

# Understanding Environment, Health and Income Linkages and How These Exacerbate Vulnerability of Low-Income Households

## Key Takeaways



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CDPR hosted a workshop to understand and demonstrate linkages between productivity of households and environmental risk factors affecting health. Participants included government representatives, health practitioners, environmentalists, private sector experts and international experts.

This workshop is part of a series that aims to generate discussion on how government initiatives on increasing income opportunities of low-income households can be made more efficient and effective in meeting their objectives. These vulnerable households are susceptible to quickly slipping back into poverty when faced with adverse economic events (such as the one associated with COVID 19), and in the current slow growth scenario it will be particularly important to prioritise the vulnerable and address vulnerability. The previous government aimed to do this through the Kamyab Pakistan Programme (KPP) that provided subsidized, interest-free cash loans and help transition vulnerable households towards sustainable livelihoods and complementing this with providing skills, making healthcare mandatory for all borrowers, and providing opportunity to avail low-cost housing. The workshops will further inform the development of a Strategy Paper that will focus on how the resilience of vulnerable households can be magnified through tackling environmental risk factors affecting health and labouring women's contribution in the labour force.

### Spread of burden of disease across income groups

The discussion started off with how environmental risk factors have detrimental effects on health and the burden of disease faced by different income groups. Two environmental risk factors, namely air and water pollution both severely impact health in Pakistan.

Outdoor air pollution is prevalent not just in major urban centers, but also in smaller cities in Sind and Punjab. Indoor air pollution from using solid fuels for cooking (as is used by most poor households in Pakistan) is also important, as pollution levels can be about one hundred times higher than ambient outdoor air pollution. The amount of burning is very small (in terms of climate etc.) but is huge in terms of health impacts. A study in Sind's smaller cities (including Mirpurkhas and Nawabshah) found that women were 5 to 6 times more susceptible to heart attacks as a result of cooking with solid fuels compared with women cooking with natural gas. It is also important to note that although the role of water, sanitation and hygiene (WASH) in terms of health prevention is well understood, yet household energy from a policy standpoint (namely health impacts of poor households) is not covered at all in Pakistan.

In terms of diseases, the number one killer of children in Pakistan today is pneumonia (as they breathe in polluted air from burning biomass fuel, together with women) and the number 2 killer is diarrhea. Environmental risk factors (namely, air and water pollution) play a major role in increasing susceptibility of children to these diseases.

Air pollution is expected to reduce life expectancy in an individual who is exposed to such high level of pollutants in the air through tiny particles entering the lungs and even the bloodstream, causing many non-communicable diseases (NCDs), such as

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respiratory problems, pneumonia, stroke, cardiovascular diseases, chronic obstructive pulmonary disease, and lung cancer. Hazardous levels of air pollution can also affect fetal growth and create neonatal complications.

Direct consumption of contaminated water is also a major cause of communicable diseases (CDs) such as diarrhea, typhoid and stomach infections. There is less data on the NCD burden resulting from contaminated water in Pakistan, even though this too, clearly, is a cause of significant health impacts. Consumption of food irrigated in and fish that live in contaminated water is even more dangerous than directly consuming contaminated water as pollutants bioaccumulate, which can ultimately lead to NCDs, such as liver, kidney and reproductive damage, and neurological and hormonal problems. Major dumping of raw sewage in rivers, such as the Indus and the Ravi, is a major cause of this pollution. Further groundwater is also polluted with both naturally occurring pollutants, such as arsenic, but also pollutants from use of agricultural pesticides and fertilizers.

Air and water pollution are also responsible for creating long term impacts that can last across generations, for example through creating cognitive damage (ie reducing IQ) in children under the age of 5 years who have repeated bouts of disease and hence are malnourished, resulting in stunting.

What's more worrisome is that burden of disease from environmental risk factors seems to be borne disproportionately by the poor. Spread of disease is most likely skewed towards the poor (as it is in other countries) as they are more exposed to polluted air and water. Understanding the environmental impacts on health is important to draw an analysis on the productivity and income of poor and vulnerable families. The productivity of a person would reduce as a result of these

ailments. Moreover, a large portion of these families' incomes can be taken up by treatments for these diseases, pushing them back into poverty. This traps these families in a vicious circle where low income and low productivity prevent them from gaining adequate educational and employment opportunities which in turn deters them to create sustainable livelihoods for themselves. Indeed, during the launch of the KPP, the Prime Minister and Finance Minister both directly indicated that health impacts is a major drain on resources for poor and vulnerable households, hence putting in place a health insurance scheme, through the Sehat card, to help with management of health shocks in the short term.

### Research and data on connection between deteriorating environment on health and its subsequent effect on ability to work

Gathering data to make the connection between an environmental risk factor (such as air pollution) and its effect on a particular program would be complicated as it is difficult to seek answers to questions like how much income is saved or generated or how much productivity is increased as a result of improved air quality and related health, unless there is a significant amount of data available on the individuals within the program. Similarly, it is difficult to gather data on these variables as well as it is hard to exactly define and measure them. However, studies conducted in other counties in this regard can be used to imply a link between environmental risk factors causing health impacts and subsequently lower productivity, at a more general level. Indeed, the WHO's measure of Disability Adjusted Life Years is an attempt to capture the effect of both illness and early deaths related to a specific disease, and hence overall lower life expectancy. Studies by the University of Chicago similarly suggest that Lahore citizens lose an average 7 years of life as a result of existing levels of PM2.5 air pollution in the city.

