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Moving the
World
Forward



SUSTAINABLE TRANSPORT MUST DRIVE AFRICA'S ENERGY AND ECONOMIC TRANSITION



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**THE INTERNATIONAL TRANSPORT WORKERS'
FEDERATION (ITF) IS A DEMOCRATIC,
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REPRESENTING OVER 18 MILLION WORKING
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SECTORS. THE ITF PASSIONATELY
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ABBREVIATIONS AND ACRONYMS

USD \$	US dollars
BRT	Bus Rapid Transit
CO2	Carbon dioxide
COP	United Nations climate change conference known as 'Conference of the Parties' and held annually
CBDR-RC	The principle of 'common but differentiated responsibility and respective capabilities'
GDP	Gross domestic product
GHG	Greenhouse gas
IPCC	The Intergovernmental Panel on Climate Change
IUU	Illegal, unreported and unregulated
LDCs	Least Developed Countries
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
OECD	The Organization for Economic Co-operation and Development
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme

EXECUTIVE SUMMARY¹

For Africa, the climate crisis is already here. From soaring temperatures to devastating floods, through to rising sea levels to surging sandstorms and withering droughts, climate change is wreaking havoc to lives and livelihoods across the continent. Transport workers are amongst the most exposed to the escalating harms, while transport sector emissions continue to rise globally further contributing to the worsening of Africa's climate crisis.

We need change now.

For the world to tackle the climate crisis we must move from words to action. This must include action on transport. It is time for climate justice and we must deliver on promises of a just transition and a sustainable transport sector aligned with climate goals that supports Africa's economic and social development.

SHIFTING THE BURDEN FOR THE CLIMATE EMERGENCY

While African countries are amongst the worst hit by climate change, the continent accounts for a mere 3 percent of historic energy-related emissions and has the lowest emissions per capita of any region. It is paying the price for damage caused by others.

This burden must shift to those most responsible for the climate crisis. Globally, the transport sector accounts for nearly a quarter of energy-related emissions, primarily driven by North America, Europe and East Asia. North America's absolute and per capita transport emissions are the world's highest.

To stop climate devastation, we must cut global transport emissions by 45 percent by 2030 and deliver net-zero by 2050. In order to meet these targets governments and industry

1. References for this section can be found in the main body of the report.

must act collectively to achieve a rapid shift to sustainable land, air and sea transport by fast-tracking a just transition to zero-carbon sustainable transport.

The countries which have contributed most to emissions – and reaped the economic benefits – must lead on both mitigation and adaptation. They must pay for climate action in the countries most harmed, including in Africa, while supporting a reallocation of any emissions caps that allow for the economic and social advancement by the developing world.

A GREEN AND INCLUSIVE TRANSPORT EXPANSION FOR AFRICA

The expansion of Africa's transport sector is crucial to the continent's development. And the more developed Africa is, the better able it is to withstand climate shifts and extreme weather events. The challenge is how to expand transport systems in line with Africa's development needs without jeopardising efforts to limit global warming to 1.5°C.

Africa is set to have the world's fastest urban growth, with an additional 950 million people living in African cities by 2050. African cities are dominated by informal transport: minibuses, motorbike and bicycle taxis, and three-wheelers. These fill a void in urban transport, particularly for those with lower incomes, but are notorious for high emissions, noise and air pollution, and high accident rates. They contribute to congestion, stopping at will rather than at scheduled times and locations, and informal workers must pay high daily rental fees as well as police bribes. At the same time, private car ownership is rising fast – up 250 percent in the decade to 2015.

Part of the problem for Africa is that it is reliant on used vehicles from Europe, the US and Japan. As richer countries transition towards lower emissions vehicles, vehicles with higher emissions end up being exported to Africa which contributes to disproportionately high emissions in the region. In West Africa, for example, road transport accounts for 15 percent of emissions, despite the relatively low motorization rate.

Access to safe, frequent, affordable and accessible public transport is key to keeping emissions down as the continent urbanises. Informal transport cannot be ignored or excluded; instead, worker-led formalisation is needed that gradually restructures ownership, regulates routes and services as part of integrated formal and informal public transport networks. This will bring in cleaner vehicles, improve road safety and bolster wages and conditions for transport workers.

Ramping up climate finance is critical to allow decarbonisation to be built into the growth of urban transport. Investment in charging infrastructure, vehicles and power supply, and supporting initiatives to harness the continent's abundant sunshine and other renewable energy opportunities as a global priority.

Beyond cities, Africa is building transport systems which support trade and economic development, connecting commodities to international markets, and improving access to critical imports. Again, funding is needed to allow a clean build out. For example, investing in electrified rail and a reliable and clean electric grid will allow for bulk commodities to be transported with substantially lower emissions than if transported by road. This modal shift depends on developed countries making climate finance available to support a green and inclusive expansion of transport in Africa.

TACKLING THE CLIMATE RESILIENCE GAP ON TRANSPORT

Transport systems and the workers who run them are particularly exposed to Africa's climate crisis. Flooding can devastate port operations, sweep away or damage rail and road sections. Extreme heat can melt tarmac or bend rail tracks. Climate disturbances can reduce fisheries. Sand and dust storms can lead to vehicle crashes, downing of power lines, and reducing flight visibility and damage to screens and engines.

The workers who keep transport systems moving through heatwaves and storms, droughts and floods face tangible risks to their lives, their health and their livelihoods – which are exacerbated by the lack of social protections across the continent.

To address these harms, Africa needs climate finance for transport sector adaptation. However, not only does total adaptation funding fall far below what is needed, but transport is largely forgotten. According to Climate Policy Initiative analysis, less than one percent of all transport climate finance in 2019 and 2020 went to adaptation. And there is a notable lack of research being done in Africa, compared to other regions, on adaptation and resilience needs. This must change.

Transport-focused adaptation funding is urgently needed to plan, build, upgrade, maintain and operate climate resilient transport systems that can withstand current and projected impacts. Worker engagement is crucial to inform adaptation action and to deliver infrastructure, services and protections to safeguard transport workers in the face of mounting climate harms.

LEAVE NO ONE BEHIND: A WORKER-LED JUST TRANSITION

The development of new transport systems and technologies must not displace or adversely impact existing workers, cause job losses or reduce workers' wages or conditions. And where new jobs are created, the retraining of existing workers must be prioritised.

Africa's informal transport sector is mainly made up of young workers, when new systems such as Bus Rapid Transit displace informal transport, these workers are more likely to see adverse impacts to their jobs and incomes. The nature of informal work means that these workers have no safety net. And while informal transport is more exposed to climate harms, if adaptation efforts are focused on formal transport, young workers are more likely to be left out.

Similarly, women workers tend to hold jobs in ticket selling, catering, service support and cleaning, which are more precarious and more exposed to climate harms. New technologies which are brought in as part of the formalisation of transport such as contactless payments tend to disproportionately impact jobs held by women workers.

There are also wider social risks. When new cleaner transport systems are operated with a focus on recouping investment costs and achieving profitability, this can lead to high ticket prices, excluding those with lower incomes. Not only does this deprive people of the benefits of new systems, but where existing transport has been displaced, it can leave them having to find alternate, less convenient routes and modes for their day-to-day travel.



A just transition is essential to address such risks and include measures to ensure that no one is left behind. This requires labour and social impact assessments, early and ongoing engagement with workers, worker and trade union representatives along with users in the planning, design, decision-making and implementation of sustainable transport.

STEPPING UP ON CLIMATE FINANCE

For Africa to take the action needed on transport, climate finance is critical. Separate funding is also needed to compensate the continent for the loss and damage caused to transport systems, including irreversible harms to transport workers' conditions, impacts on industries like tourism and fisheries, and the costs of climate-related supply chain disruptions.

Developed countries have committed to mobilise USD \$100 billion a year in climate finance to 2025 but have consistently failed to meet this target. They must follow through on these commitments, and make up the shortfall in past payments, estimated to reach USD \$75 billion by 2025. Additionally, a separate loss and damage facility must be agreed urgently, with annual contributions by the developed countries primarily responsible for the climate crisis.

As post-2025 climate finance targets are set through the 'New Collective Quantified Goal', these must take account of the funding Africa needs for a just transition on transport which delivers on mitigation goals and achieves climate resilient transport systems with good conditions and protections for transport workers.

For their part, African countries must revise their national climate action plans in consultation with workers to ensure that transport sector needs on both mitigation and adaptation are fully set out, with required financing.

It is crucial that climate financing excludes forms of funding which effectively transfer the cost to African countries, contributing to debt distress and diverting resources which should be supporting economic and social development. This requires the agreement of a climate finance definition which ensures that climate finance is limited to net financial transfers of genuinely new funding. And grant-based funding is needed to avoid a cherry-picking approach focused on maximising short-term profits, ensuring instead that transport investment serves climate and social goals, and a just transition.

ITF DEMANDS

01. CLIMATE AMBITION: ACTION ON TRANSPORT TO KEEP 1.5°C ALIVE

Action at global and regional levels is needed to cut transport emissions by 45 percent by 2030 and to achieve zero carbon by 2050, with developed countries taking the greatest burden. For Africa, the key mitigation measure is public transport sector expansion, along with the incremental formalisation of informal urban transport.

02. TACKLING THE CLIMATE RESILIENCE GAP

Transport has been largely ignored when it comes to adaptation. Action is urgently needed to achieve climate resilient transport systems and working conditions fit for Africa's current and projected climate realities.

03. INDUSTRY ACTION AND A WORKER-LED JUST TRANSITION

Industry plans are needed for each transport sector setting out action on mitigation and adaptation. Worker knowledge, expertise, participation and support is critical for such plans to succeed. We need a just transition for workers, with good jobs, conditions and social protections as Africa's transport sector moves forward.

04. CLIMATE FINANCE FOR TRANSPORT BASED ON AFRICA'S NEEDS

The countries most responsible for the climate crisis must follow through on climate finance to Africa. They must make good on their commitment to USD \$100 billion a year, with additional payments for past shortfalls, and engage in new finance targets based on Africa's climate action needs. They must also agree a new and separate facility for loss and damage.

POLICY RECOMMENDATIONS

RECOMMENDATIONS FOR GOVERNMENTS, INDUSTRY, INTER-GOVERNMENTAL BODIES AND INVESTORS

1. Climate ambition: action on transport to keep 1.5°C alive

- Global collective action is needed to decarbonise transport, reducing emissions by 45 percent by 2030 and achieving zero carbon by 2050.
 - Carbon reductions should not be applied evenly across regions. Countries responsible for historic emissions must accept lower rates of growth and allow African and other developing countries higher rates of growth.
 - In Africa, the development of public transport systems must be prioritised as a key mitigation measure as the continent urbanises. What is needed is affordable, reliable and sustainable publicly funded mass transit systems that generate good, new jobs.
 - Incremental formalisation of the informal transport systems which dominate Africa's cities is needed. This should be carried out in consultation with workers, with steps to reform and regulate services, support shifts to cleaner vehicles, improve integration with formal transport and improve worker and user condition.
- Bring all mass transport into public ownership, operated on behalf of the public with profits reinvested for the benefit of the public.
 - Across the continent, investment in rail systems is needed to allow commodities and other traded good to be transported with lower emissions than by road.
 - Decarbonisation should, to the extent possible, be built into the expansion of Africa's transport systems. This depends on climate finance being made available to allow for measures such as electrification, including investment in clean and reliable grids, and opportunities to harness Africa's abundant sunshine and other renewable energies.
 - African countries should review and revise their NDCs to ensure that transport mitigation plans are as comprehensive as possible with specific emissions targets, details of the funding required and provisions for ongoing engagement with transport workers.

2. Tackling the climate resilience gap

- All stakeholders must recognise the need for climate resilient transport systems fit for Africa's current and projected climate realities and new investment must be provided to address the current gap in transport adaptation funding.
- Adaptation action should include a focus on occupational health and safety for transport workers, with changes to infrastructure, services, personal protective equipment and institutional planning and support to minimise and manage climate impacts on workers. Workers must be included in the development of new health and safety standards.
- Given the potential impacts of climate change and climate action on workers, including on livelihoods and health and safety, comprehensive and universal social protection must be made available as a priority.
- Further research and development on climate impacts on transport systems and workers in Africa is needed to inform adaptation planning and associated funding. This should include piloting measures which could improve occupational health and safety for transport workers.
- Investment in early warning systems is needed in Africa so that transport systems and workers are better prepared for extreme weather events.
- African countries should take specific account of transport systems and transport workers within NDCs and broader adaptation plans, recognising the sector's particular exposure to climate impacts and associated funding requirements.

3. Industry action

- Industry plans should be developed for urban transport, road and rail, aviation, tourism, shipping and fisheries, setting out the action needed to mitigate transport emissions and to achieve climate resilience and good conditions for workers in Africa. Where workers have suffered loss and damage as a result of climate change, this should be identified and monitored so that compensation can be sought.
- Greater democratic oversight is needed. Transport workers, including informal transport workers, must be engaged in decision-making on climate action in each sector.
- Labour impact assessments should be carried out to understand the impact of proposed changes to transport systems and to inform planning.
- As transport systems in Africa are built out, there should be support for displaced workers to move into new systems with good jobs and working conditions.
- As young workers are brought into transport systems, they must have access to decent work and career progression, including apprenticeships and training pathways.
- Barriers that restrict women from entering and advancing in all industry occupations must be identified and dismantled any gender-specific impacts of new technology must be similarly addressed.
- Research and development for opportunities to fast-track energy transition in Africa and globally, along with funding to support local pilots.

4. Worker-led just transition

- Bringing transport workers expertise into decision-making on the decarbonisation of the transport sector is crucial to maximising opportunities and minimising risks to workers, communities and the environment.
- It is particularly important to recognise and engage with worker groups who are more likely to be adversely impacted, such as informal workers, women workers and young workers. Early engagement can allow for issues such as systematic exclusion to be addressed, while opportunities to improve access to decent and secure work for more vulnerable workers can be maximised.
- All NDCs should recognise the need for a just transition which recognises and addresses harms and maximises benefits in terms of good jobs, good working conditions and wider social benefits.

5. Climate finance for transport based on Africa's needs

- Developed countries to follow through on their \$100 billion a year climate finance commitments equally split between mitigation and adaptation funding, with catch-up payments for past shortfalls.
- A loss and damage finance facility to be created, taking account of transport-related loss and damage in Africa, with annual contributions and accountability measures.
- Developed countries to progress negotiations on a New Collective Goal on Climate Finance in good faith, taking full account of Africa's transport sector needs.
- A definition of climate finance must be agreed to ensure that funding is genuinely additional and does not transfer the burden to the receiving country. Negotiations must be overseen by a trusted third party, with workers having a voice in the methodology.
- Climate finance for transport in Africa should be provided on a grant-basis to ensure countries have the financial space to plan and implement in line with climate and development goals. Transparency and public oversight mechanisms must be included.
- Mechanisms to support decent work and respect for labour rights should also be part of any underpinning investment agreements.

SECTION 1: INTRODUCTION

“Every day, the thunderstorms seem more violent, flooding is more frequent and droughts more severe ... our crops are failing. People are being forced to flee their homes, becoming climate refugees. Sea levels are rising, potentially drowning cities ... The oceans are turning to acid and salt is penetrating croplands, causing further serious challenges to food security.”

