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Financing Just Transitions in Emerging Economies

Alligning Climate Goals with Inclusive Economic Transformation for Emerging Markets and Developing Economies

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Key Findings

Supporting a Just Transition in emerging economies requires not only large-scale capital for infrastructure such as renewables, but also targeted financing for communities and small businesses. Capital should be matched to specific activities based on risk and impact.

Detailed and strategic investment plans help build investor confidence by clearly mapping projects, funding needs and socio-economic co-benefits.

Blended finance structures are crucial to fund non-commercial activities, such as worker reskilling, while attracting private investment for infrastructure.

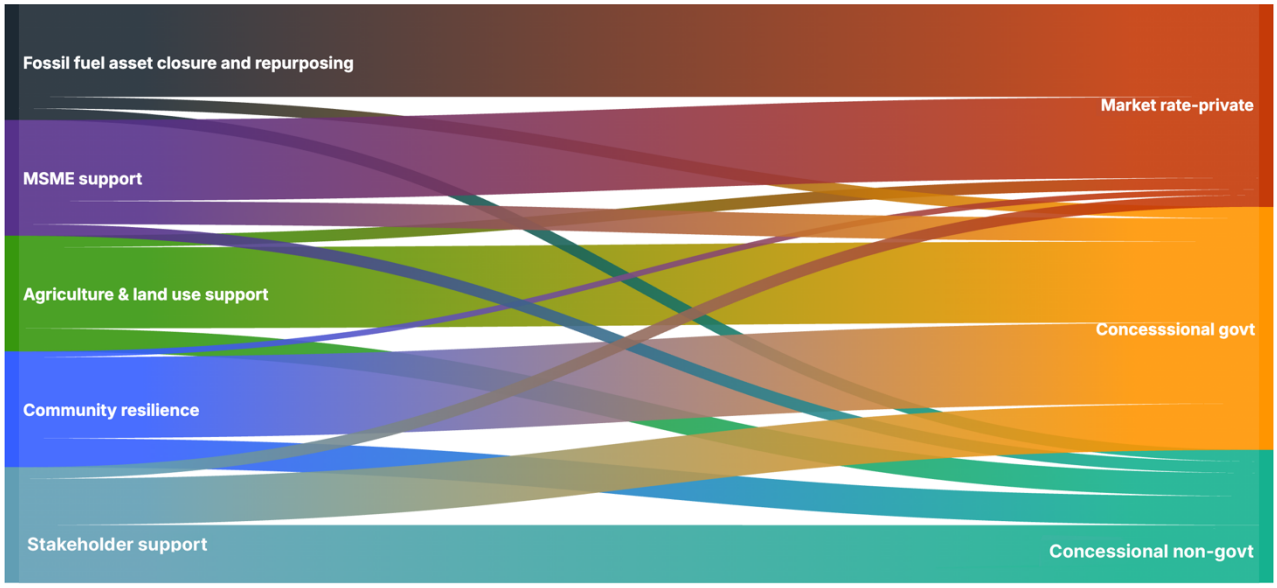
Strengthening institutional co-ordination across ministries, empowering sub-national governments and embedding robust governance systems are critical to ensure transparency, accountability and long-term effectiveness of Just Transition financing ecosystems.

Executive Summary

The global energy transition gives emerging markets and developing economies (EMDEs) a chance to combine climate action with inclusive economic growth. On one hand, the growth of low-carbon technologies can create new industries and jobs. On the other, it may disrupt regions and sectors that rely on fossil fuels. A Just Transition aims to manage this change fairly by protecting affected workers and communities, creating new opportunities for economic growth, and ensuring that the benefits of the transition are shared widely.

To achieve this, planning for energy transition must go hand in hand with planning for a Just Transition, especially in fossil fuel-dependent communities. This is to ensure that the shift to a low-carbon economy does not deepen existing socio-economic inequalities. In this context, Just Transition activities encompass a mix of hard energy transition assets, such as renewable energy, climate smart agriculture and climate-resilient infrastructure, and "softer" Just Transition aspects, such as responsible coal asset closures, stakeholder capacity building, labour reskilling, support for micro, small and medium enterprises (MSMEs) and community resilience. These activities lie on a spectrum of varying commercial viability. While grid-scale solar projects may attract private capital at market terms, non-commercial components like coal asset closure or social support measures often require concessional or grant-based finance. Given the interlinkages between these activities, they must be pursued through a co-ordinated "co-investment" approach that focuses on financing energy transition assets, such as renewable energy, alongside Just Transition initiatives like building community resilience in fossil fuel-dependent regions.

Figure 1: Financing Sources by Just Transition Activity (% Ideal Contribution by Source)



Source: IEEFA Analysis

This report argues that financing a Just Transition in EMDEs will require significant capital deployment not only for infrastructure such as renewable energy, but also to support communities and small businesses through the transition. With fiscal pressures mounting and fossil fuel revenue expected to decline, EMDE governments should look beyond their own budgets to a diverse set of capital providers, including multilateral development agencies, private investors, development banks and philanthropies. The financing challenge is not only about scale, but also about mapping suitable forms of capital to the right activities based on their risk-return profiles and developmental impact.

To illustrate how this can be achieved, this report draws on practical examples from several case studies, identifying mechanisms to structure similar financing interventions in EMDEs. The Philippines' Accelerating Coal Transition (ACT) investment plan shows how concessional debt and grants coupled with private capital can enable early coal retirement and repurposing with social support. South Africa's Just Energy Transition Investment Plan (JET-IP) underscores the importance of institutional co-ordination, stakeholder engagement and dedicated funding platforms. In India, targeted medium, small and micro enterprises (MSMEs) and agriculture programmes backed by multilateral and philanthropic co-financing are helping vulnerable sectors decarbonise while building economic resilience. In Ethiopia, the United Nations Green Climate Fund (GCF) financed a rural water programme that illustrates the value of grant-based financing in fragile contexts.

Key Recommendations for EMDEs

Drawing from the case studies, this report identifies some key enablers for EMDE governments to create a robust Just Transition financing ecosystem in their jurisdictions.

Table 1: Key Recommendations and Actions

Recommendation	Key Action
1. Integrated Just Transition strategies	Develop integrated Just Transition strategies aligned with national decarbonisation goals, net-zero targets and Nationally Determined Contributions (NDCs) while ensuring they are embedded in local development priorities.
2. Bankable investment plans	Create detailed, unified investment plans outlining specific projects, financing needs, and social co-benefits. Programmes like the Philippines' Accelerating Coal Transition (ACT) investment plan increase investor confidence and improve access to finance.
3. Translate plans into pipelines	Establish dedicated facilities for early-stage project preparation and technical support to build a robust pipeline of bankable, investment-ready projects. This reduces perceived risk and accelerates deployment, as seen from South Africa's Just Energy Transition (JET) investment plan experience.
4. Blended finance structures	Structure financing to combine grants, concessional loans and commercial capital in ways that reduce risk and attract investment. Use concessional capital strategically to fund non-commercial components (e.g. reskilling) while ensuring fiscal sustainability.
5. Foster strategic partnerships	Co-develop funding solutions with multilateral development banks (MDBs), philanthropies and private investors by aligning interests and structuring risk-sharing mechanisms. Pooling resources ensures scale and impact while tailoring approaches to local contexts.

6. Strong investment co-ordination	Establish matchmaking platforms to connect capital providers with eligible projects. These platforms help align available funding with actual needs, especially for softer components, such as capacity building and community programmes.
7. Empower sub-national institutions	Build the capacity of local and sub-national institutions to design and execute Just Transition programmes, including budgeting, planning and delivery. Case studies from Ethiopia and India's Zero Budget Natural Farming (ZBNF) show how decentralised governance enhances ownership and impact.
8. Strengthen MRV and oversight	Establish robust governance systems with independent oversight, transparent fund flow mechanisms and third-party audits. Complement this with strong monitoring, reporting and verification (MRV) systems to track environmental, social and economic results, enhancing investor trust and stakeholder accountability.
9. Leverage national schemes	Utilise and align existing national programmes and policy reforms to support Just Transition efforts. India's Rashtriya Krishi Vikas Yojana (RKVY)/Paramparagat Krishi Vikas Yojana (PKVY) and South Africa's enabling policies demonstrate how existing schemes can provide financial and administrative support while reducing setup costs.
10. Institutional co-ordination mechanisms	Set up interministerial and multi-level co-ordination bodies to oversee Just Transition implementation. These bodies streamline decision-making, resolve policy conflicts and ensure coherence across ministries and levels of government.

