



Educators on a Heating Planet: Shaping Education Unions' Vision for a Just Transition

Alanah Torralba
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Education International (EI)

Education International represents organisations of teachers and other education employees across the globe. It is the world's largest federation of unions and associations, representing over 32 million education employees in 383 organisations in 178 countries and territories.

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Executive Summary

Amidst an aggressively heating world, a just transition for educators has become a matter of urgency. Educators are already on the frontlines of climate change: every day, they are contending with the worst consequences of changes to the world's climate. From extreme hurricanes and storms to massive flooding, prolonged droughts, severe heatwaves, and sinking islands, climate change is already altering the education sector in indirect yet profound ways. Thus, educators are stakeholders in the discussions surrounding climate action and the crucial project of shifting to a low-carbon world.

The goal of averting irreversible climate change can only be achieved through a fundamental reorganisation of society. Decarbonising the global economy is imperative to this end, which means phasing out fossil fuel dependence and reconfiguring societal development to adhere to planetary boundaries¹. However, the necessary task of decarbonisation has also stoked fears across the globe of potential economic collapse.

In particular, the 'jobs vs nature' binary insists that any initiative to move to a low-carbon economy will come at the expense of economic growth and, by extension, workers' rights. In response, the trade union and climate justice movements have forged the concept of a 'just transition' to address the political anxieties being provoked by climate change and the policies designed to tackle it. In a nutshell, a just transition seeks to promote social protection to cushion the effects of a low-carbon industrial transformation on vulnerable groups. Recently, it has evolved into a framework through which policies are envisaged to address the inequalities being exacerbated by climate change within countries. It is in this context that educators have approached the impacts of climate change on their sector and the just transition discourse.

Educators who participated in the study "Educators in a Heating Planet: Shaping the Education Unionists' Vision for a Just Transition" are unanimous in pointing out the ill-preparedness of education infrastructure for the recent worldwide spate of severe heatwaves. Climate change has underscored the ongoing deterioration of many education systems with the increasing intensity, frequency, and unreliability of storms, hurricanes, and typhoons causing damage to many poorly maintained education buildings. Decades of state neglect of social services mean that education systems are now unable to develop climate

1 Steffen, Will, et al. (2015). "Planetary boundaries: Guiding human development on a changing planet." *Science*, vol. 347, no. 6223. <https://www.science.org/doi/10.1126/science.1259855>



resilience. This has resulted in school calendar disruptions and diminished teaching capacity among educators. In some cases, climate impacts are compounding the workload of educators, especially in the aftermath of climate catastrophes. Moreover, the alarming rate with which sea levels are rising is also threatening the viability of island communities. The threat of sinking islands has massive consequences for the ongoing existence of local education systems.

A just transition for educators, therefore, is primarily concerned with addressing the adaptation needs of the sector and the communities that they serve. Educators see a substantial role for themselves in their communities; their concerns for environmental protection cannot be understood separately from this. Thus, while the job status of educators may not be directly imperilled by a shift to low-carbon industries, they are still affected by the ripple effects of job losses on their communities. Hence, many education unions feel strongly about building climate resilience in their schools and universities as well as their communities. They see this project as multi-pronged: the education sector must shift to renewable energy sources; education facilities should become resilience hubs in their communities; educational institutions should begin the process of disentangling their finances from fossil fuel companies; and, finally, governments must increase investment in public education as a climate-adaptation strategy.

On a broader scale, educators believe that the profession should be recognised as a 'low-carbon jobs sector' because they also have an integral role to play in the transformation of global economies and the workforce. Educators believe that the public education sector should lead the re-skilling and training of the workforce for low-carbon industries. The transition must, in no way, become another private enterprise venture that reproduces existing economic, racial, and gender inequalities by restricting access to the majority through exorbitant tuition and fees. Hence, the educator's fight against privatisation must continue in the transition to a low-carbon world.

Finally, education unions see an opportunity in the just transition discourse to deepen their involvement on climate change and remain relevant to their members and communities. Aside from advocating for quality climate education for all, engaging with just transition is a way to spotlight the tangible impacts of climate change on the working conditions and future prospects of the education sector. Hopefully, this inspires education unions to recognise that the simultaneous crises surrounding education and climate change can only be confronted through collaboration, solidarity, and collective action.

Introduction

The onslaught of extreme weather events and the impending slow onset impacts of climate change are constant reminders that we are living in a climate emergency. Every day, more frequent and intensifying typhoons, hurricanes, floods, and droughts are deepening existing inequalities for the most vulnerable people across the globe. Among small island states, rapidly rising sea levels are threatening the existence of communities themselves. In a stark warning, the world's leading climate scientists² have claimed that the planet is set to overshoot the dangerous limit of global temperature rise by 2030, unless massive cuts in greenhouse gas emissions are made today.

There is no doubt that a comprehensive reorganisation of society is urgently needed in order to curb runaway climate change³. Primarily, carbon emissions need to be slashed by at least 50% in less than 10 years so that global heating does not exceed the 1.5°C safety threshold⁴ as expressed in the Paris Agreement⁵. Rapid decarbonisation of the world's economies is paramount to this end, which means that power generation, as well as goods production, needs to urgently shift from being predominantly fuelled by fossil fuels to renewable energy such as solar, hydro, and wind.

Aside from existential threats, climate change has also triggered political anxieties the world over. Uncertainty over the negative impacts of decarbonising the global economy has been at the centre of these anxieties, particularly in terms of choosing between reducing emissions to prevent further climate chaos and protecting workers' rights and the economy. In a nutshell, this supposed trade-off contends that climate mitigation, labour rights and economic development are incompatible with each other because building renewable energy pathways will drive the world's economies into collapse. Workers, supposedly, will suffer the brunt of the low-carbon transition because they will lose their jobs or become 'obsolete' in this new energy paradigm. In the past, this debate was used by corporations to sow division among workers and

2 IPCC, 2022: Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001.

3 Runaway climate change is a theory that posits that even a slight rise in global temperature could trigger abrupt and irreversible changes to the Earth's systems, which can reinforce catastrophic feedback loops. For instance, the disintegration of ice sheets in Greenland due to rising temperatures has been attributed to a global sea level rise of seven metres. Scientists often refer to this as passing 'tipping points'. To understand this better, here is an explainer on tipping points: <https://www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change/>

4 DW.com (n.d.) IPCC: World must halve emissions by 2030. Available at: <https://www.dw.com/en/ipcc-world-must-halve-emissions-by-2030/a-61348250>

5 The Paris Agreement is a landmark climate treaty that aims to limit global warming temperatures well below 2°C by the end of the century. To date, the legally binding agreement has been adopted by 197 nations, or nearly every country in the world.



communities that were at the peripheries of polluting industries⁶. Presently, it is still being invoked by fossil fuel companies to derail policies that are aimed at directing large-scale emissions cuts, even though the same companies had long been aware of the links between their products and global warming⁷.

Environmental groups, climate justice activists, and trade unions have united to debunk these falsehoods. Out of these contradictions, civil society groups and trade union movements have proven this binary to be fundamentally untrue. This has given rise to the concept of a 'just transition'.

Just transition, a unique concept that seeks to address climate crisis-related inequalities within a country, is a trade union-generated idea that broadly aims to promote equity in policy solutions geared towards tackling climate change. It centres the welfare of the most vulnerable by demanding that climate justice stands at the centre of climate action. Moreover, it acknowledges that labour rights and climate protection are critical precepts of climate justice, as it recognises the interconnectedness of the root causes of these issues.

Education International, in response to the growing challenges being presented by climate change to education unions, launched its *Teach for the Planet* campaign in 2021, directed by a *strong mandate for climate action* from its 2019 World Congress. Aside from advocating for quality climate education for all, Education International has also recognised that educators must engage in the debates surrounding a 'just transition' because of their increasing status as stakeholders in the climate crisis. Educators are already feeling the escalating impacts of the climate emergency in their personal and professional lives. On a daily basis, they have to endure, alongside their students, punishing heatwaves as well as harsher winters because of the ill-preparedness of the education sector to respond to changing weather patterns. Typhoons and hurricanes are also demolishing not just education infrastructure but also the homes of educators, rendering many homeless. With the advent of rapidly rising sea levels, education units also stand to be wiped away, unless critical policy interventions are made now.

This study seeks to provide an overview of the ways that climate change is altering the education landscape and profession. Through a series of interviews with representatives of Education International affiliates and collaborators, it collated the experiences of educators in the face of worsening climate change. As the trends of declining job security and shrinking civic spaces are

6 One of the biggest environmental regulation wins in the 1970s in the US was the Clean Air Act, which sought to restrict hazardous pollutants and emissions from industrial activities. In response, corporations commissioned studies that would undermine the law by arguing that environmental regulations would result in economic and productivity losses (See: Gollop, F.M. and Roberts, M.J. (1983) "Environmental Regulations and Productivity Growth: The Case of Fossil-Fueled Electric Power Generation", *Journal of Political Economy*, 91(4), pp. 654–74. Available at JSTOR, <http://www.jstor.org/stable/1831072>).

7 Franta, B. (2018) "Shell and Exxon's secret 1980s climate change warnings", *The Guardian*, 19 October. Available at: <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/sep/19/shell-and-exxons-secret-1980s-climate-change-warnings>.

exacerbated by climate change, this study also aims to advance the concept of a 'just transition' in the education sector, as a framework through which a collective response to the crisis can be harnessed. Finally, the study hopes to encourage dialogue among educators who recognise that climate protection is integral to the future welfare and progress of education unions worldwide.

What is a Just Transition?

Just transition, which traces its roots to the trade union movement, is a concept that centres justice and equity in any plans to reduce emissions or systemically respond to the impacts of climate change. While no singular definition exists, the just transition discourse broadly advocates institutional and policy reform to protect vulnerable groups from the devastating impacts of climate change and to expedite a shift to a low-carbon economy. It is both an emergency response to climate change as well as a longer-term stratagem for structural policy reform and economic reorganisation.

An Overview of Trade Unions' Involvement in Environmental Issues

The origins of the just transition concept can be traced to the trade unions in North America in the 1970s. In particular, it was the Oil, Chemical and Atomic Workers' Union (OCAW) in the United States (US) that first propagated the idea that environmental and social concerns should be reconciled to become a rallying point at the workers' 'first environmental strike' against the health and safety issues at Shell refineries⁸. In collaboration with labour leaders from Canada and other US states, OCAW's Tony Mazzochi, renowned American labour leader, recognised that the industries that employed them were causing the health and environmental issues that the unions had been striking over⁹. The group believed that by mobilising communities and workers, it was possible to generate policy responses that simultaneously addressed environmental and labour concerns.

Concurrently, these industries were committing rampant environmental pollution which left many communities mired in health and environmental problems¹⁰. As communities and workers began to coalesce to demand stricter

8 Morena, E., Stevis, D., Shelton, R., Krause, D., Mertins-Kirkwood, H., Price, V., Azzi, D. and Helmerich, N. "Mapping Just Transition(s) to a Low-Carbon World." United Nations Research Institute for Social Development.

9 *Ibid.*

10 *Ibid.*

environmental laws, corporations responded by spreading disinformation and commissioning studies that warned of massive job losses as a direct consequence of more stringent regulations¹¹. In spite of this, trade unions were able to recognise the importance of upholding environmental safeguards alongside job security and community safety. Hence, the network of unions and labour organisers proposed the 'Superfund for Workers'. This was a comprehensive plan of action that responded to the brewing antagonism between labour and the environment by building a compensatory fund for workers and communities affected by the activities of energy industries¹².

Amidst growing environmental struggles, in 1995, Les Lepold of the Labor Institute and Brian Kohler, a labour leader from the Communications, Energy and Paperworkers Union of Canada (CEP), coined the term 'just transition' at a presentation to the International Joint Commission on Great Lakes Water Quality¹³. It was the first articulation of the burgeoning movement's ethos.

In succeeding years, ongoing union collaboration led to the birth of the Just Transition Alliance (JTA)¹⁴. Through this initiative, trade unions became active in local campaigns that united workers and frontline communities in viewing attacks on unionisation and environmental injustice as two sides of the same oppression. Trade unions also collaborated with environmentalists during the massive march at the 1999 World Trade Organization Ministerial Conference in Seattle, USA, arguably one of the most important protests in the history of the climate justice movement¹⁵.

While just transition as a framework declined in popularity in the US in the 2000s, its popularity spread to unions beyond North America¹⁶. Unions working on the social and health costs of environmental degradation connected these concerns with occupational and safety hazards, a classic labour union agenda. Specifically, the Comisiones Obreras in Spain, the Trade Union Congress in the United Kingdom (UK), and the Australian Council of Trade Unions employed this approach and explicitly started to include climate change in their agenda¹⁷.

Just transition would soon be introduced into policymaking spaces. By 2006, when the International Confederation of Free Trade Unions and World Confederation of Labour merged to form the International Trade Union Confederation (ITUC), the world's largest network of trade unions had already

11 Morena, E., Stevis, D., Shelton, R., Krause, D., Mertins-Kirkwood, H., Price, V., Azzi, D. and Helmerich, N. "Mapping Just Transition(s) to a Low-Carbon World." United Nations Research Institute for Social Development.

12 Brecher, J. (2015) "How to promote a just transition and break out of the jobs vs. environment trap", *Dollars & Sense*, November/December. Available at: <https://independent.org/wp-content/uploads/2017/02/1115brecher.pdf>

13 *Ibid.*

14 *Ibid.*

15 Almeida, P. "Climate justice and sustained transnational mobilization", *Globalizations*, 16(7), pp. 973-979. DOI: [10.1080/14747731.2019.1651518](https://doi.org/10.1080/14747731.2019.1651518)

16 Morena, E., Stevis, D., Shelton, R., Krause, D., Mertins-Kirkwood, H., Price, V., Azzi, D. and Helmerich, N. "Mapping Just Transition(s) to a Low-Carbon World." United Nations Research Institute for Social Development.

17 *Ibid.*

recognised the centrality of climate change and environmental concerns to the labour movement's agenda¹⁸.

Over the years, the ITUC has become a powerful force within international climate policymaking spaces by advancing the just transition agenda through social dialogue. Along with the International Transport Workers' Federation, Public Services International, and IndustriALL, ITUC has engaged with the yearly Conference of Parties (COP), hosted by the United Nations Framework Convention on Climate Change (UNFCCC), in an effort to centre a just transition in climate talks. Trade unions sought to address the growing anxiety among workers, especially those in the energy sector, that climate policy would undermine job security and quality in the long run. Through concerted efforts and collaborative work, the trade union movement was able to mainstream its agenda as well as integrate 'just transition' into climate policy, most notably in the Paris Agreement. Recently, COPs have continued to include references to just transition such as in the 'Solidarity and Just Transition Declaration' at COP 24¹⁹ and the 'Just Transition Declaration' at COP 26²⁰.

Trade unions continued to raise the concept of a just transition into public consciousness – to highlight that environmental and social policies are not diametrically opposed. Rather, they are complimentary and symbiotic.