Ali Bongo Ondimba, President of the Gabonese Republic (Petesch, 2021)

In April 2022, South Africa declared a national emergency as record rains caused flooding and landslides, devastating parts of its eastern coast. More than 400 lives were lost and over 12,000 homes were destroyed, displacing an estimated 40,000 people (Ramaphosa, 2022). The Port of Durban, through which around 60 percent of the country’s exports go and a key gateway to sub-Saharan Africa, was severely impacted, along with critical roads and railway lines (Njini & Cele, 2021). Inevitably,

this had serious ramifications for food and other supplies, and for wider trade and the economy. Scientists specialising in attribution studies – assessing how much climate change contributes to an extreme weather event – have found that that global warming made the disaster twice as likely, and that the rainfall behind the catastrophe was significantly more intense than it would have been without climate change (Tandon, 2022).



Source: Office of the Presidency of South Africa. In April 2022, unprecedented flooding halted operations and knocked down container stacks at South Africa's largest port, a key hub for exports like metals and agricultural commodities, and imports like fuel (Turner, 2022).



Source: Caritas KwaZulu-Natal. South Africa declared a national state of disaster as severe flooding and landslides killed 448 people and severely damaged infrastructure (Ramaphosa, 2022).



Source: Joao Silva/The New York Times. Extreme weather events are becoming more frequent and severe as a result of climate change, with devastating impacts for transport infrastructure, services and workers.

This is just one example of the extreme weather events and changes in climate that Africa is battling as it hosts the world's climate summit, COP27. And it illustrates just how intertwined transport is with climate action. On one hand, global transport emissions are a major contributor to the global warming which is making climate catastrophes like this more and more common. On the other, when transport systems are hit by climate changes or extreme weather events they have not been built or set up to withstand, the social and economic impacts can be devastating. And the people who keep transport systems moving are left particularly exposed as the harms magnify.

It is critical that climate action, and the funding which underpins it takes due account of transport. As world attention focuses on Africa, this report takes a closer look at how transport fits into the region's climate crisis and wider needs and priorities, and what this means for plans that are being developed and implemented now, and the approach to climate financing.

THE MOUNTING CLIMATE CRISIS

For context, it is important to understand the myriad ways in which climate change is already affecting Africa, and what we can expect in the future.

According to the Intergovernmental Panel on Climate Change (IPCC), the average global temperature has been rising since the start of the industrial period, and the advent of human activities such as the burning of fossil fuels, reaching a full 1°C above pre-industrial levels in 2017 (IPCC, 2018, p.51). At the current rate,

we can expect to reach 1.5°C by 2040 (IPCC, 2018, p.81). In its 2021 'emissions gap' report, the United Nations' Environment Programme (UNEP) warned that, with current pledges to tackle emissions, the world is set to hit 2.7°C by the end of the century – a level which would lead to disastrous climate change (UNEP, 2021, p.XXIV). Only with much stronger action on emissions can the world limit the global temperature rise to 1.5°C above pre-industrial levels.

With the level of warming that has already been reached, Africa is experiencing serious impacts.

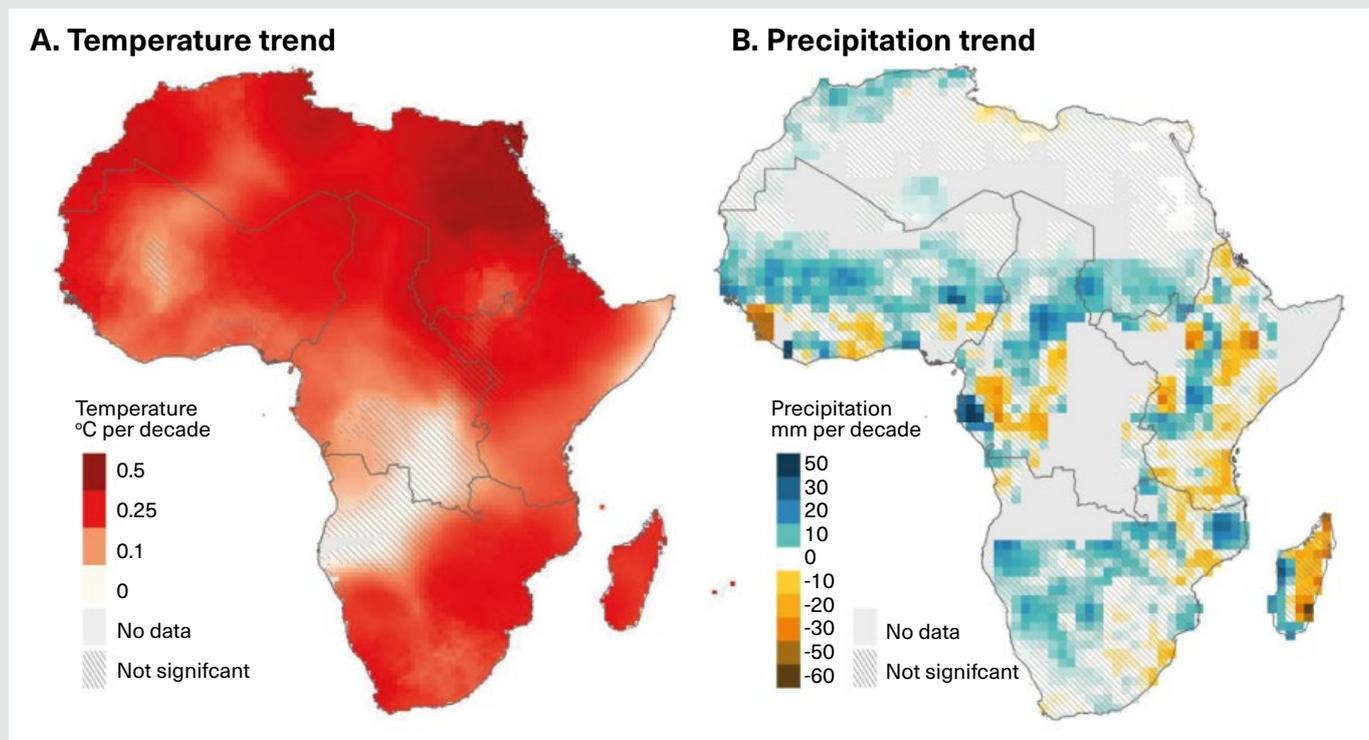
Hot days and nights have become more frequent, and heatwaves are becoming longer and happening more often (WMO, 2021, pp.9 & 11). With global warming limited to 1.5 °C, the IPCC projects that children born in Africa in 2020 will be exposed to four to nine times more heat waves than those born in 1960 (IPCC, 2022b, p.1325).

Temperatures are escalating particularly quickly in North Africa and the neighbouring Middle East, which, as a combined region, is also the most water-stressed on the globe (WMO, 2021, p. 13. Hofste, Reig & Schleifer, 2019). Extreme temperatures – especially when combined with high humidity – have major health impacts, including on workers, and can be lethal. Transport infrastructure can also be seriously affected with, for example, melting tarmac and bending rail tracks.

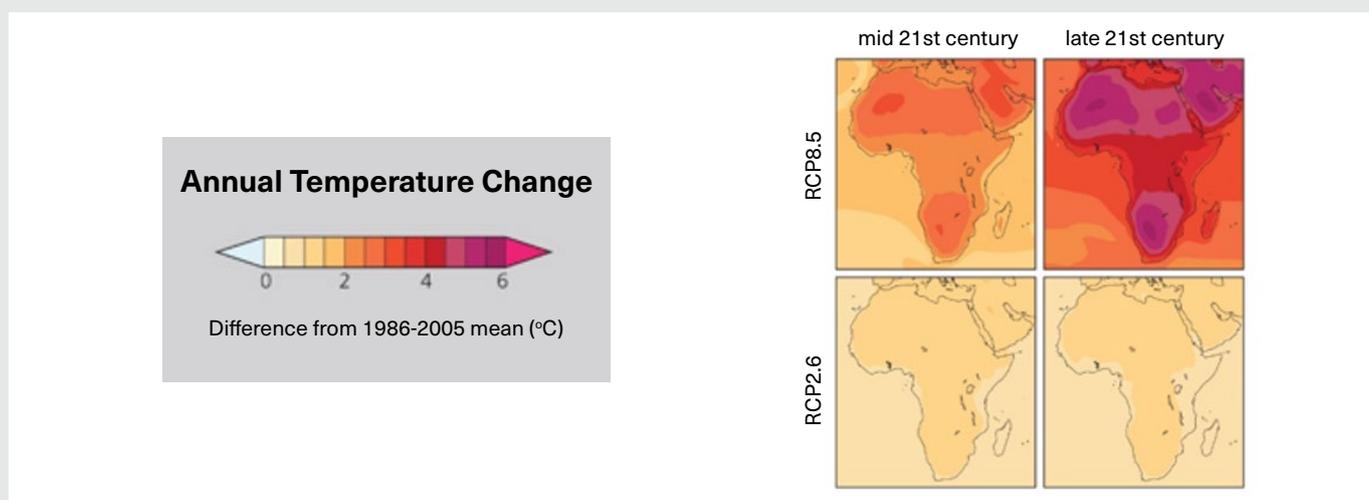
Hot and dry weather conditions are contributing to increasing wildfires – last year, Algeria was affected by over 65 fires (WMO, 2021, p.25).

The area is increasingly impacted too by sand and dust storms. In Egypt, for example, a sandstorm accompanied by strong winds and high waves disrupted marine navigation and forced the closure of four major ports on the Red Sea in December 2021 (WMO, 2021, p.26). The

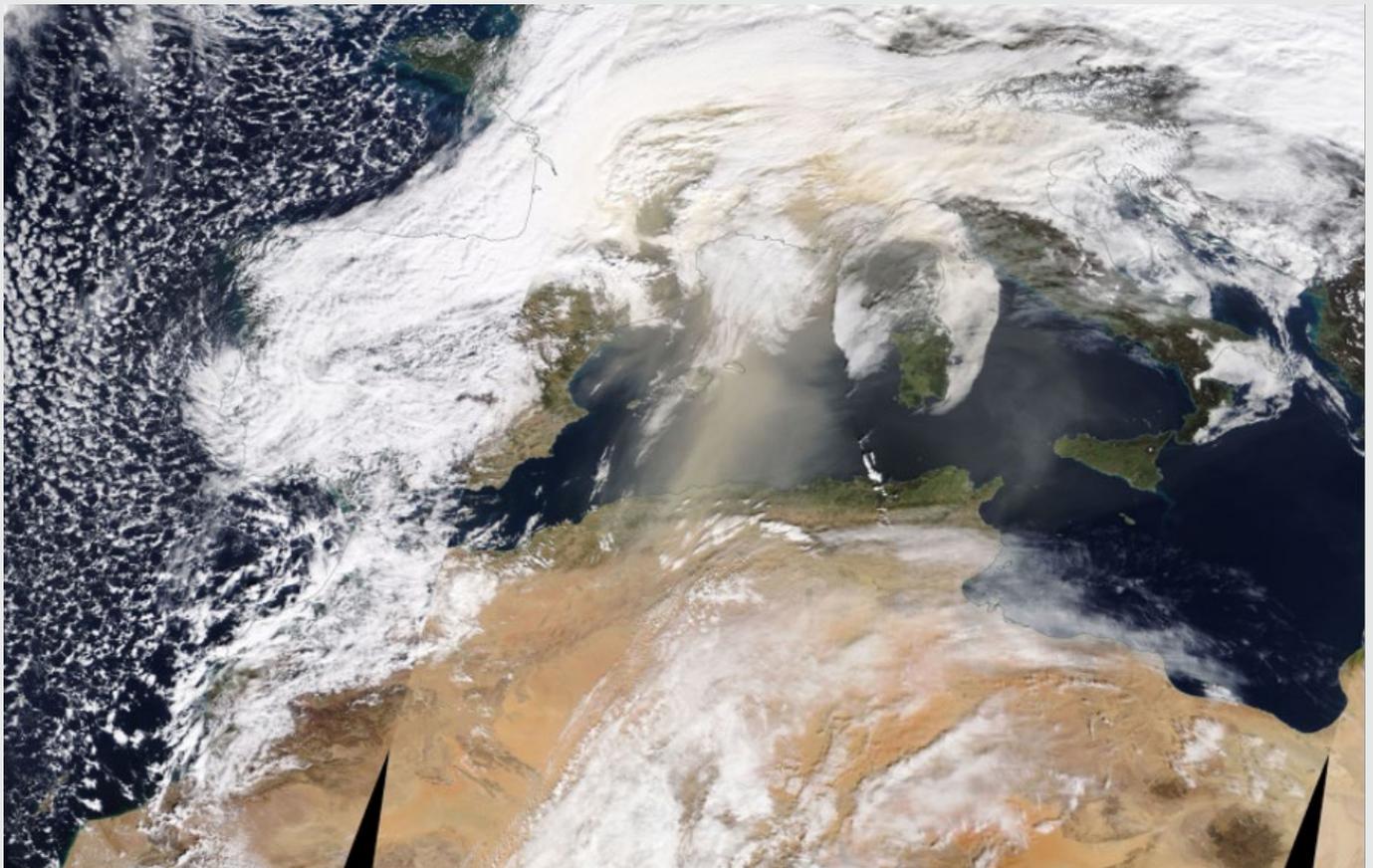
previous spring, a severe sandstorm in Libya led to cars crashing and power lines coming down, while winds blew dust storms from Algeria to southern and central Europe, turning the sky yellow, coating buildings and cars, and affecting air quality (WMO, 2021, p.26).



Source: IPCC (2022b) p.1321. Observable climate trends in Africa over a 35-year period, from 1980 to 2015.



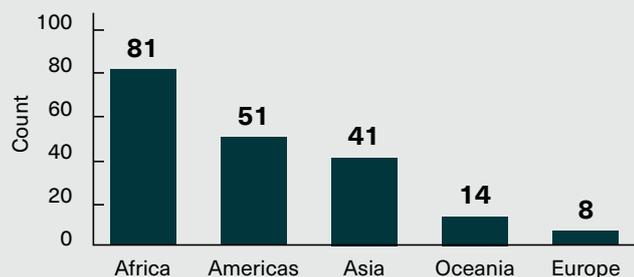
Source: IPCC (2014) p.1207. RCP 8.5: Represents expected impacts if emissions continue to rise throughout the 21st century, reaching over 4°C above pre-industrial temperatures by 2100. RCP 2.6: Represents expected impacts if very stringent action is taken to curb emissions.



Source: NASA Worldview (2021). In February 2021, a sand and dust cloud formed in Algeria reached Europe, affecting the sky and air quality in cities including Barcelona and Marseilles, and covering snow in the Alps (WMO, 2021, p.26).

Africa is increasingly affected by falls and delays in rainfall. Twenty-nine countries across the continent have experienced at least one drought event since 2010 (MIF, 2022, p.15). In East Africa, consecutive failed rainy seasons have been devastating, with consequent water and food scarcity displacing a million people in Somalia alone (NRC, 2022). In Madagascar, the worst drought in over 40 years caused rivers to dry up in 2021, leaving 70 percent of people in the country's south without access to basic drinking water ((WMO, 2021, p.29).