With rising investor interest in the energy transition, early planning and institution-building can help EMDEs secure capital, avoid social disruption, and transition to a more sustainable and inclusive growth model.

Introduction

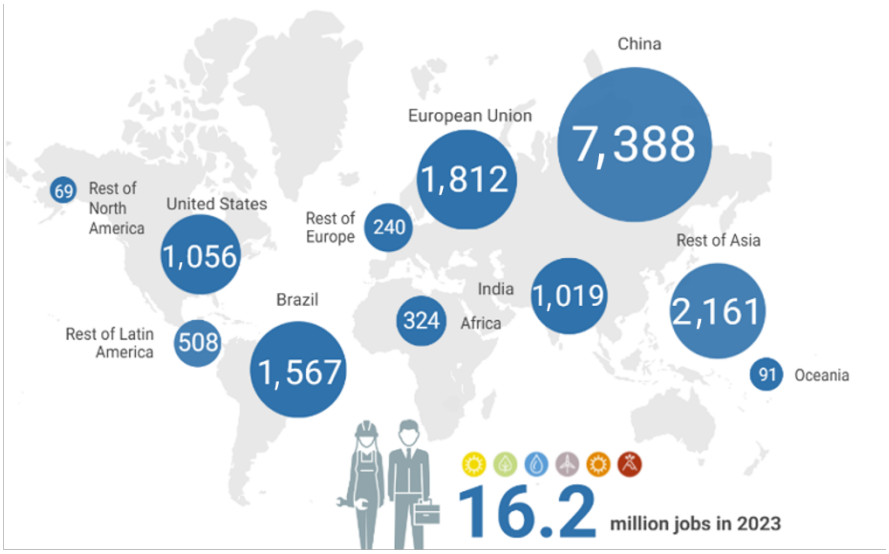
The global push for climate goals and a low-carbon economy is creating significant opportunities for countries to develop new industries, generate jobs and drive economic growth. Since 2020, investment in clean energy has accelerated, with spending on renewable power, grids and storage now exceeding total investments in oil, gas and coal. In 2024, worldwide energy investment surpassed US$3 trillion for the first time, with clean energy technologies and infrastructure getting the majority (~US$2 trillion).[1]

Emerging markets lead the rapid adoption of clean energy. For example, in 2023, clean energy contributed about 5% to India's gross domestic product (GDP) growth,[2] primarily driven by investments in new solar power capacity.[3] Renewable energy installations expanded to 224 gigawatts (GW) by April 2025,[4] up from 134GW in December 2023. Similarly, in the Philippines, the government has set ambitious goals to raise the share of renewable energy in the power generation mix to 35% by 2030 and 50% by 2040, respectively.[5] These targets have already driven record-

[1] International Energy Agency (IEA). World Energy Investment 2024. June 2024.
[2] IEA. Clean energy is boosting economic growth. April 2024.
[3] S&P Global. India seizes crown of fastest growing G20 economy. December 2023.
[4] Central Electricity Authority (CEA). Installed Capacity Report. 30 April 2025. Page 1.
[5] Philippines government. Philippine Energy Plan 2023-2050. 5 June 2023.

breaking capacity additions in 2024, exceeding the total renewable installations made over the previous three years combined.[6] The clean energy economy is also generating new jobs. In 2023, the last available data on global clean energy job creation, renewable energy jobs rose to 16.2 million from 13.7 million in 2022, marking the highest increase to date.[7] China led with an estimated 46% of this total, while Brazil and India added 1.5 million and 1 million new jobs, respectively.

Figure 2: Renewable Energy Employment Globally ('000 jobs, 2023)



Source: International Renewable Energy Agency (IRENA)

This socio-economic growth extends beyond clean energy, influencing various sectors as the world embraces new clean energy technologies. In a net zero 2050 scenario, Bloomberg New Energy Finance (BNEF) estimates global investments in energy-related infrastructure, technologies and projects might reach US$185 trillion.[8] As we move beyond decarbonising the power sector, the potential for job creation across multiple sectors is vast.

However, the transition to low-carbon sectors will coincide with a transition away from fossil fuel-heavy sectors such as coalmining and thermal power production, which will lead to the loss of livelihoods dependent on these sectors. Hence, it is imperative that EMDE governments manage this transition in an equitable manner.

[6] Philippines government. PH push for renewable energy yields record-breaking installations. February 2025.
[7] IRENA. Renewable Energy and Jobs. October 2024.
[8] BNEF. New Energy Outlook 2025. April 2025. Page 8.

Socio-Economic Disruptions and Financing Challenges

While the energy transition offers significant opportunities for economic growth, it also presents challenges for emerging economies that rely heavily on fossil fuels to meet their energy needs, provide employment, and generate significant GDP and revenue. The transition to renewable energy and green industries can generate employment opportunities in sectors such as wind, solar, battery storage and electric mobility. However, fossil fuel-dependent regions will face substantial job losses and economic disruption.

The International Energy Agency's updated Net Zero Emissions by 2050 Scenario forecasts 30 million new clean energy jobs will be created by 2030 while close to 13 million jobs in fossil fuel-related industries will be at risk.[9] However, these new jobs may not always be in the same location or require the same skills. Therefore, policymakers should focus on creating jobs locally, training and capacity building to ensure that energy transitions benefit as many people as possible, especially those working in fossil fuel-dominant sectors. Similarly, many informal jobs that depend on the fossil fuel economy often do not provide basic financial support to formal workers, such as pension and severance pay. Lastly, many jobs supported by the economic activity created by fossil fuel-dominated areas may be lost if those assets are closed down.

Hence, it becomes imperative for policymakers in EMDEs to prioritise a holistic Just Transition approach that not only facilitates the energy transition but also safeguards livelihoods and strengthens social protection systems.

Financing Barriers to a Just Transition for Emerging Economies

Financing a Just Transition in emerging markets requires substantial capital for building new low-carbon infrastructure, worker reskilling programmes, social protection measures and economic diversification efforts in fossil fuel-dependent regions (discussed in the next section). Assets stranded by the transition, such as early coal plant retirements, will require compensation, while investment in climate-resilient infrastructure will be needed to sustain economic growth.

While there is an incremental need to finance these assets, EMDEs will face a critical challenge in financing climate initiatives, socio-economic development and infrastructure improvements due to limited financial resources. The International Monetary Fund estimates EMDEs in the Asia-Pacific region require at least US$1.1 trillion (Rs94 trillion) annually for climate mitigation and adaptation efforts, yet actual investments lag by about US$800 billion (Rs68.7 trillion) a year.[10] With fiscal space constrained by public debt accumulated during the global pandemic, there is an urgency to confront these challenges and increase private sector participation to bridge this financing gap.

[9] IEA. Clean technologies are driving job growth in the energy sector. November 2023.
[10] International Monetary Fund (IMF). Explainer: How Asia Can Unlock $800 Billion of Climate Financing. January 2024.

Declining Fossil Fuel Revenues Will Hit Emerging Economies

While private sector investments will drive clean energy expansion, the responsibility for mitigating socio-economic disruptions, such as job losses and community resilience will fall largely on public funding. In emerging markets, social sector spending and public infrastructure development are funded primarily by government budgets. A portion of expenditure is also funded by revenue generated from fossil fuel sectors. For example, in Indonesia, which is highly dependent on fossil fuel revenue for fiscal spending, pressure on the budget has been mounting. This is due to the sharp decline in tax revenue from a combination of global economic volatility and falling commodity prices, particularly for coal, nickel and crude oil, the key pillars of Indonesia's export-driven economy.[11] Hence, as transitioning EMDEs phase out fossil fuel assets, the pressure on public finances will increase further due to declining fossil fuel revenue.