The history of just transition shows the pivotal role that holistic and multi-stakeholder engagement has played in building and sustaining the movement. The coalitions of the 1970s and 1980s showed how labour unions can integrate environmental advocacy into the social dialogue agenda. At the time, this was trailblazing as climate change was yet to be recognised as a global emergency. It marked a departure from the 'jobs vs. nature' dichotomy that was primarily being propagated by corporations to disengage workers from the broader struggles of their communities, signalling that the worker is not alien to her community nor to nature itself. It also paved the way for vital collaborations with environmental groups which have resulted in the critical recognition that the labour movement's concerns are not separate from the broader struggle to stem the climate crisis. As Brian Kohler of CEP said in 1996, "the real choice is not jobs or environment. It is both or neither".²¹

18 "Just Transition Centre." International Trade Union Confederation | Building Workers' Power. <https://www.ituc-csi.org/just-transition-centre>
19 Iddri (2018) *The Just Transition Silesia Declaration – Stepping up the transition and anticipating redevelopment needs*. 6 December. Available at: <https://www.iddri.org/en/publications-et-evenements/billet-de-blog/declaration-de-silesie-sur-la-transition-juste-la>
20 UN Climate Change Conference UK 2021 (2021) *Supporting the conditions for a just transition internationally*. 4 November. Available at: <https://ukcop26.org/supporting-the-conditions-for-a-just-transition-internationally/>
21 Morena, E., Stevis, D., Shelton, R., Krause, D., Mertins-Kirkwood, H., Price, V., Azzi, D. and Helmerich, N. "Mapping Just Transition(s) to a Low-Carbon World." United Nations Research Institute for Social Development.



Just Transition in the Global South and its Contemporary Conceptions

Despite this history, it is important to note that just transition continues to be a largely Global North concept. With the exception of its contemporary usage in South Africa in tackling its coal dependence²², just transition is yet to make headway into governments within the Global South. However, many unions in Asia and Latin America, such as in the Philippines, India, and Brazil, are starting to adopt the framework to bridge union concerns about climate policies that could affect working conditions, job security, and community relations in their countries. In recent years, just transition has also permeated various sectors including feminist groups, international non-government organisations (NGOs), philanthropic organisations, and even fossil fuel companies²³. Furthermore, the International Labour Organization has utilised just transition as a framework with its engagement on climate change and sustainable development²⁴, where it highlights social dialogue as integral to policymaking and the implementation of a just transition on all levels. While this points to the concept's broad appeal, it also signals a particular weakness: that of the relative ease with which it may be co-opted by forces that are antithetical to climate justice, such as multinational corporations.

Nevertheless, the concept's strength continues to be its direct agency with traditional labour movement issues, while also addressing the inequities produced by the climate crisis among social agents within countries. Thus, educators, who are also workers, are stakeholders in the just transition discourse. By shaping the definition of a just transition for their sector, educators are building a roadmap for the struggles against shrinking labour rights, privatisation of education, and the climate crisis.

22 World Resources Institute (2021) *South Africa: Strong foundations for a just transition*. 23 December. Available at: <https://www.wri.org/update/south-africa-strong-foundations-just-transition>

23 Shell (n.d.) *A fair and just transition*. Available at: <https://www.shell.com/energy-and-innovation/the-energy-future/a-fair-and-just-transition.html>

24 International Labour Organization (2016). *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. 2 February. Available at: https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm

Findings

This section is divided according to the geographical categories of the education unions that participated in a series of interviews conducted between March and July 2022. The unions were chosen through recommendations as well as via an open callout through Education International's Climate Network²⁵. Most interviews were conducted via videoconferencing, while a few unions chose to send their written answers by email. Likewise, collaborators from the ITUC and the All-Africa Students Union were interviewed for their inputs on potential synergies with the education sector.

The following text provides a narrative summary of each interview. It starts with a brief overview of climate change and policy impacts in each country, followed by an account of the lived realities of educators amidst climate change. A summary of each union's, nascent or otherwise, understanding of a just transition then follows. In some cases, unions that are already integrating climate change and just transition discourses into their work also shared their best practices in harnessing member participation on the issue. Questions about climate change impacts, union concerns, and participant conceptions of a 'just transition' guided the conversations.

Table 1. List of Union Respondents

<i>Africa</i>	• Teachers Union of Malawi (MUT) - Malawi
	• Progressive Teachers Union of Zimbabwe (PTUZ) - Zimbabwe
<i>Asia-Pacific</i>	• New Zealand Educational Institute (NZEI Te Riu Roa) – Aotearoa New Zealand
	• National Teachers' Association R.O.C. (NTA) – Taiwan
	• All India Primary Teachers Federation (AIPTF) - India
	• All India Federation of Teachers Organisations (AIPTO) - India
	• Fiji Teachers Union (FTU) – Women's Wing National President – Fiji
	• Vanuatu Teachers Union (VTU) - Vanuatu
	• Union of College Union (UCU) – United Kingdom
<i>Europe</i>	• Union of Education Norway (UEN) - Norway
	• Confederación Tabajadores de la Educación de Argentina (CTERA) - Argentina
<i>Latin America</i>	

²⁵ While the research endeavoured to have equal geographic representation for Education International's affiliates, there were extenuating circumstances that made it difficult for some unions to participate in the study. The research is still open to updates, if any union representatives would like to participate.



North America

- Centrale de syndicats du Québec (CSQ) - Canada
- American Federation of Teachers (AFT) - United States of America
- Sindicato Nacional de Trabajadores de la Educación (SNTE) - Mexico

Africa

Malawi

Respondent

Pempho Manda, Assistant Programs Coordinator of Teachers Union of Malawi (TUM)

Country Profile

In Malawi, climate change is pushing more people into acute poverty²⁶. A landlocked country with an economy that is agriculture-based, erratic rainfall patterns and prolonged droughts have meant that farmers and pastoral peoples are bearing the brunt of climate impacts in the country²⁷. Farmers have also been seeing shorter growing seasons, poor crop yields, food shortages, hunger, and the spread of disease²⁸.

Global heating is also affecting other crucial sectors of the economy including water, energy, health, transportation, education, gender, wildlife, forestry, and infrastructure²⁹. In a country where 29% of the population is already living in extreme poverty³⁰, measures to mitigate climate impacts on its primary industries and adaptation programmes for its people will be crucial in ensuring that the most vulnerable populations are not further entrenched in a cycle of poverty. This is especially important for marginalised groups such as women, who assume multiple roles as caregivers, farmhands, food and water providers, and are most affected by changing weather patterns in terms of their status, ability to make a living, and socio-economic mobility³¹.

26 Oxfam International (2009) *Climate change is pushing Malawi further into poverty: women are hit worst*. 17 June. Available at: <https://www.oxfam.org/en/press-releases/climate-change-pushing-malawi-further-poverty-women-are-hit-worst>

27 Climate Change Knowledge Portal (n.d.) *Malawi*. Available at: <https://climateknowledgeportal.worldbank.org/country/malawi#:~:text=Malawi%20has%20experienced%20climate%20change,dry%20spells%20and%20strong%20winds>

28 Oxfam International (2009) *Climate change is pushing Malawi further into poverty: women are hit worst*. 17 June. Available at: <https://www.oxfam.org/en/press-releases/climate-change-pushing-malawi-further-poverty-women-are-hit-worst>

29 Climate Change Knowledge Portal (n.d.) *Malawi*. Available at: <https://climateknowledgeportal.worldbank.org/country/malawi#:~:text=Malawi%20has%20experienced%20climate%20change,dry%20spells%20and%20strong%20winds>

30 *Ibid.*

31 Oxfam International (2009) *Climate change is pushing Malawi further into poverty: women are hit worst*. 17 June. Available at: <https://www.oxfam.org/en/press-releases/climate-change-pushing-malawi-further-poverty-women-are-hit-worst>

Climate Change and Educators

From massive flooding to intensifying droughts, educators in Malawi are bracing for more hardships in both their professional and personal lives due to climate change. Pempho Manda of the Teachers Union of Malawi explains:

“We have seen how floods and droughts have affected the education sector. Malawi already has a lot of challenges in the education system such as in infrastructure, teacher-to-student ratio, and remuneration packages for educators but with climate change it will get worse. We are experiencing massive flooding every year, which we did not experience a few years ago. So that means every year our school infrastructures are being damaged, the learning and teaching materials are being damaged; we are losing teachers. Every year, teachers have to be alert that they will not lose their lives to [the floods].”

During climate disasters, it is important to note, Manda says, that educators are constantly being tapped as emergency responders. Every year, teachers who might also be dealing with displacement issues of their own, are asked to aid in disaster relief. This results in the doubling of workload for teachers as they are still expected to perform teaching duties upon the resumption of classes. This is happening against a background of declining numbers of teachers as the Malawian government is failing to recruit new educators due to an unattractive remuneration and benefits package, according to Manda. In Malawi, the dereliction of investing in social services such as education is coinciding with heightening climate change impacts, which will inevitably have far-reaching consequences for Malawian society.

Just Transition and Educators

Despite the high vulnerability of the education sector, Manda says there is still no adaptation response plan for climate change impacts. Given the country's high vulnerability to climate change, as well as existing economic challenges, designing a just transition for educators is pertinent for the sector's welfare. Hence, policy interventions for a just transition must also include reinforcing basic social protection schemes such as pension funds, retirement plans, and healthcare benefits. Manda explains:

“On the labour rights issue, the policies should include support for the teachers that make sure their jobs are not at risk [of destructive climate impacts]. If they are at risk, what can we do to make sure that fewer teachers are affected? How can we help them to go to other cities [if the

situation in the current one has become untenable] and still find a way to earn a living?"

Transforming education systems to become climate resilient is also paramount, Manda adds, because educators' workplaces must be reinforced to withstand extreme weather events. Additionally, school administrations must ensure that, when classes resume after a disaster, workplace conditions are conducive for teaching and that learning materials are replenished.

Finally, the TUM has been including educators' concerns on climate change in their agenda during social dialogue with government. For instance, in the aftermath of Cyclone Idai in 2019, TUM conducted research on the preparedness of teachers during disasters. The research findings were used to present recommendations to the government on how to build resilience within education systems as well as capacitate educators in adapting to climate change. According to Manda, following these engagement processes, the Malawian government has included climate-resilient buildings in its education reform policy.

Zimbabwe

Respondent

Josphat Gwezhira, Progressive Teachers' Union of Zimbabwe (PTUZ)

Country Profile

Zimbabwe, which is home to nearly 15 million people, is primarily being impacted by climate change through its water supply and food security³². Because the country's farmlands are largely rain-fed, changing rainfall patterns are having a detrimental effect on the agriculture sector³³, which in turn imperils the country's ability to provide food for its people. Additionally, water reservoirs are drying up due to the recurrence of droughts in the last two decades³⁴.

Meanwhile, stronger cyclones have been hitting the country more frequently and causing unprecedented devastation. In 2019, Cyclone Idai left 300 dead and thousands homeless. In 2020 and 2021, Tropical Storm Chalane and

³² UNDP Climate Change Adaptation (n.d.) *Zimbabwe*. Available at: <https://www.adaptation-undp.org/explore/eastern-africa/zimbabwe>

³³ Mambondiyani, A. (2021) "Droughts or storms? The dire dilemma of Zimbabwe climate migrants", Aljazeera, 16 September. Available at: <https://www.aljazeera.com/features/2021/9/16/droughts-storms-dire-dilemma-zimbabwe-climate-migrants>

³⁴ *Ibid.*

Cyclone Eloise also caused massive damage in the country³⁵. Unreliable rainy seasons that bring violent storms and typhoons coupled with prolonged dry spells are stifling Zimbabwe's economic development. According to its first Nationally Determined Contributions (NDCs), sectors that are crucial in boosting the country's economy – such as agriculture, water, energy, forestry, and tourism – are highly susceptible to the volatilities of climate change³⁶. Hence, climate change aggravates impoverishment in Zimbabwe, especially the historically marginalised groups such as women, subsistence farmers, and internal migrants who are on the frontlines of the climate crisis.

Climate Change and Educators

Educators in Zimbabwe are confronted with the realities of the climate emergency every day. Aside from looming climate disasters, educators must also negotiate the increased difficulties of procuring basic daily needs. Specifically, diminishing groundwater supply is a direct impact of climate change that educators deal with daily, according to Josiphat Gwezhira of the Progressive Teachers' Union of Zimbabwe (PTUZ). He says that the lack of drinking water is compounding workloads for teachers, especially those in rural areas. Water shortages also force schools to buy water, funds that could have been used for other things such as learning materials. In addition, the water crisis in Zimbabwe is affecting educators who are tending to animals and farms. Gwezhira says that farming is not only a way to augment their livelihood as teachers, it is also a part of their traditional way of life. He explains:

“The trend is that the rainfall is not really enough for us; that affects us a lot because we have to spend a lot of time looking for water before we go to work ... My colleagues who are teaching outside of town, deep in the remote areas which also do not have the same capacity to hire [as the schools in the cities] drillers [for water], so there is no water. In the mornings and afternoon, they have to look for water on top of their teaching jobs.”

Intensifying cyclones and storms are also affecting educators in their personal and professional lives. Between 2019 and 2021, cyclones and storms caused massive infrastructural damage to Zimbabwe, which included school systems and individual shelters. According to Gwezhira, many educators had their homes destroyed by these extreme weather events. Meanwhile, education infrastructure, which was already in a state of disrepair, also sustained massive damage. As a result, many educators and students were without a conducive place to learn for several weeks. In some cases, classes had to be held in unsafe buildings, according to Gwezhira.

35 Mambondiyani, A. (2021) “Droughts or storms? The dire dilemma of Zimbabwe climate migrants”, Aljazeera, 16 September. Available at: <https://www.aljazeera.com/features/2021/9/16/droughts-storms-dire-dilemma-zimbabwe-climate-migrants>

36 Climate Change Knowledge Portal (n.d.) Zimbabwe. Available at: <https://climateknowledgeportal.worldbank.org/country/zimbabwe>



Just Transition and Educators

For PTUZ, a just transition for educators means preparing the sector for the worst consequences of climate change. According to Gwezhira, in its social dialogue with government officials, PTUZ is calling for the reinforcement of school buildings to become climate resilient as well as the provision of reliable sources of water supply.

In order to establish climate resilience among educators, Gwezhira says that it is also imperative to address the pervasive problem of insufficient salaries. As climate change is expected to ravage farmlands in the country, educators will have fewer options to augment their incomes.

According to Gwezhira, union members are quite interested in taking part in climate change initiatives in the country. In particular, unionists have been actively campaigning for quality climate education. The PTUZ is also calling for traditional farming techniques to be taught in schools as a way to promote agricultural resilience in communities. Hence, he says, codifying teachers' engagement on climate change into law would be a step in the right direction. It would help to improve the status of educators as stakeholders whose right to be represented in official decision-making processes must be safeguarded.