World regions: drought events (2010-2022)



10 African countries with the largest number of drought events (2010-2022)

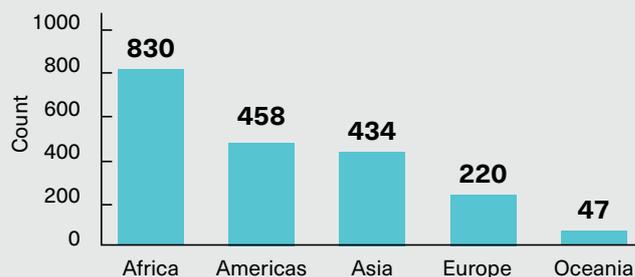
Country	Drought events
Kenya	6
Somalia	6
Mauritania	5
Ethiopia	4
Lesotho	4
Madagascar	4
Niger	4
South Africa	4
Zimbabwe	4
Angola	3

Source: MIF (2022). Africa is the most drought affected region in the world.

At the same time, the continent is seeing rising sea levels, with the highest rates along the coastal areas of the Red Sea, followed by the Tanzania and Mozambique coasts (WMO, 2021, p.15). This is expected to increase with further global warming, contributing to more frequent and severe coastal flooding. As well as the implications this has for ports and supply chains, there are serious ramifications for coastal cities and populations – at a point when the highest rates of urbanisation and population growth are in Africa’s coastal zones (MIF, 2021, p.18).

Other weather events include torrential rains, contributing to river level rises and flooding

World regions: flood events (2010-2022)



10 African countries with the largest number of flood events (2010-2022)

Country	Drought events
Angola	24
Kenya	22
Nigeria	21
Tanzania	21
DR Congo	20
Niger	19
Uganda	19
Mozambique	16
Somalia	16
South Africa	16

Source: MIF (2022). Africa is the second-most flood affected region in the world

in countries such as Sudan, Niger and the Democratic Republic of Congo. The Southern African region has experienced tropical cyclones, while glaciers in East Africa are retreating, projected to disappear from Mount Kenya by 2030 and from Kilimanjaro by 2040 (WMO, 2022). And climate impacts on oceans, seas and lakes cause harm to marine and freshwater fisheries, reducing stocks on which many in the region depend (IPCC, 2022b, pp.1357-1360).

The following chapters examine further the linkages between transport, climate change and climate harms, and what this means for the approach to the sector moving forward.

SECTION 2: CLIMATE AMBITION

“The major emitters must make more ambitious their emissions reduction commitments. We all must harness low-carbon investment opportunities, as we reboot our economies.”

Uhuru Kenyatta, President of the Republic of Kenya (Kenyatta, 2021)

If we are to limit further global warming, we must scale up climate mitigation action, and drastically reduce greenhouse gas emissions. This section looks at how climate ambition can be increased in Africa’s transport sector, and how a just transition can be achieved.

TACKLING TRANSPORT SECTOR GREENHOUSE GAS EMISSIONS

In 2019, the transport sector accounted for 23 percent - nearly a quarter - of global energy-related greenhouse gas (GHG) emissions, and 15 percent of total GHG emissions (IPCC, 2022a, p.10-9). And transport, along with industry, is where emissions are rising most rapidly (IPCC, 2022a, p.10-9). Consequently, if we are to achieve climate mitigation goals, we need, as the IPCC puts it, ‘transformative changes in the transport sector’ (IPCC, 2022a, p.TS-67).

However, in looking at where primary responsibility for action should lie, it is important to recognise the major differences in regional responsibility for historic and continuing GHG emissions.

In the past, Africa’s contribution to GHG emissions has been minimal. Overall, the region accounted for a mere 3 percent of cumulative energy-related emissions from 1850 to 2019 and it has the lowest emissions per capita of any region (IPCC, 2022a, 2-26 and 2022b, p.1294). The continent currently has a very different emissions profile to the rest of the world, with the majority of its emissions arising from agriculture, forestry and other land use as opposed to energy consumption. But this is shifting rapidly with the development and urbanisation of the region.

Who has contributed the most to CO2 emissions

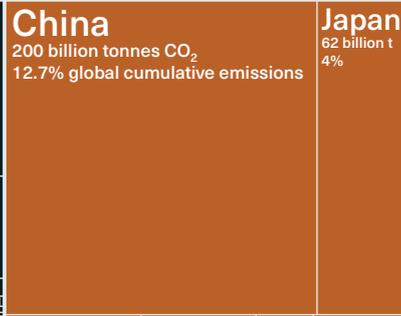
North America

457 billion tonnes CO₂
29% global cumulative emissions



Asia

457 billion tonnes CO₂
29% global cumulative emissions



EU-28
353 billion tonnes CO₂
22% global cumulative emissions



Europe

514 billion tonnes CO₂
33% global cumulative emissions



Africa

43 billion tonnes CO₂
3% global emissions

South America
40 billion tonnes CO₂
3% global emissions

Oceania
20 billion tonnes CO₂
1.2% global emissions

Source: Ritche (2019). Cumulative carbon dioxide emissions by region, 1751 to 2017 (excluding international travel)

So, which regions have been responsible for the bulk of transport emissions to date? North America, Europe and Eastern Asia are the major contributors, together accounting for 50 percent of transport sector emissions (IPCC, 2022a, 2-49). North America's absolute and per capita transport emissions are the world's highest (IPCC, 2022a, 2-49).

The principle of 'common but differentiated responsibility and respective capabilities'

(CBDR-RC), enshrined in the UN Framework Convention on Climate Change, establishes that while all states are responsible for addressing climate change, this responsibility is not equal. Countries which have contributed the most to harms and which have the greatest capabilities to tackle emissions should be taking the lead, both in mitigating their own emissions, and in providing financial support for action in the developing world, including Africa.

“The disproportionate responsibility placed on Africa, which contributes less than 4 per cent of the world’s energy-related emissions but faces serious consequences to the lives and livelihoods of its people, cannot be described as anything but climate injustice. We need bold and collective action built on the principle of equity.”

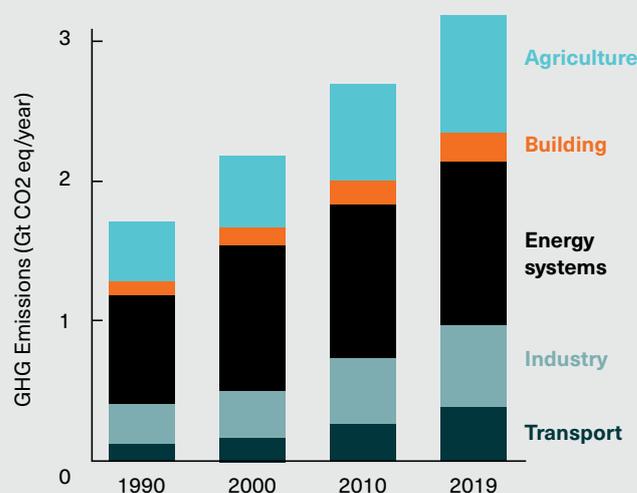
Sameh Shoukry, COP27 President-Designate of the Arab Republic of Egypt (Commonwealth, 2022)

For Africa, the question is how it can mitigate emissions as it moves forward, and transport is a key part of this. The sector accounted for 23 percent of the region's carbon emissions in 2019, and transport emissions are rising quickly: between 2010 and 2019, Africa's transport emissions rose by 27 percent, the second highest growth rate after Asia (IPCC, 2022a, p.143. SLOCAT, 2022). In particular, car ownership rates are rising, with some countries seeing numbers of private cars growing by 250 percent or more in the decade to 2015 (SLOCAT, 2022).

Africa is projected to have the fastest urban growth in the world: by 2050, African cities are expected to house an additional 950 million people, with a commensurate ramp up in urban transport needs (OECD/SWAC, 2020, p.4). And, in terms of trade and the economy, transport infrastructure and services, particularly rail, road freight, ports and aviation, will be a necessary condition for connecting the continent to regional and international markets. Transport is thus a critical part of the region's development, and as the sector expands, so will associated emissions – unless a focus on mitigation is part of the approach to building transport systems.

While the climate challenge for the developed world is how to swap out 'dirty' technologies, infrastructure and processes for clean alternatives, the issue for Africa is how to develop economically in line with climate goals.

African greenhouse gas emissions since 1990 by sector



Source: IPCC (2022b) p.1295. While Africa's transport sector has historically been a relatively low contributor to GHG emissions, it is growing fast and this is set to continue in the coming decades, making it an important focus for climate mitigation efforts.

However, there is a tension in relation to climate resilience.

The more developed a country is, the better able it is to withstand climate dangers. Africa is home to 36 of the world's Least Developed Countries (LDCs), countries which are simply not equipped to handle ever worsening weather events and extremes (UNCTAD, 2021, p.xii). It is no coincidence that over the last 50 years, 69 percent of deaths due to climate-related disasters were in LDCs, despite being hit by only 18 percent of disasters and being home to only 13 percent of the world's population (Swaby, 2021).

Development has, therefore, to be a priority for the region. But it is often easier, faster and cheaper to develop using 'dirty' fossil fuels, than to do so cleanly. A dirtily but rapidly developed Africa is likely to be more resilient to climate harms than a cleanly but slowly developing Africa. And yet, the former approach would set the region up to generate harmful GHG emissions in the future, worsening the climate crisis with serious ramifications in Africa and around the world.

Climate finance is key to addressing this tension, as discussed further at Section 5. Ensuring that Africa has the financial support it needs to build out transport systems cleanly and quickly is not only the responsibility of the developed world under the CBDR-RC, but an important step in limiting further global warming for our collective protection.

WHERE SHOULD MITIGATION EFFORTS FOR AFRICA'S TRANSPORT SECTOR FOCUS?

Given the direction in which Africa is moving, there are two transport areas where mitigation efforts should particularly focus: urban transport and the development of transport connections for international trade.

With the urbanisation of Africa, it is widely recognised that the single biggest emissions mitigation gains outside of land-related actions will come from developing mass transit systems (Gicheru & Nkem, 2016).

A big reason for this is the structure of the continent's car market. Some three-fifths of light-duty vehicles in Africa are second-hand from Europe, the US and Japan, and tend to have lower efficiency and emissions ratings (Bouchene et al, 2021). As the UN Environment Programme puts it in its 2020 report on the used vehicle market:

"Millions of used cars, vans and minibuses exported from Europe, the US and Japan to low and middle-income countries are hindering efforts to combat climate change. They are contributing to air pollution and are often involved in road accidents. Many of them are of poor quality and would fail roadworthiness tests in the exporting countries." (UNEP, 2021).

Consequently, in, for instance, West Africa, road transport accounts for 15 percent of GHG emissions, despite the relatively low motorisation rate (Bouchene et al, 2021).

A speedy transition away from 'dirty' vehicles in richer countries could exacerbate this issue, with redundant petrol and diesel cars being exported to Africa, while vehicle electrification in the region remains slow.

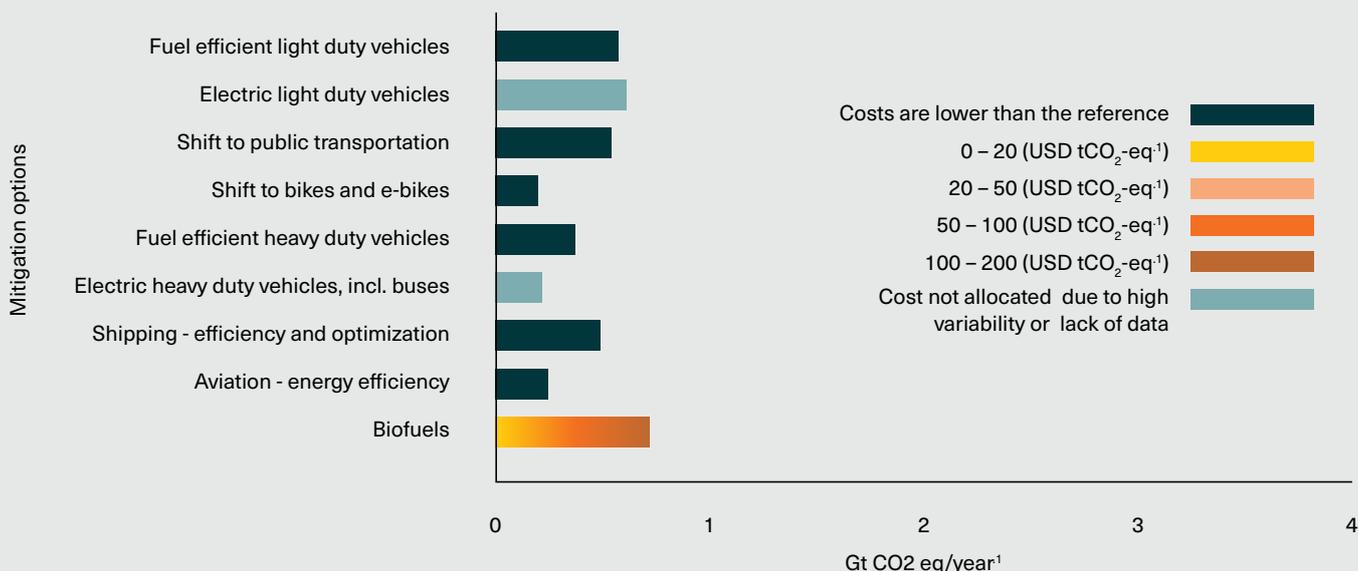
In this context, it is critical that, as Africa's cities expand, the build out of public transport systems is prioritised, to limit the increase in private cars and related GHG emissions as far as possible. For this to be effective, infrastructure and services must be set up in a way that urban populations will make full use of them.

In interviews with the ITF, transport workers in South Africa have described some of the current challenges in achieving this. The affordability of the city's public transport system would make it an attractive option, but for serious issues, particularly around unreliability. As a result, those that can afford to, switch to cars. And those that cannot, 'have to make it work', crowding into carriages or riding outside because 'everyone wants to get to work on time, and they just know that the next available train will be delayed or will not happen' (Mtshabe, Z., personal communication, August 2021).

"It would assist most of our community or most of the people in South Africa should they get reliable and affordable public transport. But then because of the unreliability, [those that can] choose their own private transportation which costs quite a lot. And I think there are people that are aware of the climate changes and they are concerned about the climate changes. But if public transport is not reliable, what are you going to do?" Zenathi Mtshabe, bus company worker, Johannesburg

What is needed therefore is the investment and planning to achieve public transport systems which are reliable, get people where they need to go, and which are affordable. And critically, this must involve engaging with the workers who keep cities moving to capture their insights into how best to build out public transport and to consider with them risks that need to be addressed.

Potential contribution by transport to net emission reduction (2030) GtCO₂ - eq/year¹



Source: Babiker et al (2022). This chart shows how a shift to public transport (regardless of energy source) around the world supports mitigation efforts. With Africa's urbanisation and the structure of its car market, the development of reliable, efficient and affordable mass transit is particularly important. For designer: we just need the transport section of this chart



Source: ITF. Our Jobs, Our Planet, Our Public Transport rally in Nairobi, Kenya, 2021

“We acknowledge the need to transition from petroleum-run motor vehicles to electric vehicles as proposed under climate action ... [It] is a move in the right direction that will significantly reduce greenhouse gases from the public transport sector. However, [we] note that such a move will also have a potential negative effect on public transport workers, if not well taken care of. To this end, we affirm the need to come up with appropriate mitigation measures before the situation gets worse ... to ensure a transition within the sector.”

