pakistan</td>
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<td><strong>Panel Organisers:</strong> Dr Sajid Amin and Dr Fareeha Armughan, SDPI, Islamabad, Pakistan</td>
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<td>2. Dr Musferah Mehfooz, COMSATS, Lahore, Pakistan</td>
<td>2. Dr Zubair Iqbal Ghouri, CEO, TRA Associates; &amp; Former Member, Planning Commission, GoP</td>
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<td><strong>Panel Organisers:</strong> Dr Shafqat Munir, Mr Saleem Khilji and Mr Muhammad Awais Umer, SDPI, Islamabad, Pakistan</td>
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<td><strong>Discussants:</strong></td>
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<td>1. Dr Farhan Zahid, DIG, CPO, Quetta, Pakistan</td>
<td>1. Ms Onyinye Ough, ED, Step Up for Social Development and Empowerment in Nigeria, Nigeria</td>
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<td>2. Dr Muhammad Makki, PCS, NUST, Islamabad, Pakistan</td>
<td>2. Dr Zubair Iqbal Ghouri, CEO, TRA Associates; &amp; Former Member, Planning Commission, GoP</td>
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<td><strong>Panel Organisers:</strong> Dr Shafqat Munir, Mr Saleem Khilji and Mr Muhammad Awais Umer, SDPI, Islamabad, Pakistan</td>
<td>4. Dr Athar Osama, Founder &amp; CEO PIF; &amp; Advisor HEC, Pakistan</td>
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<td><strong>Panel Organisers:</strong> Mr Maaz Javed and Dr Vaqar Ahmed, SDPI, Islamabad, Pakistan</td>
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Concurrent Session B-4
Rural Communities in the Fight against COVID-19
in collaboration with Rural Support Programmes Network

Chair: Dr Pervez Tahir, Former Chief Economist, Planning Commission, GoP
Moderator: Ms Shandana Khan, CEO, RSPN, Pakistan
Panellists:
1. Dr Rashid Bajwa, CEO, NRSP, Pakistan
2. Mr Nadir Gul Barech, CEO, BRSP, Pakistan
3. Ms Shabana Ikhtiar, NRSP, Pakistan
4. Ch Muhammad Tariq Nazir, Regional Program Manager, NRSP, Islamabad.

Panel Organisers: Dr Mohsin Kazmi, SDPI, Islamabad, Pakistan; and Ms Shandana Khan, RSPN, Islamabad, Pakistan

Concurrent Session B-5
Accelerating SDGs Achievement and Building Back Better from COVID-19 Pandemic in South Asia
in collaboration with UNESCAP-SSWA

Moderator: Dr Rajan Ratna, UNESCAP-SSWA New Delhi, India
Opening Remarks: Dr Nagesh Kumar, UNESCAP-SSWA, New Delhi, India

Chair: Mr Riaz Fatyana, MNA & Convener Parliamentary Taskforce on SDGs, GoP
Guest of Honour: Ms Romina Khurshid, MNA, Member Parliamentary Taskforce on SDGs, GoP
Panellists:
1. Dr Abid Q. Suleri, SDPI, Islamabad, Pakistan
2. Mr Nazir Kabiri, ED, Biruni Institute, Afghanistan
3. Dr Fahmida Khatun, ED, CPD, Dhaka, Bangladesh
4. Prof. Dr Sachin Chaturvedi, DG, RIS, New Delhi, India
5. Dr Posh Raj Pandey, Exec. Chairman, SAWTEE, Kathmandu, Nepal
6. Dr Dushni Weerakoon, ED, IPS, Colombo, Sri Lanka

Panel Organisers: Dr Rajan Ratna, UNESCAP-SSWA New Delhi, India; Mr Ahad Nazir and Mr Abdullah Khalid, SDPI, Islamabad, Pakistan

Concurrent Session B-6
An Overwhelming Role of ICTs during COVID-19 Era and Beyond

Chair: Mr Sartaj Aziz, Former Deputy Chairman, Planning Commission, GoP
Moderator: Brig. Mohammad Yasin (Retd.), SDPI, Islamabad, Pakistan
Speakers:
1. Dr Shaheen Sardar Ali, Rector, Nat. Academy of Higher Education, Islamabad, Pakistan
2. Mr Parvez Iftikhar, Member PM’s Task Force on IT; & Former Chairman USF, Islamabad, Pakistan
3. Dr Faisal Haq Shaheen, Senior Lecturer, Ryerson University, Toronto, Canada
4. Dr Adeela Rehman, AP, FJWU, Rawalpindi, Pakistan

