ANALYSIS

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Just Transition in Pakistan

Friedrich Ebert Stiftung

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Foreword

Pakistan stands at the forefront of the global climate crisis, which is intensifying long-standing social and economic inequalities. Floods, rising temperatures, and environmental degradation show that the country's future stability depends on how quickly and how fairly it can shift to a greener, more resilient economy. Yet this transition cannot succeed if it ignores structural realities: weak labour protections, widespread informality, gendered vulnerabilities, and the marginalisation of rural and indigenous communities.

In this context, a Just Transition is not a technical add-on to climate policy but a social and political necessity. For FES, it is rooted in social democratic values of fairness, inclusion, and democratic participation. A Just Transition places workers and affected communities at the centre of economic transformation by protecting livelihoods in carbon-intensive sectors through retraining, income support, and social security; ensuring that green industries create decent, rights-based jobs rather than precarious work; and guaranteeing meaningful consultation with those most affected by climate change and policy reforms.

For Pakistan, where millions depend on climate-vulnerable and environmentally unsustainable sectors, poorly designed climate policies risk worsening unemployment, poverty, and social instability. A Just Transition, by contrast, can turn climate action into a development opportunity by expanding renewable energy, climate-resilient agriculture, public transport, and sustainable industry in ways that create decent jobs and reduce inequality.

For the labour movement, advancing a Just Transition is both protective and transformative. It prevents workers from bearing the costs of environmental reform while positioning trade unions as key actors in shaping an inclusive green economy. Without a Just Transition, climate action in Pakistan will be socially regressive and politically fragile; with it, environmental reform can strengthen labour rights, promote equitable growth, and build a more resilient social contract.

This paper builds on that understanding by offering a research-based assessment of Pakistan's climate challenges and a roadmap for a transition that prioritises social justice. From strengthening labour rights and social protection to investing in public services and decentralised renewable systems, the recommendations affirm that climate resilience and human well-being must advance together.

A Just Transition is not only an environmental necessity but a social and economic imperative. This publication seeks to contribute to a national conversation on how Pakistan can build a fairer, greener, and more sustainable future for all.

December 2025

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Summary

The idea of a just transition is not new. Environmental groups have always intertwined the concepts of justice and the need to move away from fossil-fuel based energy. A just transition in Pakistan's context means that the country needs to develop an equitable, sustainable and healthy polity. Otherwise, its existing social, economic and climatic circumstances will only get significantly worse.

This paper, therefore, focuses on the need to address Pakistan's existing structural inequities. It argues that the country cannot embark on the path of a just transition until it

1. tackles the workplace hazards its farmers, labourers and women face

2. alleviates its increasing environmental pollution

3. stems the displacement of its indigenous populations due to mega-development projects

4. ends the exploitative extraction of its natural resources.

The government of Pakistan must also acknowledge that its fossil-fuel-based economic policies have externalities – that is, their environmental, social and micro-economic costs. It must also end the practice of ignoring these costs for short-term macroeconomic gains. To do so, Pakistan needs to follow a social democratic approach which can counter the narrow financial and economic focus of its policies to include in them a broad social and environmental element, prioritising human well-being over growth and profits.

The problem is that Pakistan's financial situation is so precarious that it is making drastic cuts in its social protection investments. These cuts have worsened the economic situation for those living in poverty and under conditions of extreme inequality in regions that are highly vulnerable to climate change. A related problem is that Pakistan spent over 10 billion US dollars in debt-servicing right after the 2022 floods instead of investing in post-flood revival of the communities affected by it.

There is also indication that the 2022 floods, as well as many other recent disasters in Pakistan, were caused by climate change – something that the country has been contributing to quite significantly in recent decades. The introduction of oil, gas and coal in its energy generation mix has, indeed, tripled its emission of greenhouse gas since the 1990s. Large development schemes, including hydropower projects, have, meanwhile displaced indigenous communities in large numbers in several parts of the country, making them further vulnerable to climatic disasters. Add to this a highly polluting transport system and the picture of Pakistan's environmental profile becomes even bleaker.

Yet another structural roadblock in a just transition is the size of Pakistan's informal economy. It takes away legal protections from workers and allows employers to hire and fire them at whim while

also paying them much less than the minimum wage. More people might become informal workers as Pakistan moves from large-scale energy projects to decentralised and small renewable energy sources.

The agriculture sector offers another challenge, with almost no state presence to monitor wages and other working conditions. Consequently, farm labourers are often stuck in a debt bondage that goes on for generations.

On the other hand, the government's efforts and ability to overcome the problems mentioned above always leave a lot to be desired. From combating environmental pollution to curtailing industrial emissions of greenhouse gases and from fighting against deforestation to protecting the marginalized sections of the society, particularly women, the concerned government departments singularly fail to implement their writ. If they work at all, they often end up benefiting the few at the cost of many. These weaknesses have allowed industries, corporations, agricultural elites, and housing societies to get away with the worst imaginable environmental crimes.

The vast disparities within and across Pakistan's constituent units only make a bad socio-economic situation worse for the marginalised and poorer communities. In Sindh, Balochistan, and Khyber Pakhtunkhwa provinces, as well as in the semi-autonomous regions of Gilgit-Baltistan and Kashmir, infrastructure is much weaker and, therefore, a lot more vulnerable to disaster than the one in Punjab. Even in Punjab, living conditions are worsen significantly for the working populations who are being squeezed out of formal settlements that can be 'gentrified'.

Authorities in Pakistan believe that privatising a large part of the state can offer a way out of the problems listed above. In reality, this solution has caused more problems than it has solved. The privatization drives, for instance, have decimated labour unions

The fact is that the transition to a greener, sustainable and equitable economy and society is not possible without significant involvement of the state. The government, therefore, must put in place the constitutional and legal frameworks required for a just energy transition. It must also develop social, economic and technical infrastructure to ensure the implementation of these frameworks.

Section I: An Overview of Just Transition in Pakistan

Climate change is indiscriminate, it wreaks havoc where it can, unjustly making the global south – and marginalized and poor communities within them – pay for the past and present environmental excesses of the developed countries as well as of their own richer communities. Over the last two decades, therefore, countries in the global south, such as Pakistan, have witnessed a surge in climate-related disasters which have hurt their marginalized and poor communities the most. Consequent to the climatic disasters that Pakistan has faced in recent times, the Indus river, which once shaped the history of civilization itself, has now turned into a mercurial nightmare: floods one year, droughts the next. This nightmare, admittedly, has been made worse by Pakistan's own actions – or, to put it more precisely, the lack thereof. Pakistan has faced repeated challenges in building the physical and social infrastructure required to effectively address climate change.

This situation makes it clear that a transition towards a greener, environment-friendly economic and social model became imperative decades ago – both in Pakistan and elsewhere. The latest iteration of Pakistan's Nationally Determined Contributions (NDCs), submitted to the United Nations Framework Convention of Climate Change (UNFCCC) in September 2025 under its Paris Climate Agreement obligations, makes a commitment to cutting the country's projected greenhouse gas emissions by 50 percent by 2035. Of this reduction, as much as 17 percent will be achieved unconditionally through domestic resources and policies, while an additional 33 percent depends on international finance, technology transfer, and capacity-building support[1].

These commitments notwithstanding, Pakistan's current path towards this transition is too slow and too inconsistent to be effective. Even its most recent NDCs do not include a well-delineated pathway for a just transition, focusing mostly on carob capture, storage and utilisation (CCSU) mechanisms which are highly costly – and, therefore, unaffordable for a poor country like Pakistan – as well as totally untested in any developing country. Most importantly, Pakistan operates within an economic paradigm that puts growth and profits above human well-being.

Without a just transition, therefore, Pakistan's already dire social, economic and climatic situation has the potential to get significantly worse.

A History of the Just Transition Movement

In the global climate discourse, just transition theory has been kept largely in the shadows. This is best exemplified by the fact that it is mentioned in the preamble of the Paris Climate Agreement but not within the text of the agreement. It is, however, not a novel concept at all, having existed for decades already.

1 https://unfccc.int/sites/default/files/2025-09/Pakistan_NDC3.0_24%20Sep.pdf

While there are several strands of the transition framework,[2] this paper will largely focus on the need to address existing structural inequities, hazardous work environments, increasing pollution, displacement of indigenous populations, and the extraction of natural resources.

The roots of just transition can be traced back to 1993, to a movement led by Tony Mazzocchi against the highly polluted work environments in manufacturing plants. The movement sought to resolve a key conflict between the need to curb the damage caused by harmful chemicals in plants and the concerns of workers who were afraid to lose their jobs (Cha 2024, p.29). Mazzocchi's union - the Oil, Chemical, and Atomic Workers International Union - pushed for the creation of a superfund to protect workers who would have to transition out of these jobs and into an entirely new way of life. The union also aimed at creating a safer environment for workers, protecting them from the damage caused to their bodies by harmful chemicals and ensuring a decent standard of living for them.

The connection between a transition and worker protection is not unprecedented. In fact, the history of trade unions and democracy in the workplace can be traced back to the very first transition when coal miners, who were among some of the first to unionize, led the charge for workers rights when the world moved away from using timber and towards using coal as a source of energy (Mitchell 2014, p.21).

Environmental groups have always intertwined the concepts of justice and the need to move away from fossil-fuel based energy. They, however, have been criticized in the past for often overlooking the needs of the workers (Wang and Lo 2021, p.3) employed within the energy industry. Moreover, these groups often focus too much on achieving net-zero – a situation in which emissions of greenhouse gases that cause climate change are not entirely ended but are offset by countermeasures – as soon as possible, ignoring the massive consequences this could have on the human well being in general.