Collective statement by Kenyan unions (TAWU, RAWU and BOTTAX) involved in ITF just transition workshops (ITF, 2022, p.42).



If the development of public transport systems can be combined with their decarbonisation, the scope for mitigation is, of course, much higher. However, there are challenges to achieving 'clean' public transport.

Electrification, for example, is often presented as a means to reduce GHG emissions, and there are initiatives in this direction: in Uganda, for instance, state-owned Kiira Motors has started manufacturing electric buses which are now being piloted in Kampala (Sustainable Bus, 2020).

However, achieving electrified mass transport at scale and across the region is not straightforward. It requires substantial investment in charging infrastructure, vehicles and the development of appropriate routes and systems. And there are fundamental questions over power supplies and reliability.

In West Africa, for example, barely half the population has access to electricity, and those who do suffer an average 44 hours of blackouts a month (McCalley et al, 2020, p.50). They also experience some of the costliest electricity in the world (Hussein, 2021 and Cormier, 2020).

Electrifying mass transit in this context would add a substantial load to a struggling electric grid, making it even more fragile. There is scope to address this by, for instance, taking advantage of the fact that most countries in North, West and Southern Africa have significant potential for solar power generation, and that there is particular scope for wind power generation in Algeria, Namibia and Mauritania. However, this will take substantial investment (Republic of Zambia, 2022).

Alternatives are being explored, such as harnessing Africa's abundant sunshine directly into vehicles, for example, with buses equipped with solar panels and batteries (Louis, 2021). However, securing investment for the roll out of such vehicles has been a sticking point (Namubiru, 2016).

More broadly, what is achievable in terms of decarbonisation of Africa's expanding transport system depends on what funding is made available. As discussed further at Section 5, this in turn depends on wealthier countries following through on their climate finance commitments, and investment in sustainable transport being given due priority.

The build out of transport routes for trade faces similar challenges. In sub-Saharan Africa, for example, building, upgrading and maintaining rail systems allows for overland transportation of the region's primarily bulk commodities more cheaply and with lower energy emissions than by road (ADB, 2014, p.53). As rail networks are built, electrification from the start would offer lower GHG emissions, lower air pollution, greater energy efficiency and lower operating costs. But electrified rail has high upfront capital costs that are challenging for cash-strapped states and of less interest to risk-averse private investors without significant state concessions. This also makes electrified rail less economic on low traffic routes. And while diesel engines can run even when there are blackouts, electrified rail (other than dirtier hybrid electric-diesel engines) cannot – which means that investment in a reliable and clean electric grid is also needed for electrified rail to work.

Again, how far emissions can be mitigated as transport routes are built out will come down to money. If Africa's transport sector is to move ahead cleanly, appropriate funding is needed.

AFRICA'S TRANSPORT REALITY: CLIMATE CHANGE AND INFORMAL TRANSPORT

A distinguishing feature of transport in Africa is the level of informality. One academic report puts the level of informal transport services at over 80 percent in some urban areas (Agbiboa, 2020). Minibus taxis operate all over the continent, going by different names from area to area (for example, *trotro* in Accra, *matatu* in Nairobi, *danfo* in Lagos, *daladala* in Dar es Salaam). Two-wheeler motorbike taxis have come to dominate many city streets due to their affordability, and there are also bicycle taxis and three-wheeler tuk-tuks. App-based travel is on the scene too, with Uber's Careem, for example, a growing presence in North Africa, and Uber and Bolt both active in East Africa.

These informal forms of transport emerged to fill gaps in formal urban transport, and many – particularly those with lower incomes – depend on them for their daily travel. In Lagos, an estimated 500,000 primarily young workers are employed in informal transport as, for example, riders, renters, mechanics and spare-parts dealers (Agbiboa, 2020). They are thus an important source of income for many, some of whom may struggle to secure formal employment. There is also a link to climate harms: those forced to migrate after natural disasters will often end up working in the informal sector.



Source: ITF. Climate action in Africa must take account of the informal transport sector, with a focus on just transition based on engagement with all transport workers, including informal workers.



Source: ITF. Motorcycle taxis, couriers and delivery services are growing in African cities. In 2013, Standard Bank researchers found that the Uganda's boda-boda industry was the second largest employer after agriculture (ITF, 2017, p.10).



Source: ITF. While informal transport fills gaps in urban transport and provides employment for many, the vehicles in use typically produce high GHG emissions, noise and air pollution.

While informal transport fills a major void, in its current form, it also contributes to a range of harms. On the climate side, the vehicles are known for being particularly 'dirty', in terms of air and noise pollution, as well as high GHG emissions. They contribute to congestion and stop at will rather than at scheduled times and locations. They are notoriously unsafe: in Nairobi alone, matatus account for an estimated 95 percent of car-related fatalities,

and over 13,000 people die in accidents involving these vehicles every year (Agbibo, 2020). Because they sit outside the formal, regulated system, they do not contribute to government revenues, and issues of corruption and criminality can affect informal workers. Workers may face gangs taking cuts of their earnings or may be forced to pay police bribes (Ndiritu, 2022).

ESTIMATING INFORMAL TRANSPORT EMISSIONS IN KAMPALA, UGANDA

Uganda's capital, Kampala, provides a sense of how significant emissions from the informal transport sector can be. Looking at two key modes of informal transport, motorbikes and minibuses, the Global Labour Institute has produced estimates of the level of GHG emissions as follows (GLI/AFD, 2020):

Motorbikes

In Kampala there are an estimated 200,000 to 300,000 motorcycle taxis or 'boda-bodas' (BBC, 2019). However, they cause high levels of pollution. Their two-stroke (and often poorly maintained) engines emit harmfully high levels of CO₂ (WHO, 2011, p.15).

In Kampala – as in much of the Global South – motorbikes used for informal transport have medium capacity engines sized between 125cc and 500cc (Boxer 150cc and TVS 125cc are common in Kampala).

Carbon dioxide (CO₂) emissions are measured in grammes of CO₂ per kilometre (g/km). It is estimated that motorbikes with a medium-size engine (125cc – 500cc) emit approximately 83.7g/km. (if a motorbike drives 100 miles, it will emit around 0.17 tonnes of CO₂). A 2002 study also estimated that motorbikes with two-stroke engines release between 60 and 90g/km of CO₂ (Sperling et al (2002).

If Kampala has 300,000 boda-bodas and each motorbike emits approximately 84g/km of CO₂, and if each boda-boda drives 50 km a day, then it can be estimated that boda-bodas in Kampala emit, in total, approximately 460,000 tonnes of CO₂ per year.

Minibuses

In Kampala, the most common minibus used for informal transport is the 14-seater commuter Toyota Hiace Minibus. They are known as matatus. There are estimated to be 9,000 in the city (Matovu, 2015). The average fuel consumption of a Toyota Hiace is 33.6MPG or 8.4 litres/100 km and the average CO₂ output is estimated at 221.0g/km. Driving 100 miles would release 0.04 tonnes of CO₂ (figure based on 2007-2011 models).

A 2015 study by Matovu et al estimated the emissions of Matatus in Kampala. Multiplying the number of Matatus in Kampala (9,000) by their CO₂ emissions (221 g/km) and the average estimated daily distance covered (96 km, according to a 2013 study), it can be estimated that Kampala's Matatu's contribute 191 tonnes of CO₂ emissions per day (Kitaka, 2013). Assuming that all vehicles are in use every day of the year, the annual contribution would be 69,715 tonnes of CO₂ per year.

It should be noted that vehicle efficiency drops with age, poor maintenance and quality of gasoline/oil used. Most Toyota Hiaces were exported to Africa and Asia in the 1990s (Kamuhanda, 2008). Models in circulation are running on old engines with higher emissions (Matovu et al, 2015). Consequently, these figures can be considered as a lower baseline of estimate.

However, there are opportunities for positive change. For example, two- and three-wheeler vehicles are electrifying at the fastest rates of all transport modes (Kerracher et al, 2021). UNEP modelling indicates that a steep and global shift to 90 percent electric battery motorcycle sales by 2030 could result in GHG emissions reductions of about 11 billion tons (10 billion tonnes) in the period to 2050, and financial savings due to lower fuel and maintenance costs of USD \$350 million by 2050 (UNEP, n.d.). Promoting such energy shifts while also taking action to incrementally formalise Africa's informal transport system in consultation with workers, with measures to regularise services and protect against risks to workers and users, could play an instrumental role in achieving a just transition.

In international arenas, we are starting to see a recognition of the need to take account of and integrate informal transport into future planning. However, governments in the region still tend to see the informal transport sector as something to be reduced or shut down.

The African Transport Policy Program (SSATP) notes that in Nigeria, for example, outside of Lagos, planning authorities view informal transport as a mode that 'needs to be eradicated' (SSATP, 2018). Informal transport providers (workers and owners) respond with what the SSATP terms 'an aggressive defence of their interests ... sometimes becoming relatively violent when reform programmes arrive' (SSATP, 2018).

During the heights of the COVID-19 pandemic, some city authorities took advantage of lockdowns to force through 'shock therapy'. Radical and permanent changes, such as bans on informal buses or motorcycles, were pushed without any negotiation or consultation with the workers affected. In Kampala, Uganda, for example, authorities proposed a permanent ban on *boda-boda* motorcycle taxis in the city centre until, with pressure from the Amalgamated Transport and General Workers Union and its *boda-boda* associations, they agreed to revisit this position with worker engagement (ITF, 2020, p.13).

There are concerns that climate mitigation will similarly be used as a pretext to target the informal transport sector with no consideration of the impacts on those depending on it – either for their livelihoods or as an affordable means of daily travel. This would not only have serious implications for urban communities, particularly the most vulnerable, but could cause a push back on climate action at a time when it needs to be a priority.

What is needed instead is for climate mitigation efforts and related mass-transit build outs to consider, from the outset, the impacts on the informal sector and those who rely on it, and to involve informal transport workers. Questions such as the affordability of new 'clean' modes of public transport, how old and new forms of transport can work together most effectively and opportunities for informal workers to transition to formalised transport all need to be considered. Too often, when there is engagement with informal workers, this tends to be with those representing vehicle owners and employers, ignoring those actually doing the work. Instead, workers, worker co-operatives and representative trade unions, along with users, need to be involved in the design, decision-making and implementation process for new transport systems.



As to the informal sector itself, recognising that it is not simply going to disappear, worker voices are looking at how it can be transitioned towards inclusive, sustainable and decarbonised transport. Joseph Ndiritu of the Public Transport Operators Union in Kenya has, for example, set out steps which should be taken in Nairobi, including:

- **Bringing cleaner vehicles into the informal system**
- **Investing in road safety training**
- **Restructuring ownership while looking at ways to improve wages and conditions, support passenger needs, and reinvest profits in public transport infrastructure and services (Ndiritu, 2022).**

Such ideas could make a real difference both in tackling climate change and to urban travel, and it is important that they are brought to the table, and that resources are made available to achieve the necessary transition for the informal sector.

BUS RAPID TRANSIT (BRT) AND THE QUESTION OF FORMALISATION²

Bus Rapid Transit (BRT) is a mode of transport which bodies such as the World Bank are encouraging cities in Africa and the world to adopt. It is seen as a means of lowering emissions, reducing air pollution and easing congestion by transforming transport.

BRT is based on dedicated road lanes (or 'corridors'), the use of which is limited to large buses operated by BRT companies. These lanes are physically separated with no other vehicles allowed to operate on them, so as to avoid congestion. New roads, interchanges and modern stations are built along BRT routes, and electric vehicles are often brought in to further reduce emissions. Part of the goal of BRT is to formalise public transport, so by design, these systems will often displace informal transport.

As cities look to improve and expand public transport, BRT is often the preferred option. It can be implemented speedily and is significantly cheaper than other options such as light rail or tram systems which require expensive infrastructure.

Working with the Global Labour Institute, the ITF has followed the planning and rollout of BRT. We have so far completed three labour impact assessments in three African cities: Nairobi, Kenya; Dakar, Senegal; Abidjan, Republic of Côte d'Ivoire. We have also engaged with workers in other cities (including, beyond Africa, in Bogota, Jakarta and Cebu). These assessments included gender impacts, with all data disaggregated by gender and age.

Key points to consider around BRT include:

- **Requiring labour impact assessment** to be carried out for each proposed BRT to identify who existing workers are, what challenges they face pre-BRT, how they will be impacted. This should take account of formal and informal workers, be made publicly available and incorporated into BRT planning, implementation and management, with worker engagement throughout.
- Similarly, an **environmental and social impact assessment** must be carried out **with appropriate worker engagement** to identify and address potential risks, including preparing for worsening climate impacts. Dar Es Salaam provides an illustration of what can go wrong if workers are not listened to: BRT operators, including drivers and mechanics, were ignored in an environmental assessment, and the main BRT depot was built in an area that floods frequently (Stiller et al, 2019). Operations have been suspended multiple times, buses have been damaged and the costs ramifications have been significant. The wider informal transport workforce should be brought in, including cleaners, mechanics, painters, vendors and callers, as well as drivers and ticket sellers.
- **Involving trade unions and informal associations** in BRT planning from an early stage, with regular and ongoing consultation and negotiation.

2. For full details of the ITF and the Global Labour Institute's labour assessments and wider work on BRT, please see the ITF BRT webpage at <https://www.itfglobal.org/en/sector/urban-transport/bus-rapid-transit->



- Making BRT **affordable to lower-income communities, with routes that serve their needs**. If there is a focus on recouping costs quickly or making profit (which is particularly likely when the private sector is involved), the risk is that prices will be set high, limiting BRT's use to higher-income groups and effectively excluding those most in need of public transport.
- Ensuring that **provisions on decent work and labour rights are negotiated into contracts between BRT management and operators**. Contracts should cover aspects such as minimum wages and hours, provisions on facilities, gender and other equality measures, promotions and training opportunities. **Decent work and labour rights** should also be part of any **underpinning investment agreement**.
- Prioritising long-term **occupational health and safety for BRT workers**. This includes providing in the build out and operations for adequate rest stops, shelters and sanitation on routes, and protections against climate harms, such as air conditioning for higher temperatures. Again, this can be undermined by a push for profits: in Jakarta, for example, private BRT operators introduced an 'efficiency policy' which reduced the number of bus service officers who managed safety and ticket vending, and accidents then rose (ITF, 2022, p.32).
- A focus on a '**gender equal new normal**' in which **women transport workers' rights are protected and gender equality is achieved** by addressing the systemic exclusion of women in the transport industry. ITF experiences have highlighted

the need for BRT consultation and planning process to analyse gender impacts (ITF, 2021). Build out and operations should take account of the need for protections against gender-based violence and harassment, guarantees of sanitation dignity, training opportunities to support women, and for measures to ensure that technology advances gender equality. There should be efforts to better engage and represent women in decision-making. The ITF and UITP, the international umbrella body for public transport authorities, have produced joint recommendations on **strengthening women's employment and equal opportunities in urban transport** which should help to inform BRT planning and implementation (ITF/UITP, 2019).

- Critically, there needs to be a **consideration of jobs impacts**. Since **young workers tend to be concentrated in the informal transport affected by BRT**, the ramifications for them need to be examined. At the same time, **older workers in the formal sector are usually left out of new bus operations and maintenance**. Positively, there is an opportunity for a smooth transition, with **training to allow displaced workers to move into the new systems** – but how effective this is depends on how the process is managed and which workers are given access.