Panel Organisers: Brig. Mohammad Yasin (Retd.), Mr Shahid Minhas, and Mr Hassan Murtaza Syed, SDPI, Islamabad, Pakistan
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<td>Chair: Mr Rashid Mehmood, Additional Secretary Development and International Coordination, Ministry of National Food Security and Research, GoP</td>
<td>Chief Guest: Lieutenant General Asim Saleem Bajwa (Retd.)</td>
<td>Moderators: Dr Vaqar Ahmed and Mr Moeen Ali, SDPI, Islamabad, Pakistan</td>
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<td>Moderator: Dr Abid Q. Sulieri, ED, SDPI, Islamabad, Pakistan</td>
<td>Chair: Mr Muhammad Mudassir Tipu, DG China, MoFA, GoP</td>
<td>Agenda Setting Presentation: Ms Kiran Afzal, Finance, Competitiveness and Innovation GP, The World Bank, Islamabad, Pakistan</td>
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<td>Opening Remarks: H.E. Ms Androulla Kaminara Ambassador of the EU to Pakistan</td>
<td>Moderator: Mr Shakeel Ramay, Director, ASC, SDPI, Islamabad, Pakistan</td>
<td>Private Sector Perspectives:</td>
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<td>Keynote Speaker: H.E. Mr Wouter Plomp, Ambassador of the Kingdom of Netherlands to Pakistan</td>
<td>Book Launch: Understanding China for Future Cooperation</td>
<td>1. Mr Aftab-ur-Rehman Rana, President, STFP, Pakistan</td>
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<td>Speakers: 1. Dr Aamer Irshad, FAO, Islamabad, Pakistan 2. Dr Aneela Afzal, AP, PMAS-AAU, Rawalpindi, Pakistan 3. Dr Pauline Oosterhoff, RF, IDS, Brighton, UK</td>
<td>Panellists: 1. Mr Hussein Askary, Section Manager, BRIX Saltsjöbaden, Sweden 2. Mr Xie Guoxian, Minister Counsellor Economy and Commercial, Chinese Embassy in Pakistan 3. Ms Xie Yuhong, Vice Chairman and Secretary General ACEF, Beijing, China</td>
<td>2. Mr Naveed Khan, Founder, Hunza on Foot</td>
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<td>Panel Organisers: Ms Sundus Munawar, Embassy of the Kingdom of the Netherlands in Pakistan, Ms Rabia Tabassum and Mr Qasim Shah, SDPI, Islamabad, Pakistan</td>
<td>Panel Organisers: Mr Shakeel Ahmad Ramay and Ms Ayesha Ilyas, SDPI, Islamabad, Pakistan</td>
<td>3. Mr Komail Naqvi, Co-Founder and CEO, Find My Adventure</td>
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<td>Public Sector Perspectives:</td>
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<td>1. Mr Malik Babur Javed, Manager (P&amp;P), PTDC</td>
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<td>2. Mr Hasan Daud Butt, CEO, Khyber Pakhtunkhwa Bol, GoP</td>
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<td>Panel Organisers: The World Bank Pakistan, Mr Moeen Ali and Ms Mahnoor Arshad, SDPI, Islamabad, Pakistan</td>
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### Day 2 - 15 December 2020

#### Special Plenary:
**Pakistan’s Economic Response to COVID-19 and Way Forward for an Inclusive Recovery**
**Time**: 4:00pm – 5:30pm

**Host**: Dr Abid Q. Suleri, ED, SDPI, Islamabad, Pakistan

**Guest**:  
- Dr Reza Baqir, Governor, State Bank of Pakistan

**Plenary Organiser**: Dr Sajid Amin, SDPI, Islamabad, Pakistan

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#### Dialogue Plenary:
**COVID-19 Challenges for SDGs and Human Development**
**Time**: 6:15pm – 7:15pm

**Hosts**: Dr Abid Q. Suleri, Executive Director, and Dr Vaqar Ahmed, Joint ED, SDPI, Islamabad, Pakistan

**In Conversation With**: Dr Ishrat Husain, Advisor to the Prime Minister on Institutional Reforms and Austerity, GoP

**Plenary Organisers**: Mr Ali Rehmat and Mr Fahad Khan, SDPI, Islamabad, Pakistan

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#### Dialogue Plenary:
**Economic Security and Diplomacy in the Times of COVID-19**
**Time**: 7:45pm - 8:45pm

**Hosts**: Dr Abid Q. Suleri, Executive Director, and Dr Vaqar Ahmed, Joint ED, SDPI, Islamabad, Pakistan

**In Conversation With**: Dr Moeed Yusuf, National Security Advisor to Prime Minister of Pakistan, National Security Division and Strategic Policy Planning, GoP

**Plenary Organisers**: Mr Ali Rehmat and Mr Fahad Khan, SDPI, Islamabad, Pakistan
Concurrent Session C-1

Finding the Way Forward in Post-COVID-19 Pakistan with the Doing Good Index

Chair: Dr Waqar Masood Khan, Special Assistant to the Prime Minister (Minister of State) on Revenue- FBR, Pakistan
Moderator: Dr Shafqat Munir, SDPI, Islamabad, Pakistan