Asia-Pacific

New Zealand

Respondents

Liam Rutherford, President, New Zealand Educational Institute (NZEI Te Riu Roa)

Conor Twyford, Community Organiser (NZEI Te Riu Roa)

Country Profile

In 2007, the Intergovernmental Panel on Climate Change (IPCC) predicted that Aotearoa New Zealand would experience a myriad of climate change impacts that would endanger its water security, natural ecosystems, and coastal communities³⁷. Since 1950, Aotearoa New Zealand has already experienced a mean temperature increase of 0.4°C, 10 to 20 days fewer cold nights and

³⁷ NIWA (YEAR) *IPCC identifies climate change impacts and vulnerability in New Zealand*. Available at: <https://niwa.co.nz/news/ipcc-identifies-climate-change-impacts-vulnerability-new-zealand#:~:text=IPCC%20identifies%20climate%20change%20impacts%20%26%20vulnerability%20for%20New%20Zealand,-SHARE%20THIS%3A&text=Water%20security%2C%20natural%20ecosystems%2C%20and,finalised%20in%20Brussels%20last%20Friday>

frost per year, a sea level rise of 70mm, and 25% alpine mass loss³⁸. Moreover, because of its diverse topography, Aotearoa New Zealand will likely experience more intense climate change-induced typhoons, droughts, and wildfires³⁹. The country's primary industries, such as agriculture and fisheries, are already experiencing financial losses due to increased heatwaves and other weather disruptions⁴⁰. Lastly, rising sea levels are threatening to inundate the country's coastal communities⁴¹, where many of the indigenous and historically excluded Māori people live⁴².

Climate Change and Educators

For many educators in Aotearoa New Zealand, climate change is already altering the teaching landscape. The aggravating impacts of climate change and the policies designed to address them are having direct and indirect impacts on education. In recent years, according to Liam Rutherford, President of the NZEI Te Riu Roa, educators have raised the alarm about the devastating impacts of climate change on schools, centres, and communities. Notably, Aotearoa New Zealand's sea levels are accelerating twice as fast as previously predicted by the IPCC⁴³. This will inevitably reach school systems - a concern that is becoming more pressing for education unionists in Aotearoa New Zealand. Many schools are already regularly experiencing massive flooding; furthermore, research shows that a one-metre rise in sea levels would inundate up to 94 schools, requiring them to move, merge, or close⁴⁴.

Meanwhile, the oil and gas-producing region of Taranaki is beginning to experience the effects of the national government's ban on new offshore oil and gas exploration. Because oil and gas companies are the biggest employers in the region, NZEI Te Riu Roa anticipates that decommissioning these industries will have a domino effect on the education sector, impacting the stability of schools and job prospects for educators.

Thus, the concurrent issues of sea level rise and the impending energy transition are two of the most significant impacts of climate change for Aotearoa New Zealand educators. Rutherford adds:

“Where you’ve got parts of Aotearoa New Zealand, like Taranaki, that are going through a dramatic shift as oil and gas permits are banned, businesses will move or transition. If we don’t [successfully transition]

38 New Zealand. Ministry for the Environment (2021) *How climate change affects New Zealand*. 30 September. Available at: <https://environment.govt.nz/facts-and-science/climate-change/how-climate-change-affects-new-zealand/#climate-change-affects-maori>

39 *Ibid.*

40 *Ibid.*

41 *Ibid.*

42 Godfery, M. (2022) “Māori might be the ‘luckiest’ Indigenous people – but that’s not down to New Zealand exceptionalism”, *The Guardian*, 4 February. Available at: <https://www.theguardian.com/world/commentisfree/2022/feb/04/maori-might-be-the-luckiest-indigenous-people-but-thats-not-down-to-new-zealand-exceptionalism>

43 Aljazeera (2022) “New Zealand faces sea rise ‘much sooner than we thought’”, 2 May. Available at: <https://www.aljazeera.com/news/2022/5/2/new-zealand-faces-major-sea-rise-much-sooner-than-we-thought>

44 Wanna, O. (2021) “Rising tides put up to 94 schools at risk of flooding and closures”, *Stuff*, 20 February. Available at: <https://www.stuff.co.nz/environment/climate-news/124183902/rising-tides-put-up-to-94-schools-at-risk-of-flooding-and-closures>



Taranaki, that is going to have impacts on the number of students that schools have and therefore the workforce that is employed there.”

To date, according to NZEI Te Riu Roa, there have been no concrete plans of action proposed by the government to address concerns around the impacts of industrial change on pre-tertiary education, which could include the merging or closure of schools and centres, and the forced migration of entire communities.

Just Transition and Educators

Upholding the indigenous world view of the Māori is central to the union’s work on climate change. The Māori worldview emphasises the interconnectedness of both living and non-living things, and that human beings are intrinsically linked to the natural world⁴⁵. In line with this philosophy, NZEI Te Riu Roa emphasises the importance of recognising that the education union’s industrial demands are intertwined with the communities’ concerns about climate change. In addition, many union members are already actively engaged in climate action in their own personal capacities and within their respective communities. Rutherford explains:

“Educators see this as more than just teaching and learning about climate change ... As a trusted institution within their communities, educators have an important engagement role with their parent communities, which can touch on what is going on in their local communities on matters such as sustainable gardening as well as schools moving to become carbon neutral ... The other part of the work we are doing is within the wider trade union movement, both nationally and internationally, around supporting the entire economy to become low carbon and ensure that there is a just transition in place.”

Hence, the union’s strategy in incorporating climate change in the union’s industrial agenda has been to frame educators as ‘second responders’ to the climate crisis. This recognises the fact that while educators do not work in a fossil fuel-intensive industry, climate impacts will inevitably disrupt educators’ work and communities. The case of schools prone to inundation from sea level rise and the implications for a just transition is a focal point in these discussions. For instance, according to Conor Twyford, the union’s community organiser, a principal whose school may one day be threatened by foreclosure due to inundation had already contacted NZEI Te Riu Roa to consult with his staff on potential responses.

⁴⁵ Environment Guide (2018) “Maōri and biodiversity”. Available at: <https://www.environmentguide.org.nz/issues/biodiversity/maori-and-biodiversity/>

Twyford adds:

“Even though our members are so immersed in climate change, in the education of children, and connecting to the environment every day, the idea of it [climate change] as a labour rights issue is only just starting to crystallise ... This [the case of flood-prone schools] is how we can communicate about just transition to our education union members because it makes so much sense. On the back of that, because we can't wait for government, we are building two training modules on climate change and educators in a just transition.”

Through this strategy, educators are positioned as stakeholders in debates on climate policies, particularly on just transition. Importantly, the union felt it needed to ‘walk the talk’. Thus, it sought to realign internal policy with the climate crisis by prioritising a move to carbon neutrality. This was done not only to gain credibility but also to drive green behaviours within the staff and membership. As such, NZEI Te Riu Roa employed this framing to advance its work on climate change education as well as to progress social dialogue on a just transition.

In effect, the union’s work in integrating climate change and just transition into its industrial agenda has been akin to building up climate change activism. Amplifying grassroots initiatives has been crucial to this, Twyford and Rutherford say. According to Rutherford, the innovative approach to climate change as an advocacy point in the union has made the issue self-sustaining. This method of engaging members could also be applied to other issues that traditionally do not gain traction. Rutherford explains:

“The way that Conor [Twyford, union community organiser] has gone about building activism for climate change within the union is creating a pathway for us to rethink how we go about engaging members on any issue. Climate change as an issue did not come through our normal branch structure and area councils. Now, we are seeing the emergence of a nationwide climate change network with localised chapters. There are a number of issues that we would be working with members that would traditionally go through our branch structures and then die. But Conor's turned a corner, and now we are rethinking the ways we could work with members that is more fruitful and sustaining.”

Through its engagement with members, NZEI Te Riu Roa was able to identify key policy demands, which they had crafted in collaboration with the New Zealand Council of Trade Unions, to advance a just transition within the education sector. Mainly, this has been about reinforcing traditional education

union demands with policies that promote climate resilience and a just transition for educators. The following are the union's policy demands:

- Provide Employment Relations Education Leave. Employers and government must provide paid leave time for educators to meaningfully engage in local climate policy debates.
- Nationalise the early childhood education sector. In Aotearoa New Zealand, 70% of early childhood learning institutions are privatised. Providing free early childhood education, where the precepts of quality climate education must undoubtedly take root, can relieve many families of financial hardships related to education and stabilise employment for educators. It would also massively increase the quality of teaching and learning as well as make it easier for teachers to join unions.
- Codify accountability mechanisms for climate education targets. The Ministry of Education must formalise its own targets on climate education such as curriculum reform and integration, professional development for teachers, and increasing teaching resources. It must also provide a platform where these targets can be scrutinised by stakeholders and the general public.
- Decarbonise education systems. The national government must prioritise transitioning school systems to renewable energy by providing ample financial resources and technical assistance.

Taiwan

Respondent

Carrie Su, Chief Coordinator – International Affairs Department, National Teachers' Association R.O.C. (NTA), Taiwan

Country Profile

Climate change has already impacted weather conditions and sea levels in Taiwan in the last few decades⁴⁶. Specifically, climate change is bringing fewer but stronger typhoons and more severe but frequent droughts⁴⁷. In 2021, Taiwan faced one of its worst droughts yet, but no typhoon made landfall in the country – the first time in 56 years. This has had serious consequences

⁴⁶ Taiwan Adaptation Platform (n.d.) "Climate change impacts". Available at: https://adapt.epa.gov.tw/eng/TCCIP-1-A/TCCIP-1-A-5_en.html

⁴⁷ Hale, E. (2021) "Taiwan faces water wake-up call as climate change intensifies", *Aljazeera*, 20 August. Available at: <https://www.aljazeera.com/news/2021/8/20/taiwan-water-woes>

for the country's water security⁴⁸. While its water reservoirs were eventually refilled after heavy rain⁴⁹, experts are urging the country to draw up a plan to address water shortages after scientists warned that the frequency and pathway of typhoons will become more unreliable in Taiwan due to intensifying climate change⁵⁰. In particular, it must devise a way to balance water usage between the general public and its primary economic sectors, agriculture, and semiconductor industries.

Climate Change and Educators

Climate change is a priority in the daily professional lives of Taiwanese educators. According to Carrie Su, Chief Coordinator – International Affairs Dept. of NTA, educators have been including climate change into their lesson plans and sustainable lifestyle examples. In the union's view, Taiwanese educators are crucial agents in turning the tide on climate policies because quality climate education can empower today's generation of students into effecting social change. In addition, she says that, especially in rural areas that are acutely affected by climate change, educators serve as the link between students and their families accessing life-saving resources during climate calamities.

Educators are also well aware that climate change will have impacts on the education sector. For instance, sea level rise in rural areas of Taiwan are threatening schools with closure, which will result in job losses or forced relocation for educators. Consequently, this will also have an unfortunate effect on the education of marginalised peoples residing in these underserved areas.

The country is also embroiled in a debate on the future of nuclear power and renewable energy⁵¹, which Su says has been divisive among educators on the ground. While the country's energy mix is still predominantly fossil fuel-based, with oil accounting for 50%⁵², whether or not renewable energy will be prioritised over nuclear power in the future remains a controversial topic. An energy crisis is also brewing in Taiwan, says Su, as power outages are becoming more commonplace. The NTA maintains a neutral position on this matter.

48 Hsu, H-H. "Facing advancing global warming and international pressure Taiwan needs to take prompt action", *Taiwan Insight*, University of Nottingham Taiwan Studies Programme. 12 April. Available at: <https://taiwaninsight.org/2021/04/12/facing-advancing-global-warming-and-international-pressure-taiwan-needs-to-take-prompt-action/>

49 Hale, E. (2021) "Taiwan faces water wake-up call as climate change intensifies", *Aljazeera*, 20 August. Available at: <https://www.aljazeera.com/news/2021/8/20/taiwan-water-woes>

50 Jensen, S. (2020). "Taiwan may face fewer typhoons – but harsher drought as planet warms", *Reuters*, 22 December. Available at: <https://www.reuters.com/article/us-climate-change-taiwan-typhoon-feature-idUSKBN28W00D>

51 Silver, A. (2018) "Meet the engineering professor who got Taiwanese voters to support nuclear power", *Science*, 27 November. Available at: <https://www.science.org/content/article/meet-engineering-professor-who-got-taiwanese-voters-support-nuclear-power>

52 U.S. Energy Information Administration (n.d.) *Taiwan*. Available at: <https://www.eia.gov/international/overview/country/TWN>

Just Transition and Educators

The NTA has been active in advocating for quality climate education in Taiwan, as educators have pushed for new, innovative ways to teach about climate change. In the new 108 curriculum⁵³, for example, upper secondary students are required to take a course that brings them into nature to learn about climate change on a practical level. Many educators are also developing their own programmes to teach climate change through various subjects such as science, technology, social science, geography, and even history and culture. In addition, NTA also has a long-term national programme called ‘Grain Food Classroom’, where primary school teachers guide their students to grow plants for food production.

However, regarding a just transition, NTA is only in the beginning stages of the conversation. According to Su, while the NTA recognises climate change as a labour rights issue, there is still much to be done in popularising the issue within the union. Much of the union’s efforts on climate change at the national level are focused on ensuring that climate education is part of compulsory education. At the local level, educators are monitoring budget allocations for climate-proofing education infrastructure. Su explains:

“For sure, we have plans to include Just Transition in the agenda. Because in the West Coast of Taiwan, for example, some members were already raising the issue of sea level rise as a potential problem. The teachers have the knowledge about climate and education, but the international discussions are only beginning. Actually, we try to keep up with the international advocacy agenda so that we can lead in the sector and society as a whole.”

The NTA already recognises that a just transition for the education sector concerns the strengthening of social protection schemes. For instance, Su says that safeguarding pension funds as well as boosting parental leave are only a few of the policies that can promote the welfare of educators amidst worsening climate change. Ensuring educators are protected against the adverse effects of climate change and energy policies are integral in a just transition.

⁵³ In 2019, Taiwan implemented the 108 Curriculum which expanded basic education from nine to 12 years. The extension of basic education sought to advance a holistic approach to education that would advance a high-performing education system that also encourages lifelong learning and social contribution among students. See: Coudenys, B., Strohbach, G., Tang, T. and Udabe, R. (2022). “On the path toward lifelong learning: An early analysis of Taiwan’s 12-year basic education reform”, in Reimers, F.M., Amaechi, U., Banerji, A., Wang, M. (eds.) *Education to build back better*. Springer, Cham. Available at: https://doi.org/10.1007/978-3-030-93951-9_4

Fiji

Respondent

Urmila Singh, President of National Women's Wing, Fiji Teachers Union (FTU)

Country Profile

Fiji, a small island state that is home to more than 870,000 people, is one of the most vulnerable countries to climate change⁵⁴. With 300 volcanic islands, including low-lying atolls, it is highly susceptible to extreme weather events such as cyclones and slow-onset impacts such as ocean acidification⁵⁵. Surging sea levels due to melting glaciers and ice sheets as well as the thermal expansion of seawater resulted in the relocation of the village of Vunidogoloa to higher ground in 2012, the world's first documented case of climate migration⁵⁶. Likewise, unmitigated climate change in Fiji could result in higher rates of diseases due to temperature rise, more destructive storms and unreliable weather patterns, and agricultural disruptions due to saltwater damage induced by sea level rise⁵⁷. In fact, given the escalating impacts of climate change, Fijian officials now claim that climate change is the 'single greatest threat' to the country's existence⁵⁸.

