

THE AFRICA GREEN SKILLS & JOBS TOOLKIT

Detailed Outline

GreenWorks for Africa Forum — A JLA Initiative

Synthesized from: Policy, Regulatory & Governance Systems
| Finance, Technology, Innovation & Market Systems | Social
Systems

GreenWorks for Africa Forum Pre-Convening Reports
(Sessions 1 & 2, 2026)

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List of Acronyms

Acronym	Full Form
AfCFTA	African Continental Free Trade Area
AGRA	Alliance for a Green Revolution in Africa
AU	African Union
CAASDEV	Cameroon Association for the Advancement of Science and Development (or similar solar skills initiative referenced)
CAMARTEC	Centre for Agricultural Mechanisation and Rural Technology
CGD	Center for Global Development
COP32	32nd Conference of the Parties (UNFCCC)
CSA	Climate-Smart Agriculture
EnDev	Energising Development
EPR	Extended Producer Responsibility
EV	Electric Vehicle
FSD	Financial Sector Deepening (FSD Africa)
GEA	Global Energy Alliance
GEAPP	Global Energy Alliance for People and Planet
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICT	Information and Communication Technology
ILO	International Labour Organization

List of Acronyms

MEL	Monitoring, Evaluation and Learning
MFI	Microfinance Institution
MRV	Monitoring, Reporting and Verification
NGO	Non-Governmental Organisation
PAYGo	Pay-As-You-Go
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
PRO	Producer Responsibility Organisation
PUE	Productive Use of Energy
R&D	Research and Development
SACCO	Savings and Credit Cooperative Organization
SME	Small and Medium-sized Enterprise
SMS	Short Message Service
TVET	Technical and Vocational Education and Training
VSLA	Village Savings and Loan Association
WEEE	Waste Electrical and Electronic Equipment
WRI	World Resources Institute

1. Executive Summary

Africa's green transition is a jobs transition.

The continent is facing intensifying climate pressures, a youth unemployment crisis, rising food insecurity, weak industrialisation and deepening inequality. It also has significant green growth potential across various sectors, including: Energy & Power Systems, Sustainable Agriculture, Transport & Mobility, Buildings & Urban Infrastructure, Water & Blue Economy, Waste & Circular Economy, Forests, Biodiversity & Natural Capital, Manufacturing & Industry, Sustainable Tourism, Green Digital Economy, Green Finance & Capital Market Instruments, Health & Social Infrastructure (Climate-Linked).

The GreenWorks 4 Africa Forum, a continental co-design platform convened by Jacob's Ladder Africa in partnership with the African Union Commission, The Ministry of Environment, Climate Change and Forestry, FSD Africa, AGRA, the Center for Global Development, GIZ, World Resources Institute and other strategic partners, brings together policymakers, private-sector actors, development partners, practitioners and technical experts to identify practical and scalable actions for advancing green jobs, skills, enterprise development and sustainable economic growth across Africa.

The Forum, scheduled for 12–13 August 2026 in Nairobi, Kenya, will showcase best practices and scalable African solutions to youth unemployment through green jobs and enterprise development; produce an actionable knowledge resource linking job creators and skills developers to support programme design and policy reform; identify sustainable financing models for green skills development and job creation; build an Africa-wide community of practice committed to inclusive green growth and decent work;

promote practical tools for measuring green job creation and workforce readiness; and articulate a unified African position on integrating green jobs into Nationally Determined Contributions, supported by consolidated reporting at COP32.

A series of strategically bundled sector-specific (renewable energy and productive use of energy; circularity, industry and waste systems; climate-resilient agriculture and smart food systems; e-mobility, green infrastructure and urbanisation; natural capital and nature-based enterprises; and industrial decarbonisation, green manufacturing and mining) pre-convenings were held ahead of the forum to gather evidence, test emerging ideas and identify priority issues requiring continental action. Issues within these sectors were discussed across three cross cutting systemic pillars, namely, the Finance, Technology, Innovation and Market Systems, Social Systems and Policy Regulation and Governance. .

The common diagnosis from these pre-convenings was that despite having ideas, pilots, policies and case studies, Africa predominantly suffers a gap in practical delivery architecture: i.e. moving from discussion to implementation, pilots to scale, grant dependence to investment-ready pipelines, and fragmented training to workforce systems linked to real market demand.

The same barriers recur across the six sectors: strong policy ambition with weak execution; over-reliance on grants; weak links between investment and local jobs; skills mismatch between TVET systems and industry demand; limited local manufacturing and value addition; and continued exclusion of informal workers, youth, women and communities from formal green economy pathways.