Presentation: Ms Mehvesh Mumtaz Ahmed, Director of Research, CAPS, Hong Kong

Speakers:
1. Mr Aamir Yusuf, Joint Secretary, Jamiyat Punjabi Saudagaran-e-Delhi, Karachi, Pakistan
2. Mr Ahmed Chinoy, Former Chairman, Pakistan Cloth Merchant Association, Karachi, Pakistan
3. Mr Muazzam Arslan Bhatti, CEO, Alfoze Technologies Pvt Ltd, Islamabad, Pakistan

Panel Organisers: Dr Sajid Amin, Dr Shafqat Munir and Mr Ali Rehmat, SDPI, Islamabad, Pakistan

Concurrent Session C-2

Role of Regional Cooperation for Asia-Pacific’s Energy Transition in the COVID-19 Era

Opening Remarks: Mr Zheng Biaihua, DG, Development Bureau, GEIDCO, China
Moderator: Mr Kashif Salik, SDPI, Islamabad, Pakistan

Speakers:
1. Mr Michael Williamson, Section Chief, Energy Division, UNESCAP, Bangkok, Thailand
2. Dr Michael Jakob, Snr. Researcher, MCC, Berlin, Germany
3. Ms Milou Beerepoot, Regional Energy & CCM Specialist, UNDP, Regional Office, Bangkok, Thailand
4. Mr Ahsan Javed, RF (Renewable Energy), SAARC Energy Center, Islamabad, Pakistan
5. Dr Hina Aslam, RF, SDPI, Islamabad, Pakistan

Panel Organisers: Dr Sajid Amin, Dr Shafqat Munir, Mr Ali Rehmat, SDPI, Islamabad, Pakistan

Concurrent Session C-3

Access to Healthcare and Competition

Chair & Moderator: Mr Pradeep S Mehta, Secretary-General, CUTS International, Jaipur, India

Welcome Address: Dr Abid Q. Suleri, ED, SDPI, Islamabad, Pakistan

Speakers:
1. Dr Joseph Wilson, Former Chairman, CCP, Pakistan
2. Ms Teresa Moreira, Head, CCBP, UNCTAD, Geneva, Switzerland
3. Mr Hardin Ratshisusu, DC, CCSA, Pretoria, South Africa
4. Mr Allan Asher, Chair, FEMAG, Australia

Panel Organisers: Mr Ujjwal Kumar, Mr Udai Mehta, Mr Akshay Sharma, CUTS International; and Ms Zahra Khalid, SDPI, Islamabad, Pakistan
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<td><strong>Cultural and Knowledge Partnerships through Museums</strong></td>
<td><strong>Tobacco Greenwashing: Misinformation / Disinformation in the Times of COVID-19</strong></td>
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<td><strong>Chair</strong>: Ms Zartaj Gul, Minister of State for Climate Change, GoP</td>
<td><strong>Chair</strong>: Sayed Zulfikar Bukhari, Special Assistant to Prime Minister on Overseas Pakistanis; and, Chairman, PTDC, GoP</td>
<td><strong>Chair</strong>: Dr Nausheen Hamid, Parliamentary Secretary Health, GoP</td>
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<td><strong>Moderator</strong>: Ms Maryam Shabbir, SDPI, Islamabad, Pakistan</td>
<td><strong>Moderator</strong>: Mr Haroon Sharif, Former State Minister &amp; Chairman, BoI, GoP</td>
<td><strong>Moderator</strong>: Mr Syed Ali Wasif Naqvi, SDPI, Islamabad, Pakistan</td>
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<td><strong>Speakers</strong>: 1. Dr Abid Q. Suleri, SDPI, Islamabad, Pakistan 2. Mr Sanjay Vashist, Director, CANSA, India 3. Ms Raana Rahim, CC, ICMPD, Pakistan 4. Mr Harjeet Singh, Global Climate Lead, ActionAid, New Delhi, India 5. Ms Farah Kabir, ActionAid, Bangladesh 6. Mr Kashif Salik, SDPI (paper: “Climate-Induced Displacement and Migration in Pakistan: Insights from Muzaffargarh and Tharparker Districts”)</td>
<td><strong>Speakers</strong>: 1. Dr Karen Exell, Hon. Snr. Research Associate, UCL, Qatar (currently based in Saudi Arabia) 2. Dr Nadhra Shahbaz Naeem Khan, Assoc. Prof., MGSHSS, LUMS, Lahore, Pakistan 3. Mr Qasim Jafri, President of Board of Governors of Goethe Institute Lahore, Member Foreign Minister’s core group on Cultural Diplomacy, and Member Board of Directors of Tourism Development Corporation.</td>
<td><strong>Speakers</strong>: 1. Mr Khurram Hashmi, Nat. Coord., CTC-Pak, Pakistan 2. Dr Minhaj us Siraj, Joint ED, PIMS, Islamabad, Pakistan 3. Mr Waseem Iftikhar Janjua, SDPI, Islamabad, Pakistan 4. Mr Nadeem Iqbal, CEO, NCRP, Pakistan</td>
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<td><strong>Panel Organisers</strong>: Ms Maryam Shabbir and Ms Khansa Naeem, SDPI, Islamabad, Pakistan</td>
<td><strong>Panel Organisers</strong>: Ms Imrana Niazi; Ms Tayyaba Hanif and Ms Amna Zaidi, SDPI, Islamabad, Pakistan</td>
<td><strong>Panel Organisers</strong>: Mr Waseem Iftikhar Janjua and Mr Syed Ali Wasif Naqvi, SDPI, Islamabad, Pakistan</td>
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Concurrent Session C-7
Cultural Diplomacy in the Times of COVID-19
in collaboration with Friedrich-Ebert-Stiftung (FES)