Fiji has become a leader on the global climate policymaking stage. In 2017, the country co-hosted COP 23, the global climate summit where world leaders and key stakeholders negotiate the policy direction of climate action. Recently, at COP 26 in Glasgow, Scotland, in 2021, Prime Minister Frank Bainimarama called on rich countries to deliver on their climate finance pledges⁵⁹ which have stalled in the last two years. While the government has implemented projects that would tackle climate impacts, the country needs much more in terms of finance and technology transfers so that it might deescalate the life-threatening consequences of runaway climate change for its people.

Climate Change and Educators

In Fiji, educators know that climate change is already part of their daily lived experience. The recent spate of cyclones and the looming threat of sinking

54 UNFCCC (2017) "How Fiji is impacted by climate change". 9 February. Available at: <https://unfccc.int/news/how-fiji-is-impacted-by-climate-change>

55 *Ibid.*

56 Meakins, B. (2012) "Village relocated due to climate change", Salon, 19 September. Available at: https://www.salon.com/2012/09/19/first_village_relocated_due_to_climate_change/

57 World Bank (2000) "Cities, seas, and storms: Managing change in Pacific Island economies", *Adapting to Climate Change*, IV, 30 November. Available at: <https://documents1.worldbank.org/curated/en/532221468288338891/pdf/274490Cities0seas0and0storms0vol04.pdf>

58 DW. (2022) "Fiji: Threat of climate change bigger than conflict, says defense minister." Deutsche Welle, 12 June. Available at: <https://www.dw.com/en/fiji-threat-of-climate-change-bigger-than-conflict-says-defense-minister/a-62104337>

59 In COP 15 in Copenhagen, Denmark, in 2009, rich nations promised to harness US\$100 billion per year by 2020 as climate finance for impoverished and vulnerable nations for their adaptation and mitigation programmes. This pledge has been largely unfulfilled, as 2020 reports show that rich nations are barely making a dent in their climate finance commitments. Additionally, experts have argued that the US\$100-billion figure was arbitrarily summoned as it pales in comparison to the actual financial requirements needed to meet the goals of the Paris Agreement, which is in the trillions of dollars.



islands as well as destruction of farmlands are climate risks that many Fijians have to face, despite the country being one of the least contributors of greenhouse gas emissions historically.

Education systems are inevitably affected by climate change. Aside from school buildings being destroyed by cyclones and flooding, families are forced to relocate when croplands, shelters, and small businesses are destroyed by an extreme weather event, according to Urmila Singh, President of the National Women's Wing of the Fiji Teachers Union. This results in increased workload for educators due to the disruptions within the classroom that they must adapt to. Singh explains:

“When coastal areas are flooded, people are relocated, which means that the children attending the nearby schools are relocated to a new school. They are forced to adapt to a new environment, new culture ... [and need to] adapt to ... a new lifestyle ... Due to natural disasters, schools are damaged. Families and communities are affected because the resources that we depend on are destroyed ... [This results in] prolonged school closure which affects the dissemination of the curriculum. Then teachers will have to redesign their curriculum and readjust themselves.”

Meanwhile, the future of schools in low-lying islands are also in danger due to rising seas – as are the jobs of educators. Singh confirms that some schools in small and outer islands have been closed due to climate change impacts. While many education unionists from these islands have been relocated to higher ground, relocation has also created fissures in the identity of communities, as climate refugees are forced to leave their cultures and traditions. She explains:

“They take a lot of time to adapt to the new environment when they are relocated. [When they flee] they leave behind whatever they had there [such as] their farms. And their land is [supposed to be] their own because, in Fiji, many people depend on agriculture.”

Educators are also experiencing the devastation wrought by climate change as many teachers have had their homes destroyed by cyclones, according to Singh. For instance, in 2016, Cyclone Winston damaged at least 495 schools, 88 health facilities, while some 32,000 homes were destroyed⁶⁰. According to Singh, in the aftermath of Cyclone Winston, many teachers became climate refugees themselves. During events such as these, educators are forced to rely on humanitarian aid and government-initiated assistance. Singh adds:

“They had nothing left, not even a piece of bread to put on the table.”

60 OCHA Services (2016) “Tropical Cyclone Winston – Feb 2016”. Available at: <https://reliefweb.int/disaster/tc-2016-000014-fiji>

However, even during weather-related calamities, educators are still called upon by their local governments to help in disaster response. Educators are asked, albeit on a voluntary basis, to assist in areas where health workers might be lacking.

Singh also draws on an important point regarding the disparities of climate impacts on the Fijian population, specifically on women and children. In Fiji, as in many Pacific Island nations, domestic violence cases have been known to increase in the wake of climate change-induced disasters⁶¹. Because teaching is a predominantly female profession in Fiji, many educators also experience this often-unspoken epidemic of violence that grips communities in the aftermath of devastating cyclones or droughts. She explains:

"In Fiji, the women are most affected. Because women are the ones who are most exposed [to climate chaos], they are the ones who walk kilometres to reach the sea or the farms. This is also how they are exposed to heatwaves. They spend hours in the sea, in the river looking for fish and crabs and other things. They search for food ... Then, the man comes home and food is not there on the table. The mother has to explain that she spent long hours looking for food but there simply was nothing. Then what happens? Domestic violence happens. Children are [also] affected and the child [usually] is not able to perform well in school. That's where the teacher comes in."

Just Transition and Educators

Fijian educators are acutely feeling the anxieties on labour prospects and adverse impacts on working conditions being engendered by the climate crisis. The unprecedented speed of sea level rise coupled with more frequent yet unpredictable cyclones and typhoons are exacerbating the threat of displacement on an already economically disadvantaged nation. This means that while there are options for relocation, the losses that educators incur when they become climate refugees are difficult to fathom. Singh explains that while educators may not lose their jobs because of relocation, they still lose intangible things like traditions, cultures, and even a sense of identity.

Just transition, therefore, in the Fijian education system context must pertain to a comprehensive adaptation strategy to climate change impacts while also considering long-term plans to relocate educators with as much support and resources as possible to facilitate their integration into their new communities. According to Singh, the Fijian government is already involving education

61 United Nations Climate Change (2019) "Climate change increases the risk of violence against women." 25 November. Available at: <https://unfccc.int/news/climate-change-increases-the-risk-of-violence-against-women>



unions in their plans regarding cushioning the effects of climate change on communities. The Fiji Teachers Union believes that the State needs to integrate climate resilience into education systems, especially those buildings that are not structurally built to withstand stronger cyclones and massive flooding.

Moreover, Singh believes that educators and education unions, perceived as trusted institutions within their communities, have a role to play in preparing communities for a just transition. She adds:

“We as a teacher organisation in Fiji are duty bound [to help our communities]. As I said in our motto, the child is our home. We really [need] to ensure that no child, no family is left behind. We will create awareness and educate the community at large. As educators, we must ensure that when families are relocated or are forced to move from one area to another that their future and safety are guaranteed. We need to ensure that they are adequately resourced with materials for day-to-day living and that children have full access to education.”

India

Respondents

Nisha Cairae, All India Primary Teachers Federation (AIPTF)

Dr. Nisha Sharma, All India Federation of Teachers Organisations (AFTO)

Country Profile

India, a subcontinent that is home to 1.4 billion people, has been enduring some of the worst extreme weather events due to climate change. Ranked as the seventh most vulnerable country in the world to climate change⁶², it has been experiencing prolonged heatwaves as well as unpredictable monsoon seasons and stronger cyclones. More worryingly, the IPCC’s latest report issued a stark warning that some of the planet’s climate systems, such as oceans and atmospheres, have already been irreversibly altered due to unmitigated climate change which will result in stronger and more destructive weather disasters.

In South Asia, especially, this means that extreme weather events that trigger

62 Mohan, V. (2021) “Climate risk: India 7th worst-hit”, *The Times of India*, 26 January. Available at: <https://timesofindia.indiatimes.com/india/india-among-top-10-worst-hit-countries-due-to-extreme-weather-events-says-a-global-report-on-climate-risk-index/articleshow/80453389.cms>

massive flooding and wildfires will forcibly displace many vulnerable people⁶³. In 2021, for example, Cyclone Amphan caused US\$13 billion in damage and affected 13 million people in its wake⁶⁴. The Indian government's own climate change assessment report from 2021 stated that the frequency and intensity of droughts in the country have considerably increased in the last 60 years and that heatwaves will be four times worse by 2100⁶⁵. Additionally, India is also grappling with water stress, as the country is running out of ground and surface water⁶⁶.

Climate Change and Educators

In India, various climate impacts are increasing hardships for educators, who are also on the frontlines of the climate crisis. For instance, in the 2022 spring and summer heatwaves, educators in Gurgaon, a city outside New Delhi, reported students fainting in class; while students in Kolkata complained of difficulties in concentrating during exams⁶⁷. In response, school officials moved classes to an earlier start to avoid having them during the hottest times of the day, while others sent students home so as to conduct online classes⁶⁸. Winters are also bringing additional issues, as many school buildings are not equipped to deal with colder seasons. Likewise, intensifying monsoons and typhoons are causing unprecedented destruction in terms of shelter and livelihoods, as well as education systems.

Dr. Nisha Sharma of the All India Federation of Teachers Organisation (AIFTO) believes that while the education sector might be less directly affected by climate change and its subsequent policies, the constant devastation of climate disasters is taking a toll on the capacities of educators. She explains:

“Climate change is interrupting education. If there is a storm, or flood, or high rainfall, the school building will be damaged. Teaching and learning materials are also damaged or even just washed away. The infrastructure, such as bridges and roads that connect people to educational institutions, are also damaged, which means that education will experience disruptions. So, what is the result if my school is damaged or if it is collapsed? How am I able to teach? How can the students come and attend classes when it is risky? In these cases, students and educators will miss the classes.”

63 Khadka, Navin Singh (2021) “Climate change: The IPCC environmental warning India cannot ignore”, *BBC News*, 10 August. Available at: <https://www.bbc.com/news/world-asia-india-58155294>

64 *Ibid.*

65 Khadka, Navin Singh (2021) “Climate change: The IPCC environmental warning India cannot ignore”, *BBC News*, 10 August. Available at: <https://www.bbc.com/news/world-asia-india-58155294>

66 DW.com (n.d.) *Climate change: Why is it now or never for India*. Available at: <https://www.dw.com/en/climate-change-why-it-is-now-or-never-for-india/a-61000680>

67 Nugent, C. (2022) “India's unbearably hot schools show we must climate-proof education”, *TIME*, 6 May. Available at: <https://time.com/6174322/india-schools-heat-climate-change/>

68 Nugent, C. (2022) “India's unbearably hot schools show we must climate-proof education”, *TIME*, 6 May. Available at: <https://time.com/6174322/india-schools-heat-climate-change/>



Meanwhile, in the aftermath of climate disasters, Nisha Cairae of the All India Primary Teachers Federation (AIPTF) says that schools are one of the first locations where disaster victims seek refuge. Educators are also being mobilised by the government to assist in disaster response. Cairae explains that while teachers may not immediately lose their jobs if a school building is washed away by a storm, educators could be assigned jobs in refugee centres that are not teaching-related. For instance, she says, teachers in relief camps are assigned to medicine distribution, which means they are commissioned to undertake tasks that are not under the scope of their official responsibility.

Consequently, in the aftermath of disasters, some schoolchildren may be forced to drop out of school. Cairae adds:

“When parents cannot find jobs, together with the climate crisis, they will migrate to other places ... In the schools we deal with as a union, they are all government primary schools. The children enrolled with us belong to poor socio-economic conditions. They are first-generation learners who depend on their parents, [when the parents migrate] they also migrate. Then, [the] government will close down schools because the enrolment is down. It’s [becoming] a cycle.”

Just Transition and Educators

For both unions, the AIPTF and AIFTO, climate change is already a pressing labour rights issue. They contend that the effects of a warming planet on the working conditions of educators as well as the broader impacts of climate change on society are poised to alter the education sector for the worse. Sharma explains:

“Our efficiency to work is affected by the absence of a proper working environment. If the working environment is not proper [and worsened by climate change], my efficiency is affected and my performance goes down. The result? Maybe I’m fired if my efficiency performance is continuously affected.”

Hence, a just transition for educators entails a plan to protect educators and students from experiencing the worst consequences of climate change. Adaptation plans to mitigate the effects of heatwaves and intense winters, as well as reinforcing education infrastructure to become climate-resilient, are crucial public policy interventions for the education sector. More importantly, Cairae says, the government must officially recognise that the education sector is also on the frontline of climate change. Even before social protection schemes to deal with the aftermath of extreme weather in India can be implemented, responding to the hardships being experienced by educators

is an important first step. For Indian education unionists, codifying climate education into the national curriculum must also be part of a just transition. Currently, only a few states have officially included climate education in their respective curricula. Meanwhile, education unions have been lobbying that this be replicated in every state as well as including climate education in the official teachers' training curricula.

The struggles for stable employment, decent working conditions, fair pay, and reliable pension funds go hand-in-hand with the fight for a just transition in the education sector. Because climate change is a threat multiplier⁶⁹ for existing societal injustices, ensuring basic social services among educators places them in a better position to become climate resilient in their professional and personal lives.

Vanuatu

Respondent

Neselinda Meta, Vanuatu Teachers Union (VTU) —(e-mail interview)

Country Profile

Vanuatu, a low-lying island state, has recently declared itself to be in a climate emergency⁷⁰. Amidst rapidly rising sea levels, two destructive cyclones, and an intense drought in the last decade, the country has assessed the cost of its adaptation needs to climate change to US\$1.2 billion⁷¹. Climate change is impacting every facet of life in Vanuatu. Temperatures are already expected to soar by up to 1°C by 2030, while cyclones are projected to be less frequent but more severe in the coming years⁷². Meanwhile, sea levels have surged by 6mm per year since 1993 and are projected to accelerate to 18cm in the future⁷³. Experts warn that these impacts will endanger the country's economy, people's lives and livelihoods. In particular, rising sea levels could make whole islands in the country disappear. For instance, in 2017, some 200 villagers in a remote island were asked to move to higher ground due to the threat of a sinking island and high vulnerability to harsher cyclones⁷⁴. For many Vanuatu citizens, climate change is an existential threat.