Three threads cut across every sector:

1. Recognising the value of Africa's informal sector. Waste pickers, smallholder farmers, artisanal miners, boda boda riders and community workers are already part of Africa's green economy. They need recognition, protection, skills, finance and structured routes into more stable enterprise and employment but on their own terms.
2. Finance must reach the worker. Blended finance, green bonds, Village Savings and Loan Associations (VSLAs), Extended Producer Responsibility (EPR) funds and carbon credits need to reach youth, women and community enterprises, including those operating below formal investment thresholds.
3. Skills must match deployment. Technical and Vocational Education and Training (TVET) and university curricula need stronger alignment with industry demand through dual apprenticeship, modular certification and employer-led curriculum design linked to actual technology, infrastructure and enterprise needs.

The Toolkit is, therefore, organised around five core questions that every green jobs programme must answer:

1. Where are the green jobs?
2. Who can access them?
3. What skills are needed?
4. What financing is required?
5. How will progress be tracked?

These questions keep the focus on delivery. They move the green transition beyond broad policy commitments and isolated pilots toward sector-specific job opportunities, clear beneficiary pathways, practical skills systems, appropriate finance and measurable results.

Several priorities cut across the Toolkit. Youth employment and women's inclusion must be embedded in programme design, financing, procurement and governance. Informal workers must be recognised as central participants in the green transition and supported through legal recognition, social protection, skills, finance and enterprise pathways that respect how they are already organised. TVET and university systems must align more closely with industry demand through modular certification, apprenticeships, work-based learning and employer-led curriculum design. Land access and tenure security must be addressed as core economic enablers, particularly in agriculture, natural capital and urban development. African-owned data and monitoring systems must also be strengthened to measure green jobs, job quality, investment, skills demand, natural capital and the distribution of benefits.

The Toolkit, additionally, identifies a set of actions that can be initiated within the next 12–24 months, details of which are presented in the relevant sector pathways.

2. Purpose of the Toolkit

This Africa Green Jobs and Skills Toolkit supports stakeholders to move from green growth ambition to practical job creation by helping them to:



- Identify green jobs opportunities across six priority sectors
 - Translate policy priorities into implementable actions
 - Link financing mechanisms to real jobs and enterprise growth
 - Align skills development and TVET systems with market demand
 - Support youth, women, informal workers, and communities as central economic actors
- Strengthen local content, local manufacturing, and value addition
 - Use African case studies as replicable models
 - Track green jobs outcomes through practical indicators and accountability systems
 - Build stronger coordination across policy, finance, skills, markets, and social protection

3. Target Users

USER GROUP	PRIMARY USE OF TOOLKIT
African Governments and Policymakers	Review sector policy gaps, strengthen enforcement and accountability, build local content rules, and align ministries across climate, labour, finance, education, trade, agriculture, energy, and industry.
Development Partners and Donors	Identify bankable and scalable green jobs programmes, move beyond fragmented pilots, fund skills and enterprise pipelines, support regional green jobs and skills standards harmonisation.
Private Sector and Industry	Identify green value chains, build local supplier networks, partner with TVET institutions, and link business models to community benefit.
TVET Institutions and Universities	Align curricula with industry needs, design modular certifications, create apprenticeships, and recognise informal learning pathways.
Youth and Women-Led Enterprises	Identify business opportunities, access skills pathways, prepare for finance, join Savings and Credit Cooperative Organizations (SACCOs), enter green value chains.

USER GROUP	PRIMARY USE OF TOOLKIT
Civil Society and Community Organisations	Advocate for fair access to green opportunities, protect community rights, support informed consent, track community benefits.

4. How to Use This Toolkit

The Toolkit can be applied to the design, review or strengthening of a sector strategy, investment, programme or green jobs initiative. Users should begin with the relevant sector and then apply the practical instruments in Annexe 2 through the following five steps:

STEP 1: Diagnose the Sector

Based on the identified priority sector, review its sector overview, identified barriers, case studies and priority actions. Use the Sector Green Jobs Diagnostic Checklist to assess readiness across policy and regulation, markets and value chains, finance, skills and workforce, inclusion and just transition, infrastructure, data, standards and accountability.

STEP 2: Map Green Jobs Opportunities

Use the Green Jobs Opportunity Mapping Template to identify employment, livelihood and enterprise opportunities across the sector value chain. Map the job types, target groups, skills and certification requirements, financing needs, market demand and potential deployment pathways. Classify jobs as direct, indirect, enterprise, public sector, community-based, or informal-to-formal transition jobs.

STEP 3: Assess Finance, Inclusion and Viability

Apply the Green Jobs Finance Readiness Checklist to determine whether the proposed opportunities have viable business and revenue models and can access suitable financing. Use the Inclusion and Just Transition Screen to assess whether youth, women, informal workers, communities and workers affected by the transition can participate safely and benefit equitably.