The concept of justice extends not only to workers' rights, but also to the concepts of intergenerational justice and the Common but Differentiated Responsibilities (CBDR)[3] framework. The former concept recognises that the needs of the future generations must be taken into account by not burdening them with the consequences of climate change. The latter concept applies to the greater responsibility borne by wealthy countries with respect to climate action. Together, the two concepts represent where the weight of the burden for the transition must be placed.

In order for governments to ensure a just transition, they first must acknowledge and determine externalities – the environmental, social and micro-economic costs of fossil-fuel-based energy projects. While community groups and environmental experts have been measuring these externalities for several decades, these costs are largely ignored for short-term macroeconomic gains and profits for energy companies, especially in the global south.

Secondly, energy transition, as it is being carried out right now, tends to favour large scale plans that are for the benefits of energy companies and shareholders (Atkins 2023, p.35), instead of the public at large. For instance, the development of wind and solar farms leads to massive amounts of land expropriation from communities, giving them very little in compensation often forcing them into eco-

2 For a deeper insight into the different theoretical frameworks surrounding the just transition, see: Wang, X. and Lo, K. (2021). Just transition: a Conceptual Review. Energy Research & Social Science, 82, p.102291. doi:https://doi.org/10.1016/j.erss.2021.102291

3 The framework was introduced in the Kyoto Protocol signed in 1997 under Article 10 of the agreement.

nomic and social displacement. Moreover, communities are not consulted prior to the implementation of such projects, leading to complaints about damaged environment, noise pollution, higher health bills, and loss of livelihoods despite initial pledges by energy companies to work with and benefit communities (ibid, p.5). This does not mean, however, that they should only be involved at a consultative level and forgotten after that. For communities that host such projects, they should be offered co-ownership of energy projects, share in the management and/or other benefits to incentivise their participation in such projects (Atkins 2023, p.65).

A social democratic approach, therefore, has become a necessity to counter the narrow financial focus of renewable energy projects and expand energy transition to include in it a broad social and environmental quotient that puts a premium on overall human well-being rather than ensuring profits for the few.

Another important community to be affected by the energy transition comprises industrial workers, specifically those who are engaged in carbon-intensive sectors. They tend to fear the shift towards renewable energy, thinking that their jobs will be phased out and they will be left to fend for themselves. Providing them a seat on the transition table allows for the creation of a holistic approach that takes a broader set of viewpoints and integrates them within policy-making instead of prioritizing the needs of the few.

Keeping in mind the human and environmental concerns outlined above, the just transition encapsulates three principles:

1. **Distributive Justice:** The burden of climate change should not be borne by specific groups only, especially communities and workers who are being impacted the most by transition. Those who have contributed the most to climate change must pay back these communities and workers proportionately. Distributive justice emphasises the need for a collective but differentiated responsibility to create policies and devises mechanisms that tackle climate change and energy transition (Imelda 2023, p.8) in a just and equitable manner.

2. **Restorative Justice:** The need for the energy transition has arisen due to a history of damages caused to individuals, communities, and the environment (ibid, p.9). The just transition focuses on righting such historical wrongs.

3. **Procedural Justice:** Workers and communities being affected by the energy transition have the right to be supported throughout the process. Procedural justice means that they are provided the means, materials and representations required for them to participate meaningfully in the energy transition process.

Pakistan's climate vulnerabilities and socio-economic inequalities.

Despite contributing to less than 1 percent of the world's greenhouse gas emissions, Pakistan suffers greatly from climate change. A summary of some of Pakistan's rankings on leading climate change vulnerability indexes is provided below.

Table 1

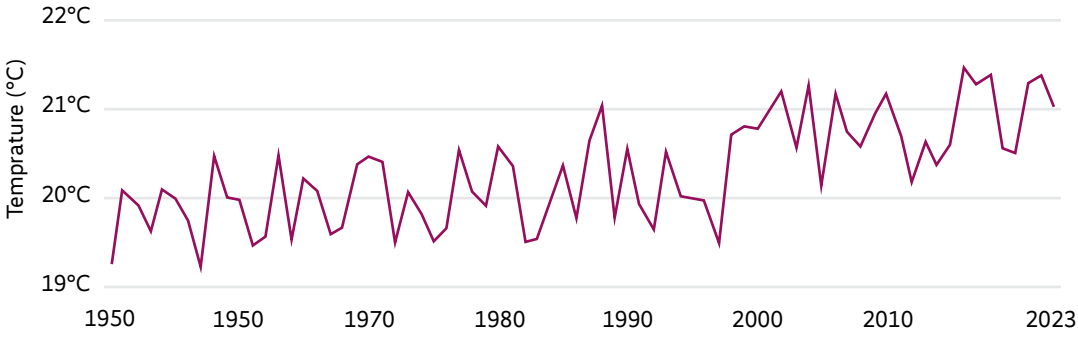
Index	*Explanation*	*Pakistan's Ranking*
ND-GAIN	*The index measures a country's sensitivity and readiness for climate change. A lower rank implies a low level of readiness to climate impacts and a high level of sensitivity to climate change.*	*152* *Sensitivity (higher is worse):* *Readiness (lower is worse):* *0.273*
Climate Risk Index 2025	*Ranks countries based on the costs of climate change - both human and economic. A higher rank suggests that the country is extremely vulnerable to climate change and has faced significant costs already.*	*1st position*
Climate Changing Performance Index (CCPI)	*Measures a country's emissions, quality of climate policy and implementation of renewable energy.*	*31st position*

In recent years, climate-related catastrophes and disasters have devastated Pakistan. Meanwhile, climate change has altered weather patterns, leading to difficulties in planning for most communities that are dependent on agriculture, fisheries and forestry, forcing their members to migrate and restart their lives. This forced migration has, in turn, exacerbated existing social and economic inequalities. The human cost of climate change has been staggering to say the least as natural disasters have led to losses of 29.3 billion US dollars in 1992-2021. The floods in 2022 alone have added damages of 14.9 billion US dollars.

Temperatures have also increased significantly during the summer months along with increased precipitation, though in some areas there has been a reduction in rainfall causing a further deterioration of both environment and livelihood options in arid plains and the coastal belt (Climate Country Risk Profile: Pakistan 2021, p.5). Projected increases in temperature for Pakistan are much higher than the global average as is the increase in the frequency of droughts and floods (ibid, pp.10-11).

Figure 1

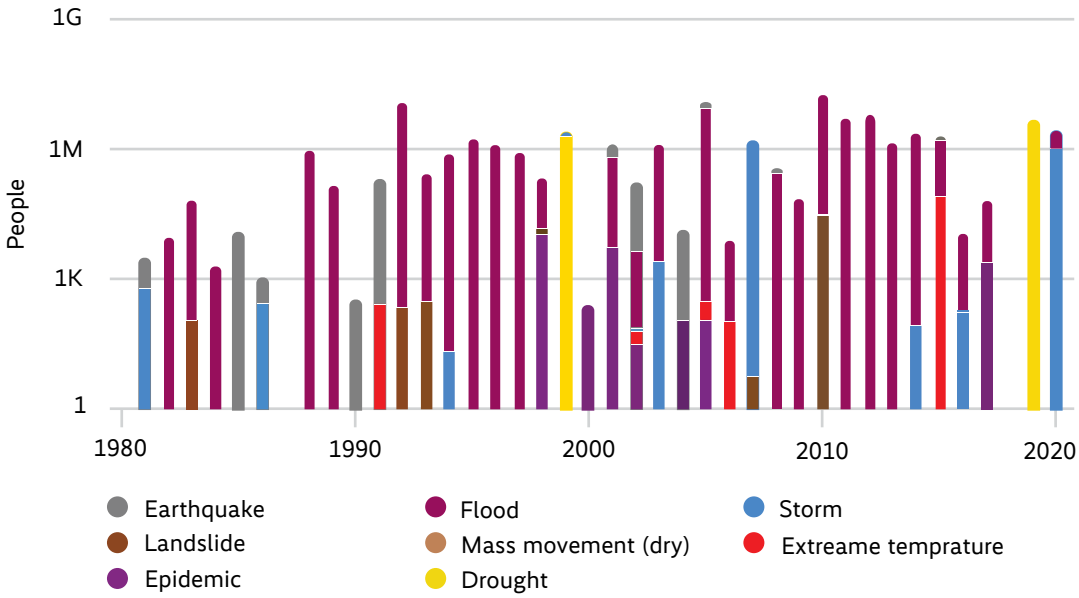
Observed Annual Average Mean Surface Air Temprature of Pakistan for 1950-2023



Source: World Bank Climate Knowledge Portal

Figure 2

Key Natural Hazard Statistics for 1980-2020 Number of People Affected



Source: World Bank Climate Knowledge Portal

Pakistan's ability to respond to climate change, however, is strikingly limited. While a reduction in the emissions of greenhouse gases that cause temperature rise will most certainly lead to a better quality of life as far as the environment is concerned, it will not, at least immediately, address the frequency and magnitude at which these disasters are taking place. As one of the lowest contributors to global climate emissions, Pakistan's transition to net-zero will have little to no bearing on the global system

and subsequently on Pakistan's own climate. In any case, Pakistan requires an investment of 100 billion US dollars by 2030 to fulfil its commitment of emissions reduction under its NDCs.