In such a scenario, it is essential for EMDEs to tap into alternative sources of financing beyond government budgets for social sector expenditure too. This will help ensure a Just Transition for the most vulnerable stakeholders, and create economic opportunities beyond the fossil fuel-dominated economy.

Mapping Just Transition Expenditure

As mentioned earlier, a Just Transition requires targeted investments across multiple areas to mitigate the socio-economic impacts of phasing out fossil fuel-based industries. Figure 3 lists the key expenditure areas within the context of a Just Transition (explained in the next section).

Figure 3: Key Just Transition Categories

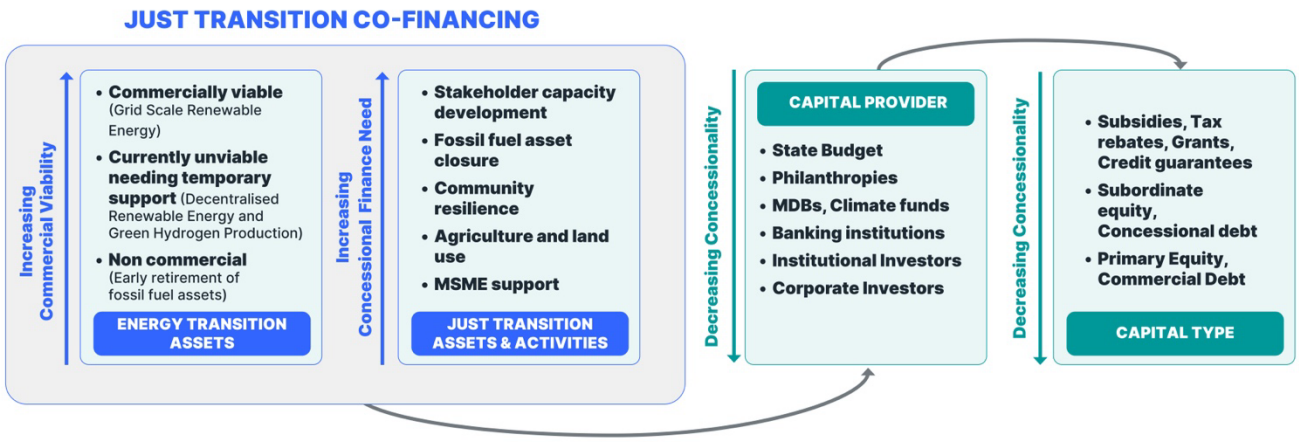
Source: IEEFA Analysis

[11] Reuters. Indonesia keeps 2025 budget deficit forecast unchanged despite tax revenues slump. March 2025.

These Just Transition assets and activities lie on a spectrum of increasing need for concessional finance support as commercial viability decreases (Figure 4). For instance, fossil fuel closure activities are non-commercial and hence, will be funded either through deposits maintained by project sponsors or public capital (either government or non-government). On the other hand, economic diversification activities such as grid-scale renewable energy require minimal concessional finance support to scale up. This is due to their established market presence, technological viability, and the existing familiarity among lenders and investors.

A key point to note is that energy transition assets (renewable energy, green hydrogen, climate resilient infrastructure etc.) and Just Transition activities such as capacity building are not isolated investments, and will have to be planned together. For example, while financing for renewable energy infrastructure will primarily come from private capital, Just Transition-related co-benefits, such as subsidised power for local communities, reskilling and upskilling of community members and supporting local social infrastructure, need to come from non-commercial capital.

Figure 4: Flow for Activities, Capital Providers, Instruments and Mechanism



Source: IEEFA Analysis

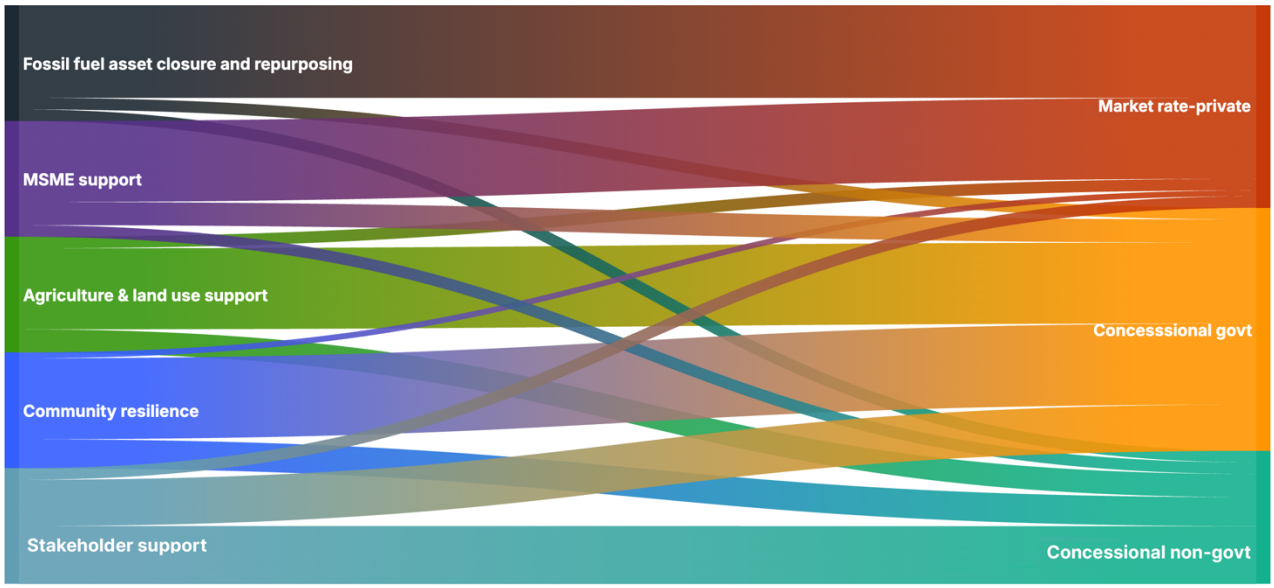
As Figure 4 illustrates, a successful Just Transition requires diverse capital providers with different mandates, capital structures and risk-return profiles. Capital can come from public or private sources, either concessional or commercial. Public concessional sources include government budgets, climate funds and development banks, while public commercial sources include state-owned banks. Private concessional capital comes from philanthropies and impact funds, while private commercial sources include institutional investors, corporates, private banks and environmental, social and governance funds.

Figure 5 maps the Just Transition expenditure areas identified in Figure 3 with appropriate financing sources, based on the need for concessional sources of financing. The mapping has been done by considering the risk-return profile of assets and activities in each category, the development priorities/objectives of capital providers, and actual use cases where financing has been secured.

Additionally, the mapping takes into consideration an emerging market perspective. For instance, assets with low commercial viability typically require a higher share of concessional financing to attract investment. As such, capital sources such as government budgets, philanthropic capital and climate funds are best suited to finance these assets through grants, credit guarantees and concessional debt.

While the actual financing may differ based on specific contexts, the mapping provides insights into the requirement of different sources of capital to finance the various categories of a Just Transition.

Figure 5: Financing Sources by Just Transition Activity (% Ideal Contribution by Source)



Source: IEEFA Analysis

As Figure 5 shows, concessional sources of financing, either from government or non-government sources (private or multilateral/bilateral) play an important role in financing the Just Transition. This is primarily for non-commercial assets and activities, such as stakeholder capacity development, or those that require concessional capital support, such as the transition of MSMEs and the agriculture sector.

Designing Just Transition Financing Mechanisms

Lessons from Case Studies Across Key Categories

As highlighted in the previous section, financing Just Transition activities cannot be isolated from financing low-carbon infrastructure, and this “co-investment” will require different sources of capital. This section delves deeper into these Just Transition categories, their activities, financing instruments and

mechanisms (Figure 4), and case studies. Several key learnings from each case study have been provided for EMDE government stakeholders to structure similar mechanisms in their jurisdictions.