STEP 4: Prioritise Actions and Develop an Implementation Roadmap

Select the interventions that respond most directly to the identified constraints and opportunities. Define the required policy reforms, financing mechanisms, skills interventions, infrastructure, market linkages, social safeguards and institutional responsibilities. Sequence the actions across immediate (0 to 12 months), scale-up (1 to 3 years) and institutionalisation (3 to 5 years) horizons, with clear lead actors, timelines, resources, risks and expected outputs.

STEP 5: Track Results, Learn and Adapt

Use the MEL Indicator and Accountability Tool to establish a baseline, targets and reporting arrangements. Track jobs and enterprises created, workers trained and certified, finance mobilised, youth and women reached, informal workers supported, policies implemented, environmental outcomes delivered and community benefits realised. Review the results periodically and adjust the intervention where progress or inclusion outcomes are insufficient. Prioritise disaggregation of data.

5. How To Move From Ambition To Jobs

To strengthen the Toolkit's practical value, users should apply a concise set of implementation inputs that connect each green growth opportunity to real jobs, skills, finance, inclusion and measurable outcomes. These inputs help ensure that sector analysis leads to investable actions, accountable delivery and inclusive employment outcomes.

Core inputs include:

Jobs conversion pathway: Define how each policy priority becomes a practical employment pathway by linking policy ambition, investment, enterprise model, skills pathway, job type, target group, finance source and measurable outcome.

Job quality criteria: Assess whether proposed green jobs are decent, safe, stable, inclusive, income generating and linked to progression opportunities.

Prioritization matrix: Rank actions by job creation potential, feasibility, inclusion impact, finance readiness, time to results, scalability and environmental value.

Actor responsibility matrix: Clarify the roles of national governments, local authorities, private sector, TVET institutions, financiers, development partners, civil society, youth groups, women's groups and community organizations.

Finance-to-jobs linkage: Require every financing mechanism to specify the jobs it will create, who will benefit, what skills are needed, how enterprises or workers will be supported and how outcomes will be verified.

Skills-to-jobs linkage: Ensure every training intervention demonstrates employer or market demand, certification, apprenticeships, placement routes and post-training support.

Inclusion and just transition screen: Test whether youth, women, informal workers, affected workers and communities can participate meaningfully, benefit fairly and avoid exclusion or harm.

Results and accountability indicators: Distinguish between people trained, people certified, people placed, enterprises created, enterprises financed, jobs sustained, incomes improved, workers protected, finance mobilised and policies implemented.

Implementation readiness checklist: Confirm that market demand, financing, lead actors, beneficiaries, skills providers, risks and measurable indicators are in place before an intervention is advanced.

Sector action template: Use a standard template for each sector covering the opportunity, target group, job types, skills, finance, lead actors, timeline, risks and indicators.

Guiding Question for Users

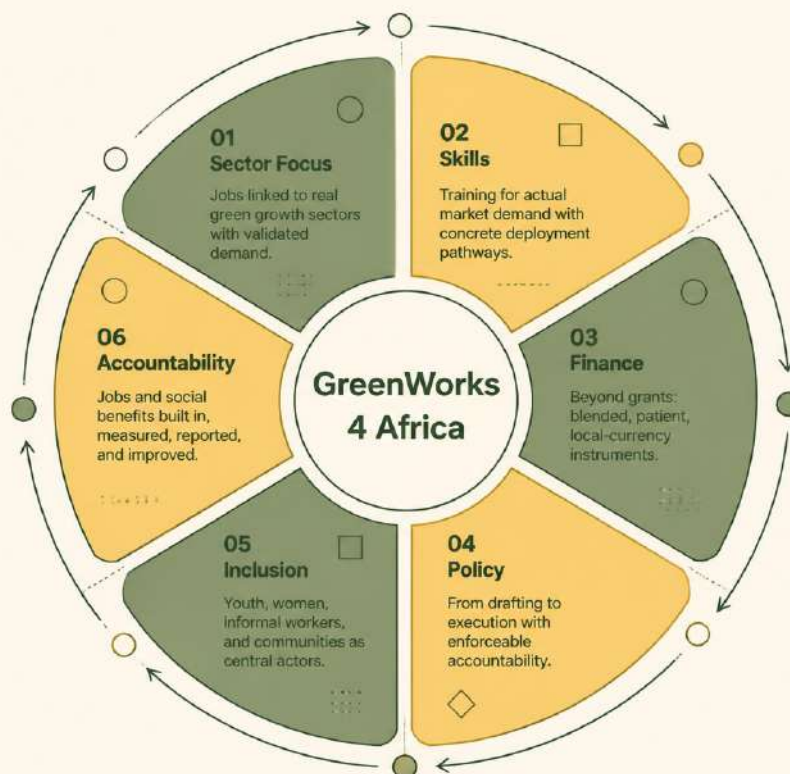
For every proposed sector action, users should be able to answer: what jobs will be created, for whom, through which financing and skills pathways, led by which actors, measured by which indicators and sustained over what time frame?