The irony is that Pakistan's precarious financial situation and its mounting debt have forced it to join an economic austerity program under an assistance package being provided by the International Monetary Fund (IMF), leading to drastic cuts in social protection and climate change related spending. These cuts have worsened the economic situation for those living in poverty and under conditions of extreme inequality, particularly in the northern, southern and western regions of the country which, in fact, are more vulnerable to climate change than its eastern and central parts. In such a state of affairs, only the rich possess resources required to adapt to the constantly changing climate while everyone else has to struggle continuously.

A second irony is that Pakistan spent over 10 billion US dollars in debt-servicing right after the 2022 floods instead of investing in its ability to mitigate climate risks. This lack of investment, at least in part, explains why it has been unprepared for the latest burst of flooding due to heavier than usual rainfall, cloud-bursts, and glacier melting in 2025.

Apart from these disasters which Pakistan is ill-prepared to tackle, the greatest threat caused by climate change in the country is being faced by the agricultural sector, the lifeblood of the national economy. More than a third of Pakistan's workforce is employed in the sector and it contributes to a quarter of the total Gross Domestic Product (GDP). Changes in weather patterns make sowing and harvesting seasons unpredictable and increase risks to crop yield and quality. Some of Pakistan's main crops such as cotton, wheat, sugarcane, maize, and rice are particularly sensitive to temperature changes and can experience a 20-20 percent reduction in yields (Country Climate Risk Profile: Pakistan 2021, p.19) due to altering weather patterns.

Pakistan is also an extremely unequal society with inequalities having been entrenched here since centuries. The agriculture sector is a major example of this where feudal[4] system still prevails, creating unequal returns for landowners, sharecroppers and tenants[5]. Under the current austerity program, it is the poor and working class who have to take on a greater burden owing to the high levels of inflation and a general sales tax imposed on almost every daily use item under the IMF assistance package. While this program has a greater focus on increasing revenue generation, the people who contribute to the state revenues often miss out on the benefits they must receive in return such as reliable and accessible healthcare and education facilities. These sectors have never been a priority in the national budgets, regardless of who is in charge.

For women, in particular, social and economic disparities have become even worse as a result of climate change. To cite just one example, reductions in crop yields and changing weather patterns often result in higher rates of domestic abuse.

The current approach taken by Pakistan, and also encouraged by its multi-lateral development partners such as IMF and the World Bank, focuses on leveraging the private sector and utilizing private finance to bridge the massive gap between the need for climate finance and its availability. While this

4 42 percent of Pakistan's National Assembly members (not accounting for those with reserved seats) derive their incomes from agriculture and landholdings. The majority of these landowners reside in Punjab, followed by Sindh (Noor 2024).

5 While they represent the majority of the agricultural workers in the country, most peasants and sharecroppers are deep in debt to landowners and do not possess proper housing for themselves (Tariq 2019.

approach is still in its early phases in Pakistan, globally[6] it has not yet made any meaningful progress towards reducing greenhouse gases emissions, nor has it led to a reduction in the inequalities present under the current economic system. Instead, it has led to worsening environmental, economic and social conditions for indigenous and marginalized communities and individuals. Corporations, on the other hand, have often used the guise of fighting climate change to obscure or 'greenwash' their practices that are otherwise detrimental to the environment.

6 Despite claims that private finance and blended-finance approaches are key to solving the climate finance gap, it has made very little progress. A better approach has been to use a broader industrial toolkit which utilizes public-private partnerships, public ownership, regulation of private finance and subsidies. For more on this see: Oil Change International (2025). Private Fantasies, Public Realities: Why Private Finance isn't Delivering and Energy Transition and the Case for Public Sector Leadership. [online] Washington, D.C.: Oil Change International. Available at: https://oilchange.org/wp-content/uploads/2025/06/Just_Transition_Report_Private-Fantasies-Public-Realities.pdf.

Section II: Challenges to a Just Transition in Pakistan

Fossil Fuel Dependency and Environmental Degradation

The current energy mix in Pakistan is skewed towards fossil fuels, though this was not always the case. While the initial sources of energy generation in the country were based on thermal energy, there was a significant rise in the use of hydro-electric power for energy generation in the 1970s. This was done largely through the technical assistance and funding by the World Bank, which also arbitrated between India and Pakistan to develop the Indus Waters Treaty. The aftermath of the treaty led to a massive focus on developing infrastructure to regulate and redirect Pakistan's waterways which resulted in the development of large dams – the Tarbela and Mangla – which, in turn, gave a big boost to hydro-electric generation.

By the 1980s, Pakistan was struggling to emerge from a massive economic downturn by engaging with Multilateral Development Banks (MDBs) through structural adjustment lending programmes. During this time, Pakistan's population rose significantly, which did increase the demand for energy. This demand was, however, slightly overstated in the early planning stages. The World Bank, largely responsible for designing Pakistan's energy policy at the time, indeed, created a narrative of a massive energy deficit to continue in the 1990s and early 2000s if nothing was done about it. [7]

To cater to this projected energy deficit, Pakistan devised a policy under conditions imposed on it by the MDBs. These conditions largely favoured the private sector, particularly those from other countries in order to boost foreign direct investment. The policy largely shielded these private investors from financial risks and placed the consequent burden on end-consumers. Enjoying complete freedom to choose the fuel and the site of the prospective projects, the private producers largely opted for thermal energy generation as it was much quicker to develop. Over time, these plants contributed to a massive burden on the economy and the environment through high costs of their fuel, dollar-indexed returns and capacity charges. These issues were made worse due to the perennially depreciation of the Pakistani rupee.

The lessons learnt from the failures of the 1990s were largely ignored when the government came up with a new policy in early 2000s. Pakistan once again embarked on a power generation plan based on fossil fuels. This time, however, there was an emphasis on utilizing gas rather than oil – in accord-

7 The World Bank became heavily involved in Pakistan's energy sector from the 1980s. During this time, the Bank has produced several documents as a part of its Structural Adjustment Programme (World Bank, 1982), the Energy Sector Loans (ESL-I and ESL-II) (World Bank, 1989), and the Private Sector Energy Development Programme (PSEPD) (World Bank, 1994). The key focus in all these documents is on the growing energy deficit due to Pakistan's rapid population growth, creating the need for an increase in energy production The Bank, by its own acknowledgement, was instrumental in designing Pakistan's 1994 energy policy and even acted as a broker between the Government of Pakistan and Independent Power Producers (IPPs). It also provided technical assistance to the Government of Pakistan for the exploitation of Thar's coal reserves and has been heavily involved in dividing the Water and Power Development Authority (Wapda) into several entities including region-based electricity distribution companies (Discos).

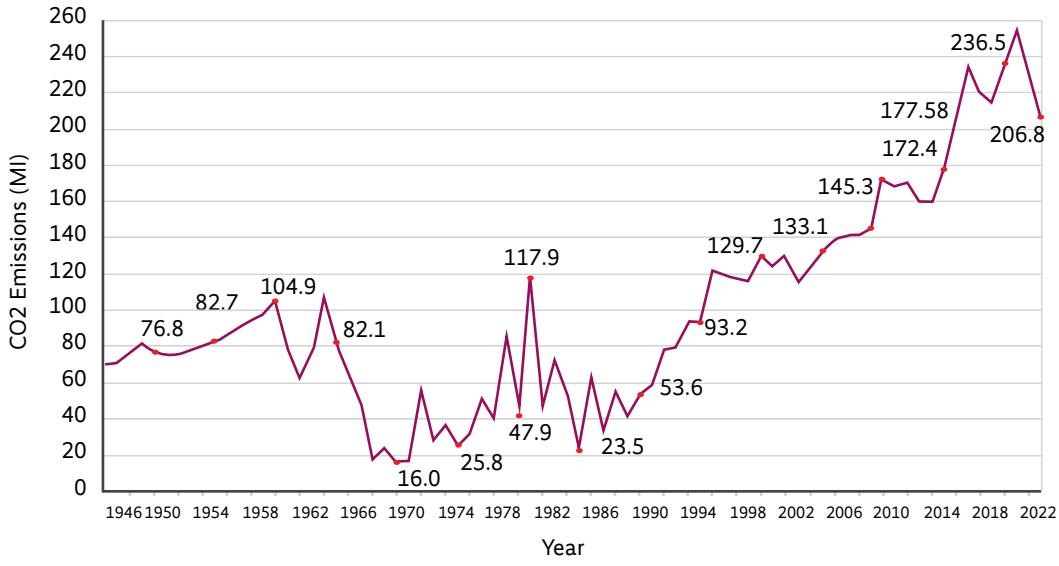
ance with the trend across the world – due to its low financial cost. By the 2010s, Pakistan's utilization of thermal fuels for energy generation had become a deeply entrenched trend. This time, however, there was an emphasis on using local coal from Thar under the monik[8]er of 'Thar badle ga Pakistan' (Thar will change Pakistan).

Neither of these aims were achieved as the foreign exchange costs of the projects only increased energy prices and the local communities have faced even worse consequences as the ecological and environmental damage from the coal-based power plants has wreaked havoc on their health and livelihoods. Despite many local protests against these projects, Pakistan is still on the path to increase investments in coal through tax credits and plans for coal gasification[9]. Importantly, both of these initiatives ignore one of the major issues facing Sindh, the province where Pakistan's coal dreams reside: water shortages. Even though Pakistan has one of the biggest glacier systems in the world, its southern and western parts, including Sindh, struggle with serious water scarcity. Coal development projects, on the other hand, require immense amounts of water. They also cause massive damage to water resources where they are based, extracting water from areas that are already water scarce and polluting the existing reservoirs in the process. That these projects were developed while Pakistan had already pledged to reduce its emissions of greenhouse gases under its NDCs is even more concerning as it highlights the clear contradictions present in the country's policies.