- BRT is often linked to automation, and this can lead to job losses. Looking at Jakarta again, automation eliminated support officers who were responsible for supervising driver behaviour and maintaining quality services. As well as **loss of livelihoods, there can be knock-on effects on transport safety and quality** (ITF, 2022).
- **Integrating BRT with informal public transport**, including through station interchanges and access for informal workers, as well as the planning of feeder routes.
- Beginning **incremental formalisation** of informal transport. This should include **reforming and regulating the target system** where may drivers pay a high daily rental fee to vehicle owners, which incentivises long working hours, competitive driving and high accident rates. Informal transport workers should also be provided with a **predictable living wage through formal employment contracts, with fixed hours and access to social protection**.

BRT illustrates the careful thought which needs to be put into the formalisation of public transport and, crucially, the importance of bringing in and listening to workers from the start.



Source: Citizen Tanzania (2018). The Dar Es Salaam BRT depot was built in an area prone to flooding after BRT drivers and mechanics were ignored in an environmental assessment, with serious and ongoing ramifications (Stiller et al, 2019).

ACHIEVING A JUST TRANSITION FOR TRANSPORT WORKERS

“The only way for a transition to be successful is if there is broad commitment to a transition that is just – a journey to net zero that leaves no-one behind. The needs of workers in industries and geographies that will be hurt by such a transition must be carefully considered [with] support to ensure that workers are the major beneficiaries of our shift to a greener future.” Cyril Ramaphosa, President of the Republic of South Africa (Ramaphosa, 2021).

Africa’s leaders have affirmed their commitment to achieving emissions reduction goals and limiting further climate harms through a just transition which leaves no one behind. But what does this mean for the region’s transport workers?

JUST TRANSITION AT THE INTERNATIONAL LEVEL

The Paris Agreement, which sets out the global framework for tackling climate change, makes clear in its preamble that a just transition must include a focus on workers (Paris Agreement, 2015). The International Labour Organization has produced *Just Transition Guidelines*, based on which the international labour movement has developed the following description of what just transition should involve:

“A just transition secures the future and livelihoods of workers and their communities in the transition to a low-carbon economy. It is based on a social dialogue between workers and unions, employers and governments. A plan for just transition provides and guarantees better and decent jobs, social protection, more training opportunities and greater job security for all workers affected by global warming and climate change policies.” (ILO, 2015).



Source: ITF. A just transition must take particular account of women transport workers who tend to hold jobs which are less secure and more exposed to weather hazards and extremes.

The shift to 'clean' transport is often presented by governments, companies and funding agencies as a win-win, supporting climate mitigation goals and offering much-needed jobs. However, as the BRT example discussed above illustrates, the reality is more complicated.

The introduction of new technologies or systems can displace or adversely impact existing workers, causing job losses or reducing their incomes. And while new jobs are created, these jobs often do not go to existing workers.

"In the transition to electric vehicles, we could lose a lot of jobs due to lack of training, especially in sectors like vehicle maintenance. We need a guarantee that current workers won't lose their jobs and will be considered a priority in retraining the workforce." Matatu worker, Nairobi, Kenya

Particular groups of workers are more likely to lose out, unless their needs are given specific consideration.

Young workers, for example, are disproportionately employed in informal transport (over 94 percent of young workers aged 15-24 in Africa are informally employed)

(Kiaga, 2020). As such, they are more likely to see their livelihoods impacted as informal transport is displaced. The lack of protections associated with informal work means that young workers are left especially vulnerable when their ability to work is hit. The nature of informal transport also leaves workers particularly exposed to climate change impacts, but if the focus of adaptation efforts is on formalised transport, they are left out.

Similarly, women workers tend to hold jobs that are more precarious, and more exposed to climate shifts and extreme weather events. Ticket sellers, service support workers, food providers and cleaners, for example, are commonly women. New technologies which are often brought in as part of the formalisation of transport, such as contactless payments, tend to disproportionately impact jobs held by women.

It is critical to bring workers in from the start so that such risks can be identified, harms minimised and benefits maximised. Such engagement can help to ensure that new technologies and systems are accompanied by good jobs with appropriate protections for workers. Offering training and support to displaced or impacted workers, including young and women workers, can help them to access these new, good jobs. And effective dialogue

can ensure that as transport systems are upgraded and expanded, the needs of workers, including young and women workers, are taken into account: for example, with protections against gender-based violence and harassment built in, appropriate sanitation facilities, shelter spaces, and recognition of rights to organise and bargain collectively within the future transport environment.

There are also wider social impacts to consider. When new transport systems are operated with a focus on recouping investment costs and achieving profitability, this can lead to high ticket prices, effectively excluding those with lower incomes. This deprives them of the benefits of these new systems, and where existing transport has been displaced, can leave them having to find alternative, less convenient, routes and modes for their day-to-day travel. To achieve a just transition, the needs of both workers and users of transport have to be considered from the outset.

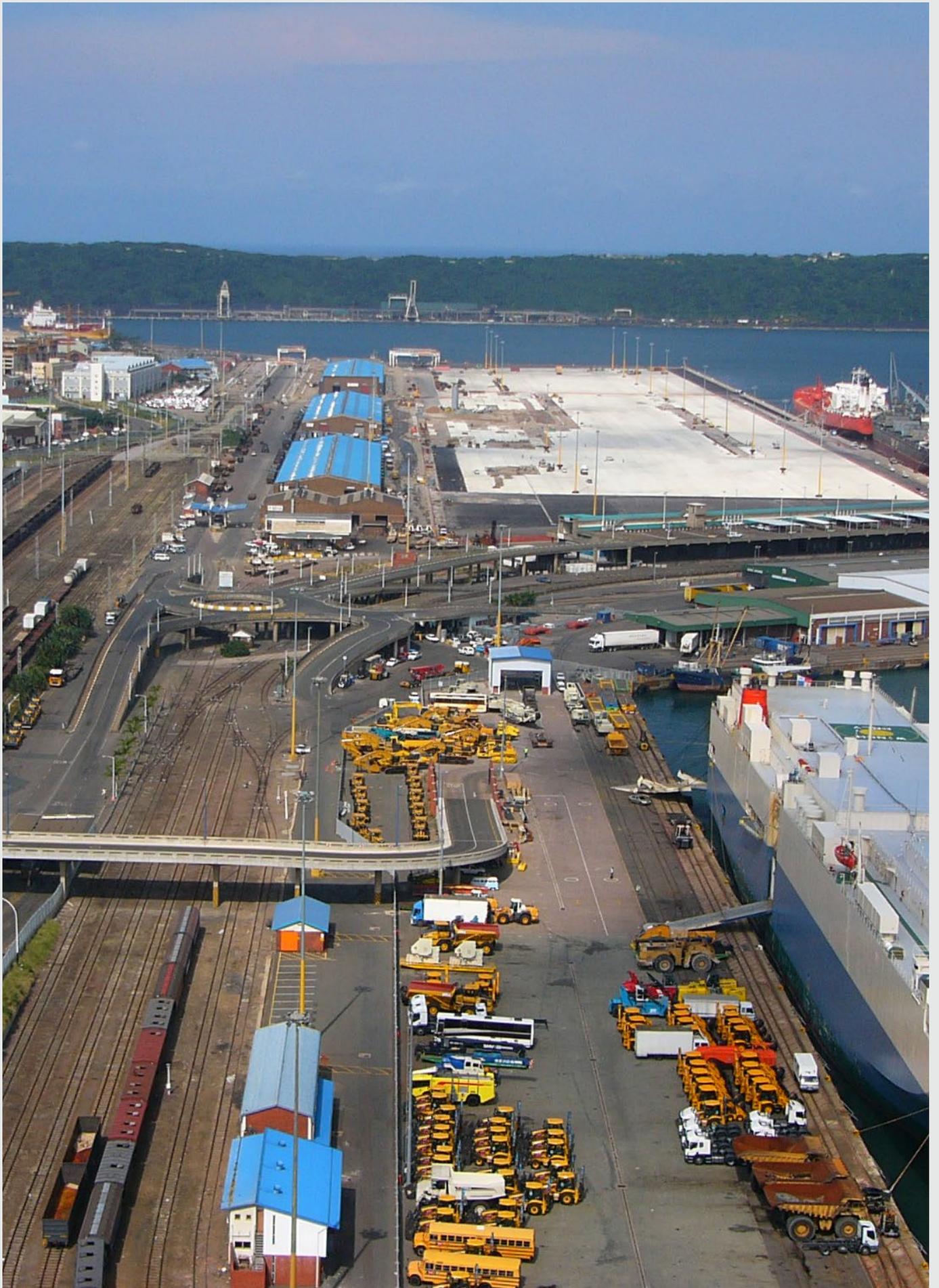
More broadly, real engagement with workers and communities on the ground can help to flag projects which are ill-thought through or have problematic elements. Experiences around the world illustrate what can go wrong when key voices are ignored.

In Colombia, for example, Bogota's local government started introducing the largest fleet of electric buses outside China without engaging public transport unions, communities or existing operators. This resulted in delays in implementation, the displacement of around 6,000 workers from the original bus system, and difficulties in hiring the number of electric bus drivers needed to start operations (ITF, 2022, p.9).

Similarly in New Zealand, the Port of Auckland ignored worker concerns over an automation project, which ran into major difficulties and was eventually scrapped with a write-off of USD \$65 million with more costs to come. Instead of delivering climate benefits, the project caused delays and congestion, worsening emissions and impacting supply chains which depended on the ports, with knock-on effects for workers, businesses and communities (Fox, 2022).

There can also be impacts for particular groups of workers which need to be considered. The introduction of new technologies can potentially benefit workers, such as women and young workers, through, for example, new opportunities for work in the formal sector. However, ITF research has shown that some innovations, such as the introduction of automatic ticket vending machines, have led to job losses (in particular in roles that are dominated by women); increased hiring of outsourced workers; and health and safety implications for workers (Wright, 2018).

It is important that lessons are learned from such experiences. Involving workers, unions and users is key to ensuring that projects are set up and implemented so as to deliver on climate ambition goals and achieve a just transition. Specific measures must be brought in to address the barriers particular groups of workers face. For example, addressing the systemic exclusion of women requires specific action to improve their access to decent and secure work opportunities, focusing on attracting and retaining women and challenging occupational segregation.



SECTION 3: CLIMATE RESILIENCE

“Solutions for climate adaptation come from people, not from protocols.”

Dr Mithika Mwenda, Executive Director of the Pan African Justice Alliance (Government of the Netherlands, 2021).

Alongside climate ambition to reduce carbon emissions and limit global warming, urgent action is needed on adaptation – that is, changes to manage the climate impacts which are already here. This section looks at what action is needed to address climate impacts on transport infrastructure, services and workers in Africa, and how national climate action plans in the region should take account of the transport sector.

PROTECTING AFRICA’S TRANSPORT SYSTEMS AND WORKERS AGAINST CLIMATE CHANGE IMPACTS

For Africa, adaptation is a priority. As set out in Section 1, the region is being buffeted by climate shifts and hazards. The impacts on transport systems and workers are serious and wide-ranging, from increasing and more

extreme floods washing out roads, bridges and bus depots to warmer temperatures causing thermal expansion of rail lines and forcing service slowdowns and stops. And investment, planning and adjustments are needed to achieve transport systems which can withstand current and projected climate harms, and provide safe conditions for workers and passengers.

At the same time, there is an increasing focus on the imperative to move beyond ‘adaptation’ to ‘resilience’. While ‘adaption’ is about adapting to new climate conditions, ‘resilience’ is broader, looking at developing systems that are able to contend with the moving target of constantly changing climate conditions. This shift to climate resilience is welcome, as it takes account of a context where we are seeing myriad climate harms emerging and escalating, and focuses attention on the need for infrastructure, services and working conditions suitable for anticipated future climate change.

On the international stage, adaptation and resilience are now recognised as being as important as climate mitigation – at least on paper. In practice, however, far less funding has so far been made available for adaptation efforts than for mitigation – and what has been provided is a tiny fraction of what is actually needed. And in terms of research, it is notable that there is a dearth of work being done in Africa, compared to other regions, on adaptation and resilience despite the particular importance of this issue to this region.

This must change. Given how hard-hit Africa is by climate change, it is essential that research and planning is done, and appropriate investment is provided to achieve climate resilient transport systems, with protections built in against more intense and frequent weather hazards and more climate shifts.

“Transport workers have not been involved in city planning. Our needs in the context of climate change are not adequately provide for, or given any consideration. [So, for example,] although most of us hang around bus terminals, there are no structures which can protect us from heavy rain and extreme heat.” Informal transport worker, Nairobi, Kenya (ITF, 2022, p.5).

“What is critical [is] to upgrade the infrastructure... We need to improve our infrastructure which will obviously accommodate the climate conditions nowadays. So, it’s the infrastructure, the quality of service... Trains that must be introduced are trains that are going to be able to handle the ... climate conditions that we are experiencing currently... And the technology has to be able to detect the climate conditions.” Andrew Dlamini, train driver, Durban, South Africa ((Dlamini, A., personal communication, August 2021).

The workers who keep transport systems moving must be part of this process. It is they who can best speak to how climate harms are already impacting, what vulnerabilities there are and what changes and investments are needed to face up to new climate realities. Involving workers can also help to shape the new roles that will be necessary in a transition to a more climate-resilient transport system. For example, more frequent and extreme weather events will necessitate more passenger assistance personnel, and they will need the knowledge, training and equipment to deal with likely eventualities.

CHANGING CONDITIONS ON CAIRO'S STREETS: THE IMPACTS ON OCCUPATIONAL HEALTH AND SAFETY FOR TRANSPORT WORKERS



Photo: *Middle East Observer*. In October 2019, heavy rains and flooding killed 25 people and brought Cairo to a standstill, affecting key roads and tunnels and leaving some vehicles submerged (Rashed, 2019).

While the devastating impact of climate on transport systems is widely acknowledged, the ramifications for the working conditions of the workers who keep those systems running is given little, if any, attention. That needs to change.

In Greater Cairo, Egypt's capital and one of the populous cities in the region, transport is heavily impacted by climate change. But according to research by the Environment, Climate Change and Sustainability Company (ECCSCO), no reports have been published on the impacts on the occupational health and safety of its transport workers.

To begin addressing this gap, trade unions and transport workers in Cairo worked with the ECCSCO to look at how the city's transport workers are being affected by climate change and what changes are needed to protect them against increasing harms.³

The worker impacts and issues identified through this research included:

- Continuous exposure to high temperatures, low temperatures and air pollution in vehicles, garages, car parks and streets giving rise to health problems, including heat strokes, thermal stress, colds, influenza, skin problems (such as dry hands), and respiratory problems.
- Lack of equipment, protections and uniforms to help protect them through climate harms. For example, most vehicles are not equipped with air conditioning, and workers are not provided with items such as hand protections or masks.
- Vehicle issues (such as short circuits and breakdowns) due to bad weather giving rise to dangers for workers. This can be exacerbated by vehicle condition issues or failure to take account of bad weather in how services are run (for example, not providing for regular stops in hot conditions can increase the risk of vehicle overheating).
- Impacts of extreme weather events on the number of working hours and work efficiency, which in turn can impact on worker incomes, giving rise to economic harms and stress.
- Increased costs for repairs and spare parts (such as tyres) due to worsening weather conditions and a lack of insurance protection against natural disaster all adding to the economic

3. This research project was carried out by the ECCSCO on behalf of the ITF. Further details on the research findings are available upon request to the ITF.

burden for some transport workers and related stress.