6. Conceptual Framework

Africa Green Jobs are defined as: Employment, livelihood or self-employment activity, formal or informal, that supports climate resilience, low-carbon growth, resource efficiency, ecosystem protection, circularity, and social inclusion, while generating income or sustenance for Africa's youth, women, informal workers, and communities.

PILLAR	MEANING
Sector Focus	Jobs must be linked to real green growth sectors with validated demand
Skills	Workers must be trained for actual market demand with concrete deployment pathways
Finance	Green jobs need finance beyond grants ,blended, patient, and local currency instruments
Policy	Policies must move from drafting to execution with enforceable accountability
Inclusion	Youth, women, informal workers, and communities must be central actors
Accountability	Jobs and social benefits must be intentionally built into programme design, measured, reported, and continuously improved

Policy can create the conditions for investment, while investment can stimulate demand, enterprise growth and employment. These outcomes depend on effective implementation, viable markets, appropriate skills and worker protection, and deliberate mechanisms to ensure that communities benefit. Progress across each of these areas should be tracked.



7. Cross-Cutting Findings from the Three Pillar Pre-convenings

The following systemic barriers appear consistently across all six sectors and all three pre-convening pillars. They must be addressed as continental priorities, not sector-by-sector problems.

7.1 The Policy-to-Implementation Gap

Strong policy ambition exists in circular economy, climate-smart agriculture, e-mobility, natural capital accounting, industrial decarbonisation, and green skills. However, enforcement, coordination, and accountability remain chronically weak. The Africa Green Jobs and Skills Toolkit, therefore, focuses on execution, and not policy language alone.

7.2 Green Finance Is Too Donor-Driven

Projects remain dependent on grants and pilots. The reports call consistently for blended finance, green bonds, Extended Producer Responsibility (EPR) funds, carbon finance, biodiversity credits, Village Savings and Loan Associations (VSLAs), SACCOs, public procurement quotas, tax incentives, project

preparation facilities, and debt-for-nature swaps. Finance must be linked to both infrastructure outputs and local job creation.

7.3 Skills Systems Are Misaligned with Industry

Key gaps include weak employer involvement in curriculum design, limited work-based learning and apprenticeships, few modular certifications, low participation of women, limited recognition of informal learning pathways, and a persistent disconnect between training completion and actual employment.

7.4 Informal Workers Are Central and Excluded

Informal workers are already active in waste recovery, smallholder farming, transport, construction, and community enterprises. The challenge is to recognise, protect, skill, finance, and integrate them in a dignified and just manner within their contexts.

7.5 Youth and Women Must Be Treated as Economic Actors

Youth and women are workers, technicians, innovators, enterprise owners, cooperative leaders, and community mobilisers and should not be viewed only as beneficiaries. Every intervention should demonstrate explicitly how they access jobs, finance, land, training, leadership, and markets.

7.6 Data, Standards, and Certification Are Insufficient

Priority gaps include green jobs definitions, waste tracking systems, EV and green building standards, natural capital accounting, skills certification frameworks, labour market data, and community benefit measurement mechanisms.

8. Sector Pathways for Green Jobs and Skills

This section presents the six full sector chapters. Each chapter includes a sector overview, refined issues mapped to jobs implications, African case studies with their jobs models, priority resolutions with actionable interventions, target beneficiaries, quick-win opportunities, and green jobs created.

SECTOR 1: Renewable Energy and Productive Use of Energy

SECTOR OVERVIEW ▼

Energy access, productive-use of energy and clean cooking sit at the centre of Africa's green jobs transition, particularly because substantial energy-access and clean-cooking deficits persist across rural and underserved communities.

Energy and power are projected to account for approximately 65% of Africa's green jobs by 2030, with clean cooking alone generating an estimated 1.4–2.5 million jobs and solar home systems a further 0.4–1 million jobs by 2030. Much of this employment will arise not only in generation and construction, but across distribution, installation, operations, maintenance, repair, customer service and other local delivery systems; indirect roles are expected to represent around 56% of all green employment by 2030.

Africa's renewable-energy workforce currently stands at approximately 324,000 workers—only 2% of the global total—despite the continent holding around 60% of the world's best solar resources, pointing to a significant gap between resource potential and local workforce development. The jobs dividend will therefore depend on whether energy investment is deliberately linked to local content, enterprise development, manufacturing and assembly, skills deployment and community access, so that new assets in mini-grids, clean cooking, biogas, battery systems and productive-use equipment also generate sustained local livelihoods rather than relying primarily on imported technologies and expertise.