The graph below shows how each of the three major spikes in Pakistan's emission of greenhouse gases – first between 1996 and 1998, second between 2005 and 2010 and the third between 2015 and 2020 – coincided respectively with the introduction of oil, gas and coal in Pakistan's energy generation mix.

Figure 3

CO2 Emissions (Including LUC, 1946-2023)



Source: Our World in Data

8 https://profit.pakistantoday.com.pk/2024/07/30/fbr-allows-100-tax-credit-for-sindh-coal-mining-projects/

9 https://www.dawn.com/news/1878661

As mentioned earlier, the economic costs of developing fossil fuel power plants, too, have been enormous for Pakistan. Their contracts involve capacity payments to ensure that their developers and operators maintain a certain amount of production capacity available all the time regardless of whether that capacity is fully utilized or not. These payments have, over time, compounded significantly due to their poor design, especially their indexation with dollar prices.

In recent times, Pakistan – as well as its development partners – have been reverting to hydroelectricity in a big way when previous hydroelectric projects have turned out to have as much, if not more, negative social, environmental and economic impacts as those based on fossil fuels. Large numbers of indigenous communities have been displaced during the development of dams[10] built to generate hydroelectricity, leaving them with insufficient compensation and forcing them to find new socio-economic sources for sustenance. Both the Tarbela and the Mangla projects caused massive displacements. Tarbela alone was responsible for the displacement of 96,000 people, who were poorly compensated and were largely left to fend for themselves as they were unable to resettle[11]. The Mangla Dam project was even worse, leaving 110,000 people displaced and submerged 280 villages.

The other, and possibly a bigger, ecological problem with hydroelectric projects is that they involve diverting, channeling and restricting river flows, leading to a large amount of environmental problems for communities living near the dam sites as well as downstream[12]. Even if the displacement of these communities is taken care of, rapidly changing weather patterns due to climate change have made hydroelectric power far more unpredictable (Palladino 2023). This unpredictability, along with the fact that dams cause large scale methane emissions from submerged vegetation in their reservoirs (Christopher 2024, p.49) makes them economically infeasible and environmentally dangerous. Both the Tarbela and Mangla Dams not only exemplify such issues, they also show how influential landlords have used their power to ensure that they benefitted from such projects[13], but also show how such large infrastructural projects increase the country's flood risks as increases in monsoon rains due to climate change can force such dams to overflow, bringing great risks to communities who live downstream as they are threatened by the potential opening of the dam gates under already distressing situations.

The electricity sector, however, is not the only large consumer of fossil fuels. In fact, it is the transport sector that consumes the highest amount of fossil fuels in Pakistan – and also emits a large amount of greenhouse gases. In the absence of a reliable and environmentally sustainable public transport system, most of the Pakistanis are dependent on transport that runs on fossil-fuels, including a majority of the working population that uses motorcycles on a regular basis.

10 https://profit.pakistantoday.com.pk/2025/02/18/govt-holds-emergency-talks-as-diamer-bhasha-dam-affectees-protest-over-unfulfilled-promises/#:~:text=Amid%20mounting%20protests%20by%20thousands%20of%20Diamer-Bhasha%20Dam,swift%20action%20following%20an%20emergency%20meeting%20on%20Monday.

11 https://www.culturalsurvival.org/news/pakistans-water-resource-development-endangering-indigenous-ways-life

12 https://researcherslinks.com/current-issues/tarbela-watershed-management-project-historical-prospective-impact-lessons-learnt/41/5/8636

13 https://www.redpepper.org.uk/environment-climate/climate-change/pakistan-flood-climate-change-colonialism-british-empire-imperialism-green-revolution/

Table 2

Rising number of light commercial vehicles in Pakistan:

All numbers are in thousands

Year	*Scooter/ motorcycle*	*Motor Car*	*Taxis*	*Rickshaw*	*Van*	*Pickup*	*Jeep*	*Station Wagon*	*Total*
2019	*14623.3*	*7470.8*	*205.6*	*133.2*	*218.5*	*194.7*	*83.2*	*214.9*	*23144.2*
2020	*22808.8*	*3960.2*	*116.1*	*721.3*	*139.9*	*513.5*	*150.9*	*903.4*	*29314.1*
2021	*24722.3*	*4141.9*	*116.5*	*759.5*	*151.7*	*527.4*	*175.7*	*90.5*	*30685.5*
2022	*26505.2*	*4400.5*	*116.6*	*788.1*	*168.7*	*543.1*	*214.9*	*90.7*	*32827.8*
2023	*27845.1*	*4567.3*	*116.8*	*811.3*	*181.2*	*550.7*	*240.6*	*90.9*	*34403.9*
2024	*28782.9*	*4562.2*	*117.3*	*829.7*	*187.2*	*554.4*	*253.3*	*91.7*	*35378.7*

Source: Ministry of Finance (2025), Pakistan Economic Survey

Ostensibly to discourage the use of fossil fuels in the transport sector, the government has introduced a carbon tax on petroleum products but its critics demand that it will hurt the poorest segments of the society most because they cannot curtail their demand for fossil fuel-based transport for travel between work and home – especially in the absence of a greener alternative.

The government has also publicised an electric vehicle policy which stipulates that 30 percent of all new vehicles to be sold in Pakistan till 2030 must be electric ones. This policy, however, does not offer a clear picture on whether Pakistan has the ability to produce enough electric vehicles on its own to fulfil its 30 percent commitment. If not, then the large scale import of these vehicles will only increase the burden on Pakistan's already meagre financial resources. The policy also does not provide a pathway as to how millions of motorcycles and hundreds of thousands of auto rickshaws running on petroleum can be replaced with electric vehicles within the next five years. Such a policy also overlooks the potential gains that can be made by developing a robust and widespread public transport network. The country is struggling with growing traffic congestion - a problem that is going to worsen over time owing to the constantly growing population, especially in urban areas[14].

Informal Economy

While it is difficult to give a clear number on how big Pakistan's informal economy is, estimates place it around 457 billion US dollars, making it 64 percent[15] larger than the country's GDP, yet it still remains largely undocumented. This informal economy employs 72.5 percent of the workforce outside of agriculture. These estimates err on the conservative side, highlighting the significance of the problem for Pakistan.

The existence of an informal economy is a massive roadblock in a just transition as it prevents policies from being effective, specifically for workers who receive no legal protections in the informal sec-

14 https://www.dawn.com/news/1953204

15 https://tribune.com.pk/story/2466956/informal-economy-64-larger-than-formal-study

tor. It is easier for companies to subcontract the hiring of labourers as informal workers as they can be paid much less than the minimum wage and in the absence of legal contracts[16]. It is highly likely that more people will move into the informal sector as the national economy transitions to renewable sources of energy if this transition is not just. But for this transition to be just, it is imperative for the state to reduce the size of the informal sector and improve its own ability to implement its policies and impose its rules and regulations across all parts of the economy.

Often forced to reside in slums or informal settlements that segregate them from the rest of the city, workers in the informal economy suffer heavily as a result of economic, energy and environmental iniquities. While climate change induced disasters and flooding certainly do not discriminate, they impact those who live in informal settlements far more than others because formally developed areas with functioning drainage and sewage facilities and proper communication infrastructure are far better equipped to deal with these climatic effects.

The agriculture sector is particularly challenging as far as social and economic justice are concerned. The state neither has the presence nor the policies to monitor wages and other working conditions in this sector because of its sheer spread across more than 54,000 villages and tens of millions of acres of land. Consequently, farm labourers are often stuck in a debt bondage, involving unwritten arrangements under which they can buy their freedom only by paying off all their debts – something they find impossible to do even after serving their bondages for more than one generation.

Similarly, the fact that small farmers own only 36 percent of Pakistan's total arable land (Malik 2023) means that landless farmers are cultivating most of the rest of the land on the behalf of absent landlords. Most such farmers have to pay pre-determined amounts of money to landlords regardless of the quantity and quality of the yield. In cases where the yield is lower than the agreed amount, the farmers are forced to borrow from other informal sources as they lack access to regulated private credit facilities (ibid).

A just transition can only be meaningful if farm labourers and landless farmers get better working conditions underwritten by the state. Otherwise, agricultural and irrigation technologies might successfully transition to renewables – as, indeed, they are already doing – but the social and economic plight of these two communities will not change just as it did not change when agriculture transitioned from bulls and oxen to tractors and tubewells.

Equally importantly, the political will to formalize the informal sector should not just be driven by the need to generate more taxation revenues, as it seems to be the case in Pakistan. It should also be guided by the just transition framework, stressing the need for more and better paying jobs with better working conditions during and after the transition process.