Fossil Fuel Asset Closure and Repurposing

Fossil fuel asset closures should be managed responsibly to minimise environmental hazards, restore land for future use, and lay the groundwork for economic diversification in affected communities. This includes planning coalmine and thermal power plant closures, reforming land use regulations, and executing site remediation and demolition. Repurposing coal assets involves converting retired plants or mine sites into renewable energy generation plants or energy storage systems, often reusing existing infrastructure or equipment.

As mentioned earlier, repurposing assets into low-carbon infrastructure will primarily be financed using private capital at market rate. Project sponsors are usually responsible for site remediation and closure, often using regulatory deposits like mine closure deposits, along with additional grants from the government or development agencies.

Case study: The Philippines

The Philippines' ACT investment plan is designed to facilitate the country's shift from coal to renewable energy sources.[12] Formulated in June 2024 as part of the Climate Investment Funds (CIF)'s global ACT initiative, it aims to help EMDEs shift away from coal in a just manner. The plan was developed by the Philippines government in collaboration with the Asian Development Bank (ADB), International Finance Corporation (IFC) and the World Bank.

Under the plan, US$500 million (Rs43 billion), including a grant of US$25 million (Rs2.1 billion), has been allocated to finance the Just Transition, and total co-financing is expected to exceed US$2.3 billion (Rs197 billion), with investments from the ADB, World Bank, and the public and private sectors. The plan allocates resources across three components:

1. **Infrastructure Development (72%):** Funds the early retirement and repurposing of coal-fired power plants (CFPPs) and the development of renewable energy projects. This component uses concessional debt from MDBs and market rate debt from commercial financiers.

2. **Supporting People and Communities (23%):** Supports Just Transition initiatives, such as reskilling and upskilling programmes for workers affected by the phasing out of coal, and providing sustainable income opportunities for affected communities.

3. **Building Robust Governance (5%):** Enhances policy framework, the regulatory environment and institutional capacity to support the energy transition.

[12] ADB. Climate Investment Fund–Accelerating Coal Transition Program. February 2024. Page 9.

Components 2 and 3 will be funded primarily through ACT grants. The Philippines' Department of Energy (DOE) leads the implementation of the plan, with technical and financial support from development partners.

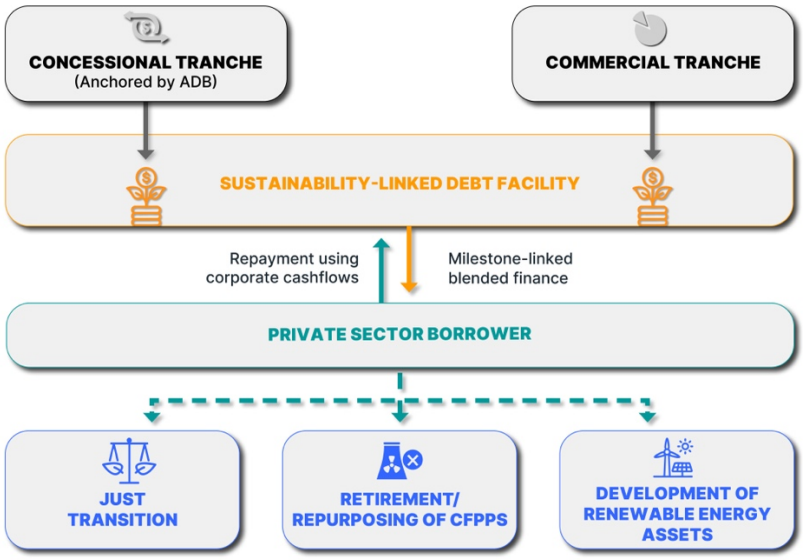
The ACT structure offers lessons on how Just Transition co-financing can be effectively accomplished through a well-structured financing model to derisk investments, attract private capital, and ensure both infrastructure development and socio-economic transition are financed. Key learnings from the Philippines' ACT for EMDEs structuring similar interventions include:

- First, it follows a programmatic approach, where all partners operate under a unified strategy outlined in the investment plan. The strategy was developed through a consultative process involving the government, MDBs, the private sector and civil society. The plan is integrated with the Philippines' National Climate Change Action Plan and a Just Transition framework being developed by the government. Often, multilateral support for EMDEs lacks grounded, local, programmatic support. The Philippines' ACT strategy ensures these issues are addressed upfront.

- Second, the plan employs a blended finance model that helps reduce investment risks and attract diverse funding sources. For instance, a key proposed transaction is the early retirement and repurposing of the 210 megawatt (MW) state-owned Mindanao CFPP. Here, low-cost CIF-ACT debt will be used to lower the weighted average cost of capital and generate a net present value gain to offset early retirement costs for project sponsors. While CIF-ACT funding would be used for technical assistance to support a Just Transition, the concessions provided by CIF-ACT are essential to crowd-in private capital for the plan.

- Next, for private sector CFPPs, a sustainability-linked debt facility has been designed by ADB to ensure a Just Transition co-financing model, rather than standalone private investment in clean energy infrastructure. This facility is designed to incentivise private sector owners of CFPPs to accelerate retirement and/or repurposing of their plants through pricing incentives and/or disbursement milestones when they meet environmental, social, developmental and/or governance targets. Support from multilaterals like ADB is essential for structuring such facilities in EMDEs where domestic governments may not have the experience and technical know-how.

Figure 6: Sustainability-Linked Loan Structure as part of Energy Transition Mechanism



Source: Philippines Department of Energy

A key achievement of the ACT investment plan has been its ability to secure CIF grant capital, which is critical to mobilise additional concessional and commercial capital from other sources. The plan's successful implementation and achievement of its goals remain to be seen. However, it does offer lessons on how the involvement of multilateral entities like CIF can foster confidence and help mobilise large-scale capital for asset closure and repurposing, along with financing the softer aspects of a Just Transition.

Stakeholder Support and Capacity Building

Stakeholder capacity-building activities aim to enhance institutional and technical capabilities among governments, corporates and other key actors to manage the closure of high-carbon assets like coalmines. This involves:

- Developing transition plans aligned with national and international standards.
- Disseminating knowledge on asset closures.
- Establishing grievance redress mechanisms.
- Creating financial mechanisms and policies to fund closure costs.
- Establishing dedicated bodies or task forces to oversee and co-ordinate Just Transition efforts.

Simultaneously, labour support activities focus on mitigating socio-economic impacts by offering training programmes for reskilling and upskilling workers affected by asset closures, and initiatives such as job counselling, job search assistance and social protection measures.

As shown in Figure 5, financing for these activities typically comes from a mix of concessional government and non-government sources. Government contributions often include public budget allocations, while non-government sources include technical assistance grants from multilateral entities and philanthropic organisations. The financing is often co-ordinated through specific technical assistance facilities or Just Transition platforms. However, corporate actors also play an important role in labour support activities either through in-house workforce transition programmes or initiatives like corporate social responsibility in India.

Case Study: South Africa

South Africa's Just Energy Transition Investment Plan (JET-IP), launched in November 2022, is a comprehensive strategy to decarbonise the nation's economy while ensuring social equity.[13] The plan is backed by an initial US$8.5 billion (Rs730 billion) commitment from the International Partners Group (IPG), comprising the CIF-ACT, the EU, Germany, France, the UK and the US, delivered through a mix of grants, concessional loans and commercial finance. The CIF-ACT programme also played an important role in the plan by committing the largest amount – US$2.6 billion (Rs223 billion) – of all the IPG members.