Consolidated Issues and Jobs Implications

PILLAR	CONSOLIDATED ISSUE	Jobs Implication
 Policy	Weak policy-backed access to clean cooking, electricity and productive-use energy, especially for rural and frontline communities	Energy investments bypass households, farms and local enterprises where jobs could be created through mini-grids, clean cooking, productive-use equipment, local servicing and rural enterprise growth
	Weak local content requirements, domestic production capacity and safeguards against shifting emissions through imported or outsourced energy production	Jobs leak to external suppliers and neighbouring markets; domestic manufacturing, installation, adaptation, repair and maintenance roles remain underdeveloped
	Limited support policies for learning institutions, TVET-industry alignment and university-industry collaboration on renewable energy projects	School-based green projects and training programmes do not feed into apprenticeships, placements, enterprise development or workforce pipelines

PILLAR	CONSOLIDATED ISSUE	Jobs Implication
	Technology	Projects create energy assets without building domestic supplier networks, local enterprises, youth-led ventures or technical employment pathways
 Finance	Over-reliance on grants, donor funding and international climate finance, with weak links between investment, productive use and local labour markets.	Projects create assets but not sustainable employment; short-term installation work dominates while durable jobs in operations, maintenance, services and enterprise growth remain limited
	Weak bankability and uncertain revenue models for rural electrification, mini-grids and productive-use energy	Private capital remains limited, reducing jobs in last-mile distribution, mini-grid operations, appliance financing, irrigation, cooling, processing and local energy businesses
	Energy infrastructure and system reliability gaps reduce reach, affordability and commercial viability	Poor reliability limits enterprise use of energy and suppresses downstream jobs in agribusiness, manufacturing, cold chains, services and rural value addition
 Technology	High cost and limited local capacity to use, adapt, maintain and repair imported renewable energy technologies	Local technicians, artisans and SMEs cannot fully participate in the sector; innovation capacity stagnates and dependence on external expertise remains high
	Lifecycle management for solar panels, batteries and renewable energy e-waste remains insufficiently institutionalised	Jobs in repair, refurbishment, recycling, safe disposal and materials recovery remain underdeveloped and informal while unmanaged waste creates social and environmental risks
 Social	Youth and women remain underrepresented in renewable energy employment, enterprise ownership, leadership and productive-use models	Technical and enterprise opportunities are distributed unevenly, with higher-growth energy value chains dominated by already-connected actors, while women and youth are often excluded or concentrated in lower-paid, less secure roles.

PILLAR	CONSOLIDATED ISSUE	Jobs Implication
	Informal energy workers, informal labourers and workers affected by the transition from high-carbon industries lack recognition, protection and reskilling pathways	Existing workers remain exposed to unsafe or unstable work; just transition mechanisms are missing and routes into renewable energy jobs remain unstructured
	Community benefit-sharing, land governance and resilience planning remain weak in renewable energy projects	Host and energy-poor communities may carry project impacts without stable jobs, improved services, revenue participation or transition support

Consolidated Case Studies and Jobs Models

Case study	Country / scope	Consolidated relevance	Jobs model
<u>Kenya geothermal and wind electricity generation</u>	Kenya	Demonstrates utility-scale renewable energy adoption and the role of grid-connected generation in national energy transition	Operations, maintenance, grid integration, engineering, technical services and energy infrastructure jobs
<u>EnDev partnership</u>	Kenya / multi-country reference	Shows how commercial energy access models and carbon credits can support modern energy services and expand access beyond grant-based delivery	Rural energy enterprise jobs, carbon project roles, clean energy distribution, servicing and last-mile energy access jobs
<u>CAASDEV Solar Skills and Youth Enterprise Model</u>	Cameroon	Links renewable energy deployment with youth skills and enterprise development through youth-led solar installation and maintenance ventures	TVET-to-SME pipeline for solar technicians, youth installers, maintenance workers and local energy entrepreneurs
<u>Nigeria Rural Electrification Agency Rural Electrification Challenge</u>	Nigeria	Builds youth skills alongside rural energy access delivery, linking electrification to local workforce development	Youth technicians, rural electrification workers, installation teams and local energy service providers