Environmental Pollution

Every winter season in Pakistan, almost the entire province of Punjab is covered with a suffocating blanket of smog – mainly because smoke emitted by industries, transport and the burning of agricultural waste combines inseparably with water vapours in the atmosphere. In 2024, the air quality index of Lahore, the second most populous city, hit a peak of 1900[17], significantly higher than the safe limit

16 https://moderndiplomacy.eu/2023/05/02/the-impact-of-pakistans-informal-economy-on-its-overall-economic-development/

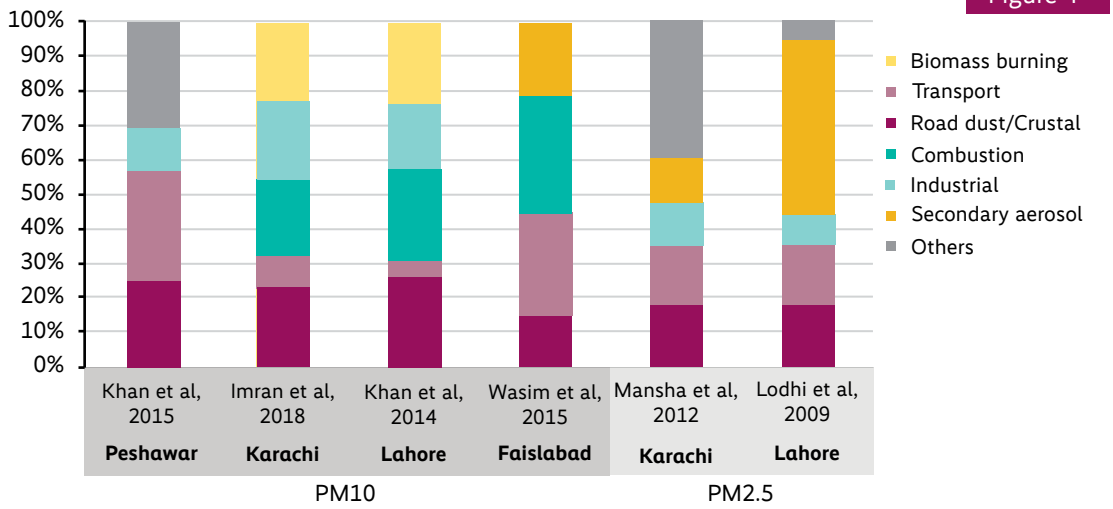
17 https://www.aljazeera.com/gallery/2024/11/4/record-high-air-pollution-shuts-schools-in-pakistans-lahore

of 100 prescribed by the World Health Organization. Every year, several pledges are made and initiatives taken to reduce the level of smog, yet the problem continues to worsen every year.

While the smog impacts everyone, the poor are most likely to suffer the most from high levels of toxins in the air, water, and soil because of their unsafe living conditions[18]. In large cities like Karachi and Lahore, more than half of their population lives in informal settlements where safe drinking water, sanitation facilities and clean air are luxuries available to none of their residents.

The graph below, however, shows that environmental pollution does not have a single source. Not just that. Even the composition of pollution differs across the major centers of population. If nothing else, this complex composition suggests that different parts of Pakistan require different approaches to address their environmental problems. The government, on the other hand, continues to make policies, plans and projects that, following a one-size-fit-all mantra, are devised and enforced without any major regional variations.

Figure 4



Source: Adapted from The Energy and Resources Institute, 'Scoping Study for South Asia Air Pollution' , Final Report, 2019 (p. 17) .

Even when some problems are common across regions, the efforts to address them have been patchy at best and non-existing at worst. For instance, only 1 percent of Pakistan's wastewater is treated properly[19], while the rest is allowed to flow back into rivers and subsequently into the sea. This waste-water finds its way into the canal irrigation system as well, severely impacting the quality of Pakistan's agricultural produce.

Another major failure in this regard is the government's inability to control and curtail industrial emissions of greenhouse gases and other pollutants. This situation is often condoned and even justified by arguing that economic growth will go down if strict action is taken against the polluting industries. Such prioritization of growth over human well being for short term gains – but at the long term expense of the country's ecology and the health of its people – is a classic Pakistani policy model of benefiting the few at the cost of many and ignoring broader impacts to reap immediate and narrow rewards.

18 https://www.dandc.eu/en/article/pakistans-laws-control-chemical-pollution-are-hardly-enforced

19 https://aptma.org.pk/pakistans-textile-industrys-battle-with-global-environmental-challenges/

Gendered Impacts of Climate Change

On the surface, it may seem that the impact of climate change is not gendered, but reality suggests that women tend to be disproportionately affected by abrupt changes in temperature and weather patterns. Pakistani women, in particular, are faced with higher barriers to physical, social and economic mobility than men and due to this they are often the last ones to move out of their homes and villages. Even when disaster strikes, women are rarely equipped with the set of skills needed to protect themselves against climatic changes. Women from marginalized religious and ethnic communities and those living in rural areas face even bigger climatic challenges as the barriers to their mobility are even higher and stronger than the ones facing their urban counterparts.

In Sindh province, several women reported losing their entire livelihoods and going into debt in order to afford basic necessities after the 2022 floods washed away their crops and cattle[20]. Women in the agriculture sector are also often forced into bonded labour in order to pay back the debts incurred by their spouses or other members of the family[21], leaving them even more dispossessed and rightless in times of such crises. A key concern is the lack of attention paid to the safety of women during times of climate related catastrophes. Evidence also shows that domestic and sexual violence is correlated with changing weather patterns due to their impacts on food and income security and mental health[22]. Instability in the household often comes with an increased vulnerability for women who become the subjects of abuse and violence at the hands of the male figures in their households.

Women's health, especially their reproductive health also takes a huge hit due to climate change; pregnant women and girls on their periods facing displacement during disasters are forced to deal with the unique challenge of performing the duties expected of them as mothers, daughters and wives, while simultaneously dealing with health issues without an avenue for support[23]. Having to stay in temporary shelters with dozens of people seeking refuge in a confined space, often in unsanitary conditions and with no access to privacy, women and girls on their periods also struggle silently due to the stigma associated with the subject.

Regional and Locational Disparities

Pakistan's colonial past haunts it to this day. Disparities that were created during the British colonial rule manifest themselves in the unequal development of the country. The northern and central areas of Punjab province are often considered the crown jewel of the country, where a large part of the infrastructural investment is focused. This investment has allowed these areas to be far better equipped to deal with flooding and climate change induced disasters than any other area in Pakistan. In Sindh, Balochistan, and Khyber Pakhtunkhwa provinces, as well as in the semi-autonomous regions of Gilgit-Baltistan and Kashmir, infrastructure is much weaker and, therefore, a lot more vulnerable to disaster than the one in Punjab. Karachi, in particular, is prone to massive flooding during monsoon periods. The entire city drowns within a few hours, meanwhile cities such as Lahore and Islamabad are a lot more resilient in the face of similar natural phenomenon. Balochistan is even worse off than Karachi. For historical, political and geostrategic reasons, it is completely neglected and its infrastructural and socio-economic development have never been considered a priority since colonial times.

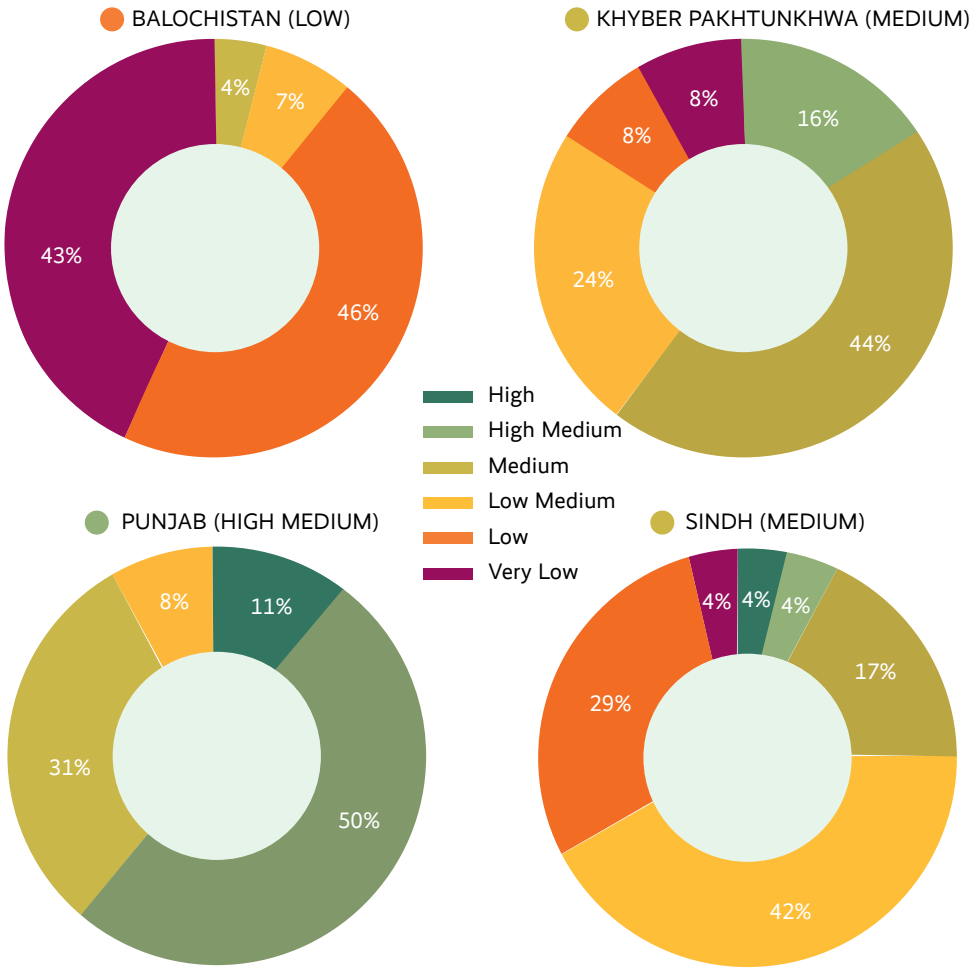
20 https://www.aljazeera.com/news/2023/3/31/pakistans-female-agriculture-workers-suffering-since-2022-floods

21 https://openknowledge.fao.org/server/api/core/bitstreams/c59fd320-0c16-4411-9840-b076fdd67c64/content

22 https://www.preventionweb.net/news/how-extreme-weather-fuelling-violence-against-women