While large-scale infrastructure and clean energy investments are central to the JET-IP, concessional finance and grants are earmarked for capacity building and social support for vulnerable communities affected by the coal phase-out and structural shifts in the energy sector. The JET-IP will channel the US$8.5 billion commitment, alongside additional EU and multilateral development bank funding, towards activities that directly support a Just Transition. The programme has allocated funding for stakeholder support and capacity building as follows:

- **Stakeholder Capacity Building:** Of the total, US$19 million (Rs1.63 billion) has been set aside to build stakeholder capacity. Of this, US$12 million (Rs1.03 billion) will be used to strengthen institutions and upgrade the technical skills of municipal and central agencies. The remaining funds will be used for scenario planning, research studies and policy rollout.

- **Labour support:** About US$180 million (Rs15.5 billion) has been allocated for reskilling and upskilling workers, developing skill development zones (SDZs), supporting community-based training and enterprises, and integrating green skills into existing education and training systems. Of this, US$3 million (Rs258 million) in grants will go towards setting up a skills platform in South Africa, and US$85 million (Rs7.3 billion) will be used to fund pilot projects in key SDZs that are expected to be affected by the transition. In addition, US$53 million (Rs4.6 billion) will be mobilised from existing public and private education, and training programmes.

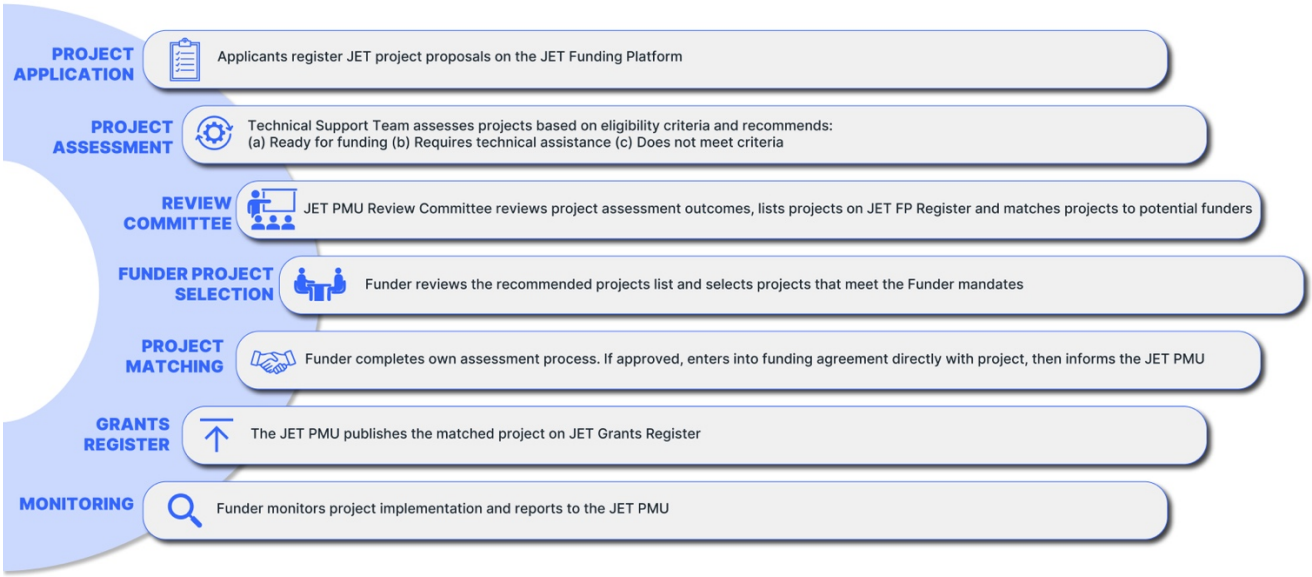
South Africa's JET-IP offers several key lessons for EMDE governments on how to strategically design and implement stakeholder capacity building and support mechanisms.

[13] Climate Commission. South Africa's Just Energy Transition Investment Plan.

- A key factor in securing IPG capital for the JET-IP was setting ambitious decarbonisation targets. In September 2021, South Africa submitted an updated NDC with stronger 2030 emission goals than its 2015 NDC, signalling enhanced ambition aligned with global climate goals.[14] The JET-IP itself was enabled by post-COP26 policy reforms, including the Climate Change Bill, removal of licensing thresholds for private renewable energy investment, and the launch of a green finance taxonomy, all introduced in 2022. Hence, a bold commitment coupled with on-ground reforms is essential to solicit interest from capital providers and mobilise financing for the energy transition in EMDEs.

- One key initiative undertaken has been the creation of a JET Funding Platform to connect grant funders with projects aligned with the JET-IP objectives.[15] It does not provide funding directly but facilitates connections between funders and project developers, offering support to make projects grant-ready. Several skill development programmes have been supported through the funding facilitator platform. There is often a lack of effective channels to connect funders with projects, especially for softer Just Transition activities. Platforms like this help bridge this gap and highlight funding opportunities.

Figure 7: Overview of the JET Funding Platform Process



Source: South Africa Presidency, Just Energy Transition

- Another noteworthy initiative under the JET-IP is the creation of a Just Energy Transition Skilling for Employment Programme (JET SEP),[16] led by businesses to drive a co-ordinated demand-led

[14] United Nations Development Programme. South Africa.
[15] South African government. Just Energy Transition. Project Assessment Guidelines. December 2024.
[16] South African National Business Initiative. JUST ENERGY TRANSITION SKILLING FOR EMPLOYMENT PROGRAMME. October 2024.

approach to skill development in South Africa. The SEP has engaged more than 50 stakeholders, including 28 CEOs from leading companies in South Africa. It will align training programmes with the actual needs of the green economy and create SDZs in fossil fuel hubs. Such initiatives highlight that upskilling efforts should align with industry needs to enable quicker absorption of workers into the green sector.

However, while the JET-IP was able to mobilise initial funding, several issues have emerged during the implementation phase, including:

- **Quality of funds:** While South Africa requires more grants for its Just Transition components, they comprise only 3% of the total commitment.

- **Investor risk:** There have been concerns about which investors will benefit, whether new energy projects will truly be green, and the risk of JETP funds being misused.[17] Hence, strong governance frameworks and third-party oversight mechanisms are essential to build investor trust in EMDE investments.

- **Energy security:** Due to a political backlash,[18] South Africa has delayed the decommissioning of some projects identified for accelerated retirement,[19] and has no investable pipelines of clean energy projects where JETP funds can be mobilised. Prioritising early planning and project preparation, and ensuring bankable pipelines are not delayed, are essential to reduce investor risk premiums, and attract long-term capital.

These issues highlight the importance of effective investor engagement, transparent institutional arrangements, and translating plans to pipelines when structuring such interventions.

MSME Support

MSMEs play a vital role in the fossil fuel value chain, particularly in the coal sector and industrial sectors like steel. In coalmining, MSMEs often operate as coal traders; in the steel industry, they are integrated in the supply chains of larger steel companies, providing goods and services essential to production. Supporting MSMEs involves providing financial and technical assistance to reduce the carbon intensity of their operations through adopting energy efficiency, rooftop solar and electric vehicles. It also includes helping them diversify into new areas like recycling and biogas as existing business models become obsolete. These activities are aimed at ensuring MSMEs are not left behind in the transition, but remain competitive, resilient and employment-generating, particularly in regions where they are critical to local economies.

[17] Transparency International. Strengthening Just Energy Transition Partnerships (JETPs). November 2024. Page 26.
[18] Reuters. South Africa's ANC walks political tightrope over coal plant shutdowns. May 2024.
[19] UK government. Twelve month Just Energy Transition Partnership leaders' update for 2024. November 2024.

IFC estimates 65 million companies or 40% of MSMEs in developing countries have an unmet financing need of US$5.2 trillion (Rs446 trillion) a year,[20] equivalent to 1.4 times global MSME lending. Given the capital-intensive nature of decarbonisation, it is essential to develop suitable financing channels and provide skill development for MSMEs to thrive in a low-carbon economy.