**Moderator/Discussant:** Dr Fatemeh Kamali-Chirani, SDPI, Islamabad, Pakistan

**Introductory Remarks:** Mr Hamayoun Khan, FES, Islamabad, Pakistan

**Speakers:**
1. Ms Anupama Sekhar, Cultural Department, ASEF, Singapore
2. H.E. Andreas Stadler, Austrian Ambassador to Malta & Guest Professor, University of Vienna and University of Applied Arts
3. H.E. Bernhard Schlagheck, Ambassador of the Federal Republic of Germany
4. Mr Daryl Copeland, CGAI and CERIUM, UMon, Canada (Vlog)
5. Dr Sehrish Qayyum, UoP, Lahore, Pakistan
6. Mr Bilal Zubair, SPIR, QAU, Islamabad, Pakistan
7. Ms Rubina Ali, IJU, Islamabad, Pakistan

**Panel Organisers:** Dr Fatemeh Kamali-Chirani and Ms Rabia Tabassum SDPI, Islamabad, Pakistan

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Concurrent Session C-8
Entrepreneurial Business Survival during COVID-19: Challenges and Way Forward
in knowledge partnership with Fatima Jinnah Women University

**Chair:** Engr. M. A. Jabbar, CEO, Qaim Automotive Manufacturing (Pvt) Ltd, Pakistan

**Speakers:**
1. Prof. Dr Kamariah Ismail, AHIBS, UTM, Malaysia, currently seconded to UTB
2. Dr Khizran Zehra, TiSEM, Tilburg University, Netherlands
3. Mr Tahir Mahmood Chaudhry, Ovex Technologies and PIE, Islamabad, Pakistan
4. Dr Anwar Shah, Assoc. Prof., QAU, Islamabad, Pakistan

**Discussant:** Mr Shamim Ahmad Khan, Member, SDPI BoG; and, Chair, Finance Committee, GoP

**Panel Organisers:** Dr Shoaiib Akhtar, FJWU, Rawalpindi, Pakistan and Mr Ahmed Khaver, SDPI, Islamabad, Pakistan

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Concurrent Session C-9
Psychological Impact in Time of COVID-19 and its Implications for Sustainable Development

**Chair:** Senator Ayesha Raza Farooq, PML(N)

**Moderator:** Dr Zarqa Taimur, Spokesperson, Govt. of Punjab, GoP

**Speakers:**
1. Prof. Dr Shakil J Malik, Sussex Institute of Neuropsychiatry, Islamabad, Pakistan
2. Ms Daanika Kamal, Queen Mary University of London, UK
3. Dr Anjum Bashir, Emotional Wellbeing and Mental Health Service Basildon UK
4. Dr Connie Meijer, Consultant Psychiatrist, The Netherlands

