

GLOBAL INFORMATION SOCIETY WATCH 2020

*Technology, the environment and
a sustainable world: Responses from
the global South*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch 2020

Technology, the environment and a sustainable world: Responses from the global South

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Sindh Community Foundation

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Introduction

While COVID-19 has brought most countries across the world to a standstill, Pakistan is ranked among three Asian countries worst affected by what we might call a “pandemic” of air pollution. The world air quality report by IQAIR in 2019 shows that air quality levels across the South Asian region were at the worst in countries like Bangladesh, India and Pakistan.¹ Pakistan had the second-worst air quality in 2019 out of 10 countries.

Scientists from the Max Planck Institute for Chemistry have warned that air pollution has shortened lives worldwide by nearly three years on average, and causes 8.8 million premature deaths annually.² They added that the worst-hit region is Asia, where the average lifespan has been shortened by 4.1 years in China, 3.9 years in India, and 3.8 years in Pakistan. This situation can only be improved by replacing fossil fuels with clean renewable energy.

Like other countries, the nationwide lockdown in Pakistan due to COVID-19 has improved air quality and decreased noise pollution. Karachi is the capital of Sindh province, one of the country’s four provinces. It is the largest urban hub in the country, with a population of 16 million. The city experienced improved air quality and decreased noise pollution by up to 40% during the lockdown, according to the Sindh Environmental Protection Agency (SEPA). Improved pollution levels were confirmed by comparing data collected using the same parameters before and during the lockdown. Environmentalists and public health practitioners

have also confirmed that there has been an improvement in the environment and biodiversity and human health.³

Context

Pakistan suffers from a number of environmental issues such as air pollution, groundwater pollution, urban and flash floods, melting glaciers in the mountainous regions of the Hunza district in the northern area of the country, and poor management of industrial waste. The air quality index has decreased to extremely unhealthy levels in more than 200 major cities like Islamabad, Peshawar and Karachi over the past year. According to the National Greenhouse Gas Inventory 2012, released by the Ministry of Climate Change, Pakistan’s energy sector accounts for 83% of the carbon dioxide emissions and nearly half of the country’s total greenhouse gas emissions, of which the transport sector accounts for at least a quarter.⁴

In 2019, Pakistan ranked 152nd out of 189 countries in the UN Human Development Index (HDI). The ranking is measured by combining indicators of life expectancy, educational attainment and income, where environmental sustainability is also one of the key indicators.⁵ The UNDP HDI on environmental sustainability for the country is poor – a score of 0.8 – and the crisis has raised questions and debates about sustainable development.⁶

The outbreak of COVID-19 has pulled developing countries backwards and has become a huge threat to the public health sector. Among the South Asian countries, Pakistan has the second-highest number of positive COVID-19 cases. The pandemic has brought economic, socio-cultural and political activities to a complete halt. Lockdown in South

1 Dahiya, S., & Butt, D. (2020). *Air Quality before and after national lockdown during Coronavirus disease (COVID-19) outbreak across Pakistan*. Centre for Research on Energy and Clean Air. <https://energyandcleanair.org/air-quality-before-and-after-national-lockdown-during-coronavirus-disease-covid-19-outbreak-across-pakistan>

2 Max-Planck-Gesellschaft. (2020, 3 March). Air pollution is one of the world’s most dangerous health risks. <https://www.mpg.de/14551937/air-pollution-health-risk>

3 AFP. (2020, 3 March). Pakistan among worst-affected countries of air pollution ‘pandemic’. *The Express Tribune*. <https://tribune.com.pk/story/2168782/pakistan-among-worst-affected-countries-air-pollution-pandemic>

4 Mir, K. A., & Ijaz, M. (2016). *Greenhouse Gas Emission Inventory of Pakistan for the Year 2011-2012*. Global Change Impact Studies Centre, Ministry of Climate Change. http://www.gcisc.org.pk/GHGINVENTORY2011-2012_FINAL_GCISCR19.pdf

5 APP. (2019, 11 December). Pakistan ranked 152nd in UN Human Development Index. *The Nation*. <https://nation.com.pk/11-Dec-2019/pakistan-ranked-152nd-in-un-human-development-index>

6 <http://hdr.undp.org/en/countries/profiles/PAK>

Asian countries like Pakistan, where the majority of the population live in poverty, has worsened livelihoods. Most poor people depend on daily wages and now also have to deal with pressing issues such as access to health care services. Meanwhile, many people are now more at threat from starvation than the pandemic. The “hunger virus”, COVID-19, is “deepening the hunger crisis in the world’s hunger hotspots.” Additionally, the health crisis is giving birth to new “epicentres of hunger” across the world.⁷

However, at the same time, Pakistan has witnessed a drastic drop in pollution levels in many cities across the country due to lockdown, including Karachi.⁸ According to the data collected by SEPA during the lockdown in April from different locations in the city’s six districts, the average particulate matter 2.5 (PM 2.5) – the most lethal and stubborn air pollutant – was reduced by 39% compared to the same data taken from 76 locations in the city in February, prior to the lockdown. Likewise, it showed the noise levels in the city also went down, by 19%, during the lockdown. This suggests that policy and decision makers at global and country level must rethink the current sustainable development model, learn from the pandemic, and come up with solid programmes to reduce the environmental crisis.

Responses from the field on improvement of air quality

The Sindh Community Foundation organised an online focus group discussion to collect qualitative data for this report from various experts, academics and civil society organisations.