23 https://pjsr.com.pk/wp-content/uploads/2022/10/76.-Vol.-4.-Issue-3.-September-2022-Saif-Raza-Women-and-Climate-Change.pdf

Figure 5



Development level of districts, 2015 (in percentages)[24]

There are vast disparities within the crown jewels too. While a lot of infrastructural development has taken place in them, it has come at the cost of the livelihoods of working class communities who are constantly pushed out of the gentrified urban spaces. The areas in which they live tend to still flood and face other disasters as they lack access to a functional drainage system. These settlements are often located right next to posh areas but they are deliberately concealed from the view behind trees or walled flyovers. As the country grapples with a growing population, especially in its urban areas, these poor conditions are likely to worsen significantly. This particular issue, however, has been consistently neglected by all political parties as they seek to increase comforts for the residents of posh areas, often squeezing the working populations out of formal settlements that can be 'gentrified'.
A related problem is how the government treats the rich and the poor when it comes to using river beds and other water channels for residential, agricultural and commercial activities. While the poor

24 https://files.acquia.undp.org/public/migration/pk/HDI-Report_2017.pdf

are often treated as illegal squatters and are often subjected to eviction drives – as has been the case with those living along the banks of rainwater drains in Karachi – the rich get away with it by legitimising their use of such land through the government permits and directives. In one such case, the large part of a posh gated housing society was built in Lahore on the very bed of the Ravi river. The recent floods have, unsurprisingly, left a major portion of it entirely unlivable. While the floods were unprecedentedly high, it still beats the imagination how municipal authorities allowed expensive housing to flourish right where the river once flowed. Unless, of course, one takes into account the political and economic clout of the developers of the housing society.

A key concern here is the use of land for large scale renewable energy projects. If these projects lead to the acquisition of agricultural land or the land being used by the poor and the marginalized but they benefit the residents of posh urban localities, this, of course, will only exacerbate the existing inequalities. This, indeed, will be nothing less than the colonial practice of taking land away from indigenous/local communities and handing it away to elites, or in this case, those who back such projects financially (banks, energy companies, industrialists, etc).

Weak State Capacity and Institutional Capture

With a sharp focus on development from the 1960s onwards, ecological and environmental issues were largely shrugged off by policy makers and development institutions. When the impacts of the so-called green revolution in agriculture, large dam development, and massive deforestation to clear lands for housing and farming were finally becoming visible and started impacting the public at large, there was finally a push towards introducing some environmental legislation. This legislation, however, was too little, too late – like most people-centered and environmental policies and actions in Pakistan have always been. This weakness has allowed industries, corporations, agricultural elites, and housing societies to get away with the worst imaginable environmental crimes.

A major issue here is the space available to the state for responding to such problems. Over the decades, Pakistan has lost the ability to take both policy and economic decisions autonomously because of its heavy dependence on MDBs for both funding its development projects and maintaining its financial and fiscal status. The consequences have been obvious. With no home grown policies and projects, Pakistan has often relied on one-size fits all formulas developed by the MDBs, only to find them ill-suited to its needs.

The conditionalities accompanying loans provided by the MDBs, too, have decreased the state's ability to devise its own plans. Currently, for instance, Pakistan is under its umpteenth IMF programme, which has forced it to raise revenues and cut down substantially on social sector development. Under yet another program bankrolled by the IMF's Resilience and Sustainability Fund (RSF), which focuses specifically on climate spending, further conditionalities have been imposed for fiscal discipline, decreasing space for financing climate-related projects and initiatives.

The state, on the other hand, has also proven itself to be thoroughly incapable of judiciously using the money provided by the MDBs. In one of the most egregious examples of its ineptness, it has not completed even a single project for the relief and rehabilitation of the victims of 2022 floods even after receiving 10 billion US dollars for such projects from the World Bank and the Asian Development

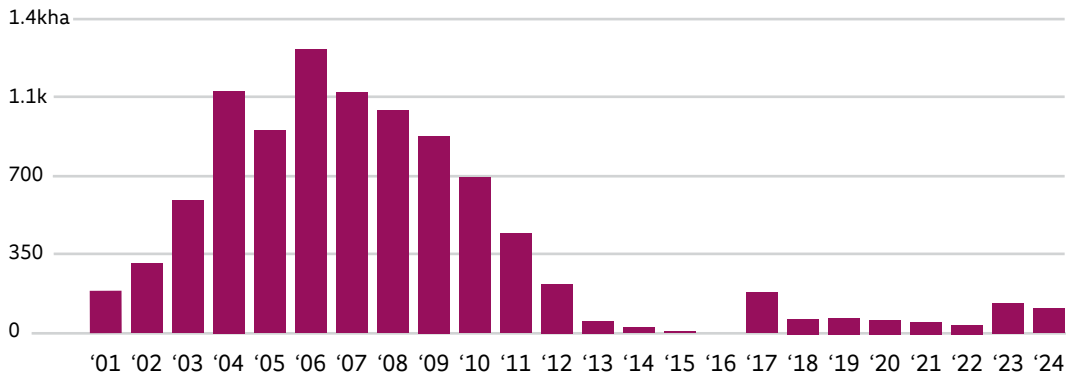
Bank etc[25]. While it is important to highlight here that 8 billion US dollars out of this money are loans and only 2 billion US dollars are grants, an even more worrying fact is that almost all the grant money has been spent on purchasing low quality equipment.

This is not an isolated development. In fact, most of the corruption within the government largely goes unnoticed, unreported and unpunished, perpetuating a consistent pattern in the use of funds meant for providing relief and rehabilitation to the victims of disasters[26]. Funds are often redirected from the urgently needed projects to those that allow political parties to leverage them for electoral gains[27].

One area where corruption and incompetence have combined to decimate natural resources at a reckless scale is the forestry sector. From corporations that benefit from the sale of timber, to politicians who project the illegal felling of forests and from thoroughly corrupt forestry officials to greedy timber smugglers, everyone has contributed significantly to the continued decline of Pakistan's forest cover over the last four decades. The history of this phenomenon is well documented and well known across the country but still no serious action is taken to address it[28]. Even when the governments have been taking steps for reforestation, they were simultaneously allowing the timber mafia to operate with visual impunity. For instance, during the Imran Khan led government (2018-19) a 100 billion tree tsunami project was launched to tackle climate change but the same administration also caved in to pressure from the timber mafia and allowed the sale of both legal and illegal forest logging[29].

Figure 6

Loss of Tree Cover in Pakistan (2001-2024)



Source: Global Forest Watch

If anything, such examples illustrate that the state has neither the capacity nor the space and resources to initiate, handle and maintain a just transition that can help address the climatic crisis that Pakistan is facing. The only option for it to be effective in this regard is to resurrect itself as an administratively responsive, socially responsible, politically representative and democratically accountable version of itself.

25 https://tribune.com.pk/story/2423587/flood-relief-scandal-40-bridges-never-built

26 https://dialogue.earth/en/climate/usd-9-billion-pledge-a-start-but-pakistans-flood-recovery-needs-more-than-promises/

27 https://www.dawn.com/news/696102/billions-meant-for-flood-hit-people-misused-report

28 https://www.dawn.com/news/1647355

29 https://profit.pakistantoday.com.pk/2020/02/01/gb-govt-gives-in-to-timber-mafia-allows-five-month-trade/

Section III: Social Democratic responses to Just Transition

Strengthening labour rights and social protection during the green transition

Pakistan has been slowly eroding labour rights, largely inherited from the colonial era legislation as it pivots towards an economy running on the principles of neoliberalism[30] – with the exception of the first government of Pakistan People's Party (PPP) which made some serious attempts to promote unionization and labour rights. But even PPP, which claims to be guided by the principles of socialism, had a violent disagreement with textile labour unions back in the 1970s.

By the 1980s, however, the state had decided to discard any pretensions of socialism. Its development partners, therefore, gave it technical assistance to prepare pathways for privatizing large parts of the national economy. Although some early steps towards privatisation were also taken in the late 1980s, it took off strongly in the early 1990s and led to the privatisation of many nationalised banks, cement and fertilizer plants, flour mills, cooking oil manufacturing units and road transport networks. The push for privatization of state-run businesses and corporations has continued since then.

Accurate numbers are hard to come by but some estimates suggest that the privatization drives have all but decimated labour unions in the country – with less than one percent of the national workforce being a part of unions. Most workers are worried about losing their jobs if they do join a union. Most of the surviving unions, indeed, are still operating in the government-owned business such as railway, Pakistan international airline and electricity distribution companies. Even where the unions exist, their powers have been cut down drastically, firstly through large scale retrenchments of their members and secondly by bringing in laws that have made it difficult for unions to carry out strikes and protests. Some unions that continue to be strong have become the vehicles of political ambitions of their leaders. Others are known as 'pocket unions' – supported by the corporations to avoid protests and strikes.

With a transition to a new mode of energy production and consumption, it is inevitable that workers employed by the government utilities become redundant and lose their jobs in the coming years.

It is also likely that the state further erodes legal protections for workers in order to incentivize investments in the energy sector. A just energy transition will be impossible to carry out if the rights of many are sacrificed at the altar of the benefit for the few.

A just energy transition framework, therefore, needs to take into account all the above developments to come up with principles and frameworks that guarantee that the workers joining the renewable energy sector have all the legal and constitutional rights guaranteed to them under national and inter-

30 https://library.fes.de/pdf-files/bueros/pakistan/19148.pdf

national covenants and conventions. This cannot be accomplished without a solid legal and regulatory foundation for workers' rights and social protections. This foundation should be accompanied by vocational and skills training programmes so that workers retrenched as a consequence of transition either get alternative jobs in the same sector or become employable in other sectors.