- Extreme weather conditions affecting the public mood, impacting on passengers and workers, adding to mental stress and making tensions more likely.
- Impacts on working hours and overtime affecting time for family and social activities, with adverse implications for mental health.
- Workers not being in a position to take appropriate steps, due to a lack of knowledge of climate change phenomena, how they impact on transport and what they can do to address risks to occupational health and safety.

“In my job, because I work at the hospital, [I see]... people with hypertension and heart conditions affected by high temperatures, and I have to give them extra rests along the way ... trying to transform [the] parking area next to the office into a ventilated waiting and rest area ... equipped with fans, so people won't have to be exposed to extreme temperatures while they run their paperwork and wait.” Woman worker, Public Transport Commission, responsible for medical filings en' (Personal communication, August 2021).

The research sets out a range of recommendations to protect the occupational health and safety of Cairo's transport workers in the face of continuing and worsening climate harms, including:

- Investment in and changes to transport systems to take account of climate impacts. For instance, drivers on long routes can be particularly affected by high temperatures, cold snaps or extreme weather events. To help address this, regular rest stops should be set up, with



Photo top: © ITF. *“These days, it's hot. So, I'm forced to put the air conditioning on. The tyres are affected by the heat and the climate that we're seeing. I used to change my tyres once a year to year-and-half. Now I have to change them every six months.”* Um Waleed, taxi driver in Cairo for 42 years en' (Personal communication, August 2022).

Video grabs above: Workers shared videos for this research from their phones.



Photo: © ITF. As Egypt prepares to host COP27, public transport unions representing workers in Cairo have been coming together to look at issues of sustainable transport and just transition, including how to protect occupational health and safety in the face of worsening climate harms. Summer 2022.

provisions including drinking water and toilets, and trees to help shield these areas from dust and sandstorms. At the same time, transport services should allow time for appropriate rest breaks and changeovers. Other recommendations include improving ventilation and lighting for garages, and supporting shifts to cleaner vehicles to reduce carbon emissions and improve air quality, thereby reducing the risk of worker health impacts.

- The identification and provision of appropriate equipment and clothing to protect workers through anticipated weather shifts and natural disasters. For example, providing N95 respirators for those who suffer from allergies to protect them through dust storms, and making first aid kits available in garages and vehicles (along with training on their use) in case of a climate-related emergency.
- Economic, social and health protections. This is important as many transport workers depend on daily or weekly work rather than on a monthly wage, so transport reductions or closures can directly impact their incomes. Some have no social or health insurance, and can also face the costs of climate-related vehicle damage. A safety net against climate harms is essential.

- Awareness-raising and training. This is essential to prepare transport workers for current and anticipated weather extremes and natural disasters, and to ensure that they are in a position to identify and address risks in different circumstances for their own and the public's protection.
- Bringing preparation for climate impacts into institutions and policies. For example, setting up a specialised unit on climate change and sustainability for transport in Egypt, and making appropriate changes to laws, policies and procedures (such as changing the Egyptian Highway Code to take account of higher temperatures on tyre wear and tear).

It is important that this research is the starting point for dedicated work on occupational health and safety around climate change for Cairo's transport workers. And more broadly, that this issue is given attention across the region for all transport workers, taking account of the particular ways in which climate change is and will, in the future, affect their working conditions.

A DIVERSE CONTINENT: COUNTRY-BY-COUNTRY PLANNING ON CLIMATE ACTION THROUGH NATIONAL DETERMINED CONTRIBUTIONS

There is no one-size-fits-for-all for Africa. Across the continent, different countries are hugely varied in terms of climate challenges, resources, levels of development, and economic, social and conflict contexts. Approaches to climate action and the mobilisation of climate finance need to be tailored to the situation in each country and tied into existing priorities, plans and projects. And across the board, such work should always take account of transport, given the fundamental importance of the sector and its workers in day-to-day life and economic development.

Recognising the need for different national approaches, the Paris Agreement requires each signatory country to produce a climate action plan, called a National Determined Contribution (NDC). NDCs should set out country targets and plans for mitigating GHG emissions and for adapting to climate impacts, along with monitoring processes to keep climate action on track, and a climate finance strategy. Countries are supposed to update their NDCs every five years. However, it was recognised at COP26 that existing plans did not achieve the emissions cut required to limit global warming to 1.5°C above pre-industrial levels, so countries were requested to revisit and strengthen their NDCs (UNFCCC, 2021, A29). A Global Stocktake process is also underway to assess progress in raising climate ambition and implementing the measures needed to reach Paris Agreement targets (UNFCCC, n.d.-a).

A review of the NDCs of four countries across Africa provides a sense of how different they are, the range of ways in which transport is being considered, and what the gaps are:

- **Angola** (*oil-rich state in central-southern Africa with a recent history of civil war*):

While the NDC covers transport and notes that transport emissions are expected to increase with economic growth, the only specific transport measure set out under mitigation is the roll-out of natural-gas powered buses, contributing less than one percent of total emissions mitigation. Under adaptation, there are no specific references to transport apart from an impact study on fisheries productivity. (Republic of Angola, 2021).

- **Liberia** (*West African state, rich in natural resources but one of the world's least developed countries with very low GHG emissions, seriously impacted by recent civil wars and multiple Ebola outbreaks*):

Under mitigation, the NDC pledges a 15 percent reduction below business-as-usual levels in GHG emissions by 2030 through the introduction of electric kekehs (auto-rickshaws). There are no details on how this will be done. The NDC also refers to converting the National Transit Authority's buses and private taxis to natural gas by 2030; imposing levies on high-GHG emitting vehicles and offering rebates to lower emitting vehicles; and to developing a sustainable transport policy by 2025. In terms of adaptation, there is a commitment to developing a green infrastructure plan for the country's cities, but there is no detail, nor any specific measures on transport. (Republic of Liberia, 2021).

- **Mauritius** (*an archipelago of 70 islands in the Indian ocean; a small island developing state facing considerable threat from sea-level rise. It has the highest level of development in Africa*):

Transport is identified as one of the priority sectors for mitigation in the NDC, with commitments to extend the light rail network as part of a national strategy to modernise and upscale public transport by 2022, phase out subsidies and incentives for diesel bus imports

and increase the subsidy for the purchase of electric vehicles. However, there is no emissions-cut target associated specifically with these transport measures. In terms of adaptation, there are references to fisheries and tourism, but transport is not otherwise covered. (Republic of Mauritius, 2021).

- **Morocco** (*north-western African state, currently the fifth largest economy in Africa*):

Under the Urban Public Transport Improvement programme in the NDC, there are several specific strategies and targets for mitigation. The main focus is on promoting multi-modality of intercity transport, including rail, electric bus and taxi development, and an extension of tramways. An Urban Transport Road support fund of two hundred million dollars is promised for the programme. In terms of adaptation, there are references to fisheries, but no specific targets. Morocco has started a National Adaptation Plan process, but transport is not currently covered as a priority sector. (Kingdom of Morocco, 2021).

- **Nigeria** (oil-rich state in West Africa. The most populous country in Africa, considered an emerging country – part of the ‘Next Eleven’ along with states such as Egypt, Mexico, South Korea and Turkey):

Under mitigation, the NDC refers to a range of transport measures: 100,000 extra buses by 2030; BRT to account for over 22 percent of passenger-km by 2035; a quarter of trucks and buses using natural gas by 2030; and tougher emission limits on all vehicles by 2023 and 2030 – but without a firm commitment to a specific transport emissions-cut target. The NDC also contains a five-year climate action for the capital, Lagos, in which transport is one of three focus areas. Measures referenced in this plan are the expansion of the city’s BRT network, spatial planning to promote transit-oriented development, encouraging the update

of low-emissions vehicles and the shift of freight from road to rail. In terms of adaptation, there are references to the impact of climate change on tourism and, briefly, to water transport, and Nigeria is moving forward with a National Adaptation Plan process, but it is not yet clear how transport will fit into this. (Government of Nigeria, 2021).

While it is positive to see that some of these countries have detailed mitigation measures in place for transport, it is notable that only Liberia – responsible for the lowest GHG emissions in this group – has set a specific target for cutting transport-related emissions. And while there are a few references within these NDCs to issues of just transition, gender or youth, it is not clear what this means for transport workers specifically. What provision is there to engage with transport workers (including women and young workers) on climate plans for transport? How are impacts of proposed measures on workers (including informal workers) being assessed and addressed?

On the adaptation side, the lack of attention given to transport overall is striking. Given how transport systems in each of these countries are already being impacted by climate change, this is a serious gap – particularly where NDCs contemplate expanding transport systems. It leaves the systems which keep their communities and economies moving particularly vulnerable to climate change and puts transport workers’ safety, health and livelihoods at particular risk.

It is important that such gaps in NDCs are addressed as quickly as possible, so that countries across Africa have comprehensive, ambitious climate action plans for the transport sector, which can truly deliver a just transition. And crucially, that NDCs specify the investment support needed (in concrete amounts) so as to make these plans a reality.

SECTION 4: INDUSTRY PLANS AND ENERGY TRANSITION

We can no longer tinker about [at] the edges. We can no longer continue feeding our addiction to fossil fuels as if there were no tomorrow. For there will be no tomorrow. As a matter of urgency, we must begin a global transition to a new safe energy economy.”

Archbishop Desmond Tutu, South Africa (Tutu, 2014).

Tackling climate change in Africa requires strong and collective action on transport-related GHG emissions at both the global and regional level to help limit global warming to 1.5°C, and the reduce the risk of further climate change. There must also be action to address the impacts which the continent is already facing, with climate resilient transport systems and protections for workers and users in the face of new climate realities. Each transport sector must play its part, and this section summarises what that means for different industries.

URBAN TRANSPORT

As set out in detail in Sections 2 and 3, as Africa’s cities expand, mitigation efforts should centre on expanding mass urban transport, with a particular focus on integration of formal and informal public transport and worker-led just transition for the massive and growing informal transport sector.⁴ As the region urbanises, urban transport systems will become increasingly important and planning and investment is needed to ensure they are set up to withstand current and projected climate change, with appropriate working conditions and protections for the transport workers who are exposed to climate shifts and more frequent and extreme weather events.

4. For further details, see the ITF’s ‘People’s Public Transport Policy’, available at <https://www.itfglobal.org/en/sector/urban-transport/people%E2%80%99s-public-transport-policy-> and the The ITF’s 2022 report, ‘A Just Transition for Urban Transport Workers’, is available at <https://www.itfglobal.org/en/reports-publications/just-transition-urban-transport-workers-0>

A collective approach is key to achieving this, with national governments, city authorities, employers, vehicle owners, formal and informal workers and unions coming together to achieve urban transport systems which support climate goals while also meeting the needs of transport workers and users. And given the importance of urban transport both to climate ambitions and to Africa's future, this must be a focus of international climate finance for Africa.

There must also be a recognition of the need to reform and regulate informal transport with an objective of public ownership: mass urban transit systems owned by the government, operated on behalf of the public, with profits reinvested for the benefit of the public. This guards against a fragmented approach, cherry picking and profiteering, and allows for an integrated approach which works for all users and sets up reliable mass transit systems in line with climate ambitions.

RAIL AND ROAD

Looking beyond Africa's cities, increasing attention is being given to the build out of transport networks to advance regional integration, international trade and associated economic development.

As things stand, Africa is home to just 84,000 km of rail track serving some 1.2 billion people, compared to 200,000 km of rail track in the European Union, serving 450 million people (less than half the population) (World Bank, 2020, p.7 and Global Railway Review, 2021). Thirteen sub-Saharan nations have no rail network at all, and where infrastructure does exist, it is often outdated, while poor maintenance reduces the amount of usable track (ADB, 2014). However, governments are recognising the role rail build out could play in connecting the region and getting good production to market at lower cost than by road, and with a lower emissions intensity.

As rail networks are built out, electrification from the start would allow for lower GHG emissions, lower air pollution, greater energy efficiency and lower operating costs. But electrified rail has high upfront capital costs which poses a particular challenge on low traffic routes outside the region's metropolises. And while diesel engines can run even when there are blackouts, electrified rail (other than dirtier hybrid electric-diesel engines) cannot. This couples clean rail development with the need for a reliable – and clean – grid. And that depends in turn on the provision of appropriate climate finance.

The alternative is to look at decarbonising road freight. The technology exists today for medium-range light-commercial electric trucks to perform short, local runs (for example, drayage from ship to warehouse). As African nations build out ports or airports, there is an opportunity for electrification from the start for these short- and medium-haul port and ground operations, given sufficient climate finance.

The challenge comes with long-haul trucks which require greater power, and therefore a larger pack of batteries. Since these are very heavy, they themselves need more power and, of key importance to freight companies, have a reduced cargo capacity. The increased battery requirement also makes electric trucks very expensive due to the high cost of rechargeable lithium batteries. All told, an electric truck is two to three times the cost of a conventional heavy-duty truck. Positively, they have markedly lower operation costs (due to reduced maintenance requirements and the slashing of fuel costs), so they should pay for themselves within a few years. Nevertheless, replacing an entire fleet is an expensive proposition due to the high upfront costs. There are also environmental and human rights risks associated with lithium battery value chains which need to be considered (Amnesty International, 2021).

The lack of charging infrastructure is another major barrier: these vehicles have much larger energy requirements and, once used at scale, will require an increase in energy generation. Again, the build out of charging infrastructure and the provision of substantial additional clean electricity generation to mitigate road freight emissions will depend on the availability of climate finance.

A transition to electric trucking would also have implications for workers. If vehicles need to recharge overnight or 90 minutes to recharge to over 80 percent of battery capacity, this has ramifications for work time, overtime and pay and conditions of workers. Maintenance of the vehicles will require specialised training or retraining of technicians. Worker engagement is needed over questions like how such training will be paid for and who will have access to it, as well as the establishment of appropriate training services and certifications.

More broadly, given the exposure of road and rail networks and workers to climate shifts and hazards, action on climate adaptation and resilience must be a priority for this industry. There is a risk that this will be treated as a trade off against climate ambition, with spending moved from mitigation to addressing the harms caused by worsening climate change. Instead, it must be recognised that both climate ambition and climate resilience require proper investment, with appropriate climate finance from wealthier countries.

It is important to bring climate priorities into all planning and action affecting Africa's road and rail networks. The region has turned to programmes such as China's Belt and Road Initiative to address infrastructure gaps, and it is important that these align with climate action and climate resilience and adaptation goals.

AVIATION AND TOURISM

Workers have an essential role in sustainable aviation: without worker knowledge,

expertise, participation, and support, new climate change initiatives will fail to make decarbonisation a reality in the industry. Aviation workers need to join employers and governments in a democratic process to determine the future of the industry. Around the globe, but particularly in Africa where regional aviation links are crucial, air transportation is a public good and must be managed along equity principles.