Case study	Country / scope	Consolidated relevance	Jobs model
<u>African Biogas Carbon Programme / CAMARTEC</u>	Tanzania	Uses carbon-credit mechanisms to finance biogas deployment and support local technical capacity	Biogas masons, installers, maintenance workers, carbon project officers and clean cooking enterprise jobs
Malawi solar irrigation pumps	Malawi	Demonstrates productive-use energy for smallholder livelihoods, rural resilience and farm productivity	Solar pump installers, irrigation technicians, smallholder service providers, farm productivity jobs and local maintenance roles
<u>Circular Energy / Energy for Hope</u>	South Africa	Uses an EPR-linked model to connect renewable technology lifecycle management, community energy access, skills development and e-waste recycling	Solar panel and battery recycling jobs, repair and refurbishment roles, community energy workers and waste-to-energy-linked livelihoods
<u>CGD TVET strengthening models</u>	Morocco, Senegal, Ghana, Côte d'Ivoire and Kenya	Provides a regional reference for scaling green skills systems and aligning TVET with renewable energy labour-market demand	Green skills instructors, certified technicians, apprentices, placement-linked trainees and regional skills pipeline jobs
Nigeria waste-to- wealth and clean cooking programmes	Nigeria / Abuja	Links waste recovery, briquette production, clean cooking stove distribution and local enterprise development	Informal collector recognition and protection, briquette producers, clean cooking distributors, community enterprises and circular energy livelihoods
<u>Grand Ethiopian Renaissance Dam</u>	Ethiopia	Provides a large-scale renewable energy infrastructure reference, with relevance for power generation, grid capacity and regional energy systems	Construction, operations, maintenance, power systems, grid management and infrastructure-linked technical jobs

Case study	Country / scope	Consolidated relevance	Jobs model
<u>Ghana Renewable Energy Master Plan</u>	Ghana	Illustrates the implementation gap between renewable energy policy ambition and actual progress	Useful as a cautionary case: policy targets do not create jobs unless backed by implementation capacity, investment, skills and delivery systems
<u>Kenya WEEE guidance and e-waste experience</u>	Kenya	Provides a reference for managing renewable energy equipment waste, including solar panels, batteries and electrical components	Repair, refurbishment, recycling, safe disposal, materials recovery and lifecycle management jobs
<u>Nigeria high-profile solar installation</u>	Nigeria	Highlights uneven benefit-sharing where renewable energy investment can bypass frontline or underserved communities	Cautionary case for designing renewable energy projects with community jobs, local access, benefit-sharing and social accountability

Priority Resolutions and Actionable Interventions

THEMATIC AREAS ▼

1. Policy and Governance

- **Mandate local content requirements** in utility-scale renewable energy procurement, including requirements for local labour, local suppliers, installation, maintenance and after-sales service.
- **Establish university-industry R&D labs** for context-specific renewable energy solutions, including clean cooking, biogas, battery systems, productive-use equipment and regional briquette production.
- **Treat energy transition as a national security and development priority** by codifying renewable energy, productive-use energy and clean cooking frameworks in law to improve continuity beyond political cycles.
- **Strengthen policy-backed access to clean cooking, electricity and productive-use energy** for rural and frontline communities through market regulation, infrastructure upgrades and decentralised delivery models.
- **Align renewable energy policy** with emissions reduction, local value retention and domestic manufacturing to avoid shifting emissions or jobs to external suppliers.

2. Finance and Investment

- **Develop integrated financing models** that explicitly link renewable energy investment to local job creation, enterprise development, productive use and skills deployment.
- **Scale blended and innovative financing mechanisms**, including PAYGo models, low-interest loans, concessional capital, guarantees and zero tariffs on clean machinery tied to local assembly or local servicing requirements.
- **Support carbon-financed energy models** that connect rural access, clean cooking, biogas and productive-use energy to international climate finance.
- **Strengthen bankability and revenue models for mini-grids, rural electrification, clean cooking and productive-use energy** so that projects can attract private capital.
- **Move beyond grant-dependent pilots by building investable pipelines** for local energy enterprises, last-mile distributors, appliance providers and maintenance businesses.

3. Skills and Training

- **Align TVET programmes** with solar installation, mini-grid operations, biogas, battery maintenance, clean cooking, productive-use equipment and energy auditing demand.
- **Integrate women and youth into all renewable energy training programmes** with explicit enrolment, completion, placement and enterprise targets.
- Link training to apprenticeships, work-based learning, certification, employer placement and local enterprise incubation.
- **Build social protection, reskilling and upskilling pathways** for workers moving from high-carbon industries into renewable energy and productive-use value chains.
- **Strengthen technician capacity** for adaptation, repair, maintenance, refurbishment and recycling of imported renewable energy technologies.

4. Social Inclusion

- **Institutionalise EPR frameworks for lifecycle management of renewable technologies**, including solar panels, batteries and renewable energy e-waste.
- **Expand decentralised renewable access** through community-inclusive governance, cooperative energy models and local benefit-sharing mechanisms.
- **Strengthen land governance and community participation in renewable energy projects** to ensure host communities receive jobs, services and visible benefits.
- **Recognise informal energy workers and create safer pathways** into clean cooking distribution, briquette production, installation, maintenance, recycling and last-mile energy services.
- **Design energy delivery models that can operate in rural, fragile, climate-affected and underserved contexts.**