Along with labour rights, social protections have also been reduced drastically under different austerity programmes sponsored and supervised by MDBs in Pakistan. Subsidies once provided to those struggling with inequality and poverty have slowly been removed in order to bring fiscal expenditure in line with structural adjustment programmes being carried out under the IMF auspices. The closing down of the Utility Stores Corporation, which provided subsidized kitchen-use items to the poorer sections of the society, in recent months is the latest example of such austerity measures. Similarly, the subsidies being provided to the poorest consumers attached to the national grid have already been made either too difficult to obtain or their size has been seriously cut down. More importantly, since the ongoing transition will result in a large-scale decentralisation and privatisation of the energy production systems, making the existing national grid either partially or completely redundant, the state will no longer have the means to direct its subsidies to the poorest consumers of energy.

Any energy transition that aims to be just must include mechanisms to provide direct subsidies to the poorest and most marginalized sections of the society, especially those who are losing the support of the state during the process of transition.

Role of the State in Creating Jobs and Infrastructure

Fossil fuels are still available in large amounts and some of them are still relatively cheaper than others. Those who run the fossil fuel projects stand to lose a lot due to the energy transition and have poured millions into lobbying against it. The government of Pakistan, therefore, has a long distance to cover before it can come up with a comprehensive just transition policy, mainly because it continues to rely heavily on fossil-fuels for both energy generation and transport.

On the other hand, it is an established fact that the transition to a green economy is not possible without significant involvement of the state. Firstly, the government must ensure that the constitutional and legal frameworks required for a just energy transition are fully in place before the transition well and truly can get underway. Secondly, the government must develop social, economic and technical infrastructure to implement these constitutional and legal frameworks. This requires creating awareness among people about the environmental and health benefits of a transition to a green economy, devising an incentives structure for investments in renewable energy that does not ignore or sidestep the rights of the workers, communities and groups to be affected by the transition, and putting in place all the technical and other infrastructure required for handling a decentralized energy generation and distribution system that will result from the transition. Thirdly, since the renewable energy systems do not require as large a work force as the systems based on fossil fuels and hydroelectricity did, the government must ensure that the former systems have a far wider presence than the latter systems – thereby compensating for the smaller employment opportunities at individual projects with their bigger number and larger geographical scale. The other avenue to create jobs in the post-transition green economy could be the transport sector. This sector, including automobile production and road transport, employs hundreds of thousands of people. The government must ensure that the transition does not let many of these jobs, especially in automobile production, to shift abroad.

Participatory Policymaking and Environmental Democracy

Policymaking processes in Pakistan are so opaque that nobody really knows how they work. And this has been the case since 1947. As has been explained in an earlier section, the state itself has lost a lot of decision-making space thanks to the involvement of MDBs in Pakistan's affairs. The remaining space is predominantly occupied by unelected bureaucrats and technocrats working within the government, both at the federal and provincial levels. Though this occupation is certainly stronger and deeper during the military regimes, it spares little space for the federal parliament and the provincial legislative assemblies to intervene meaningfully in the policymaking process. The role of these elected institutions remains largely advisory, even ceremonial as far as policy critique and policy accountability are concerned.

This has specifically been the case in environmental and energy policies. While several departments and other institutions have been created for devising and implementing these policies, they do not even feign to get input from the legislative forums. A case in point is the Indicative Generation Capacity Expansion Plan (IGCEP), a federal government document that carries out the cost benefit analysis of the electricity sector's future planning and gives a go-ahead to expansion in power generation according to that analysis. Though the National Transmission and Dispatch Company (NTDC) and its recent spin off Independent System and Market Operator (ISMO) have been devising IGCEP since 2018, they have never felt the need to take the parliament into confidence in its preparation even when it involves decisions about projects worth tens of billions of dollars. In fact, it is a mystery how these two institutions decided to arrogate the right to prepare IGCEP without any clear legal mandate since, in the constitutional scheme, electricity is a shared subject between the federal government and the provinces so, therefore, any planning about should be done about it under the supervision of the Council of Common Interests (CCI) – just like all planning about shared water resources has to be done under CCI.

For a just transition to be democratic, participatory, inclusive and transparent, all the government policies, plans and projects must not just be examined, critiqued and endorsed by the relevant legislative forums, they must also seek and include inputs from independent research institutions, civil society organizations and, most importantly, the people to be directly affected by them. Here it must be ensured that those claiming to be the representatives of social society and affected communities have genuine credentials and are not propped by corporations and state officials to rubber stamp their ideas. As writer Arundhati Roy aptly remarked, "There's really no such thing as the 'voiceless'. There are only the deliberately silenced, or the preferably unheard." The transition to a green economy cannot be just unless it makes sure that those deliberately silenced and preferably unheard are able to raise their voices and make themselves heard.

Investing in healthcare, education, and community resilience

Pakistan spends very little on healthcare and education as these two sectors collectively account for roughly 2-3 percent of the federal government's development spending. Debt servicing, military expenditures and the salaries as well as other perks and privileges of the government's employees take up more than 90 percent of the government's annual income, leaving very little money for social sector development. It is, indeed, ironic that the proportionate expenditure on this sector has been decreasing since the 1980s while the population of the country has been increasing rapidly in the same period.

A just transition to a greener future must reverse this trend. Investing in research and education as well as in reliable healthcare can help Pakistan create an economy and a society that is resilient to climatic shocks because it will be capable of handling its natural resources, its environment, its financial resources and its human capital in a better and effective manner. The transition should not just focus exclusively on economic growth rate, it must also take care of human well being that comprises mostly, if not entirely, if people have skills and capabilities to live and thrive in a reliably stable and sustainable society.

A just translation process, therefore, should pay attention to the long-term impacts of investments in education and healthcare in particular and people's well being in general. It must replace a growth-dominated social and economic paradigm that prioritises short term financial gains over long term sustainability of natural resources, environment and livelihoods.

The focus on education has multiple benefits. While communities dependent on natural resources for earning their livelihoods – such as farmers, fisherfolk, livestock herders – can learn new techniques based on the most recent research to ensure the replenishment and sustainability of the resources they use, planners and policymakers can take advantage of the higher academic and research capabilities to devise policies, plans and projects that contribute to the general human well being instead of pandering to the profit-driven economic agendas of the elite.

Lastly, the transition to a green economy requires a massive increase in digital literacy. This is especially true for Pakistan where even the general literacy rate hovers around 60 percent. With as many as 40 percent Pakistan not being able to read and write, it is unimaginable how the country can successfully manage the social and economic consequences of a transition that will uproot large parts of the old economy and replace them with digital-heavy new ones. A healthy, well-educated and skilled populace is as much imperative for a just transition as the phasing out of fossil fuels is. Otherwise, Pakistanis will be ill-prepared to benefit from the employment and economic opportunities to be created both during and after the transition.

Section IV: Case Studies and Comparative Models

South Africa's Just Energy Transition Partnership (JETP)

JETPs are a collaboration between developed and developing economies in order to provide the developing economy with important climate finance to accelerate the green energy transition (Shai 2024).

South Africa's JETP model has been built on the principles of the country's constitution, placing an emphasis on the need for a people-centered energy transition (ibid). In particular, there is a focus on the government, with the help of foreign assistance, facilitating an increase in the pace of an energy transition from fossil fuels to renewable energy, whilst maintaining a decent standard of living for workers who will be impacted the most.

South Africa's energy sector suffered from many of the problems that Pakistan also suffers from. The state-owned electricity company - ESKOM - was draining money, racking up large amounts of debt while underperforming in terms of electricity production and access (Vanheukelom 2023, p.5)). More importantly, the country was heavily reliant on coal for energy generation in part due to significant lobbying by those in the coal industry and supply chain (ibid, p.6). The JETP is aiming to utilize its current funding to retire coal-fired power plants and provide workers in the industry with opportunities to re-skill along with financial support during the transition. Furthermore, a part of the transition involves deregulation and the unbundling of the state-owned companies, aiming to increase private investment to bring down the funding gap that currently exists (Tyler and Mgoduso 2022, p.6). Given the high capital requirements of renewable energy projects, the South African government believes that the initial investment will act as a catalyst for further investment by the private sector.

There are several issues within the approach, however. Pakistan had attempted a similar approach in the 1990s when its power sector was facing significant problems. Increased private investment through a massive government encouragement program was undertaken after taking loans and technical assistance from MDBs. While they resulted in a massive influx of foreign investment in the short-run, the negative impacts of these policies are still being felt today. In developing countries, and even in developed countries in many cases, private investors require several concessions to be granted to them, maximizing the benefits for themselves and socializing any costs involved in the process. Similar results are being seen in South Africa as well, as there are already concerns about private industry not caring enough about the workers who are involved in the energy transition and a lack of focus on re-skilling the workers who are impacted. More concerningly, many coal power plants are still being kept in operation despite initial plans to phase them out due to a worsening of the energy crisis since the beginning of the JETP. Furthermore, the country is already facing high levels of debt and is utilizing more foreign loans to finance the energy transition, putting future generations at risk of further economic crises, along with reduced fiscal maneuverability as more funds are put aside for debt servicing.

The consultative process involved in the JETP is an encouraging action. As a part of the programme, a presidential commission was created to engage with several stakeholders from the business community to small indigenous communities and workers. Whether these consultations lead to meaningful changes at the policy level remains to be seen as different stakeholders hold varying levels of political power and the ability to influence.