69 Hallegate, S. et. al. (2015) "Threat multiplier: Climate change, disasters and poor people", *Shock Waves*, Nov. Available at: https://doi.org/10.1596/978-1-4648-0673-5_ch3

70 Aljazeera (2022) "We are in danger now": Vanuatu declares climate emergency. 28 May. Available at: <https://www.aljazeera.com/news/2022/5/28/we-are-in-danger-now-vanuatu-declares-climate-emergency>

71 *Ibid.*

72 COP 23 | Fiji | UN Climate Change Conference (n.d.) Vanuatu. Available at: [https://cop23.com.fj/vanuatu/#:-:text=For%20Vanuatu%2C%20the%20impact%20of,18%20centimetres%20\(7%20inches\)](https://cop23.com.fj/vanuatu/#:-:text=For%20Vanuatu%2C%20the%20impact%20of,18%20centimetres%20(7%20inches))

73 *Ibid.*

74 Taylor, L. (2017) "For remote Vanuatu islanders, fleeing climate disasters is an uphill battle", *Reuters*, 21 December. Available at: <https://www.reuters.com/article/us-vanuatu-climatechange-migration-idUSKBN1EE288>

Thus, the urgency of addressing climate change has pushed Vanuatu, along with other Pacific Island nations, to seek legal protection from the International Court of Justice in a bid to safeguard vulnerable nations from climate change⁷⁵.

Climate Change and Educators

Climate change is part of the daily reality for educators in Vanuatu. According to Neselinda Meta of the Vanuatu Teachers Union (VTU), extreme weather events are causing massive damage to property and crops as well as loss of lives and livelihood. Warmer temperatures, she adds, are also causing droughts and heat stress for people and animals. These weather pattern alterations are affecting seasonal calendars for agriculture, fisheries, and even education.

Climate change is becoming a factor on the tenability of educators' working conditions in Vanuatu as extreme weather events are disrupting school calendars and the efficiency of teachers. For instance, according to Meta, tropical cyclones have destroyed school buildings and damaged critical infrastructure in the education sector. She adds that as many as 2,400 educators and 51,000 students have been affected by devastating cyclones. In the aftermath of Cyclone Pam in 2015, for example, over 50% of primary and secondary schools were closed for almost a month⁷⁶. These weather disasters have become a constant threat to the continuity of education in the country. Moreover, Vanuatu sits on the Pacific 'Ring of Fire,' which means that earthquakes and volcanic eruptions are a perpetual risk for the country and the education sector. This puts Vanuatu in an extremely vulnerable position as these geographic precarities are compounded by the likelihood of a climate catastrophe coinciding with multiple other geological risks such as a volcanic eruption or an earthquake.

Just Transition and Educators

According to Meta, VTU considers climate change as a foremost labour rights issue because of its direct and indirect impacts on a range of human rights issue. More importantly, for the union, climate change is a moral issue that is becoming the biggest threat to the existence of low-lying island states.

For VTU, a just transition is needed to "secure the future and livelihoods of workers and their communities in the transition to a low-carbon economy" in order to tackle worsening climate change, says Meta. While VTU has not

75 Taylor, L. (2017) "For remote Vanuatu islanders, fleeing climate disasters is an uphill battle", *Reuters*, 21 December. Available at: <https://www.reuters.com/article/us-vanuatu-climatechange-migration-idUSKBN1EE288>.

76 UNICEF (2019) *It is getting hot: Call for education systems to respond to the climate crisis | Perspectives from East Asia and the Pacific*. Bangkok: UNICEF East Asia and Pacific Regional Office. Available at: <https://www.unicef.org/eap/media/4596/file/It%20is%20getting%20hot:%20Call%20for%20education%20systems%20to%20respond%20to%20the%20climate%20crisis.pdf>

officially included climate change in their official policy on social dialogue, it has been active in national and international dialogue on climate change.

In addition, VTU has been raising awareness among its communities on managing resources sustainably, increasing energy efficiency, and reducing waste. According to Meta, promoting social justice and addressing poverty, social inequalities, and gender gaps are important factors in the union's cognition of a just transition. Specifically, pushing for gender-sensitive policies that recognise the differentiation in the impacts of climate change on women is vital in the pursuit of equity and climate justice in climate policies, she adds.

Europe

United Kingdom

Respondent

Marianne Quick, Bargaining and Negotiations Official, University and College Union (UCU)

Country Profile

The UK, which is more responsible for climate change than any other country⁷⁷, is also experiencing the impacts of worsening climate change, despite its relatively stable climate history. Between increased rainfall and temperatures, the UK is already in the midst of 'disruptive climate change', according to climate scientists⁷⁸. For instance, in the summer of 2022, the UK breached the 40°C threshold⁷⁹ during an unprecedented heatwave in Western Europe. In Spain and Portugal, more than 1,500 people died due to extreme heat, while huge swathes of England were under warning of potentially lethal temperatures⁸⁰ - the country's first health advisory of its kind.

Despite dire warnings of climate chaos in its present and future, the UK is woefully ill-prepared for the impacts of climate change⁸¹. In its sixth

77 On a per capita basis. King, E. (2014) "UK has made largest contribution to climate change says study", *Climate Home News*, 17 January.

Available at: <https://www.climatechangenews.com/2014/01/17/uk-has-made-largest-contribution-to-global-warming-says-study/>

78 Harrabin, R. (2021) "UK already undergoing disruptive climate change", *BBC News*, 29 July. Available at: <https://www.bbc.com/news/science-environment-57988023>

79 The UK also experienced an unusually hot summer in 1976 that many people are citing as 'precedent' for 2022's heatwaves. However, climate scientists have been quick to refute this as present-day temperatures are considerably higher than the summer of 1976 and attribution science has been clear that human-induced climate change is at play in today's heatwave. For more information: Gilbert, E. (2022) "Yes, Britain had a heatwave in 1976. No, it was nothing like the crisis we're in now", *The Guardian*, 19 July. Available at: <https://www.theguardian.com/commentisfree/2022/jul/19/britain-heatwave-1976-crisis-summer-heat>

80 ABC News (2022) European heatwave death toll soars above 1,500 as temperatures soar across continent. 20 July. Available at: <https://www.abc.net.au/news/2022-07-20/heatwave-in-uk-europe-kills-at-least-1500-authorities-say/101252988>

81 Carrington, D. (2022) "UK not prepared for climate impacts, warns IPCC expert," *The Guardian*, 4 March. Available at: <https://www.theguardian.com/environment/2022/mar/04/uk-not-prepared-climate-impacts-ipcc-intergovernmental#:~:text=%E2%80%9CThe%20IPCC%20report%20backs%20up,climate%20change%20and%20not%20prepared.%E2%80%9D>

assessment report, the IPCC said that the UK will be experiencing wetter winters and drier summers as well as water shortages that could double in frequency within decades⁸². Heat stress in the summer is also poised to worsen in the coming years, affirming one study's conclusion that one in three heat-related deaths in the UK was caused by global warming⁸³. The 2022 heatwaves also demonstrated that transportation infrastructure, such as airports and sea ports, were not built for high temperatures, as flights were cancelled due to melting runways⁸⁴. The UK is also not ready to tackle more flooding along rivers and coasts as well as those arising from intense downpours in urban areas⁸⁵. Key infrastructure such as sewage systems, electricity and communication networks have not been sufficiently fortified to withstand the impacts of strong winds during storms and floods⁸⁶.

More importantly, the UK is falling behind in its climate action commitments. In particular, it is not on track to meet its target of slashing emissions by 78% by 2035, despite falling emissions owing to the switch from coal to gas in electricity production⁸⁷. Critics argue that policies necessary to disentangle the country from its dependence on fossil fuels are inadequate and shall, in effect, intensify climate change⁸⁸.

Climate Change and Educators

Owing to its relatively stable and moderate climate⁸⁹, the UK was rarely a site of apocalyptic climate-related calamities. However, recent events such as the 2022 intense heatwaves and rising sea levels in parts of the UK are making climate emergency more tangible for UK citizens. For the education sector, particularly, climate change is forcing schools to close during extreme weather such as the heatwaves⁹⁰ because most buildings in the country have not been retrofitted for soaring temperatures during the summer. According to a few head teachers, during the 2022 heatwave, they saw a drop in school attendance that has climbed to as much as one-third of the student population⁹¹. Some schools have elected to move to remote learning spaces similar to those employed during Covid-19 lockdowns. In the future, while school administrations may choose to stop in-person learning as a safety

82 *Ibid.*

83 Vicedo-Cabrera, A.M., Scovronick, N., Sera, F. et al. (2021) "The burden of heat-related mortality attributable to recent human-induced climate change", *Nature Climate Change*, 11, 31 May, pp. 492–500. Available at : <https://doi.org/10.1038/s41558-021-01058-x>

84 London Luton Airport (2022) 18 July. Available at : <https://twitter.com/LDNLutonAirport/status/1549071379009511425>

85 Carrington, D. (2022) "UK not prepared for climate impacts, warns IPCC expert," *The Guardian*, 4 March. Available at: <https://www.theguardian.com/environment/2022/mar/04/uk-not-prepared-climate-impacts-ipcc-intergovernmental#:~:text=%E2%80%9CThe%20IPCC%20report%20backs%20up,climate%20change%20and%20not%20prepared.%E2%80%9D>

86 *Ibid.*

87 Stephenson, S. (2021) "Is the UK on track to meet its climate commitments?" *Economics Observatory*, 13 October. Available at: <https://www.economicsobservatory.com/is-the-uk-on-track-to-meet-its-climate-commitments>

88 Somerville, P. (2021) "The continuing failure of UK climate change mitigation policy", *Critical Social Policy*, 41(4), November, pp. 628–650. Available at: doi:10.1177/0261018320961762

89 Met Office (n.d.) *Climate change in the UK*. Available at: <https://www.metoffice.gov.uk/weather/climate-change/climate-change-in-the-uk>

90 BBC News (2022) *UK heatwave: Further schools closing during extreme heat warning*. 18 July. Available at: <https://www.bbc.com/news/uk-england-berkshire-62156746>

91 Tidman, Z. (2022) "Schools see a third of pupils absent as children stay at home in potentially-record breaking heatwave", *Independent*, 18 July. Available at: <https://www.independent.co.uk/news/education/education-news/heatwave-schools-children-absent-40c-b2125544.html>

precaution, online learning modalities also present a host of challenges for both educators and students.

Similarly, in the autumn/winter, heavy downpours and storms have been known to cause the closure of schools due to severe damage caused by flooding. In Roswleyt, a village in Derbyshire, for instance, a primary school was flooded in 2019 and forced to close for nearly five months. Meanwhile, the threat of rising sea levels is slowly becoming evident in the UK. The town of Fairbourne in north Wales, for instance, has been identified as the first community in the country to be decommissioned due to climate change⁹². Based on forecasts and the chances of a storm breach of its sea defences, local residents may be evicted from their homes by 2054 or sooner, because the local council decided the costs of protecting the town from surging sea levels as a result of climate change were prohibitive⁹³. Fairbourne's residents may become the UK's first case of climate refugees as no tangible resettlement or compensation plans have been made to address it. Many Fairbourne residents are resisting the planned eviction of their community, saying the council's decision will result not only in loss of property but also in a collective loss of identity and culture⁹⁴. By extension, education systems will also cease to exist should this plan be implemented.

Just Transition and Educators

Admittedly to Quick, education unions in the UK are only at the early stages of the discourse on climate change and labour rights. Traditionally, the just transition narrative in the country has only covered industrial unions, says Quick. However, growing concerns over workplace safety during heatwaves, compounding workloads in the face of climate events, the integrity of education infrastructure, and ethical considerations regarding fossil fuel financing are becoming more prominent discussion points among UK education unions. Quick explains:

"In the UK, climate change is not really something that's in people's consciousness ... So how do we put the union and our members in the best position possible now to face those consequences in the future? There are examples of climate change impacting education now. Increasing temperatures will have an impact. One of the things we've talked about is: do we need to scope out working temperatures in terms of collectively bargaining for the future? Do we have to look at how we organise the

92 Wall, T. (2019) 'This is a wake-up call: the villagers who could be Britain's first climate refugees', *The Guardian*, 18 May. Available at: <https://www.theguardian.com/environment/2019/may/18/this-is-a-wake-up-call-the-villagers-who-could-be-britains-first-climate-refugees>

93 Wall, T. (2019) 'This is a wake-up call: the villagers who could be Britain's first climate refugees', *The Guardian*, 18 May. Available at: <https://www.theguardian.com/environment/2019/may/18/this-is-a-wake-up-call-the-villagers-who-could-be-britains-first-climate-refugees>

94 Gerretsen, I. (2022) 'The UK 'climate refugees' who won't leave', *BBC Future Planet*, 10 May. Available at: <https://www.bbc.com/future/article/20220506-the-uk-climate-refugees-who-wont-leave>

academic year to minimise the impact on work [of extreme weather]? There's the working conditions aspect but there's also the terms and conditions aspect: how do we put our members in the best place possible for that eventuality [of extreme temperatures and weather]."

Aside from workplace climate adaptation, terminating the endowment of fossil fuel finance in education is a growing concern within education unions in the UK, according to Quick. In particular, transitioning workers in fields that directly benefit from the fossil fuel industry, such as geology and petrochemical engineering, is a test case of just transition within the education sector. Quick adds:

"We need to start thinking now about how we can provide a just transition for those workers, if we are saying that there isn't a future in fossil fuels. [There was] an open letter that's been signed by a number of academics concerned about the amount of funding that is pumped into universities from the fossil fuel industries. But how do we do it? How does the sector survive without that money? Because we need to be independently sustainable from fossil fuel funding ... Universities are going to have to come up, in consultation with unions and other stakeholders, on how they're going to transition away from reliance on that funding. There's also an ethical point here because a lot of fossil fuel companies will be using this investment into the sector to greenwash what they do. This is why it gets tricky. How do we know something is genuinely research into sustainability?"

Divestment from fossil fuel companies in pension funds is another controversial just transition issue for UK educators. In 2021, amidst public outcry, the Universities Superannuation Scheme (USS), the country's largest private pension fund by asset, announced that it would pursue an investment plan that is consistent with the goals of net-zero emissions by 2050⁹⁵. However, critics of the USS administration are claiming that this pledge is too vague as it does not detail how these goals would be achieved in the short and long term.

Within UCU, there is a policy of encouraging the divestment of pension funds from fossil fuel companies. Quick explains that, while many educators are not necessarily concerned about where their pension contributions are being invested, when it was divulged that the USS invested in tobacco companies or US arms dealers, most education unionists were appalled. Similar disclosures in the face of the climate crisis could trigger the same reaction.

On a broader scale, Quick says that educators should also be part of the plan

⁹⁵ Financial Times (n.d.) *UK university pension fund proposes net zero investment strategy*. Available at: <https://www.ft.com/content/3ecd1c6c-6643-4920-b4f8-0ab04fe0a687>

to train and reskill workers for climate-adaptive industries and professions. At present, the UK government is unclear if there is an ample number of teachers, trainers, and assessors to deliver the skilled education that is required of a low-carbon economy shift. For example, Quick cites that there are not enough heat pump engineers and heat pump installation trainers in the country because colleges do not offer competitive remuneration packages for these jobs. The public education sector is largely unprepared to offer courses in critical fields in climate mitigation and adaptation. This means that private sector training companies will likely fill this void, causing these professions to become inaccessible to many people who cannot afford the fees.