TARGET BENEFICIARIES ▼

- **Youth:** Solar technicians, mini-grid operators, biogas masons, battery maintenance workers, e-waste recyclers, productive-use equipment technicians, energy auditors and carbon project support staff.
- **Women:** Clean-cooking supply chain agents, metering and billing operators, cooperative energy managers, solar irrigation operators, PAYGo agents and local energy entrepreneurs.
- **Informal workers:** Waste collectors, artisans and informal technicians transitioning into briquette production, clean energy distribution, repair, recycling and maintenance services.
- **Rural communities:** Mini-grid operators, last-mile distributors, productive-use equipment users, smallholder farmers, rural processors, cold-chain users and community energy cooperatives.
- **Learning institutions:** TVETs, universities and technical colleges developing practical renewable energy training, R&D, apprenticeships and placement pipelines.
- **Local SMEs:** Renewable energy installers, clean cooking enterprises, appliance distributors, repair businesses, fabrication workshops and productive-use service providers.



Quick-Win Opportunities:

12 TO 24 MONTHS

- » Launch PAYGo solar technician apprenticeships in three countries, modelled on commercial energy access approaches that link deployment, skills and local enterprise growth.
- » Pilot women-led solar irrigation cooperatives combining VSLA financing with technical support for installation, maintenance and productive-use business planning.
- » Create clean cooking enterprise funds linked to carbon finance streams in urban and peri-urban areas.
- » Build county-level mini-grid maintenance teams staffed by local youth technicians.
- » Set up renewable energy lifecycle pilots for solar panel, battery and e-waste collection, repair, refurbishment and recycling.
- » Develop fast-track TVET short courses for solar, biogas, clean cooking, battery systems and energy auditing, linked to employer placements.
- » Introduce local-content clauses in selected renewable energy procurement contracts within 12 months.

Green Jobs Created

Solar installation technicians; mini-grid operators; clean cooking manufacturers and distributors; biogas masons and technicians; energy auditors; rural energy entrepreneurs; battery maintenance workers; carbon project officers; productive-use equipment technicians; PAYGo agents; metering and billing operators; briquette producers; e-waste recyclers; solar irrigation technicians; renewable energy repair and refurbishment workers; TVET trainers in green energy.

SECTOR 2: Circularity Industry and Waste Systems

SECTOR OVERVIEW ▼

Circularity and waste management represents one of Africa's most immediate and accessible green-employment opportunities, building on existing collection, sorting, aggregation, repair, reuse and recycling activities that already support large numbers of informal workers and micro-enterprises. Waste recycling alone is projected to generate 0.6–1.1 million jobs by 2030 and up to 14.7 million by 2050, making it one of the continent's largest prospective green-employment value chains; approximately 72% of its projected 2030 jobs could also be accessible to low-income workers. The priority is to transform fragmented, informal and poorly financed activity into safer, more productive and commercially viable circular value chains. This requires integrating informal waste workers, enforcing extended producer responsibility systems, investing in local processing and recycling capacity, and developing circular product standards and markets for recovered materials.

South Africa's experience demonstrates the potential: its extended producer responsibility regime has created more than 24,000 formal jobs since 2022 and supported approximately 47,000 waste pickers. Circularity should therefore be treated as an economic, industrial and trade strategy that converts waste into productive inputs for local manufacturing, enterprise growth, regional value chains and decent work.