Another encouraging point is that JETPs do serve the CBDR and restorative justice frameworks by involving richer countries in providing the necessary financing to carry out such programmes. The funding is still, however, much lower than the actual damages done or enough to cover the financial needs of global south countries. Secondly, they still ignore the massive amounts of debt still owed by the global south to rich, western nations largely due to policies dictated by MDBs that give the largest number of voting rights to the creditor nations.

Lessons from Europe's Green Industrial Strategies

In principle, Europe's Green Industrial strategy is not too dissimilar from that of South Africa - both aim to be catalysts for greater levels of private funding whilst maintaining a 'people-centered' approach. The key difference is largely that Europe has access to a lot more financing than countries would in the global south, which explains the higher level of government activity involved and allows them to identify the sectors that are at most risk, while enhancing the manufacturing capacity of the EU in competition with China, which has come to dominate the market. The higher level of available financing allows the EU and EU countries to increase their levels of investment in the economy without relying too much on the private sector (Draghi Report 2021, p.18). An increase in private finance here is seen as more of a consequence leading from a policy instead of the larger policy aim itself.

There is a much larger emphasis on re-skilling workers and providing them with a safety-net through social programmes, which are already well-established in many EU countries. A great amount of research has gone into identifying the true potential of the green economy and the jobs that can be created by it in order to shift workers from fossil-fuel based industries into greener jobs. Furthermore, the EU already has a significant research base through its higher education institutions and through a great amount of funding provided to maintain their research advantage, allowing them to be ahead of the curve in creating more opportunities within the green economy. A key component of the EU strategy is to increase its research base by investing more in public research institutes and universities, while also encouraging the growth of innovation and start-ups in order to develop more clean jobs (Draghi Report 2021, p.34).

The most encouraging part of the EU plan, along with the approach represented by the United State's Build Back Better plan and China's own industrial strategy which prioritizes increasing the competitiveness of its industries abroad, is the return of industrial strategy policy-making (Draghi report 2021, p.16)instead of letting the markets do their work on their own. Such policy-making should not be a privilege and must also be extended to Global South countries, most of whom are still stuck creating short-term policies and deal with economic and environmental crises as they come. Emerging industries, specifically those in the green economy, must be encouraged along with a focus on protecting the workers within these new industries.

There is very limited focus, however, on how communities will be involved in such projects. A large issue in many EU countries is the growing backlash to the growing renewable energy sector due to how many communities are being affected by them. The current EU green plan still lacks a cohesive policy to deal with this issue and is continuing to push for more de-regulation in order to incentivise the pri-

vate sector. While the South Africa approach at least pays lip-service to the idea of protecting communities, the EU plan is largely about building a foundation for the private sector without considering the consequences of letting that happen. Whether or not the private-sector led approach works still remains to be seen in the energy transition. What is important to note, however, is that this is the approach taken by most economies around the world and in the case of the global south, an approach that they are told to take.

Regardless of the merits of the approach itself, what can be done now is to advocate for enough regulations within it to protect the environment, provide protections and skills to workers in the transition, create jobs that provide for a decent quality of life, and ensure that the transition is achieved as quickly as possible.

Local movements and community-led environmental justice in Pakistan

Community-run mini hydroelectricity projects in Chitral show what a post transition green future may look like. People living in the far off villages in the mountainous district – where grid electricity has failed to reach due to the absence of a transmission and distribution network – are celebrating the positive changes that these mini hydroelectricity projects in the local education, healthcare and agriculture sectors[31]. These projects – having electricity production capacity ranging from 25 kilowatts to 800 kilowatts – were set up by some non-governmental organisations but are run by the committees set up by the villagers themselves.

In other places, such as Khanewal, communities are coming together to set up mini and micro grids linked to solar power generation – a model that can be easily replicated anywhere in Pakistan. It can not only provide cheap and clean energy to communities that otherwise did not have reliable and affordable access to sustainable sources of energy, it can also promote both local economic activity and the well being of local populace without requiring a massive and irreversible exploitation of national resources.

At the other end of the spectrum are people of Thar who have been protesting against the social, economic and environmental impacts of coal mining and coal-based power generation in their region. Since these projects began in 2013 onwards, the residents of Thar have taken multiple actions to record their displeasure over them. They set up a sit-in camp in front of a local press club. This protest continued for more than 600 days. They also took out a protest caravan that set out from Thar on foot and walked all the way to Karachi. They launched a legal challenge against the disposal of wastewater produced during coalmining. They held people's tribunals, wrote letters to government officials, corporations and financiers associated with the projects and they engaged civil society organizations and news media to make themselves heard.

Though they have not succeeded in making the government address their grievances, they have still made some remarkable progress. For instance, the government of Sindh has put a moratorium on setting up new power plants in Thar after agreeing with the local communities that the water required for generating more than 4,600 megawatts of electricity through coal in Thar is simply not available. Similarly, a few weeks ago, the provincial government also conceded the local demands that disposal of wastewater in a local pond be stopped because it had wreaked serious environmental damage in the area.

31 https://www.dawn.com/news/1589009

It is clear from these examples that a strong community engagement is imperative if the transition to a green economy has to be just, successful and effective. It is, therefore, important that the government not just allows communities to engage fully with the process of policymaking and policy implementation, they must also be incentivized and facilitated to co-own and manage the projects that are meant for their social and economic development.

Section V: Policy Recommendations

Roadmap for embedding social justice in climate and energy policies

→ Pakistan urgently needs more inclusive, effective and efficient data collection in all social sectors to prepare itself for a just transition.

→ Immediate attention must be paid to climate adaptation in order to reduce the damages to lives and infrastructure that is caused every year.

→ Pakistan already participates in the NDCs but its current focus is largely on some marginal emissions reductions and not much beyond. Again, this will not reduce the damage being caused to the country by Climate Change - there has to be a focus on developing a climate-resilient economy and infrastructure as well in order to protect the most sensitive sectors and also protect people in the most vulnerable areas.

→ The country's generation and transmission planning must look at the impacts not just on the country's generation and transmission capabilities. Attention must be paid to the social consequences of such plans and their environmental impact.

→ Awareness raising campaigns need to be launched in collaboration with vulnerable communities and labour unions to highlight the issues and problems that they are facing.

→ Introduction of re-skilling and skills training programmes - but Pakistan is already really not close to getting here right now. This could be a long-term focus.

Institutional reforms and financing for a just transition

→ CBDR principles must be followed; climate financing from the developed countries must come in the form of grant-based and concessional funding that is specifically focused on climate change and the just transition and not through debt-based financing.

→ Debt forgiveness should also be considered.

→ Industrial planning needs to be a consideration as well, following the model adopted in the European Union and China. Pakistan risks being left behind if it continues with the business as usual approach.

→ There must be comprehensive planning for urbanisation and developing climate-resilient infrastructure. The focus should be on financial and administrative decentralization, backed up by a genuinely empowered local government system that can ensure a robust and effective monitoring

and accountability of development projects. Local communities must be given a strong say in development projects that affect their way of life strongly – such as mini hydropower projects or even mini and micro-grid systems.

Policy tools for inclusive planning: social dialogue, climate-budgeting, and labour climate coalitions

- Creation of climate commissions that create dialogue between Civil Society Organisations (CSOs) and Non-governmental Organisations (NGOs), communities and the government when it comes to policy-making. Specific attention must be paid to communities who are deeply affected by the energy transition and also due to climate change. It is quite likely that these communities face more difficulties in travelling out to the center, therefore, either the government needs to facilitate their travel or they need to visit these communities themselves.

- Pakistan's climate budget is still poorly developed due to very little fiscal space to spend money on it. There must be a proper assessment of immediate adaptation and mitigation needs in order to focus current spending on the most immediate needs of the country. Adaptation will likely take more precedence due to the damage being caused by climate change and mitigation policies should be designed carefully.

- It is in the best interests of CSOs) and NGOs to reach out to labour groups and workers in order to advocate for safer work spaces and for just transition mechanisms - the need to re-skill these workers and to ensure that they find new, greener jobs as we accomplish more of the transition.

About the author

Muhammad Badar Alam is the chief executive officer of the Policy Research Institute for Equitable Development (PRIED), an independent Islamabad-based think tank focused on just energy transition and climate justice.

He started his professional career as a journalist in 1992 when he became a researcher and writer for daily Jang's Sunday magazine in Lahore. Afterwards, he worked on senior editorial positions with several leading news organizations including daily The News International, The News on Sunday and Pakistan's premium English language monthly magazine, Herald, which he joined as its bureau chief in Lahore in 2007. In 2010, he became the editor of Herald and continued to work on this positon till July 2019 when the magazine's independent editorial policy and fearless investigative journalism led to its forced closure. In April 2020, Mr Alam co-founded loksujag.com, a news website focused on amplifying voices from the margins of power. He served as its chief editor till 9 November 2022.

Mr Alam has also been the executive director of Rural Development Policy Institute (RDPI), a non-government organization based in Islamabad, between September 2019 and February 2022 and a director of Sustainable Development Policy Institute (SDPI), an Islamabad-based think-tank, between August 2019 and March 2020.

Just Transition in Pakistan

This paper argues that a just transition in Pakistan requires addressing deep structural inequities before shifting from fossil fuels. It calls for tackling unsafe working conditions, environmental pollution, indigenous displacement, and resource exploitation, while accounting for the social and environmental costs of energy policies. Amid debt, austerity, climate disasters, informality, weak governance, and flawed privatization, the state must adopt a social democratic approach and build strong legal and institutional frameworks for an equitable, sustainable future.

Further information on this topic can be found here:
↗ **pakistan.fes.de**

Friedrich Ebert Stiftung