Strategies on Just Transition

While the climate change programme within UCU is still in its early stages, Quick says the union is already proposing the creation of a Just Transition Commission to tackle these issues within the union and beyond. The UCU's strategy in broaching just transition internally is by packaging it under a bargaining framework: a claim for members and branches that they could use to make demands around climate issues in the workplace. The move was a proactive decision to transform the discourse surrounding climate change from a policy lobbying point into a bargaining and working conditions issue so that it may have an impact on the terms and conditions of union members. Following this logic, Quick says, UCU can now take industrial action over an employer's failure to address climate and sustainability in the workplace. Moreover, UCU has also initiated continuous professional development (CPD) sessions on climate change and just transition in an effort to bring the issue closer to its members. However, UCU reiterates that government-led CPD sessions are part of their demands as well as paid time off to participate in these matters.

The UCU acknowledges that while education unionists in the UK are well-versed on climate change, there are still gaps in awareness and willingness to engage on the issue. She also admits that there are still members who are climate deniers. Ultimately, Quick says that just transition is an agenda that needs to be integrated into union work as soon as possible because it is also a recognition of the education profession as a green job; that it is a public service essential in the shift to a low-carbon economy. Engaging on climate change, she adds, is an important bridge to the youth movement and a way to keep unions relevant. Quick explains:

"The climate crisis has arrived at our shores ... If we don't start bargaining for those eventualities today, it will be futile because we've lost it. We need

to start collectively bargaining for those things that are down the road ... In effect, how do we come up with a Green New Deal claim that would cover pay? I think this is a resistance [from members] we face as a union, that we should only cover pay. Why are we now asking to include these other things? Well, because if we don't, in 20 years' time, let's think what will happen: Your pay is not going to get better, your job security isn't going to improve. All of the things that are bad now are going to get worse. You can kiss goodbye to any equality in employment rights. It's taking the principles of a Green New Deal and saying this is where collective bargaining should move into ... We need to bargain for the future ... If we don't learn from where the climate crisis is hitting now, where precarity is getting worse, where job security is worse, then we've not done our job [as a union] to prepare our union and members for potential threats down the road."

Norway

Respondent

Trond Harsvik and Ingrid Convery, Union of Education Norway (UEN)

Country Profile

Norway, in Northern Europe, has a population of 5.4 million - and a climate that varies from inland to coastal areas⁹⁶. Owing to warmth generated by the Gulf Stream, Norway's climate is generally warmer, considering its location and compared to its neighbouring countries⁹⁷. However, the IPCC has warned that Norway's mild and temperate climate will soon be affected by climate change as it is projected to experience less snow and more heatwaves in the future⁹⁸.

Because it has the largest oil reserves in Western Europe⁹⁹, Norway's economic progress has been powered by its influential petroleum industry¹⁰⁰ for decades. In 2021, crude oil and natural gas accounted for more than 20% of the country's GDP¹⁰¹, while fossil fuel jobs comprised 75% of the country's total employment in 2017¹⁰². While nearly all of Norway's electricity is generated from renewable sources, the country is still a major emissions contributor

96 Climate Change Knowledge Portal (n.d.) Norway. Available at: <https://climateknowledgeportal.worldbank.org/country/norway#:~:text=Norway%20is%20vulnerable%20to%20the,level%20rise%2C%20and%20ocean%20acidification>

97 Ibid.

98 The Local (2021) How will climate change impact Norway? 10 August. Available at: <https://www.thelocal.no/20210810/how-will-climate-change-impact-norway/>

99 U.S. Energy Information and Administration (2022) Norway. 30 June. Available at: <https://www.eia.gov/international/analysis/country/NOR>

100 Climate Change Knowledge Portal (n.d.) Norway. Available at: <https://climateknowledgeportal.worldbank.org/country/norway#:~:text=Norway%20is%20vulnerable%20to%20the,level%20rise%2C%20and%20ocean%20acidification>

101 U.S. Energy Information and Administration (2022) Norway. 30 June. Available at: <https://www.eia.gov/international/analysis/country/NOR>

102 Climate Change Knowledge Portal (n.d.) Norway. Available at: <https://climateknowledgeportal.worldbank.org/country/norway#:~:text=Norway%20is%20vulnerable%20to%20the,level%20rise%2C%20and%20ocean%20acidification>

when its historical contributions and the combustion of its exported fossil fuel products are taken into account. To illustrate, the country's annual domestic emissions were around 53 million tonnes in 2017, while the emissions from exported Norwegian oil and gas were around 470 million tonnes in the same year, according to a UN Emissions Gap Report¹⁰³. While the country has made improvements in its 2030 domestic reductions targets, codifying these pledges as well as crafting stronger policies on implementation are lacking in the country's climate action plans.

Meanwhile, the government is seeking to quash a case filed by Norwegian climate activists before the European Court of Human Rights regarding the Arctic Oil drilling permits¹⁰⁴. Activists are asserting that oil exploration in the Arctic Ocean is a violation of fundamental human rights and endangers the future of young people¹⁰⁵. Despite recent pronouncements of net zero by 2050, government policy continues to be in favour of further exploration of oil and gas reserves in the country. Critics argue that these are fundamentally incompatible with each other.

Climate Change and Educators

According to Trond Harsvik and Ingrid Convery of the Union of Education Norway (UEN), climate change has not severely impacted the education system. Because of the country's stable economy and climate, in general, educators have not experienced the direct negative impacts of climate change such as stronger hurricanes, ocean acidification, or intense droughts. However, according to UEN, Norwegian educators have been at the forefront of the implementation of a new curriculum that seeks to promote sustainable development, democracy and global citizenship, public health, and coping skills across subjects. This is primarily how climate change is affecting the sector, Harsvik and Convery say.

Just Transition and Educators

The UEN's development and action plan for sustainable development¹⁰⁶ provides a guideline on the union's policy regarding climate change, including just transition. According to the plan, UEN aims to be a force for promoting education for sustainable development. It believes that "the teaching profession plays a key role in the transition to a sustainable society, and one

103 Kottasova, I. (2021) "Norway, the UK and Canada are not climate champions. They are climate hypocrites", *CNN*, 17 February. Available at: <https://edition.cnn.com/2021/02/17/world/climate-hypocrites-uk-canada-norway-intl/index.html>

104 Adomaitis, N. and Buli, N. (2022) "Norway asks human rights court to dismiss Arctic oil case", *Reuters*, 29 April. Available at: <https://www.reuters.com/world/europe/norway-asks-human-rights-court-dismiss-arctic-oil-case-2022-04-27/>

105 *Ibid.*

106 Utdannings Forbundet (2022) *Union of Education Norway – climate change and sustainable development action plan 2021-2023*. 6 May. Available at: <https://www.utdanningsforbundet.no/var-politikk/strategier/union-of-education-norway--climate-change-and-sustainable-development-action-plan-20212023/>



part of our civic mandate is to give children and young people the skills they need to be able to live in a sustainable and environmentally friendly way". The UEN affirms that the transition to a sustainable society must engender the fair distribution of goods and burdens in a bid to prevent widening socio-economic gaps in Norwegian society and between countries.

In this regard, UEN has resolved to:

- Work to involve union representatives at all levels in reorganisation processes at the earliest possible stage.
- Use the bipartite and tripartite cooperation to work for a sustainable transition of society with just distribution of benefits and burdens.
- Work - through [its] membership - to ensure that a green transition results in fair distribution of value creation.
- Work for a just transition internationally through [its] memberships of the Nordic Teachers' Council and Education International.

According to Harsvik and Convery, UEN exerts its influence on policies related to climate change and sustainable through social dialogue within the education sector at the local and national levels. In particular, UEN has been active in campaigning to adapt the curriculum to reflect the urgency of climate change and sustainability issues for students and their communities. Through its collaborative work with Unio, Norway's union confederation, it supports efforts of industrial unions and other concerned sectors working to advance a just transition in the country. UEN endeavors to adapt the sustainable development lens in safeguarding its members' interests on pay and working conditions. It has also been strengthening its organisational policies on sustainability in an effort to raise awareness among its members.

Latin America

Argentina

Respondent

Miguel Duhalde, Education Secretariat, Confederación Trabajadores de la Educación de Argentina (CTERA)

Country Profile

Argentina, the second largest country in South America, comprises a wide range

of geophysical landscapes and climates, from the tropical climate in the north to the tundra in the far south¹⁰⁷. It is also home to Cerro Aconcagua, the tallest peak in the Western Hemisphere, as well as the Laguna del Carbon, the lowest point in the Western Hemisphere¹⁰⁸, making it a geographically diverse country.

Argentina is also rich in natural resources, has substantial biodiversity, and a vast range of vegetation¹⁰⁹. Given its fertile lands, it is a leading food producer¹¹⁰. The country also has an abundance of gas and lithium reserves, which has positioned it as a major player in the energy industry¹¹¹. However, the same industries, such as industrial agriculture and mining, that are considered the country's primary economic drivers, are also fast becoming sources of ecological and social discord. For instance, deforestation and pollution due to agricultural expansion of soybean production are imperilling the country's rich biodiversity¹¹². Similarly, Argentina's beef industry is threatening natural habitats, as cattle ranches are now usually located near grasslands and forests¹¹³.

Argentina's temperature rise since 1901 was slightly lower than the global mean average. However, the country has been experiencing a trend of severe heatwaves and extreme cold in the last decades¹¹⁴. Precipitation levels have also increased, which initially favoured agricultural yields, but eventually resulted in massive flooding in urban and rural areas¹¹⁵. In the coming years, climate variability is expected to bring more uncertainty into the country's already fragile socio-economic systems, as Argentina continues to register record high urban poverty. While the country does not regularly experience devastating extreme weather events, its aggravating environmental issues can potentially cause socio-political instability.

Climate Change and Educators

For Argentinian educators, the ecological crisis propelling climate change is having an adverse effect on public health. In particular, environmentally destructive industries at the root of the climate emergency are also having an impact on public health, says Miguel Duhalde of Confederación Trabajadores de la Educación de Argentina (CTERA). For instance, large-scale agricultural corporations are wreaking havoc on the health of rural communities through the aerial spraying of unregulated pesticides and agrochemicals. Aside from

107 Climate Change Knowledge Portal (n.d.) Argentina. Available at: <https://climateknowledgeportal.worldbank.org/country/argentina>

108 *Ibid.*

109 Climate Change Knowledge Portal (n.d.) Argentina. Available at: <https://climateknowledgeportal.worldbank.org/country/argentina>

110 The World Bank (2022) *The World Bank in Argentina*. Available at: <https://www.worldbank.org/en/country/argentina/overview>

111 Climate Change Knowledge Portal (n.d.) Argentina. Available at: <https://climateknowledgeportal.worldbank.org/country/argentina>

112 WWF (n.d.) *Deforestation and pollution are the main threats to Argentina's biodiversity and landscapes*. Available at: https://wwf.panda.org/wwf_offices/argentina/environmental_problems_argentina/

113 *Ibid.*

114 Barros, V., Boninsegna, J., Camilloni, I., Chidiak, M., Magrín, G., and Rusticucci, M. (2015). "Climate change in Argentina: Trends, projections, impacts and adaptation", *Wiley Interdisciplinary Reviews: Climate Change*. 6, pp. 151-169. DOI: 10.1002/wcc.316.

115 *Ibid.*

direct inhalation of chemicals, residents are also impacted by water sources being contaminated by industrial waste and herbicides. This has led to people suffering from a range of health issues, from diarrhoea and headaches to intestinal poisoning¹¹⁶.

Naturally, educators are also affected by industrial pollution through its inevitable impacts on schools. The inhospitable effects of agrochemicals are worsening working conditions for educators, Duhalde says. Moreover, teachers are also suffering through heatwaves, which are becoming more intense and frequent. In January 2022, Argentina experienced a record-setting heatwave that briefly made the country the “hottest place on earth”¹¹⁷. In Argentina, where education is a feminised profession, women are disproportionately affected by climate change and its policies. Climate models suggest that heat stress will be a recurring impact of climate change in the country.

Just Transition and Educators

According to Duhalde, the CTERA leadership understands the urgency and necessity of fighting for a habitable planet. He says that while the education sector in Argentina is not directly affected by climate change, educators still suffer through the ‘collateral effects’ of climate change. This is why CTERA recognises climate change as a labour and human rights issue. Duhalde explains:

“Climate change affects everyone. For teachers, it has collateral effects because of the production model. There are indirect effects [to educators] because we live in a global model ... Climate change affects transport and food, and educators become affected because we are part of this economic model ... For us, climate change is tantamount to capitalism, really.”

According to Duhalde, CTERA has been active in the campaign for energy democracy in the country. In Argentina, which has some of the most expensive electricity rates in South America¹¹⁸, the energy industry is largely privately owned, even with proposed renewable energy projects. In turn, Duhalde says, energy poverty continues to be a major issue in the country, especially in rural and urban poor communities. He adds:

“We need a fair redistribution of energy. For us, energy transition must avoid

116 Chisleanschi, R. (2020) “Agrochemicals and industrial waste threaten Argentina’s Gran Chaco”, *Mongabay*, 19 August. Available at: <https://news.mongabay.com/2020/08/agrochemicals-and-industrial-waste-threaten-argentinas-gran-chaco/>

117 Bustamante, J. (2022) “Furnace: Argentina roasts in record-setting heat wave”, *Reuters*, 12 January. Available at: <https://www.reuters.com/world/americas/furnace-argentina-roasts-record-setting-heat-wave-2022-01-11/>

118 Reuters (2021) *Argentina power firms hike prices after freeze since 2019*. 2 May. Available at: <https://www.reuters.com/business/energy/argentina-power-firms-hike-prices-after-freeze-since-2019-2021-05-01/>

privatisation and reinforce what is public and democratic. This means we need to decarbonise ... This is very much related to the fight against poverty. And just transition must go hand-in-hand with talking about who gets to use that energy. Because traditional [fossil fuel] energy [in this country] is mainly used by the most powerful sectors, while lower-income households find it difficult to access energy. Just transition must mean the redistribution of a new kind of energy, renewable energy. We need to redistribute energy, but not just any kind, it has to be renewable energy."

While CTERA has been active on this campaign, Duhalde admits there is a lot of work to be done in raising awareness among union members. He says the work to raise consciousness on a just transition for educators must happen simultaneously with the government and within the union. In this regard, CTERA has set up training courses for educators interested in the topic. The union has also organised workshops for journalists on reporting about environmental topics, a type of non-formal climate education, he adds.