During the meeting, participants raised concerns about the increase in air pollution in the country, due largely to poorly planned urban development, and weak policies and environmental management in urban centres such as Karachi. They called for a reassessment of environmental, transportation and housing policies, using the COVID-19 lockdown as an opportunity to do this.

Environmental expert and researcher Nasir Panwhar confirmed how air quality has improved across the world due to pandemic lockdowns, and that there has also been a decrease in noise pollution.

Nadeem Ahmed Qureshi from the National Forum on Environmental Health agreed that the pandemic is a good opportunity to revisit environmental, transportation and housing policies to

improve air quality in Karachi. He said the province should also expand its air quality measurement system across the province in main urban hubs. However, he pointed out that the capacity of SEPA is very limited.

Qazi Khizir from the Human Rights Commission of Pakistan said it is every citizen’s right to have fresh air and a clean environment. He said that during the lockdown, five to seven types of birds were seen in the province that had not been seen for a long time. People affected by lung disease felt improvement in breathing, he added.

Kazi Khizri, also from the Human Rights Commission, said that in Karachi, bronchitis has increased due to poor air quality. He pointed out how this is linked to COVID-19 symptoms. He urged the government to take urgent action to ensure good air quality for citizens.

Muhammad Ismail Kumbhar from the Sindh Agriculture University Tando Jam said that traffic is also increasing in rural towns, which has a direct effect on lives of rural populations.

Using technology to measure air quality in Pakistan

The environmental protection agency of each province is responsible for monitoring air quality. Sindh province has had an environmental protection act in place since 2014.⁹ In 2007, the Japan International Cooperation Agency (JICA), a governmental agency that coordinates development assistance for the government of Japan, signed an agreement with SEPA for improving the air quality monitoring system to measure air pollution levels in the industrial zone of the capital city.

However, SEPA lacks modern technology for monitoring air quality. It relies on private laboratories for collecting samples and for analysis. According to SEPA, the city has three dysfunctional environmental monitoring stations, two of them installed at SEPA’s head office in Korangi and the office of the deputy commissioner’s centre in North Nazimabad. The third is a mobile environmental monitoring station. SEPA has been relying on the mobile environmental monitoring system, but the data collection procedure is not regular.

Young Pakistanis and engaged communities have taken a leadership role in raising social awareness, and demanding government action from the government. Since 2017, the air quality monitoring infrastructure has grown to 46 stations as a result of contributions through the non-governmental

7 APP. (2020, 10 July). Deaths from Covid-19 related hunger can exceed number of fatalities from virus itself, warns Oxfam. *Dawn*. <https://www.dawn.com/news/1568147>

8 Dahiya, S., & Butt, D. (2020). Op. cit.

9 <https://epasindh.gov.pk/html/legislation.html>

organisation Pakistan Air Quality Initiative (PAQI)¹⁰ and individual data contributors. PAQI uses a crowdsourcing model to collect its data.

Despite these efforts, an automated digitised system for data generation needs to be developed for the daily monitoring of air quality. This would assist with public alerts and could feed into policy decisions. Such an automated system has been implemented in Beijing and has proved a best-practice technology for monitoring air quality. The same system can be adopted using the current local laws and regulations in place in urban areas in Pakistan. Cities such as Karachi, Lahore and Faisalbad can adopt this system in a phased approach and develop short-, mid- and long-term modules for its implementation to improve air quality over time. China has been implementing multiple modules in its system, such as modules for observation, customised visualisation, sensor integration, weather data, cross-checking and validating data sets against meteorological conditions, and dispersion.

Action steps

Pakistan developed a National Climate Change Policy in 2012 to address climate change and environmental problems. The mitigation of climate change is a core part of the policy, which provides incentives for activities that increase the energy mix, switching to low-carbon fossil fuels. However, it is clear that authorities and policy makers need to revisit the country's development, climate change and environmental policies, as well as local sustainable development frameworks. For example, transportation policy needs to be revised to promote public transportation facilities and systems in order to reduce the use of private vehicles for travel. Policies also need to promote efficient emission control technologies in industries, including in the energy sector.

However, policy is only part of the problem. At least the following other areas need attention:

- The financial, human resource and outreach capacity of environmental protection agencies at the provincial levels should be improved and modernised. Both the monitoring and human resource capacity at the Sindh Environmental Protection Agency should also be improved. The air quality monitoring system needs to be upgraded to bring it in line with global monitoring processes, so that air quality data and information can be shared with citizens. The number of air quality monitoring stations in other urban areas of the province also needs to be increased.
- Environmental protection agencies need to be more proactive when it comes to monitoring air quality and reducing the environmental effects of air pollution. This includes improving the coordination between themselves, the meteorological department, and other institutions.
- Citizens' rights to participate in policy and governance processes should be improved. However, civil society organisations lack the capacity to engage properly on the issue of air quality. There is also a lack of cooperation on the implementation of the Sindh Environmental Protection Act at the grassroots level, including the sharing of experiences, between civil society and government. Civil society organisations should advocate for policy makers to revisit urban development and environmental policy based on what has been learned from lockdown. They also need to raise awareness among communities on the right to a clean and healthy environment.
- Civil society organisations working in the areas of human rights and environmental rights and management need to develop evidence-based assessments to support their policy arguments, including the regular assessment of air quality using technology.

¹⁰ <https://www.iqair.com/profile/pakistan-air-quality-initiative>

Technology, the environment and a sustainable world: Responses from the global South

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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