**Panel Organiser:** Ms Sana Malik, SDPI, Islamabad, Pakistan
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<td>Urban Water Governance Post-COVID-19 in collaboration with Nestle Pakistan</td>
<td>Financial Inclusion of Women in Pakistan – Developing Gender-Responsive Financial Inclusion Models in collaboration with Embassy of the Kingdom of the Netherlands in Pakistan</td>
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<td><strong>Chair:</strong> Mr Hashim Raza, CEO, SMEDP, Lahore, Pakistan</td>
<td><strong>Chair:</strong> Ms Kanwal Shauzab, Parliamentary Secretary Planning Development &amp; Special Initiatives, GoP</td>
<td><strong>Chair:</strong> Prof. Dr Aliya Hashmi Khan, Member, Prime Minister’s Economic Advisory Council, GoP</td>
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<td><strong>Moderator:</strong> Engr Ahad Nazir, Centre for Private Sector Engagement, SDPI, Islamabad, Pakistan</td>
<td><strong>Moderator:</strong> Dr Imran Saqib Khalid, SDPI, Islamabad, Pakistan</td>
<td><strong>Guest of Honour:</strong> Ms Sima Kamil, Deputy Governor, State Bank of Pakistan</td>
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<td><strong>Keynote Speaker:</strong> H.E Mr Wouter Plomp, Ambassador of the Kingdom of Netherlands to Pakistan</td>
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<tr>
<td>1. Dr Siddharth Sharma, The World Bank South Asia Chief Economist Office, Washington D.C, US</td>
<td>1. Ms Simi Kamal, Hissar Foundation</td>
<td><strong>Moderators:</strong> Dr Fareeha Armughan, SDPI, Islamabad, Pakistan; and Ms Sundus Munawar, Embassy of Netherlands in Pakistan</td>
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<td>2. Ms Azeemah Owais, Ain Shams University, Cairo &amp; University of Stuttgart, Germany</td>
<td>2. Ms Fatima Akhtar, Nestle-Pakistan</td>
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<td>3. Dr Sharon Moran, State University of New York, New York, USA</td>
<td>1. Ms Fauzia Viqar, CEO, Rah CMD, Lahore, Pakistan</td>
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<td>4. Dr Faisal Haq Shaheen, Snr. Lecturer, Ryerson University, Toronto, Canada</td>
<td>2. Ms Corianne van Veen, SFO, FMO- Dutch Entrepreneurial Development Bank, The Netherlands</td>
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<td>3. Ms Shumaila Rifaqat, Head, Innovation &amp; M&amp;E, Karandaaz, Islamabad, Pakistan</td>
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<td>4. Ms Roshaneh Zafar, MD/Founder, Kashf Foundation, Lahore, Pakistan</td>
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<td><strong>Panel Organisers:</strong> Mr Ahad Nazir, SDPI, Islamabad, Pakistan; and Mr Robert Carl Michael Beyer, The World Bank, Washington, D.C., USA</td>
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<td><strong>Panel Organisers:</strong> Ms Sundus Munawar, Embassy of the Kingdom of the Netherlands in Pakistan; Dr Fareeha Armughan and Dr Sajid Amin, SDPI, Islamabad, Pakistan</td>
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Day 3 - 16 December 2020
Special Plenary:
Sustainable Development in the Times of COVID-19: Message from the President of Pakistan, H.E. Dr Arif Alvi
Time 5:45pm – 6:15pm
Host: Dr Abid Q. Suleri, Executive Director, SDPI, Islamabad, Pakistan
Message from: Dr Arif Alvi, President of the Islamic Republic of Pakistan
Plenary Organisers: Mr Shahid Minhas and Mr Hassan Murtaza, SDPI, Islamabad, Pakistan

Day 3 - 16 December 2020
Dialogue Plenary:
Health in Times of COVID-19
Dedicated to former SDPI Colleague & Friend Mr Zia ur Rehman
Time 6:15pm – 7:45pm
Opening Remarks & Reflections on Life & Work of late Mr Zia ur Rehman:
Dr Abid Q. Suleri, ED, SDPI, Islamabad, Pakistan
Moderator:
Mr Syed Ali Wasif Naqvi, SDPI, Islamabad, Pakistan
Discussion:
How Should Public Health Systems Be Improved?
Speakers:
- Dr Rashid Naeem, Physiotherapist
- Dr Kanza Batool, Health Practitioner, National Health Services, UK (Video Message)
- Dr Minhaj us Siraj, Joint ED, PIMS, Islamabad, Pakistan
- Prof. Dr Shakil J Malik, Sussex Institute of Neuro-Psychiatry, Islamabad, Pakistan
Special Remarks:
Dr Palitha Mahipala, WHO Representative/Head of Mission, WHO Country Office, Pakistan, Islamabad
Concluding Remarks by Guest of Honour:
Dr Nausheen Hamid, Parliamentary Secretary Health, GoP
Plenary Organiser:
Mr Syed Ali Wasif Naqvi, SDPI, Islamabad, Pakistan
Day 3 - 16 December 2020

Special Plenary: Remembering the Life and Work of Dr Lubna Chaudhry

Time 8:15pm – 10:00pm

Chair: Dr Saba Gul Khattak, Former Executive Director, SDPI, Islamabad, Pakistan

Special Remarks: Dr Saba Gul Khattak, Former Executive Director, SDPI, Islamabad, Pakistan
(Video 1)

School & University Days:

- Ms Tanvir Kiani, Director, Training, BISP, Pakistan/Friend
- Ms Nabila Zar Malick, UN Women, Lahore, Pakistan/Friend

Days in Hawaii:

- Prof. Dr Huma Ahmed-Ghosh, San Diego State University, USA/Friend
- Mr. Rajib Akhter, Kovair Software, Binghamton, New York, California/Husband
(Video 2)

Time in Pakistan (2000-2004):

- Dr Farzana Bari, Independent Researcher & Former Director, Center for Gender Studies, QAU, Pakistan
- Dr Shahrukh Rafi Khan, (recorded message) Former ED, SDPI & Research Associate, Mount Holyoke College, USA
- Dr Fozia Sadiq Khan, Writer/Independent Researcher/ former SDPI Colleague
- Dr Kaiser Bengali, Economist, Author, Former Minister Planning & MD SPDC/ former SDPI Colleague
- Dr Haider Nizamani, Independent Scholar, Canada/former SDPI Colleague
- Dr Sajid Kazmi, Senior Lecturer, School of Business, Solent University, UK/former SDPI Colleague
- Mr Asad Naqvi, Head, Secretariat of PAGE, UNEP, Geneva/former SDPI Colleague
- Mr Shahbaz Bokhari, Advisor, Sustainable Development Goals, FAO/former SDPI Colleague
- Mr Ahmad Salim, Senior Advisor, SDPI, Islamabad, Pakistan/former SDPI Colleague
- Dr Abid Q. Suleri, ED, SDPI, Islamabad, Pakistan/former SDPI Colleague