Argentina is also facing a dilemma in relation to its lithium mining industry, as it is a source of environmental degradation but remains a major employer in the country. Duhalde says that many union members are opposed to lithium mining; however, the industry is also a vital livelihood source for certain communities, so campaigning to decommission these activities has become a complicated issue. The challenge, then, for educators is to teach about the long-term impacts of these industries and encourage social dialogue among students and their communities. Duhalde explains:

"Many of our members were against it [lithium mining] because they weren't employed by those mining companies. There is that constant tension between supporting the companies that are exploiting natural resources and, on the other hand, people are afraid of losing their jobs. We are talking about mother and fathers, parents of the children we are teaching in our schools. So, we need to bring awareness about citizenship, so that social, labour, and environmental rights are upheld. So that we can have a different production model that guarantees job creation and also a decent life on Earth."

Ultimately, CTERA also recognises the limitations of education to effect meaningful systemic change. This explains why collective action and collaboration are important elements of this work, according to Duhalde. Education is crucial in raising awareness among students and their communities but collective action through the stewardship of unions and social movements is the way forward in pushing for systemic reforms.



North America

Canada

Respondent

Dominique Bernier, Environment and Just Transition Counsellor, Centrale de syndicats du Québec (CSQ)

Country Profile

Canada is already feeling the extensive impacts of climate change as the country's temperature has, on average, risen twice than that of the rest of the world, according to a report by its federal government in 2019¹¹⁹. Widespread warming has manifested in various ways in the country, including extreme heat, less intense cold, longer growing seasons, shorter snow and ice cover months, thinning glaciers, thawing permafrost, and rising sea levels¹²⁰. Rainfall patterns are also changing, which has resulted in increased overall precipitation but decreased rain in the summer for some areas¹²¹. Coastal flooding is projected to rise due to a combination of local and global sea-level surge, as well as sea-ice loss in the Arctic and Atlantic areas of Canada¹²². This could heighten risks of storm surges and waves that would be detrimental to coastal ecosystems and infrastructure¹²³. In addition, water supply shortages are on the horizon amidst the unpredictable replenishment of freshwater due to warmer winters, increased snowmelt, even warmer summers, and faster water surface evaporation¹²⁴.

Canada has also been experiencing extreme heat stress, as seen in 2021's deadly summer heatwaves. In British Columbia, temperatures reached 49.6°C in 2021, effectively creating a heat dome that trapped potentially lethal heat¹²⁵. The effects of the heatwaves were especially harsh on people with disabilities and the elderly as buildings and public infrastructure were ill-prepared for this level of hot weather¹²⁶. Unabated global warming will be punishing

119 "Headline Statements." Canada's Changing Climate Report 2019, <https://changingclimate.ca/CCCR2019>

120 *Ibid.*

121 "Headline Statements." Canada's Changing Climate Report 2019, <https://changingclimate.ca/CCCR2019>

122 "Headline Statements." Canada's Changing Climate Report 2019, <https://changingclimate.ca/CCCR2019>

123 *Ibid.*

124 *Ibid.*

125 Human Rights Watch (2021) *Canada: Disastrous impact of extreme heat*. 5 October. Available at: <https://www.hrw.org/news/2021/10/05/canada-disastrous-impact-extreme-heat>

126 *Ibid.*

for vulnerable groups in Canada and will have tremendous effects on the country's primary industries such as agriculture, manufacturing, and the public service sector, including education.

Climate Change and Educators

In Canada, climate change is negatively impacting the deteriorating public infrastructure system, and educators are suffering the consequences, according to Dominique Bernier of Centrale de syndicats du Québec (CSQ) in Montreal.

Specifically, heatwaves are becoming a threat to public health and education. Since most school buildings have not been retrofitted for severe temperatures, educators and students must endure punishing heatwaves, Bernier says. Moreover, in some cases where teachers have had to conduct classes under untenable temperatures, workloads are compounded by the inability of students to focus on lessons due to heat discomfort. Likewise, due to the state of disrepair of much of the public infrastructure, education systems are highly susceptible to flash floods in the wake of stronger storms and more frequent heavy downpours.

Just Transition and Educators

According to Bernier, CSQ members found health and workplace-related climate impacts the most concerning aspect of the climate change and just transition discourse, which the union started in 2019. Because of traditional views about unions, pushing for climate change to become a priority within the union has been a challenge. She explains:

“Sometimes, members will say to focus only on my [labour] rights and not be distracted by these social issues. But what we are trying to do is show them that social issues [such as climate change] have an impact on your rights at work.”

However, she says that whenever members are presented by the long-term consequences of inaction on climate change, they become more engaged in discussions. At CSQ, presenting just transition in a holistic manner that spans the education sector's position as a vital public service as well as the implications of worsening climate change for labour rights has been crucial in inspiring members to become more involved. Bernier says the Movement Act, a network of schools in Canada promoting environmental education, has also been effective in engaging with members. Current and new union members are active in this initiative, so Bernier has utilised the network to foster dialogues on just transition among members. So far, she says, this has been

effective in convincing those who might have been apprehensive about climate change as a union priority. It also helps, she says, that the Movement Act's four values - ecology, solidarity, democracy, and pacifism - are compatible with the precepts of just transition.

In this regard, CSQ is also working to decarbonise the union, especially its pension funds. Because CSQ represents a large part of the public sector, it was important for the union to divest its retirement funds from fossil fuel companies as a signal of its commitment to sustainability and a just transition. In the last few years, the CSQ has campaigned for the Caisse de dépôt et placement du Québec (CDPQ), an institutional pension funds manager, to withdraw pension contributions from the oil and gas sectors. In 2021, the campaign succeeded as CDPQ withdrew its investments from oil companies. It is now working to fully decarbonise its investment portfolio and has pledged to become carbon neutral by 2030, Bernier adds. This campaign, the result of a resolution passed at a CSQ congress, was instrumental in pressuring the CDPQ to align its investment portfolio with the values of its pension contributors, she says.

Additionally, the union is in the process of commissioning a study to investigate the impacts of 'decarbonising retirement funds,' in an effort to allay the financial anxieties among members. She explains:

"We are doing this research to study the financial impact of doing nothing. What if the retirement fund is invested in the same companies? What will happen? And we will add scenarios to study what will happen if the funds become carbon neutral ... The aim is to reassure people [on the economic soundness of steering away from fossil fuel investments], especially retired teachers."

The CSQ has also been driving the just transition discourse in Canada to recognise the important role that the public sector will play in a shift to a low-carbon economy, particularly education. The Canadian government recently announced a multi-sector engagement process that sought to collate insights on how a "just and equitable transition to a low-carbon future for workers and communities" could be ensured by the government¹²⁷. The sectors invited, which included labour, non-governmental organisations, industry and provincial, territorial and Indigenous peoples, were asked to provide inputs for a proposed just transition law that would guide government decision-making processes as well as establish a Just Transition Advisory Board¹²⁸. However, as of now, the initiative appears to only focus on industrial workers, primarily

127 Government of Canada (2021) *Canada launches just transition engagement*. 20 July. Available at: <https://www.canada.ca/en/natural-resources-canada/news/2021/07/canada-launches-just-transition-engagement.html>

128 *Ibid.*

coal-affected workers and communities, leaving a question mark over the participation of public sector services. The CSQ, however, believes that the just transition discourse needs to also include public service sectors, such as education, because they also experience climate impacts on an acute level and will be pivotal in reskilling and training workers. Bernier explains:

“If you want the workers in the industrial sector to requalify themselves for other jobs, they need to get an education. So, it's going to impact the education sector. We are trying to push [that] the reskilling and requalification of workers should not be in business education. It should not be done in the workplace because it's going to tie the workers to one industry. Public education is the way to go because, with a just transition, we need to make sure that these workers can go to many other jobs. There should be programmes that train workers for multiple kinds of green jobs.”

Moreover, the education sector, like other public services, should be carefully considered in any just transition project because of its status as a low-carbon profession. Bernier says the government should invest in public sector jobs, such as fortifying education systems to become climate adaptive and providing good quality union jobs that will simultaneously build community resilience. She adds:

“We are also trying to say that the government should invest in the public sector because these are low-carbon jobs, in general. These jobs increase the resilience of the population, and that is what just transition is. Nobody should be left behind.”

In order to ensure a just transition for educators, a comprehensive approach on basic social services and social safety nets must be employed. Bernier says educators will greatly benefit from the revitalisation and electrification of Canada's public transportation network. Moreover, redirecting fossil fuel subsidies into the public sector could fund free, accessible, and reliable public transportation which will lessen car dependence in the country. Schools should also receive more funding to create more learning opportunities for children and young people regarding sustainability, climate change, and environmental justice. Employers must also provide paid time off for educators to undergo professional development on these issues, she adds.

For the CSQ, a just transition must encompass not only workplace adaptation but also a comprehensive revitalisation of the public services sector as a generator of green jobs and a platform of community resilience.

Mexico

Respondent

Sindicato Nacional de Trabajadores de la Educación (SNTE) (email interview)

Country Profile

Mexico's highly diverse topography and climate make the country susceptible to the harsh impacts of climate change¹²⁹. In recent years, Mexico has seen more frequent and intense weather events, including two of the three most destructive hurricane seasons on record in the Atlantic which resulted in the displacement of thousands of people¹³⁰.

Mexico is also seeing longer periods of drought. In a country where as much as 75% of land is already too arid to cultivate crops¹³¹, climate change will aggravate the viability of farmlands and, in turn, endanger food security. Currently, farmers are already abandoning traditional crops, such as corn and other grains, for alternatives that require less water, such as pistachios and cactuses, fuelling concerns over long-term crop biodiversity¹³². Agricultural experts predict that climate change will worsen the conditions of dry lands in the country as it will induce more droughts, fundamentally impacting one of the country's primary industries.

Mexico's government has committed to reducing emissions and implementing necessary mitigation and adaptation programmes to improve resilience among its primary industries and the population¹³³. Key sectors identified as priority adaptation zones are energy, agriculture, water, land use and forestry, and coastal zones¹³⁴. However, public sector services, such as healthcare, transportation, and education, are yet to be mentioned in adaptation programmes.

Climate Change and Educators

129 Climate Change Knowledge Portal (n.d.) Mexico. Available at: <https://climateknowledgeportal.worldbank.org/country/mexico>

130 Kincaid, J. (2021) "From home to rubble: growing weather risk fuels Mexico landslides", *Reuters*, 10 December. Available at: <https://www.reuters.com/markets/commodities/home-rubble-growing-weather-risk-fuels-mexico-landslides-2021-12-10/>

131 Aljazeera (2020) Too dry to thrive: Climate change spurs Mexicans to change crops. 21 February. Available at: <https://www.aljazeera.com/economy/2020/2/21/too-dry-to-thrive-climate-change-spurs-mexicans-to-change-crops>

132 *Ibid.*

133 Climate Change Knowledge Portal (n.d.) Mexico. Available at: <https://climateknowledgeportal.worldbank.org/country/mexico>

134 *Ibid.*

In Mexico, the education sector is witnessing first-hand the ways that climate change is compounding social inequalities. With the advent of more intense floods, storms, and droughts, climate change is laying bare the inadequacies of the Mexican national education system to adapt to the climate crisis. According to the Sindicato Nacional de Trabajadores de la Educación (SNTE), educators are seeing an increase in difficulties for students and educators to access vital resources such as water, food, and air due to more frequent and severe climate impacts.

As oppressive heatwaves and winters become more frigid, teaching becomes a more complicated task to perform because some schools lack water, ventilation, air conditioning, and heating, according to SNTE. Moreover, severe weather is having an impact on the country's public health. Floods, droughts, and atmospheric pollution are contributing to an unhealthy living environment, according to SNTE. Educators are reportedly experiencing more health issues as a consequence of increased workloads and working under severe temperatures. Given Mexico's already overburdened healthcare system, SNTE says that social security systems may not be able to sufficiently attend to the growing healthcare needs of its population in the face of intensifying climate change.

Amidst climate breakdown, Mexico's national education system must take steps today to build the resilience of its education systems against the effects of climate change as a way to advance a just transition in the sector.

Just Transition and Educators

For SNTE, a just transition in the education sector must primarily address the necessity of adapting workplaces and communities to the impacts of climate change. It must be framed under the precepts of social justice, which goes hand-in-hand with SNTE's founding values: the defence of the public education system and the labour rights of education workers.

Hence, a just transition for the broader society must protect the environment and ensure that new forms of oppression and injustices are not generated. Therefore, social protection must be enacted to cushion the potential job losses in the transition to a low-carbon economy. As such, education programmes that reskill workers for the green economy and social protection systems that will guarantee the welfare of workers and their communities will be pivotal in the transition. Therefore, according to SNTE, it is imperative to spaces be generated that promote meaningful participation and effective representation from the public, especially in the education sector. Collective and inclusive action will be crucial in advancing just transition policies.



In this regard, SNTE has been including the climate agenda in social dialogue as a way to contribute to public policies that address the climate crisis. For instance, SNTE has advocated for the inclusion of sustainable education infrastructure projects to respond to the growing impacts of climate change on education systems. Likewise, strengthening climate education in the country is a priority as well as campaigning for biodiversity, conservation, cleaning aquifers, and reforestation.

USA

Respondent

David Hughes, Climate Justice Chair, Rutgers University, American Federation of Teachers (AFT)

Country Profile

In the US, climate change is having a variety of impacts on the world's wealthiest nation. Across the country, climate change is intensifying heatwaves, heavy downpours, and sea level rise in the Northeast and Southeast; inducing water shortages in the Northwest; triggering massive flooding in the Midwest; and causing prolonged droughts and heat stress in the Southwest¹³⁵. Amidst unabated global warming, wildfire seasons are also becoming longer in the West, doubling the area of burnt forests in recent years¹³⁶. Meanwhile, hurricanes have also become stronger since the 1980s and are projected to become more intense with continued temperature increases¹³⁷.

Extreme weather disasters, sea level rise, and prolonged droughts induced by climate change are already having profound impacts on the US economy, public health, environment, and infrastructure. In the absence of climate mitigation policies, the US is set to lose 1-3% of its GDP to climate change every year until 2100¹³⁸. Similarly, climate change is likely to become a major stressor on public health by causing more disease outbreaks, injuries, and premature deaths related to climate disasters, and heightening existing health risks such as respiratory and cardiac illnesses¹³⁹. Meanwhile, accelerating sea levels in coastal cities are already forcing US residents to flee their homes in the face of acute risks of deadly storm surges¹⁴⁰.

135 NASA Global Climate Change (2022) *The effects of climate change*. Available at: <https://climate.nasa.gov/effects/#:~:text=Climate%20change%20has%20caused%20increased,related%20health%20impacts%20in%20cities>.

136 *Ibid.*

137 *Ibid.*

138 Jaeger, J. and Saha, D. (2020) "10 charts show the economic benefits of US climate action", *World Resources Institute*, 28 July. Available at: <https://www.wri.org/insights/10-charts-show-economic-benefits-us-climate-action>

139 Centers for Disease Control and Prevention (2022) *Climate effects on health*. Available at: <https://www.cdc.gov/climateandhealth/effects/default.htm#:~:text=The%20health%20effects%20of%20these, and%20threats%20to%20mental%20health>

140 National Geographic (n.d.) *Sea level rise and coastal cities*. Available at: <https://education.nationalgeographic.org/resource/sea-level-rise-and-coastal-cities>

Climate Change and Educators

The impacts of climate change are already causing disruptions in the US education system. As heatwaves and destructive hurricanes become more frequent and intense, educators are grappling with the ramifications of climate change in the workplace. For instance, according to David Hughes of the American Federation of Teachers (AFT), the increased frequency with which climate disasters are happening in the country is disrupting the work of educators. In particular, educators must now tackle increasing calendar interruptions due to massive flooding and hurricanes.