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Meanwhile, it is also critical to address the issue of inadequate data collection and the gap it leaves for research in Pakistan. There is lack of air and water quality data which not only prevents researchers to compare levels of pollution over time but also hinders them to study the impact it leaves on indicators such as health and income. Further there is no centralized repository of environmental data, which the community can access directly to learn about its environment. This also prevents analysis to develop appropriate policies to tackle these issues across the country, even though deaths from air pollution are 29 times those from terrorism. There is also no data on the health burden by income quintile, nor an understanding of the health burden faced by lower income quintiles. Furthermore, our surveys do not sufficiently gather information for health, income and productivity outcomes, nor does any existing survey make the connection between health impacts and income/productivity. To change this, would require relevant departments across different levels of government to coordinate with each other and properly administer the collection of data. National surveys could also be re-designed to better measure variables concerning health and income.

### Effectiveness of cash transfers

KPP aims to provide sustainable livelihoods to the vulnerable through cash transfers, therefore, it was important to discuss the effectiveness of these programs and whether health concerns prevent the recipients from paying back their loans. People who apply for loan undergo social and economic evaluation. First, their social status is checked by verifying any previous criminal or default records. Secondly, their business plan and expertise is assessed. Main reasons cited for default (which in the case of Akhuwat is less than 1

percent of microcredit loans) underutilization of loans. People who experience any health problem can also delay paying back the loan as they might have to bear expenses for treatment or their business activities could be compromised which causes them to underperform. However, delay or defaults because of health concerns constitute a very minute portion of loans with delayed payback, because people who borrow loans prioritize paying them back, even at the cost of minor health issues.

### Initiatives and aligning the agenda with KPP

The idea of reducing health consequences due to environmental degradation in order to improve a household's productivity can be approached in two ways. Firstly, environmental degradation should be dealt with at a larger level with the help of policy makers and relevant stakeholders to provide these households with a clean environment. This will reduce the burden of disease among poor which will help them to improve their productivity, attain sustainable income streams, and subsequently aid them to escape the poverty trap. It will also help to ensure equality of opportunity for the children and grandchildren of the poor and vulnerable, as they disproportionately suffer from stunting and related cognitive impacts (such as lowered IQ), thus creating intergenerational impacts for these households. A shift towards a clean environment will however require policy formulation and action across different levels of government (federal, provincial, and local), as well as across different sectoral departments to facilitate improved environmental governance.

On the other hand, awareness and incentives

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at an individual level may also help to address the issue because it is important to inform people about the dangers of pollution on their health and then incentivize them to change their behaviours and habits accordingly. Because of limited income, households do not spend on preventive care. They go to hospitals when something catastrophic happens. Moreover, preventive measures exist: for instance, water chlorination and low cost clean stoves.

However, its adoption is low because people either do not know about them or are hesitant to adopt these measures. KPP can be made more contingent on environmental outcomes that are within individual domain. For instance, farmers given cash loans should be encouraged to use environmentally friendly practices, or giving loans to families who are willing to concentrate on WASH practices as well. However, one thing which needs to be considered simultaneously is that setting too many conditions for the loan might discourage the poor to take up the loan, and may be unfair in that loans for the rich do not carry similar conditions, yet the environmental footprint of the rich is much larger. Further, implementation of green practices is low even among the affluent, who are more informed about the consequences of environmental degradation. Therefore, providing incentives (through reduced interest rate) to adopt green practices could be one approach, including spreading awareness among the poor, but cannot be the sole approach to tackle these issues. Further there is evidence, for example from India, that poor households do not necessarily choose to adopt clean stoves as a health-related preventative measure, despite information on indoor air pollution. Similarly, it has been difficult to get poor households to adopt chlorination of drinking water in Pakistan. Finally, conditions will also increase the cost of monitoring and administering the program.

### Conclusion

KPP aims to improve livelihoods of the vulnerable by increasing income oppor-

tunities for them. Apart from the cash transfer programme, KPP is also focusing on other aspects which affect these households, therefore acknowledging the role of health outcomes on their productivity and poverty. In that regard, the Sehat card is an important innovation that health shocks in the short term. The question remains whether the KPP should serve as an umbrella under which environmental risk factors should also be tackled, in addition to cash transfers?

Based on other countries' studies, environmental risk factors can create a significant burden on the health of the poor affecting their income and savings. Hence addressing these factors could potentially increase the overall net transfers to both KPP households and create a more sustainable way of handling health impacts in the longer term, though this may be tough to monitor and analyze very precisely at the level of those receiving KPP loans unless there is significant additional data collection. However, addressing these environmental risk factors could also help a much greater number of poor and vulnerable households in Pakistan (beyond those accessing KPP loans) to reduce their health burden and hence use their hard-earned income for productive or development purposes rather than on health expenditures.

The workshop was successful in generating a debate on the impacts of environmental degradation on health of especially the poor, poor data collection and lack of research in Pakistan on these issues, poor governance of air and water quality, lack of awareness of health impacts of environmental risk factors, the difficulties of directly linking health impacts with productivity losses in a particular program (despite this being well-established at a more general level), the need for incentives and "nudges" to encourage better behaviours in the longer term, and the importance of coordination between national, provincial and local governments, as well as sectoral departments to effectively tackle these issues successfully through policy interventions.

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