As Figure 5 shows, MSMEs are expected to provide capital for most Just Transition-related expenditure. This capital will be in the form of equity and debt raised from financial institutions (often concessional), with the latter playing a bigger role. However, as most MSMEs have limited access to debt, they may require credit guarantees and technical assistance to access formal financing channels. Additionally, support in the form of subsidies or incentives, and concessional debt will also be needed to derisk investments by MSMEs. These concessions will come from a mix of government and non-government capital sources, including government balance sheets, MDBs and national development banks.

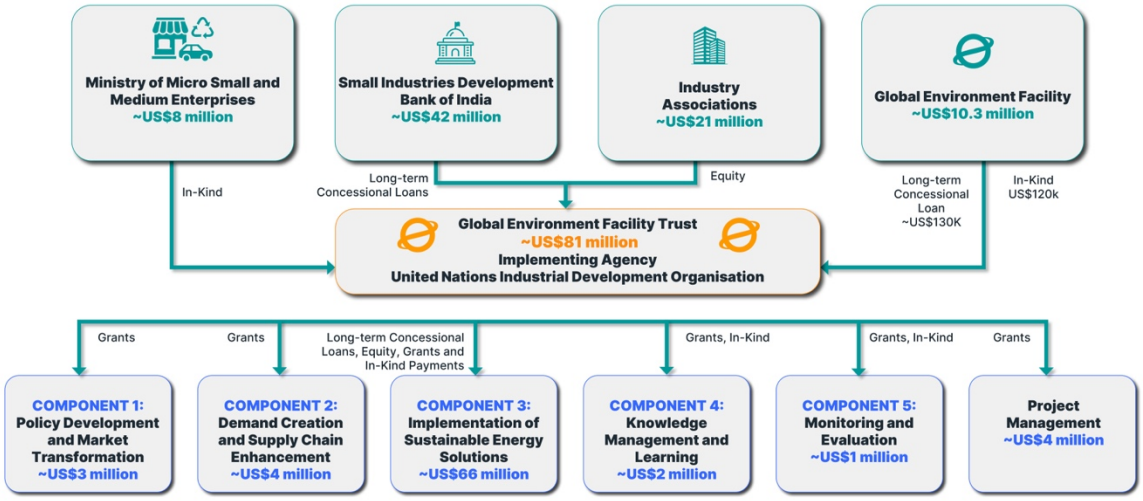
Case Study: Accelerating the Transition of MSMEs in India

The Global Environment Facility (GEF)'s Accelerating Sustainable Energy Transition (ASET) project, approved in December 2024, aims to help Indian MSMEs in the industrial sector reduce energy use and lower emissions.[21] Although this project is not explicitly labelled a Just Transition initiative, it supports interventions essential to enable a Just Transition for MSMEs. The project focuses on improving energy efficiency, switching to cleaner energy sources, and adopting technologies that reduce environmental impact while boosting productivity and resilience. It has received US$9 million (Rs773 million) in grants, with an additional US$71 million (Rs6.1 billion) in co-financing.

[20] IFC. Small and Medium Enterprises (SMEs) Finance. October 2019.

[21] GEF. Accelerating sustainable energy transition for decarbonization of MSME manufacturing enterprises in India. 2025.

Figure 8: GEF ASET Financing Mechanism for MSMEs in India



Sources: GEF; IEEFA Analysis

The key components of the project include:

- **Policy, Institutional Strengthening and Monitoring (Components 1, 4 and 5)**: A total of US$6 million (Rs515 million) in GEF grants and co-financing have been allocated for policy development, institutional capacity building and project oversight. This includes the creation of decarbonisation roadmaps, policy studies and incentive frameworks, along with strengthening key institutions, such as the Small Industries Development Bank of India (SIDBI), Bureau of Energy Efficiency (BEE), and MSME associations. It also supports monitoring and evaluation activities through regular reviews, workshops and reporting to ensure accountability and learning throughout implementation.

- **Market Awareness and Demand Creation (Component 2):** With a budget of US$1.4 million (Rs120 million) from GEF and US$3 million (Rs256 million) in co-financing, this component delivers awareness campaigns, training programmes (with emphasis on women's participation) and digital platforms to increase MSMEs' understanding of clean technologies, and connect them with service providers.

- **Technology Deployment and Scaling (Component 3):** This is the largest component, with US$6.1 million (Rs524 million) in GEF grants and more than US$60 million (Rs5.2 billion) in co-financing, aimed at piloting integrated clean energy solutions with 80 MSMEs and scaling up to over 14,000 units. It also establishes "decarbonisation cells" in MSME clusters to provide localised technical assistance, energy audits and help to access finance.

SIDBI, a designated lender for the MSME sector in India, is one of the main banks associated with project lending. In addition, the project has allocated funds to engage with leading banks on decarbonisation measures and facilitate investments in MSME clusters.

Besides providing low-cost finance by blending concessional and private capital sources, the project provides several lessons for structuring MSME financing interventions in EMDEs:

- The project achieved a leverage ratio of nearly 8:1, mobilising US$71 million (Rs6.1 billion) in co-financing against a US$9 million (Rs773 million) GEF grant. This was made possible by creating a structured platform that enabled domestic capital deployment from domestic institutions such as SIDBI, BEE and other state agencies. By aligning these actors around the specific needs of MSME decarbonisation, the programme facilitated co-ordinated investment in policy reform, technical assistance and scalable clean energy solutions for MSMEs.

- The focus on pilot projects with high-impact, high-return-on-investment for MSME decarbonisation, such as investing in proven energy efficiency technologies, will encourage replication and scaling-up beyond the project life. MSMEs in EMDEs often face limited risk appetite and resource constraints. Proving impact through low-cost, high-yield pilots enables more efficient use of limited public funds and helps derisk future investments.

- Grants are used for training and technical assistance to MSMEs in various aspects, including energy auditing, technology assessment and climate risk mitigation.[22] This ensures that concessional resources catalyse rather than crowd out private capital. MSMEs in EMDEs often struggle to access credit due to weak financial documentation and lack of collateral. By improving bankability, such programmes enable broader financial inclusion and create pathways to sustainable, market-based financing.

- Capacity building is extended to MSME owners, financial institutions, auditors and technology providers, ensuring a full ecosystem was prepared to sustain the transition. Systemic capacity gaps are a major barrier in EMDEs. Training all stakeholders ensures interventions are effective and scalable.

While success is yet to be seen on ground, the project provides a template on how co-financing from development finance institutions, national development banks and multilateral agencies can be structured with targeted interventions to create ecosystem-level changes in MSME financing.

Agriculture and Land Use

While agricultural producers such as farmers may not face significant transition risks from the phasing-out of high-emission assets, they are highly exposed to the physical effects of climate change. These include rising temperatures, prolonged droughts, erratic rainfall and water scarcity, all of which can reduce crop

[22] GEF. Accelerating sustainable energy transition for decarbonization of MSME manufacturing enterprises in India. 2025.

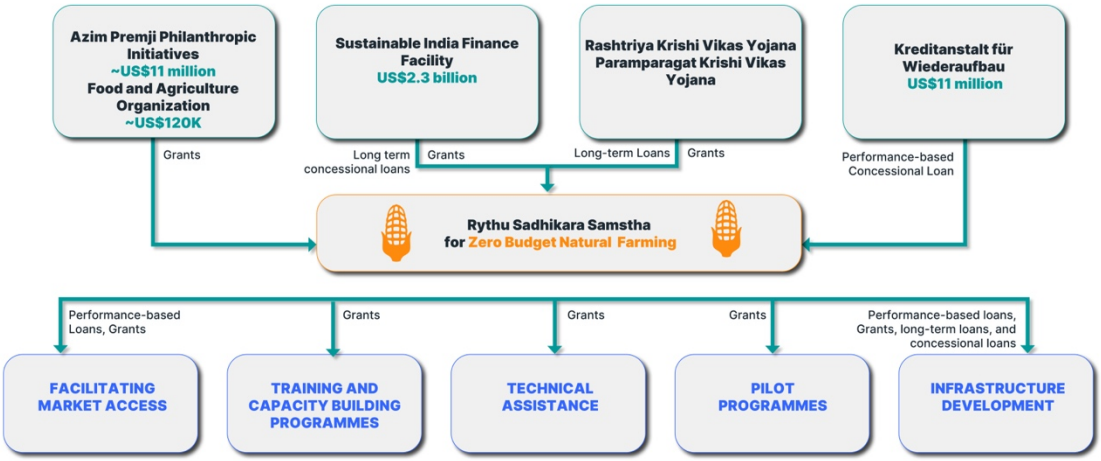
yield and disrupt planting cycles. The high dependence on farming in EMDEs highlights the importance of a Just Transition in this sector. Moreover, as fossil fuel assets are retired, particularly in coal-dependent regions, agriculture could become a critical alternative livelihood for affected communities. Hence, the sector is a high-impact area for policymakers and development institutions, and should be prioritised in Just Transition strategies.