In some extreme cases, such as with Hurricane Katrina in 2005¹⁴¹, entire public schools that were decimated by the hurricane were replaced by highly selective charter schools in the disaster's aftermath¹⁴². According to Hughes, this is a prime example of 'disaster capitalism', which has in effect reproduced inequalities among New Orleans' historically excluded groups by restricting access to quality education through privatisation.

However, climate change has also become a prominent organising point among educators, and in AFT in particular. In 2017, the union passed a resolution calling for AFT's participation in setting the narrative of "A Just Transition to a Peaceful and Sustainable Economy". Likewise, in 2020, the AFT also endorsed the Green New Deal¹⁴³ – a set of public policy proposals that seeks to address climate change through economic reforms and a massive investment in public infrastructure and social services. As Hughes puts it, clamour among union members as well as pressure from students are motivating educators in the US to be more involved in the discourses surrounding climate change and a¹⁴⁴ just transition.

Just Transition and Educators

To advance a just transition in the education sector, Hughes believes that education systems need to epitomise climate resilience for the communities that they serve. It is imperative, he says, that educators lead the way in innovating climate adaptation and mitigation pathways at the community level. In the first place, he says, universities and schools should take the initiative to shift to renewable sources of energy, such as solar and wind, as a signal of their commitment to climate action. Furthermore, buildings must be retrofitted to adapt to and withstand extreme weather conditions. Once

141 Hurricane Katrina was a Category 5 storm that hit the US Gulf Coast in August 2005. The hurricane left hundreds of thousands of people displaced, with nearly 1,800 dead. It also left a trail of more than US\$100 billion in property damage. National Weather Service (n.d.)

Hurricane Katrina. Available at: <https://www.weather.gov/jetstream/katrina>

142 Strauss, V. (2018) "The real story of New Orleans and its charter schools", The Washington Post, 4 September. Available at: <https://www.washingtonpost.com/education/2018/09/04/real-story-new-orleans-its-charter-schools/>

143 American Federation of Teachers (2020) *In Support of Green New Deal*. Available at: <https://www.aft.org/resolution/support-green-new-deal>

144 American Federation of Teachers (2017). "A Just Transition to a Peaceful and Sustainable Economy." Available at: <https://www.aft.org/resolution/just-transition-peaceful-and-sustainable-economy>



these structural changes are fortified, education systems can also serve as resilience hubs in the aftermath of climate disasters. When education systems are empowered to have independent power grids, where they no longer depend on corporatse and fossil fuel-based energy generation, they can serve their communities by providing free refrigeration of medicines as well as charging ports in times of emergency, Hughes says. Simply put, the education sector can become a paragon of energy democracy by facilitating community ownership of renewable energy. In this light, AFT is also considering passing a resolution for the divestment of teachers' pension funds from fossil fuel corporations.

While the education sector will not necessarily suffer huge job losses due to climate change or in an energy transition, educators are still stakeholders in their own communities. Hence, acting on climate change is symbiotic in the professional and personal lives of educators. To fully comprehend the magnitude of the climate crisis and its solutions, a comprehensive understanding of the educator's role in society, as not just a worker but also an active and vital member of their community, is critical. A just transition in the education sector impels unionists to recognise their prominent status as leaders within their own communities, in which they are called upon to drive decarbonisation as well as building up resilience.

Collaborators

International Trade Union Confederation (ITUC)

Respondent

Bert de Wel, Climate Policy Officer, International Trade Union Confederation (ITUC)

Just Transition and Educators

According to Bert de Wel, climate policy officer of the International Trade Union Confederation (ITUC), it is critical to recognise the status of educators as workers who have a stake in the just transition to a low-carbon world to galvanise education unions into the discourse. He says it is crucial to note that working conditions in the education sector are being directly affected by climate disasters and weather events but a lack of planning for future impacts will be detrimental to the welfare of educators and their communities. Hence,

de Wel identifies three ways that a just transition could be integrated into education systems. These are namely: adaptation, education and awareness raising, mobilisation.

Adaptation

Aside from adapting education units to become resilient to extreme weather such as prolonged heatwaves and intense storms, there is also an untapped benefit in demanding education systems to become carbon neutral. According to de Wel, initiating a shift to renewable energy sources in the education sector can also be framed as a long-term adaptation strategy in the face of fluctuating fuel prices and the looming possibility of stranded assets¹⁴⁵ on fossil fuel industries¹⁴⁶. This is where the co-benefits of climate mitigation and adaptation mechanisms can be explored for the education sector. He explains:

“With the war in Ukraine, energy costs are going up and they are often fossil fuel-based. Schools in Belgium, for example, have had to stop investing in educational material because they had to pay their high energy bills. If they had invested previously to have a positive energy school that is based on renewable energy, they would not have high bills today and they could pay for books and materials for children, and the wages for the teachers. Climate change is affecting the teachers and everybody who is working in the education system.”

Education and Awareness-Raising

Educating present and future generations of students about the magnitude of the climate crisis is a vital task in advancing just transition in the world. In particular, de Wel says that building a citizenry with the critical thinking skills to discern when corporations or governments are merely ‘greenwashing’ or posturing on climate action is important in terms of building a global culture of accountability. This contributes to how a society comprehends the structural changes required to tackle climate change, he adds.

Mobilisation

As citizens and workers, educators can mobilise to demand better climate policies. De Wel says that participating in youth climate strikes as well as organising as a union to push for climate policies on the local level are only

¹⁴⁵ Stranded assets are investments that do not generate an economic return before the end of their projected economic life. In the case of fossil fuels, it is argued that, owing to the lowering costs of renewable energy projects and the political and economic imperatives of shifting to a low-carbon economy, any investment made in fossil fuels presently run the risk of becoming stranded in 10 or 20 years.

¹⁴⁶ Auger, T., Trüby, J., Balcolme, P., and Staffell, I. (2021) “The future of coal investment, trade and stranded assets”, *Joule*, 8 June, 5(6), pp. 1462-1484. Available at: <https://doi.org/10.1016/j.joule.2021.05.008>



a few examples of how educators can be more involved in the just transition movement. He adds that linking sectoral demands in union negotiations with governments is also an opportunity to advance the education sector's interests in a just transition. De Wel cites the case of local public transport:

“There is an important role of schools in the transport issue [which is also a just transition issue]. Can teachers and students walk or cycle safely to school so that they can avoid cars? Is there public transport? There are many important issues that education unions can pick up on the ground and translate to a sectoral level with policy proposals to the Ministry of Education or Energy. They can even push this issue to become part of their country’s NDCs.”

All-Africa Students Union (AASU)

Respondent

Peter Kwasi Kodjie, Secretary General, All-Africa Students Union (AASU)

Collaborating with students

Across Africa, climate change is causing massive damage that is rendering education inaccessible for many people. Likewise, according to Peter Kwasi Kodjie of the All-Africa Students Union (AASU), food shortages due to prolonged droughts and water scarcity have dissuaded students from acquiring an education. Hence, AASU believes that climate change is an existential and moral issue.

AASU has been running capacity building programmes for their members, including on how to train students to lead sustainability practices in schools and universities. Kodjie says that student unions are keen on building collaborative relationships with educators, particularly on research and data collection. For example, he says that the extractive industry in Ghana has been destructive to rainforests, but also provides employment to many communities. He says this case should be studied for a just transition, specifically on how mining workers could be transitioned into other less-exploitative industries. He believes students and educators can contribute in studying what kinds of social protection and environmental regulatory mechanisms could be implemented to curb the harms being committed by the fossil fuel-intensive industries such as mining.

Conclusions and Recommendations

How Is Climate Change Affecting the Education Sector?

Alongside the political anxieties that climate change has provoked are social movement-generated responses for a better, more equitable world. The just transition framework emerged as an act of resistance against the divisive propaganda that upholding workers' rights is anathema to the defence of nature and our communities. In reality, workers cannot be separated from the ecosystems in which they thrive. Therefore, to stand in solidarity with one's community in its struggle to safeguard a habitable planet is an assertion of the labour movement's commitment to human rights as fundamental, even sacrosanct. Progressive trade unions have been quick to acknowledge this by rejecting the dichotomy of 'jobs vs. nature' as untrue. Historical and ongoing collaboration among trade unions, environmental justice groups, and grassroots communities affirms that climate protection need not come at the expense of secure and good quality jobs.

Educators occupy a distinct position in the just transition discourse. While the profession itself is not heavily reliant on fossil fuels for its survival, the sector is affected by the ways that climate change will alter working conditions, job security, and overall welfare. The reality on the ground is that educators are already suffering the worst consequences of the climate crisis.

The most pressing concern among educators is the recurrence of severe heatwaves. Practically every union representative interviewed for this study said that educators are reeling from the twin dilemmas of deteriorating school buildings and aggravating heat stress due to climate change. In India and Canada, for instance, educators are teaching in classrooms that are ill-equipped for extreme temperatures. Similarly, **the increasing frequency and strength of hurricanes, storms, and typhoons are causing massive damage to education systems, disrupting school calendars, and diminishing teaching capacities.** This has resulted in educators working in sub-par and unsafe conditions, as in the case of Zimbabwe and Malawi. Educators in the US are also contending with the effects of climate change on their teaching capacities.

As extreme weather events become more frequent and intense, many educators are also becoming climate disaster victims themselves. In

Zimbabwe, Fiji, and Malawi, for example, educators have lost their homes to a recent spate of severe cyclones. In the aftermath of climate disasters, educators are sometimes asked to perform duties in line with disaster responses which are beyond the scope of their official responsibilities. This is true in countries like Fiji, Malawi, and India, where educators are being shoulder-tapped by local governments to assist in disaster relief operations. While most educators are willing to help in disaster response, the sector is also beset by its own problems in the aftermath of a climate disaster, which might imply that resolving concerns within the sector is not always prioritised. Hence, **climate change-induced disasters are compounding the workload of educators.**

Rapidly rising sea levels are threatening to sink whole islands and communities and, consequently, schools. In Aotearoa New Zealand, Fiji, Vanuatu, the UK, and Taiwan, rising sea levels pose a threat to the very existence of certain schools and centres, thus imperilling job security and job prospects.

The multiplier effect of climate change on existing social injustices is becoming more apparent in the different ways that climate change is affecting women. **In particular, women, who make up a majority of educators, are being disproportionately affected by climate impacts¹⁴⁷.** This is true everywhere but especially in India, Argentina, and Fiji. In Fiji, for instance, female educators must contend with increasing levels of domestic violence which is fuelled by climate impacts. Meanwhile, in Argentina, female educators are unfairly burdened by the task of generating income while also ensuring the health and safety of their families. Similarly, Indigenous peoples are tackling the twin burdens of environmental restoration and heightening climate change risks. Because of their historical marginalisation and their crucial roles in ecological conservation¹⁴⁸, **Indigenous peoples are also bearing the unfair impacts of climate change, such as displacement and forced migration.** Maōri, who often live in the coastal areas of Aotearoa New Zealand, are already facing the acute threat of climate displacement.

Finally, climate change is having harmful impacts on educators' health and quality of life. Climate change has been known to influence key determinants of public health such as air quality, water access, shelter, and food security¹⁴⁹. In countries where climate change is worsening the quality of these precepts, public health will also certainly suffer, such as in the case of Argentina and Mexico.

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What Does a Just Transition Mean for the Education Sector?

Defining a Just Transition for educators should begin with the recognition that the education sector will be indirectly affected in the race to decarbonise the world's economies. In this sense, educators are "second responders" to the climate crisis, to borrow the words of NZEI Te Riu Roa. However, it must be reiterated that educators are crucial stakeholders in climate action. Firstly, **educators are intrinsically part of the communities they serve.** In some cases, educators are even seen as leaders who have a responsibility to steer their communities into action during times of emergencies. Educators recognise the interconnectedness of the climate change-related struggles of their communities and the challenges that beset education systems. Educators also have a comprehensive understanding of their status as both stakeholders and stewards of their communities. This is manifested in the many ways that educators have centred the needs of their students and communities during climate disasters and severe weather. Educators are aware that it is students and their communities who ultimately suffer the consequences of teaching disruptions.

A just transition in the education sector must address the adaptation needs of educators and education systems. Among the education union representatives interviewed for this study, there was a consensus that education systems all over the world are woefully unprepared for the impending deluge of climate impacts. For education unions, climate change threats related to occupational and safety hazards must be addressed through the lens of a just transition. Moreover, governments are not investing enough in climate-proofing education infrastructure. Education unions must demand the inclusion of climate-adaptive education systems in their countries' NDCs and National Adaptation Programmes.

The education sector can also drive climate resilience within communities by leading the way in shifting to renewable energy and the move to become carbon neutral. Education facilities can be transformed into climate resilience hubs, as they already play an integral part in the disaster response plans of their communities, as suggested by AFT in the US. In order to boost resilience among educators, **social protection schemes such as pensions, healthcare, disability and unemployment benefits should also be strengthened as part of a just transition.**

Education unions must also unite to demand the recognition of public sector professions as 'low-carbon jobs'. Currently, the just



transition narrative is mainly focused on industrial sectors such as energy and construction, largely leaving out the discourse on the public sector as a green jobs generator. Massive investments in the public sector, as outlined in the various iterations of the Green New Deal, can produce safe, unionised and climate-adaptive jobs. **Additionally, the public education sector should be involved in the retraining and reskilling of workers for low-carbon industries as part of a broader just transition plan. Education unions can reiterate their opposition to privatisation, as training and reskilling the workforce for the low-carbon economy should be seen as a public good and responsibility.**

In engaging in the just transition movement, **education unionists are finding that it can also be a critical way for unions to remain relevant among young people and the climate justice movement, as demonstrated by the experiences of different union affiliates.** Including climate change in the agenda of education unions has proven to be an effective way to engage with members as well as to begin or maintain collaboration with other civil society organisations. In a few unions, the work on climate change has produced new and innovative ways of building activism among unionists.

Unionists bring an important skill to the climate movement: disciplined organising. Experienced education unionists understand that it is through persistent organising, dutiful attendance of policy meetings and tripartite negotiations that concessions and reforms are won. These are skills that can be carried into the next phase of union organising: collective bargaining for the future.

Finally, the just transition framework offers a more hopeful view for workers in the climate crisis. While a future rife with cataclysmic weather events might impede our ability to meaningfully respond to climate change, a just transition can enliven our collective political imagination. It can inspire educators, whose sector is already being battered by privatisation and climate change, to dream and fight for a better and more equitable world.





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Educators on a Heating Planet: Shaping Education Unions' Vision for a Just Transition

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