At SUNY Binghamton (2004-2020): (PIDE interview clip)

- Dr Denise G Yull, Associate Professor and Chair, Human Development Department College of Community & Public Affairs, SUNY, Binghamton University, USA
- Dr Joshua M Price, Professor & Chair, Sociology, State University of New York, Binghamton, USA
- Dr Jakob Feinig, Assistant Professor, Human Development Department, State University of New York, Binghamton, USA
- Dr Mohammed Rabiu Abubakari, Postdoctoral Associate, SUNY at Albany, USA
- Mr Md. Shahriar Islam, SUNY Binghamton and University of Dhaka/Student

Special Remarks: Dr Saba Gul Khattak, Former Executive Director, SDPI, Islamabad, Pakistan

Plenary Organisers: Dr Saba Gul Khattak, Former Executive Director, SDPI, Ms Ayesha Ilyas and Ms Uzma T. Haroon, SDPI, Islamabad, Pakistan
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<td><strong>Time 9:30am – 11:00am</strong></td>
<td><strong>State of Social Protection in Pakistan: Need, Coverage,</strong></td>
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<td><strong>Towards Addressing Impacts and Challenges of Coronavirus Era</strong></td>
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<td><strong>Legislative Status, Challenges, and Way Forward</strong></td>
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<tr>
<td><strong>Chair:</strong> Prof. Dr M. Irfan Khan, IIU, Islamabad, Pakistan</td>
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<td><strong>Moderator:</strong> Dr Safdar A. Sohail, ED, SPRC, &amp; Convenor, PASP, Islamabad, Pakistan</td>
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<td><strong>Moderator:</strong> Dr Mahmood A. Khwaja, SDPI, Islamabad, Pakistan</td>
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<td><strong>Panel Organisers:</strong> Mr Mutee Ul Rehman and Ms Sana Ajmal, SPRC, Islamabad, Pakistan</td>
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<tr>
<td><strong>Speakers:</strong> 1. Ar. Aamina Shahid, COMSATS University Islamabad (CUI), Islamabad, Pakistan</td>
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<td><strong>Launch of Flagship Report by SPRC:</strong> <strong>State of Social Protection in Pakistan</strong></td>
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<tr>
<td>2. Ms Ummee Ammara and Mr Hassan Bukhari, ITU, Lahore, Pakistan</td>
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<td><strong>Speakers:</strong> 1. Dr Aliya Hashmi, Chairperson, National Poverty Estimation Committee, Planning Commission, GoP</td>
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<tr>
<td><strong>Discussant:</strong> Dr Mazhar Iqbal Zafar, QAU, Islamabad, Pakistan</td>
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<td>2. Mr Mutee-ul-Rehman, Snr. Specialist, SPRC, Islamabad, Pakistan</td>
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<tr>
<td><strong>Panel Organisers:</strong> Dr Mahmood A. Khwaja, SDPI, Islamabad, Pakistan</td>
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<td>3. Dr Jomo Kwame Sundaram, Advisor, Khazanah Research Institute &amp; VF, Initiative for Policy Dialogue, Columbia University, USA</td>
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<tr>
<td><strong>Gender-Based Violence and the Pakistani Transgender Community in COVID-19 Pandemic</strong></td>
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<td>4. Dr Stephen Kidd, SSPS, Development Pathways, UK</td>
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<td><strong>Moderator:</strong> Prof. Dr Shaheena Ayub Bhatti, FJWU, Rawalpindi, Pakistan</td>
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<td><strong>Panel Organisers:</strong> Mr Mutee Ul Rehman and Ms Sana Ajmal, SPRC, Islamabad, Pakistan</td>
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<tr>
<td><strong>Panelists:</strong> 1. Ms Nayyab Ali, UNDP-Pakistan</td>
<td></td>
<td><strong>Launch of Flagship Report by SPRC:</strong> <strong>State of Social Protection in Pakistan</strong></td>
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<tr>
<td>2. Ms Aisha Mughal, Ministry of Human Rights, GoP</td>
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<td><strong>Speakers:</strong> 1. Dr Aliya Hashmi, Chairperson, National Poverty Estimation Committee, Planning Commission, GoP</td>
</tr>
<tr>
<td>3. Ms Huma Chughtai, Federal Judicial Academy, GoP</td>
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<td>2. Mr Mutee-ul-Rehman, Snr. Specialist, SPRC, Islamabad, Pakistan</td>
</tr>
<tr>
<td>4. Ms Khadija Ali, Lawyer and Gender Activist, Pakistan</td>
<td></td>
<td>3. Dr Jomo Kwame Sundaram, Advisor, Khazanah Research Institute &amp; VF, Initiative for Policy Dialogue, Columbia University, USA</td>
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<td>4. Dr Stephen Kidd, SSPS, Development Pathways, UK</td>
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**State of Social Protection in Pakistan: Need, Coverage, Legislative Status, Challenges, and Way Forward**