These strategies should focus on enhancing agricultural productivity and sustainability through innovative technologies and practices. Initiatives include replacing diesel-powered pumps with solar alternatives to reduce emissions and operational costs, leveraging animal waste for renewable energy generation, transitioning refrigeration systems to renewable energy sources, and supporting climate-smart agriculture practices. As Figure 5 shows, governments and developmental agencies are crucial in providing financial and technical support for these initiatives.

Case Study: Zero-Budget Natural Farming in Andhra Pradesh

In 2018, the Andhra Pradesh government launched a large-scale initiative to transition six million farmers to Zero-Budget Natural Farming (ZBNF), a chemical-free agricultural system that improves soil health, enhances biodiversity and promotes water conservation. The initiative supports climate goals through eliminating synthetic fertilisers and pesticides, reducing greenhouse gas emissions. ZBNF also enhances soil carbon sequestration, conserves water and improves resilience to drought. “Zero budget” means farmers do not need to purchase external inputs, thereby reducing cultivation costs.[23] ZBNF is supported by a diverse financing structure involving philanthropic, multilateral and public sector stakeholders. The programme is implemented by Rythu Sadhikara Samstha (RySS), a state-owned not-for-profit organisation.

Figure 9: Financing Structure for ZBNF



[23] Ministry of Agriculture Directorate of Economics and Statistics. EVALUATION OF ZERO BUDGET NATURAL FARMING (ZBNF) INITIATIVES IN ANDHRA PRADESH. March 2021. Page 16

Sources: IEEFA analysis, KfW, BNP Paribas, Directorate of Economics and Statistics (DES)

The key project interventions and financing sources include:

- The Sustainable India Finance Facility (SIFF) – a not-for-profit partnership established by the United Nations Environment Programme, BNP Paribas and the World Agroforestry Centre – has committed to mobilising US$2.3 billion (Rs180 billion). This commitment has further attracted US$11 million (Rs944 million) from the Azim Premji Foundation and US$120,000 (Rs1 million) from the Food and Agriculture Organization.

- National schemes such as the Rashtriya Krishi Vikas Yojana (RKVY) and the Paramparagat Krishi Vikas Yojana (PKVY) will provide additional financial support. The state government also received a performance-based loan from Kreditanstalt für Wiederaufbau (KfW) in 2019, worth €90 million (Rs8.8 billion).

- Nearly 73% of total funds are allocated for farmer capacity building, including training, skill development and ZBNF knowledge dissemination. About 17% goes towards institution building, supporting women's self-help groups, farmer collectives and market linkages across villages and districts. Of the remaining funds, 8% is used for certification, quality assurance and monitoring, while 2% covers technical support and programme management at the district and state levels.

This ZNBF programme exemplifies how strong resolve from sub-national governments can support sustainable agriculture while addressing economic and social challenges by effectively mobilising concessional finance from government and non-government sources. Some key learnings for EMDE governments structuring similar interventions include:

- **Long-term vision-enabled strategic budgeting:** The state's goal was to convert 6 million farmers and 8 million hectares by 2024 to ZBNF at an estimated cost of Rs170 billion over 10 years. This vision was anchored by the state's Chief Minister so there was buy-in at the top level.

- **Breaking the cycle of farmer debt caused by costly chemical inputs:** ZBNF aimed to train farmers in natural methods to lower costs, boost profits and build a self-sustaining model. While farmers are not required to contribute capital, investments go into capacity building until they no longer need external support. This shows the value of helping communities become self-reliant by using public funds as short-term support, not ongoing help.

- **Spreading the risk burden:** ZBNF replaced the traditional model – where farmers bear all the risk (due to lending for farming inputs) – with a distributed approach. Farmers handle crop risk, philanthropies fund pilots and technical assistance, while governments and lenders finance large-scale capacity-building programmes. By seeking targeted funding, the government has helped align the development priorities of capital providers with specific parts of the programme.

- **Leveraging existing national schemes:** RKVY and PKVY provided targeted financing for specific parts of the ZBNF programme where external financing is not required. Utilising existing

programmes run by central governments is a good strategy to pool different funds intended for financing similar interventions.

The transition has already shown positive results, including improved farmer income, better soil health and reduced environmental degradation. The number of farmers practising natural farming has increased from just 40,656 farmers in fiscal year (FY) 2016-17 to 750,000 farmers and farm workers, covering 100,000 hectares, in FY2020-21 (the last available information).[24] Notably, areas that adopted ZBNF have reported no farmer suicides, highlighting its social impact.[25]

Community Resilience

Community resilience activities mitigate social, economic and environmental impacts in regions dependent on fossil fuels by supporting local-level studies, gender-sensitive empowerment projects and investments in essential infrastructure, such as water, sanitation and stormwater management. These efforts also address challenges, such as health issues from coal operations, groundwater depletion and reduced crop yield due to ash deposition. It emphasises strengthening vulnerable groups, including women, through targeted social programmes and infrastructure investments. Several of these activities are also supported by fossil fuel companies operating in communities, which may be affected as these companies close their operations.

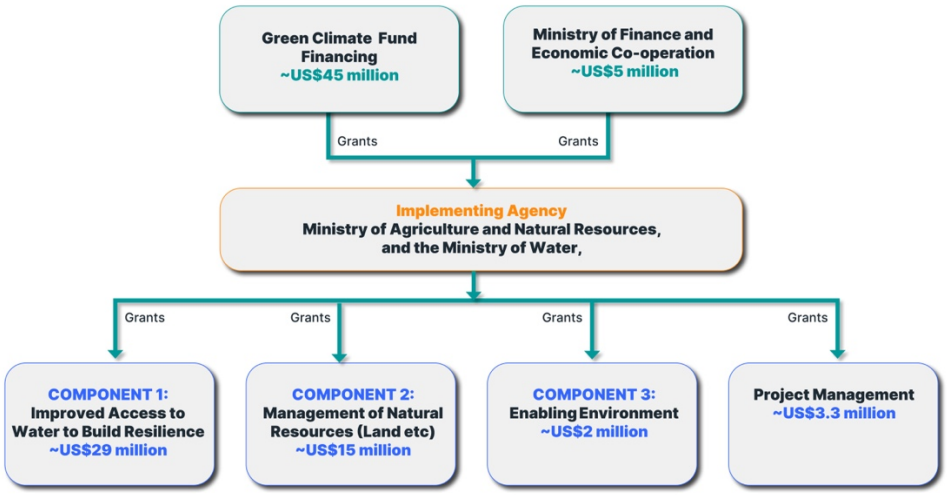
Governments, both state and central, are the primary entities that finance these initiatives through budgetary allocations. However, developmental agencies, philanthropies, MDBs, climate funds and national development banks also need to contribute through instruments like grants and concessional loans (to local authorities) to ensure inclusive growth and long-term resilience for affected communities.

Case Study: Building Gender-responsive Resilience in Ethiopia

The GCF project was launched in 2017 in Ethiopia to build gender-responsive resilience,[26] targeting rural communities most vulnerable to the adverse effects of climate change.[27] It introduced new approaches to water supply and management systems capable of increasing the productive capacity of the community and the carrying capacity of water ecosystems. Key activities under the project include developing solar-powered groundwater pumps, drip irrigation systems and water retention structures to boost agricultural productivity. Additionally, degraded land will be rehabilitated and gender-responsive training will be provided to strengthen water management and climate-resilient planning systems.