It is important to recognise that most aviation GHG emissions have been produced outside the African continent. Governments and employers from the Global North must bear the greatest share of the costs of a green transition, including funding technological infrastructure and sharing access to technology through public-public partnerships. Any caps on overall aviation growth should allow for some reallocation of capacity to Africa and other areas that bear less responsibility for the climate crisis. Any reallocated capacity should be reserved for national carriers and airports under public ownership that can be held more accountable for their operations.

Globally, we must reach true carbon neutrality for any aviation growth beyond 2019 levels. This will require unprecedented global coordination, technology, and industrial scaling for new fuel production (like sustainable aviation fuels in the short-term, and possibly hydrogen and/or electric batteries in the longer-term). The new production facilities and supply chains that emerge from this work will undoubtedly include African resources, infrastructure, and labour, as Egypt's USD \$40 billion hydrogen project already demonstrates.

Global employers and governments should support these efforts through funding and technical assistance.

It is imperative that workers are not harmed in the process of making these changes, including any workers connected to new fuel production and raw material sourcing efforts. Roughly 40 percent of all aviation workers globally lost their jobs during the pandemic (ATAG, 2020). Now in the early stage of industry recovery, employers everywhere have been struggling to refill these positions at airlines and airports. Workers and governments must join in the efforts with employers to create a rational jobs plan for the industry that not only better manages labour turnover, but also creates decent work and develops the skills needed for a more sustainable future.

In terms of climate impacts, Africa's tourism industry needs particular attention. This is an important sector for the growth, contributing to 8.5 percent of GDP or USD \$194.2 billion in 2018, and it is growing fast (Oxford Business Group, 2020). However, climate change is already affecting tourism, and poses a serious threat to its future.

Nature-based tourism, for example, is a major draw for the region, accounting for a third of total tourism revenue and supporting 8.8 million jobs (IPCC, 2022b, p.1338). As extreme heat days increase in national parks, however, animal mobility reduces, decreasing viewing opportunities, and tourists (and workers) fear heat stress. Rainfall variability and drought alter wildlife migrations, affecting tourist visits, and severe water restrictions can also affect tourism (IPCC, 2022b, pp.1338-1339). Extreme weather events have disrupted tourist activities

and damaged infrastructure at locations such as Victoria Falls, Hwange National Park and Kruger National Park (IPCC, 2022b, p.1338).

Projected climate change is expected to worsen these impacts. If global warming hits 2°C above pre-industrial temperatures, visits to South Africa's national parks are expected to fall by four percent (IPCC, 2022b, p.1338). Visits to Kilimanjaro National Park, for example, are likely to drop with decreased snow and forest cover. Tourism to water-related spots, such as Victoria Falls, Okavango and Chobe, may be adversely affected by heat and increasing fluctuations in rainfall and river flow (IPCC, 2022b, pp.1338-1339). Sea level rise and more extreme storms are projected to cause beach erosion, reducing beach tourism (IPCC, 2022b, p.1339). Increased numbers of extreme heat events are also projected to increase air turbulence and trigger weight restrictions on aircraft. This could make future air travel to Africa less comfortable and more expensive (IPCC, 2022b, p.1339).

Such climate impacts could have serious impacts in terms of job losses and reduced incomes for those who stay in the industry. Working conditions are also affected. More extreme heat days, for example, leave workers more exposed to heat stress and other harms. This reinforces the need for urgent action on mitigation to limit further climate change and guard against increased harms, and on adaptation to address the impacts which the tourism sector and its workers are already facing. As discussed further at Section 5, we must also recognise that some climate damage cannot be adapted to, and so compensation for these irreparable harms will be needed in the form of loss and damage.

SHIPPING⁵

The Covid-19 pandemic highlighted the importance of maritime shipping – a sector normally hidden from view – to all of our lives. While many of us were locked down, seafarers continued to work on container vessels, bulk carriers, and tankers, some ferrying the life-saving medical products that have let life resume. Seafarers will also be instrumental in the transition to a green, zero-carbon shipping industry and in green transportation more broadly.

International shipping contributes about three percent of annual CO₂ emissions – the equivalent of economies like Germany or Japan – but it is outside the Paris Agreement framework (IMO, 2020). However, technologies to decarbonise shipping already largely exist. The challenge is implementing them quickly enough and with justice. Shipping faces a number of chicken and egg dilemmas, primarily that shipowners will not invest en masse in new carbon-free vessels without the availability of carbon-free fuels and vice versa. The industry needs rigorous global regulation to accelerate the changes.

Shipping must embark on a just transition that retrains and upskills seafarers, ensures health and safety on board vessels and in ports, and equitably distributes the costs of and gains from new zero carbon supply chains. The transition is an opportunity to create a green, skilled workforce and it must not come at the expense of seafarers. Changes to how shipping operates must harness the knowledge, skills and experience of seafarers.

But a just transition for shipping goes far beyond the boundaries of the industry itself. As in many other sectors, the transition to green shipping is fundamentally about energy, lots of it. Alongside incremental operational efficiency measures, the shipping industry will need to replace fossil fuels with alternative, zero-carbon propulsion methods, largely alternative fuels derived from zero-carbon energy sources. This requires massive investment, and it cannot come at the expense of a just distribution of energy to other sectors and households.

The transition to decarbonised shipping will require international coordination in the distribution of zero-carbon fuels, both between transport sectors and within national energy systems. It will also require technology transfer to developing countries so that all have opportunities to gain from new sectors. This will facilitate equity in the location of new industries along the alternative fuels supply chain. Countries need the freedom and the policy space to pursue industrial policy to rapidly create new industries to produce alternative fuels and the energy needed to produce them.

Egypt and South Africa are already vying to be significant producers of alternative fuels such as green hydrogen, green ammonia, and green methanol, produced from zero-carbon electricity (Español, 2022 and Government of South Africa, 2022). They will need access to technology, international support, integrated grids, and the capacity to integrate energy systems so that households do not lose out on the increase in energy production. There are also opportunities for ports in Africa to pair with ports in other countries along “green corridors” to accelerate the transition.

5. For further details, see the ITF's Sustainable Shipping Position Paper at <https://www.itfglobal.org/en/reports-publications/itfs-sustainable-shipping-position-paper>.

In terms of climate impacts, as sea levels rise, African ports and their workers are at increased threat of flooding and storm surges. And as Covid-19 demonstrated, port closures and disruptions have knock-on effects for imports, exports and international supply chains, with serious economic and social ramifications.

West Africa, roughly from Senegal to Gabon, and East Africa, from Somalia to Mozambique, are projected to be at significant risk of extreme sea levels if the world hits 1.5°C above pre-industrial levels, with storm surges and major waves which could cause temporary or even permanent inundation (Asariotis, 2021).

Africa's ports must therefore be a priority for action on climate resilience, with particular account taken of the dangers port workers face from flooding and storms. It is notable that despite the risk the region faces from sea-level rise, ports are relatively under-surveyed with respect to climate vulnerability (Asariotis, 2021). Bridging data and knowledge gaps, and the development of climate risk assessment procedures will require full engagement with port workers both to take account of the impacts they face, and to access their knowledge of port systems and how they are affected by climate change.

FISHERIES

"[With the progression] of climate change, we now don't get any fish. So, it makes it hard to get enough money to maintain our boats. There are also too many fishermen and too many boats now, all trying to get fish but there are not many left. It's not like in the old days."
Semi-industrial fisher, Mumford, Ghana (Jaiteh, 2022)

Oceans absorb CO₂ emissions and solar radiation, while cooling the atmosphere – healthy oceans are therefore critical in our response to climate change. Global fisheries

are deeply connected to both the causes and impacts of climate change. The recent IPCC report highlights the impact this is having (and will continue to have) on coastal ecosystems (IPCC, 2022b). Nowhere is the reality of climate change more visible than in Africa. Current climate change models predict very negative impacts on fisheries, with assessments predicting that catches will decrease substantially (for example by 26 percent in West Africa) (CFFA, 2021). Fish species are likely to migrate from equatorial areas to colder areas to deal with temperature changes, while reproductive capacity and growth rates may also decline due to climate change. Artisanal fishing communities in African countries will be the first to experience the impacts. Climate change, combined with overfishing on foreign-flagged (flags of convenience) vessels and poor trade agreements, is deeply exacerbating a concerning reality (CFFA, 2021).

The impacts of climate change pose a threat to safety at sea through more severe and more frequent storms. The impacts are also pushing people from marginal agricultural land into (often coastal) cities, putting more pressure on coastal development and providing a pool of lower cost labour for industrial fishing fleets (CFFA, 2021). This means both more pressure in artisanal fisheries and also greater movement of people into offshore industrial fisheries, forcing major changes to livelihoods throughout the region.

In September 2022, the UN Food and Agriculture Organization's Committee on Fisheries met, addressing climate change in fisheries and aquaculture, a priority for member states, and highlighting the impacts and the need for adaptation and mitigation (FAO COFI, 2021).

Overfishing is an environmental and socio-economic problem, which threatens food security and long-term employment in fisheries, as well as impacting food webs (and

the wider marine environment) in ways that make it less resilient to other threats, including pollution and climate change. Overfishing off West Africa is compounded by the immense and rampant IUU (illegal, unreported and unregulated) fishing undertaken by foreign flagged vessels, which combined with poor enforcement has meant that livelihoods are being devastated across the region and billions of dollars of legal revenue are forgone (Ighobor, 2017 and EJF, 2021).

Habitat destruction (both maritime and coastal) is destroying carbon sinks which absorb CO₂ – this is especially apparent due to the clearance of mangroves for aquaculture. Furthermore, the changes resulting from sea temperature increases cause shifts in species composition and distribution to which it can be hard or impossible for fishers to adapt (Belhabib et al, 2016).

Fishing vessels themselves contribute to climate change through emissions, on board and throughout the supply chain. Promotion of alternative fuels such as ammonia is gaining support but from a worker perspective this entails much bigger health and safety concerns than operating a diesel vessel.

Fossil fuel subsidies paid to fishing companies (estimated at USD \$35.4 billion in 2018 – of which capacity-enhancing subsidies were USD \$22.2 billion) play a fundamental part in this problem (Sumaila, 2019). Subsidies are intended to promote fishing by supplementing income or lowering costs. Global fishing capacity is estimated at 250 percent of sustainable levels. Subsidies become harmful because generally they lower fuel costs and so allow fishing vessels to travel further, stay at sea for longer, tow heavier fishing gear and so catch greater numbers of fish. Without government subsidies, as much as 54 percent of high seas fishing grounds would be unprofitable at current fishing rates (Sala, 2019).

In June 2022, World Trade Organization Ministers adopted the binding multilateral Agreement on Fisheries Subsidies, curbing global public support that contributes to the depletion of marine resources (WTO, 2022). It does so by prohibiting subsidies that contribute to IUU fishing, those used for fishing overfished stocks, and those for fishing the unregulated high seas. Successful implementation of the Agreement will help secure the livelihoods of 260 million people who depend on marine fisheries (WTO, 2022).

Without urgent action on climate, subsidies and IUU fishing, the situation in West Africa will become extremely severe and lead to deeper poverty, desperation and food insecurity.



SECTION 5: CLIMATE FINANCE FOR SUSTAINABLE TRANSPORT

“The failure on the \$100 billion of international climate finance delivery, particularly the failure to ensure a 50:50 balance for adaptation has left us highly exposed. Meeting and exceeding the COP26 agreed Delivery Plan to make up shortcomings on the \$100 billion and to double adaptation by 2025 are therefore absolutely crucial to our and the world’s economic well-being. But it is no longer enough.”

Kenneth Nana Yaw Ofori-Atta, Finance Minister, Ghana (V20, 2022)

Funding is critical to achieving the climate action needed on transport for Africa’s future. The failure to provide sufficient and appropriate climate finance to date has hampered mitigation efforts and left transport systems and workers across the region exposed as climate change wreaks havoc, with devastating economic and social ramifications. This has to change, and Africa’s hosting of COP27 provides an opportunity to make the progress the region and the world needs on climate finance.

WHERE’S THE MONEY?

“The development of Africa is in the interests of the whole of humanity ... We must protect the planet together.” Macky Sall, President of the Republic of Senegal (Sall, 2022)

At COP15 in 2009, developed countries with high greenhouse gas emissions committed to mobilise USD \$100 billion a year in climate finance in 2020 to support mitigation and adaptation in developing countries (House of Commons, 2021). In 2015, at COP21, this commitment was extended to USD \$100 billion

a year through to 2025, with a new collective goal to be set for post-2025 funding, using the USD \$100 billion figure as a floor and taking account of the needs and priorities of developing countries (UNFCCC, n.d.-b).

However, wealthy countries have consistently failed to meet the USD \$100 billion a year pledge. Analysis by the non-governmental group, Oxfam, estimates that by 2025 – five years after the goal should have been met – climate-vulnerable countries could see a total shortfall of up to USD \$75 billion (Oxfam, 2021).

In 2021, the UK COP26 Presidency released a Climate Finance Delivery Plan, but this showed a continued shortfall until 2023 (Cabinet Office, 2021). At the same time, a process was set to agree the post-2025 funding, the 'New Collective Goal on Climate Finance', including technical expert dialogues, public consultations and high-level ministerial dialogues, running from 2022 to 2024 (Achampong, 2022). And positively, major donor countries also signed a declaration, 'Supporting the Conditions for a Just Transition Globally', recognising key aspects of just transition including:

- Effective and inclusive social dialogue between governments, workers and employers
- Support for worker transition to new jobs
- Local, inclusive and decent work, including for disadvantaged groups
- The development of clean, abuse-free supply chains which support decent jobs and equitable employment across borders (UNFCCC UK, 2021).

Developed countries must now step up and follow through on their existing commitments by urgently increasing climate finance to deliver USD \$100 billion a year to 2025, with additional payments to make up past shortfalls.

New targets must be based on a good faith assessment of the needs and priorities of African and other developing countries, taking account of factors such as future inflation. The African Group of Negotiators has stated that the new target should start from at least USD \$1.3 trillion per year by 2030, evenly split between mitigation and adaptation finance (UNFCCC, 2021b).

Given the growing significance of transport to Africa, this sector must be given due account in its climate financing. Sections 2 to 4 detail the types of climate action needed on transport as Africa moves forward. As an immediate step, African countries should expand their NDCs to take full account of these transport needs, with a focus on just transition, informed by engagement with transport workers and their unions, including informal workers, women and young workers, and other disadvantaged or marginalised workers. Critically, NDCs must specify the investment support they need, with concrete figures.

According to the Climate Policy Initiative, for 2019 and 2020, nearly half of average annual climate finance went to private road transport. By comparison, there was marked underinvestment in rail, public transport and transport-oriented urban development and infrastructure, which together accounted for less than 10 percent, on average, of transport funding. This has to change. If Africa is to build out its transport systems in line with mitigation goals, there needs to be a reorientation and ramp up of investment in public transport and rail infrastructure and services.

Developed countries must play their part by supporting progress on ambitious new targets, with quantitative and qualitative criteria. They must commit climate finance at the scale and in the time needed to achieve mitigation goals and minimise climate harms. And building on the just transition declaration at COP26, criteria for a worker-led just transition must be incorporated into all climate finance agreements.