**Moderator:** Dr Shaheena Ayub Bhatti, FJWU, Rawalpindi, Pakistan

**Panelists:**
1. Ms Nayyab Ali, UNDP-Pakistan
2. Ms Aisha Mughal, Ministry of Human Rights, GoP
3. Ms Huma Chughtai, Federal Judicial Academy, GoP
4. Ms Khadija Ali, Lawyer and Gender Activist, Pakistan

**Panel Organisers:** Prof. Dr Shaheena Ayub Bhatti, FJWU, Rawalpindi, Pakistan; and Ms Sana Malik, SDPI, Islamabad, Pakistan
### Concurrent Session D-4

**The Role of Science and Technology in COVID-19**

**Host:** Mr Haroon Sharif, Former State Minister & Chairman, BoI, GoP

**In Conversation With:** Mr Fawad Ahmed Chaudhry, Federal Minister for Science and Technology, GoP

**Panel Organiser:** Ms Maryam Shabbir, SDPI, Islamabad, Pakistan

**Time:** 11:45am – 1:15pm

**COVID-19 related Evidence in Policymaking: Perspective from Development Partners**

**Moderator:** Dr Abid Q. Suleri, SDPI, Islamabad, Pakistan

**Presentation:** Mr Ahmed Khaver, SDPI, Islamabad, Pakistan

**Distinguished Speakers:**
1. H.E. Ms Wendy Gilmour, Canadian High Commissioner to Pakistan
2. Mr Richard Ough, SEA, Macro Stability and Growth, FCDO, Islamabad, Pakistan
3. Mr Michael Nehrbass, Deputy Mission Director, USAID/Pakistan
4. Mr Umer Akhlaq Malik, Policy Analyst, Development Policy Unit, UNDP Pakistan

**Panel Organiser:** Mr Ahmed Khaver, SDPI, Islamabad, Pakistan

### Concurrent Session D-5

**Access to Water and Sanitation in a Post-COVID Pakistan**

**in collaboration with WaterAid**

**Chair:** Ms Kanwal Shauzab, Parliamentary Secretary Planning Development & Special Initiatives, GoP

**Moderator:** Dr Imran Saqib Khalid, SDPI, Islamabad, Pakistan

**Speakers:**
1. Ms Zofeen Ebrahim, Environmental Journalist, Karachi, Pakistan
2. Mr Salman Sufi, Founder, Salman Sufi Foundation, Lahore, Pakistan
3. Mr Niaz Ahmed, Head Policy and Advocacy, WaterAid, Islamabad, Pakistan
4. Mr Basharat Saeed, Water Resources Specialist, The World Bank, Islamabad, Pakistan

**Panel Organisers:** Mr Niaz Ahmed, WaterAid, Islamabad, Pakistan; Dr Imran Saqib Khalid and Ms Zahra Khalid, SDPI, Islamabad, Pakistan
Day 4 - 17 December 2020
Closing Plenary
Time 4:00pm – 5:30pm

Moderator:
Ms Imrana Niazi, Senior Coordinator SDC Unit, SDPI, Islamabad, Pakistan

Welcome Remarks:
Ambassador Shafqat Kakakhel, Chairman BoG, SDPI, Islamabad, Pakistan

Summary of Conference Proceedings/Recommendations:
Dr Abid Q. Suleri, Executive Director, SDPI, Islamabad, Pakistan

Remarks on Government’s Climate Change Agenda:
Mr Malik Amin Aslam, Prime Minister of Pakistan’s Advisor on Climate Change

Launch of SDPI’s Publications:
- 22nd Conference’s Anthology: Sustainable Development in a Digital Society
- Journal of Development Policy, Research & Practice vol.3 &4
- Poisons in Our Environment by Dr Mahmood A. Khwaja

Remarks on Sustainable Development in the Times of COVID-19:
Senator Shibli Faraz, Federal Minister for Information & Broadcasting, GoP

Presentation of Excellence Performance Award

Vote of Thanks: Dr Vaqar Ahmed, Joint Executive Director, SDPI, Islamabad

Plenary Organisers: Mr Shahid Minhas and Mr Hassan Murtaza, SDPI, Islamabad, Pakistan