[24] National Bank for Agriculture and Rural Development. Zero Budget Natural Farming. 2024. Page 9.
[25] Ministry of Agriculture Directorate of Economics and Statistics. EVALUATION OF ZERO BUDGET NATURAL FARMING (ZBNF) INITIATIVES IN ANDHRA PRADESH. March 2021. Page 8.
[26] "Gender-responsive resilience" means the project is designed to address and reduce gender inequalities by ensuring both women and men benefit equally from climate adaptation efforts.
[27] GCF. Funding proposal. Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities. November 2017.

Figure 10: Financing mechanism for GCF resilience programme in Ethiopia



Sources: IEEFA analysis, GCF

The project is funded through a US$45 million (Rs3.9 billion) grant from the GCF and US$5 million (Rs429 million) in co-financing from the Government of Ethiopia. The project includes the following components:

1. **Improved Access to Water:** Grants totalling US$29 million (Rs3.9 billion) have been allocated to develop water schemes and establish small-scale irrigation and water-retention structures, enabling communities to secure reliable water sources and strengthen their livelihoods against climate and environmental challenges.

2. **Management of Natural Resources:** With US$15 million (Rs1.29 billion) in grant funding, this component focuses on restoring and managing degraded land around water sources, thereby increasing water availability and supporting a healthy ecosystem in targeted areas.

3. **Enabling Environment:** A further US$2 million (Rs172 million) in grants has been allocated for capacity building for both men and women beneficiaries in water management, strengthening institutional frameworks, and enhancing communication and learning systems to ensure the sustainability and effectiveness of water interventions.

Ethiopia's Ministry of Finance serves as the accredited entity for GCF, ensuring the effective utilisation of resources for community-level interventions. The project provides key learnings in structuring community resilience-related financial interventions:

- It is aligned with Ethiopia's Climate Resilient Green Economy (CRGE) Strategy and NDCs, enabling strong ownership and policy integration. This ensured adaptation financing was tied to long-term national goals and received political buy-in.

- As a Least Developed Country,[28] Ethiopia used 100% grant-based financing from GCF due to its high debt levels and low fiscal capacity.[29] EMDEs should assess debt sustainability when planning climate and development investments. Additionally, when targeting highly vulnerable, low-income populations, they should prioritise grant-heavy financing structures from concessional sources such as international development agencies.

- Unlike other nearby initiatives, the project prioritised improving access to water, identified as the main barrier to resilience. This "water-first" approach significantly enhanced its ability to support long-term community adaptation and broader livelihood and health benefits.

- By supporting the development of gender-responsive, climate-smart planning and budgeting systems, it strengthened local capacity, particularly at the *woreda* (district) level.[30] This emphasises that EMDEs must empower sub-national institutions, not just national ministries, to mainstream climate action and deliver on-the-ground results.

- The catalytic GCF grant funded essential infrastructure and farmer training, equipping vulnerable communities to adapt to climate change with decreasing reliance on government support. This shows the value of using concessional finance to build capacity and reduce long-term dependency on government aid, rather than funding recurrent costs.

The project has made significant progress in enhancing gender-responsive resilience against drought in Ethiopia by building infrastructure, such as wells, to provide clean water access, implementing small-scale irrigation systems, carrying out soil and water conservation measures, and rehabilitating degraded land.[31]

How EMDEs can Mobilise Just Transition Financing

To fully leverage the financing opportunities for a Just Transition, EMDE governments must proactively plan and position themselves to attract and absorb capital from diverse sources, including multilateral development banks, climate funds, philanthropic foundations and private investors. While the most significant socio-economic impacts of the transition may be years away, the time to build the institutional, technical and financial foundations is now. Early planning will be critical to avoid reactive approaches, and ensure capital is mobilised at the right time, for the right stakeholders and in the right sectors.

Based on the case studies discussed in this report, the key enablers for EMDEs to create a robust Just Transition financing ecosystem within their jurisdictions include:

1. **Developing integrated Just Transition strategies aligned with national decarbonisation and net zero pathways (including NDCs):** Ensure Just Transition strategies are aligned with national decarbonisation and net-zero pathways, while embedding them in local development priorities.

[28] UN. Least Developed Country Category: Ethiopia Profile.
[29] Brookings. Options for resolving Ethiopia's debt. August 2024.
[30] GCF. Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities.
[31] GCF. Annual Performance Report CY2023. August 2024.

The Philippines ACT investment plan and Ethiopia's GCF intervention demonstrate the importance of grounding plans within national frameworks.

2. **Designing bankable investment plans that outline the financing needs and socio-economic benefits of Just Transition initiatives**: Use a programmatic approach (such as the Philippines' ACT investment plan) that combines infrastructure, capacity building and Just Transition activities under a unified plan. These plans help attract investors by demonstrating the financial viability of projects alongside benefits like job creation, skill development and community wellbeing. Transparent and detailed investment plans reduce risks, and enable targeted mobilisation of public and private capital.

3. **Investing in early project preparation and pipeline development:** A major barrier to attracting finance in EMDEs is the absence of well-prepared, investment-ready projects. South Africa's experience highlights how delays in project preparation and a lack of bankable pipelines can stall the deployment of committed capital. Establishing dedicated project preparation facilities and technical support mechanisms early in the process is essential to reduce risk premiums and secure investor interest.

4. **Using blended finance structures to crowd-in capital**: Effective models blend concessional, grant and commercial finance to derisk investments. For example, concessional finance in South Africa's JET and the Philippines' ACT are being used to catalyse private investment while funding social components, such as reskilling and governance reforms. Additionally, EMDEs should carefully assess their debt sustainability and design financing structures that do not increase fiscal stress, especially when social interventions do not generate direct financial returns.

5. **Fostering partnerships with MDBs, philanthropies and private investors to align interests and co-develop funding mechanisms:** Collaboration among partners will help pool resources, share risks and tailor financing solutions to local contexts and priorities. Such partnerships increase the scale and impact of investments while ensuring social equity is prioritised.

6. **Creating platforms to connect capital with projects:** EMDEs should institutionalise platforms that link funders, especially those offering grants, with viable projects that align with Just Transition objectives. South Africa's JET Funding Platform is a prime example of facilitating partnerships between donors and project developers. Such platforms are particularly valuable to channel finance to softer Just Transition activities such as skill-building, community support and technical assistance.

7. **Empowering sub-national institutions:** Empowering local governments and institutions is critical for the successful implementation of Just Transition programmes. Ethiopia's investment in woreda-level planning and budgeting systems demonstrates how local capacities can be enhanced to deliver climate resilience on the ground. Similarly, India's ZBNF programme was championed at the state level, demonstrating how sub-national leadership can drive large-scale transition.

8. **Strengthening governance and oversight mechanisms, and establishing measurement, reporting and verification (MRV) frameworks:** Investor confidence depends on transparency, accountability and strong institutional safeguards. Concerns about the quality of funds and governance in South Africa's JET highlight the importance of independent oversight in EMDE programmes. Establishing strong MRV systems clarifies fund-flow mechanisms through regular audits and reporting to mitigate perceptions of misuse, and attract long-term capital. Additionally, this helps build trust among stakeholders and ensure accountability by providing reliable data on social, economic and environmental outcomes.

9. **Leveraging existing national schemes and policy reforms:** India's use of national agriculture and MSME schemes (RKVY, PKVY) to support Just Transition activities illustrates the importance of aligning with, and scaling up, existing platforms. South Africa's policy reforms also helped unlock international capital.

10. **Establishing dedicated institutional structures or coordinating bodies across ministries and different levels of government to oversee just transition efforts:** These bodies facilitate inter-ministerial coordination, streamline decision-making and ensure policy coherence across sectors. Institutionalising governance mechanisms enhances accountability and supports the effective implementation of transition strategies.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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