All stakeholders – governments, companies, investors, finance providers, workers, unions and broader civil society – must work together to achieve a transport system which aligns with climate goals while supporting Africa’s development and quality of life. This must include funding and joint work to research, plan for and implement the build out of the continent’s transport systems so as to minimise overall GHG emissions, achieve climate resilience and ensure safe working conditions, provide re-training for existing workers and high-quality jobs for current and future generations. Crucially, just transition must be at the heart of this collective approach, with the knowledge, experience and expertise of transport workers used to help identify and address tensions and challenges, and to shape sustainable transport for the future.

THE CLIMATE RESILIENCE GAP

“It is time to turn words into deeds, and ambition into action. With the world in flames and under flood waters, the eyes of people everywhere will be on the decision-makers at COP27. They have to deliver if they are to escape the censure of history... If we want our continent to thrive, we have to adapt to climate change – and to achieve this, adaptation finance needs to start flowing at scale. Climate action must not become another casualty of the complex geopolitical era that we are

experiencing.” Nana Addo Dankwa Akufo-Addo, President of the Republic of Ghana (GNA, 2022)

While international climate agreements envisage a ‘balanced allocation between adaptation and mitigation’, much less funding has so far been made available for adaptation than for mitigation. There is consequently a major shortfall in funding available to manage existing and future climate challenges.

This adaptation investment gap is particularly acute for transportation. According to analysis by the Climate Policy Initiative, an annual average of USD \$174.4 billion in climate finance was allocated to transport across 2019 and 2020 (CPI, 2021, p.38). Of this, over 99 percent went to mitigation, with a mere USD \$1.4 billion per year going to transport adaptation or mixed adaptation and mitigation globally (CPI, 2021, pp.22 and 28).

These are global figures. The sums allocated to transport adaptation in Africa have been even lower – and a tiny fraction of what is needed to achieve the climate resilient transport systems the continent needs.

Given how exposed Africa’s transport sector is to climate harms, this needs to change. As transport systems are built out, there is an opportunity to make them fit to face future climate harms from the start. Scaling up adaptation funding to achieve this is critical in reducing loss and damage as climate change worsens. Investing in climate resilient infrastructure and services with appropriate protections for workers is critical to minimising the cost of climate shifts such as rising temperatures and weather hazards including flooding, storm surges and sandstorms. Such investment protects against future economic and social costs, including in terms of lives, health and livelihoods.

The African Group of Negotiators has called for a ramp up in adaptation funding, noting that without adaptation action, Africa could see annual economic losses equivalent to between 2 percent and 4 percent of GDP by 2040 (Republic of Zambia, 2022). The Group has highlighted too the benefits of adaptation measures are typically between double and over five times the costs, and the benefit-cost ratio for early adaptation is at least 12 to 1 (Republic of Zambia, 2022).

Some progress was made at COP26 in 2021, with the agreement of the Glasgow Pact which *'urge[d] developed country Parties to at least double their collective provision of climate finance for adaptation to developing country Parties from 2019 levels by 2025'* (UNFCCC, 2021b).

Fulfilling this commitment would bring the total amount of adaptation funding to around USD \$40 billion by 2025. However, modelling by the Institutional Institute for Environment and Development indicated that adaptation funding pledged as of June 2022 amounted to just USD \$21.8 billion annually by 2025, well below the Glasgow Pact target and nowhere near the level of funding needed to achieve climate resilience in developing countries bearing the brunt of climate change.

As countries convene for COP27, progress needs to be made on adaptation. In following through on their USD \$100 billion per year commitment to 2025, developed countries must ensure that the share allocated to adaptation is increased, with funding specifically earmarked for climate resilient transport. Looking beyond 2025, the New Collective Quantified Goal needs to take account of the level of adaptation funding needed to achieve climate resilient transport systems in Africa and in other developing countries, and to avert and minimise transport-associated loss and damage.

Part of the challenge for Africa is the dearth of research on adaptation needs. Funding and collective work by all stakeholders is needed to address this knowledge gap so as to inform new climate finance targets, including for transport. It is important too that the allocation of adaptation finance takes account of the need for ongoing maintenance of transport systems to ensure resilience through changing temperatures, higher rainfall and extreme weather events.

Specific consideration should also be given to the funding needed to protect transport workers against climate harms. This includes support for measures to safeguard occupational health and safety, such as rest stops to allow for regular breaks as weather worsens, and equipment to help protect against hazards like sandstorms. Social protections are also crucial, ensuring that workers impacted by climate change have access to health care, unemployment support and other benefits.

One potentially positive step in this regard is a 'Global Accelerator on Jobs and Social Protection for Just Transition', established by the United Nations in 2021 to support the creation of jobs and the extension of social protection as part of a just transition (ILO, n.d.). The International Labour Organization is coordinating this initiative, starting in a few selected countries.

For African governments, it is important that their NDCs set out their adaptation funding needs, including for transport. This should encompass the funding needed for transport sector research and assessments, for transport system build outs, upgrades and maintenance and for worker protections.

For their part, developed countries must fulfil existing pledges and commit to and follow through on new targets to ensure that Africa has sufficient and timely adaptation funding to manage climate harms and minimise future loss and damage. And where there is already international investment in the expansion of the region's transport systems – for example, through the Belt and Road Initiative – achieving climate resilience must be front and centre. It is important to recognise that a transport system which is set up for current and future climate change is vital for Africa, but also for minimising disruptions to supply chains through Africa on which the rest of the world depends.

AVOIDING THE CLIMATE FINANCE TRAPS: GETTING FUNDING TO WHERE IT NEEDS TO GO

“The climate crisis ... opens the door to undergo new forms of colonialism, through unfair trade agreements and an old-fashioned development aid concept that no longer fits. Some decisions policy-makers make are a death sentence to our people. We need a paradigm shift in this fight.” Awa Traor, Senegalese climate and social justice advocate (Louw, 2022)

Simply boosting climate finance is not enough by itself. It must also be delivered in a way that ensures delivery of climate goals while also supporting economic development and meeting societal needs. The form in which climate finance is offered –and the conditions attached – matter, as does the way it is directed and what protections are in place to guard against risks or harms.

As things stand, there is no universally agreed definition of climate finance. This creates ambiguity as to what funding can be counted towards commitments.

For example, analysis by the Organisation for Economic Cooperation and Development (OECD) based on developing countries self-reporting climate financing put aggregate funding at USD \$71.1 billion for 2017 and USD \$78.3 billion for 2018 (OECD, 2021). However, Oxfam estimates that climate-specific net assistance was only USD \$19-22.5 billion per year in 2017-2018, less than a third of the OECD figures (Oxfam, 2020).

Such discrepancies are due to a range of accounting differences, for example:

- Most developed countries count climate finance instruments such as loans at full face value, instead of the net financial transfer to developing countries, once costs such as repayments and interest are taken into account.
- Non-concessional finance (loans offered at or above market rate) accounted for an estimated 40 percent of total declared climate finance for 2017-18 – but the inclusion of for-profit loans in climate finance declarations is disputed (Oxfam, 2020).
- There is widespread overcounting of climate relevant funding, for example, with development projects which have minor climate components being fully counted towards climate financing targets (Oxfam, 2020).
- Climate finance is supposed to be ‘new and additional’, but what this means has never been agreed. The risk is that development assistance for areas such as education or health is diverted to climate funding – reallocated rather than increased funding – cutting into resources for other areas critical for local communities (UNFCCC, 2010).



As new climate finance targets are set, it is important that an agreed climate finance definition is in place. This will require a negotiation process overseen by a trusted third party, where all stakeholders – including workers – have a voice when decisions on methodology are made.

This definition should reflect the primary responsibility of developed countries for the climate crisis, limiting climate finance to net financial transfers of genuinely new funding. It should exclude forms of funding which effectively transfer the burden to developing countries, contributing to their debt distress and diverting resources which should be supporting economic and social development. Last year, the Jubilee Debt Campaign estimated that the 34 lowest income countries, many of which are in Africa, were spending five times more on external debt payments than on adapting to climate impacts (Jubilee Debt Campaign, 2021). Making this debt burden worse is not the answer.

The African Group of Negotiators has specifically called for a distinction to be made between ‘provided budgets’ (funding from developed country public budgets) and ‘mobilised finance’ such as mobilised private investments (Republic of Zambia, 2022). They highlight the importance of non-commercial funding, for example, ‘in the early stages of innovation for low emissions investments’, and to help ‘avoid excessive indebtedness and ensure long-term sustainability’ (Republic of Zambia, 2022). Consequently, they have called for a significant share of new climate funding to be made on a grant basis, from a floor of USD \$100 billion, taking account of developing country priorities.

As detailed in sections 2, 3 and 4, there are various risks associated with relying on the private sector to finance the build out of Africa’s transport system. It tends to lead to cherry-picking, where investment is focused on routes which are expected to generate profits, and operations are run to recoup costs

and maximise profits. What the region needs instead is the financial space to plan, build out and operate infrastructure and services in line with climate and development goals.

As Africa urbanises, the priority needs to be the expansion of reliable and affordable public transport, and the incremental and worker-led formalisation of informal transport. The region needs the funding to follow through on potentially important clean transport initiatives, for instance, around solar power. It is critical that there is investment in areas which do not generate profit, notably, climate resilience. This is a major priority but is heavily reliant on public funding.

Therefore, grant-based climate financing to be earmarked for Africa's transport sector is needed. Achieving climate finance at the scale and in the form required for real climate action and a just transition needs a fundamental shift in global financing, addressing the limitations in current approaches. One major question is how climate finance is priced, particularly relative to the financing of 'dirty' transport. New policy models are being developed for a new, active approach to address this, drawing on learnings from past periods where major interventions were needed, and these need serious consideration (Kedward et al, 2022).

There are number of wider risks to the region from the climate drive and the influx of climate financing. Climate finance typically comes with strings attached. There is, of course, a long history of developing countries being required to make major structural adjustments at the behest of funders such as international financial institutions, as a condition of receiving funding. A problem caused by developed countries is being used to push actions on a developing country which it may not otherwise choose, and may not be in its best interests. This underlines the need for climate finance to be based on the receiving country's needs, identified in consultation with workers, unions and other stakeholders.

There can be concerns over greenwashing, for example, where the climate badge is used as a cover for harms such as undermining worker rights and conditions, adversely impacting on passenger safety, or even causing environmental damage. There can also be serious questions over where climate finance is being targeted, and if it is really going to the areas where it can have the most positive effect. Labour and other impact assessments can help to address such risks, along with transparency measures to enable public oversight and initiatives such as participatory budgeting, whereby local people are involved in the process of deciding how public money is spent. And funding research to better understand the vulnerabilities of Africa's transport sector to climate change can help to ensure that adaptation funding goes to where it is most needed.

GETTING CLIMATE FINANCE RIGHT: A JOBS BONANZA

Where climate finance is properly directed, not only can it help to avert catastrophic climate change, but it can become a **powerful motor of job creation**.

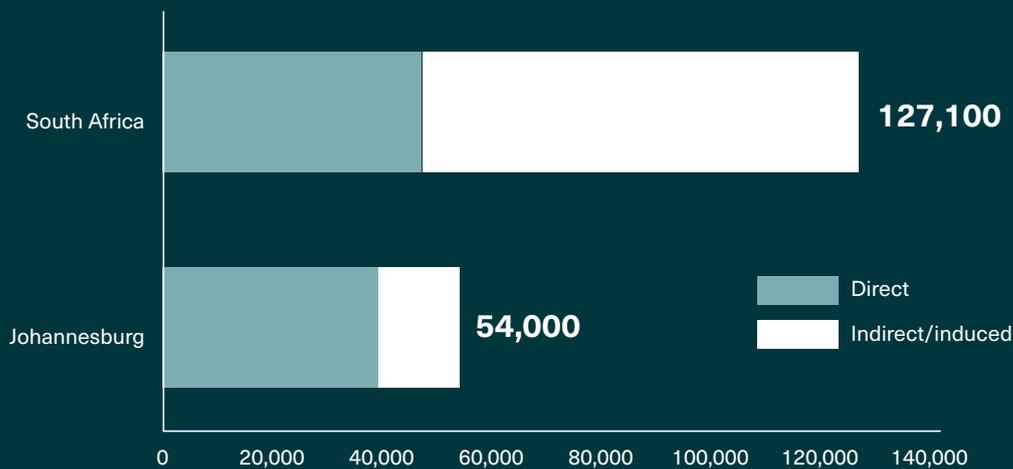
As Africa urbanises, investing in public transport is critical to mitigating future carbon emissions. ITF and C40 modelling in cities around the world, including Johannesburg, shows what this could mean for jobs (ITF/C40, 2021).

Aligning funding for Johannesburg’s public transport system with a policy to limit temperature rise of 1.5°C would generate **54,000 jobs in the city, and a total of 127,100 public transport-related jobs throughout South Africa**.

Modelling across five cities globally showed that investment in line with mitigation goals would create over 650,000 new good-quality transit jobs in those cities alone and another 650,000 more jobs globally.

Polling carried out in a range of cities at the same time showed **strong public support for investing in and expanding public transport for the benefit of people and the planet**. Such investment would also have wider societal benefits, with positive impacts for social equity, safety, public health, quality of life, access to work, education and economic development.

Jobs created by public transit investment in Johannesburg



Source: ITF/C40 (2021). Projected job creation associated with public transport investment in line with Paris Agreement goals. Note: Jobs created in South Africa include those in Johannesburg.

WHERE IT'S ALREADY TOO LATE: LOSS AND DAMAGE FOR TRANSPORT

"Loss and damage is happening right now. We can't adapt to the loss of our cultures. The loss of our identities. The loss of histories. We can't adapt to extinction, to starvation. We can't adapt to loss and damage." Vanessa Nakate, Ugandan climate justice activist (Nakate, 2022).

'Loss and damage' refers to the destructive impacts of climate change that are already here. That is, to the harms which cannot be avoided through mitigation, or adjusted to by adaptation – loss and damage is the climate damage which communities have to live with.

Transport is one of the sectors most deeply impacted by loss and damage. Climate shifts and extreme weather events such as rising temperatures, flooding, storm surges and extreme sea levels can severely damage transport infrastructure such as urban transport depots and vehicles, railroads and ports. Conditions for transport workers can be irreversibly worsened with serious ramifications to their health, safety and well-being, and in terms of their working hours and wages.

Somebody has to pay for these harms. And when the countries which are primarily responsible for the climate crisis fail to pay for the damage Africa is seeing, the burden is borne by Africa's people, including through lost economic development opportunities, higher taxes, disruptions to supplies and mobility restrictions.

Developing countries have long called out this injustice, demanding loss and damage compensation. At COP26, the Glasgow Dialogue was agreed by governments to discuss 'arrangements for the funding of activities to avert, minimise and address loss and damage' (UNFCCC, 2021b). However, talking about preventing loss and damage is not enough, when Africa is already paying a substantial price for the climate crisis. Instead, there is an urgent need for a loss and damage finance facility to be created, with developed countries making annual contributions to it.

It is critical that such loss and damage is kept separate from and is additional to any adaptation funding. The distinction is sometimes blurred by developed countries, but there is a clear difference between investing in transport systems to make them more resilient to climate change, and providing compensation for damage caused by extreme weather events and other climate harms. They are, of course, connected – ramping up adaptation funding now is the way of reducing the cost of future loss and damage – but they are two separate issues.

As COP27 brings attention to climate change in Africa, there is a chance to make real progress on the loss and damage and wider climate finance the region needs. And it is up to us all to seize this chance.

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