Abbreviations & Acronyms

ACEF All-China Environment Federation
AHIBS Azman Hashim International Business School, Universiti Teknologi Malaysia
AICS Italian Agency for Development Cooperation
ASC Asia Study Center
ASEF Asia-Europe Foundation
AIOU Allama Iqbal Open University
BISP Benazir Income Support Programme
BoD Board of Directors
BoG Board of Governors
BoI Board of Investment
BRIX Belt and Road Institute in Sweden
BRSP Balochistan Rural Support Programme
CANS Climate Action Network South Asia
CAPS Centre for Asian Philanthropy and Society
CC Country Coordinator
CCI Competition Commission of India
CCP Competition Commission of Pakistan
CCPB Competition and Consumer Policies Branch
Chintan-ERAG Chintan Environmental Research and Action Group
CPEC China-Pakistan Economic Corridor
CPO Central Police Office
CCSA Competition Commission of South Africa
CD Country Director
CDA Capital Development Authority
CEO Chief Executive Officer
CEPA Centre for Poverty Analysis
CERIUM Centre for International Studies and Research
CII Council of Islamic Ideology
CGAI Canadian Global Affairs Institute
COMSATS Commission on Science and Technology for Sustainable Development in the South
CSE Center for Science and Environment
CSSR Collective for Social Science Research
CTC-Pakistan Coalition for Tobacco Control-Pak
CUH Center for Urban Health
CUTS Consumer Unity & Trust Society International
DC Deputy Commissioner
DG Director General
DIG Deputy Inspector General of Police
DIL Developments in Literacy
DRR Deputy Resident Representative
ED Executive Director
EPA Environmental Protection Agency
EST Eastern Standard Time
EU European Union
FAO Food and Agricultural Organisation
FBR Federal Board of Revenue
FCDO Foreign Commonwealth and Development Office
FEMAG Foundation for Effective Markets & Governance
FES Friedrich-Ebert-Stiftung
FJWU Fatima Jinnah Women University
GEIDCO Global Energy Interconnection Development and Cooperation Organization
GoP Government of Pakistan
HCC Hellenic Competition Commission, Athens
HEA Higher Education Academy
HEC Higher Education Commission
HRCP Human Rights Commission of Pakistan
HSE Higher School of Economics Institute
IBT Idara Baraye Taleem-o-Taraqi
ICF Indus Cultural Forum
IDRC International Development Research Centre
IDS Institute of Development Studies
ICMPD-Pak International Centre for Migration Policy Development, Pakistan
IHCR Institute of Historical and Social Research
IIU International Islamic University
ILO International Labour Organization
IMF International Monetary Fund
SAWTEE  South Asia Watch on Trade, Economics and Environment
SBP  State Bank of Pakistan
SDGs  Sustainable Development Goals
SDPI  Sustainable Development Policy Institute
SEA  Senior Economic Adviser
SFO  Sustainable Finance Officer
SLATE  Strengthening Learning and Teaching Excellence
SMEDA  Small and Medium Enterprise Development Authority
SPIR  School of Politics and International Relations
SRO  Senior Research Officer
SSPS  Senior Social Policy Specialist
SPRC  Social Protection Resource Centre
STFP  Sustainable Tourism Foundation Pakistan
TISEM  Tilburg Institute of Economics and Management, Tilburg University, Netherlands
TL  Team Leader
UCL  University College London
UMoN  University of Montreal
UNCTAD  United Nations Conference on Trade and Development
UNDP  United Nations Development Programme
UNEP  United Nations Environment Programme
UNESCAP-SSWA  United Nations Economic and Social Commission for Asia and the Pacific: Sub-regional Office for South and South-West Asia
UoP  University of Punjab
USAID  United States Agency for International Development
USEFP  United States Educational Foundation in Pakistan
USF  Universal Service Fund
USIP  United States Institute of Peace
UTB  Universiti Teknologi Brunei
VC  Vice Chancellor
WHO  World Health Organization
Sustainable Development in the times of COVID-19

The COVID-19 pandemic took the world unawares with the developed, emerging and least developed countries equally prone to its contagion. But has it really been the 'Great Economic Equalizer' many have claimed? How has it impacted the last decade of action with regard to the Sustainable Development Goals, especially in South Asia? How has it affected different vulnerable groups such as students, small businesses, daily wagers, and sectors such as health, education, Information & Communication Technologies (ICTs) in countries like Pakistan and India?

How did day-to-day social relationships change and what effects has that had on mental health and well-being? Most importantly, has the way nation-states govern changed from being economic-centric to becoming more human security-centric?

Vibrant nations turn challenges into opportunities. Have governments and businesses across the world, particularly in South Asia found new ways of working? What are the areas where Pakistan's policymakers need to invest more to recover and improve? What are some of the best practices thought leaders need to focus on from the public and private sector to keep the 2030 Sustainable Development Agenda on track, while ensuring economic, food, water, health, education, and human security for citizens?

The authors in this volume try to answer the above questions by specifically focusing on issues related to green policymaking; regional connectivity and collaboration; economic growth, social protection, healthcare, ICTs; education; water governance; and community resilience.

-Sarah Siddiq Aneel