Consolidated Issues and Jobs Implications

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Policy	Strong circular economy policy momentum, including the AU Circular Economy Action Plan, has not yet translated into enforceable implementation systems, simpler licensing, clear institutional roles or stronger compliance.	Circular enterprises remain constrained by unclear rules, slow permitting and weak enforcement; job creation stays fragmented and informal.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	EPR is poorly understood and often framed as an additional tax instead of a shared responsibility mechanism for tracking, financing and recovering waste.	Producer accountability remains weak, EPR revenue does not reach recovery systems consistently, and informal waste workers remain outside formal value chains.
	Source separation, collection, transport, engineered disposal and recovery systems need coordinated investment and stronger local accountability.	Sorted waste is remixed or poorly managed, reducing jobs in sorting, recycling, composting, aggregation, recovery facilities and circular manufacturing.
	Waste sorting, disposal and transport rules lack consistent enforcement, including penalties for dumping and poor handling.	Recycling and reuse jobs remain unsafe, low-value and unstable where waste streams are contaminated, unreliable or poorly regulated.
	Regional standards for plastics, recycling, circular manufacturing, recycled-content products and clean technologies remain fragmented.	Circular enterprises struggle to trade across borders, limiting scale, industrial value addition and jobs in regional recycled-material markets.
 Finance	Circular value chains remain fragmented, informal and insufficiently financed.	Waste workers, aggregators, recyclers and small circular enterprises remain trapped in low-margin activity without growth capital or stable market links.
	Circular SMEs and informal-sector enterprises are viewed as high-risk because they lack collateral, formal records, credit histories and predictable revenue streams.	Circular businesses cannot access finance for equipment, storage, technology, working capital or expansion, limiting jobs in recycling, composting, repair and manufacturing.
	Volatile recycled-material markets and weak demand for circular products weaken business viability.	Jobs in recycling, reuse and circular manufacturing remain unstable because recovered materials lack reliable buyers and predictable prices.
	Circularity is still framed mainly as an environmental issue, with limited data on its contribution to GDP, employment, trade and competitiveness.	Policymakers and financiers undervalue the sector, reducing investment in circular enterprise pipelines, infrastructure and formal jobs.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Technology	Imported recycling machinery is often poorly suited to Africa's organic and wet waste streams.	Local recyclers face high operating costs and low efficiency, while technical jobs in machinery adaptation, repair and local fabrication remain underdeveloped.
	Weak intellectual property protection and limited commercialisation support constrain indigenous circular innovations.	Youth and local innovators struggle to move circular products, recycling technologies and reuse models from prototypes to viable enterprises.
 Market	Organic waste, e-waste, post-consumer materials and fresh produce waste have less developed recovery pathways than plastics, metals and construction materials.	Jobs in composting, food-loss recovery, e-waste refurbishment, organics processing and material recovery remain below potential.
 Skills	Circular economy skills systems remain insufficiently linked to occupational standards, certification, apprenticeships and deployment pathways.	Informal workers, youth and women gain limited access to recognised skills, safer work, progression and better-paying circular economy roles.
 Social	Waste pickers, informal workers, traders, collectors, small businesses and communities already operate in waste systems without adequate recognition, protection, fair compensation or formal pathways.	Existing livelihoods remain precarious, unsafe and poorly paid, while formalisation risks displacing workers unless designed around livelihood protection.
	Youth, women and underserved communities lack targeted enterprise support, gender-responsive participation and social investment in circular economy systems.	Higher-value roles in recycling, e-waste, circular design, aggregation, cooperative management and compliance remain concentrated among better-resourced actors.
	Public awareness on sorting, responsible disposal, waste reduction and circular business opportunities remains low among households, institutions, traders and collectors.	Waste quality remains poor, recovery costs stay high and jobs in sorting, reuse, recycling and composting remain unstable.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Circularity systems need resilience planning for climate shocks, conflict, technological disruption and economic stress.	Community-level circular enterprises and informal workers remain exposed to disruptions without continuity mechanisms, social protection or emergency support.

Consolidated Case Studies and Jobs Models

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>Plastic bans</u>	Kenya and Rwanda	Demonstrate how clear regulation, visible enforcement and public compliance can make plastic controls practical and stimulate alternatives.	Eco-alternative manufacturing, compliance roles, public awareness, substitution enterprises and waste reduction jobs.
<u>Kenya single-use carrier bag ban, Solid Waste Management framework and 2024 EPR regulations</u>	Kenya	Shows how regulation, judicial enforcement, citizen compliance and EPR structures can support plastics control and producer responsibility.	EPR compliance officers, recyclers, collectors, alternative packaging producers and circular enterprise jobs.
<u>Benin circular economy roadmap</u>	Benin	Provides a national model linking waste valorisation, plastics, organic waste, jobs and community participation.	Waste valorisation enterprises, community circularity roles, organic waste recovery and local circular business jobs.
<u>Ethiopia plastics ban and sorting systems</u>	Ethiopia	Demonstrates plastic control alongside urban waste segregation measures.	Sorting, collection, segregation, municipal waste management and urban cleanliness jobs.
<u>Ethiopia Reppie Waste-to-Energy Plant</u>	Ethiopia	Shows how policy-backed infrastructure can connect municipal waste recovery, energy generation and climate action.	Plant operations, waste handling, maintenance, energy generation and municipal waste recovery jobs.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>South Africa take-back schemes and EPR regulation</u>	South Africa	Demonstrates producer accountability for post-consumer waste, including e-waste, batteries and other managed waste streams.	Take-back logistics, collection, sorting, repair, recycling, compliance and producer responsibility jobs.
<u>Kenya WEEE Centre and e-waste initiatives</u>	Kenya	Provides an e-waste recovery model, while showing the need for stronger household-level incentives.	E-waste technicians, refurbishers, dismantlers, repair workers, data handlers and safe disposal jobs.
<u>TakaTaka Solutions</u>	Kenya	Offers a practical household waste separation model, with lessons on affordability, scale and public-private integration.	Waste sorters, collectors, compost workers, recycling operators, data officers and recovery facility jobs.
<u>Kenya Scrap Metal Act and demolition licensing</u>	Kenya	Shows how reuse and resale of building materials can reduce waste while creating enterprise opportunities.	Construction-material recovery, resale, repair, logistics and demolition waste enterprise jobs.
<u>Nigeria Recycling Alliance and National Plastic Waste Control Policy</u>	Nigeria	Provides reference points for training, reform and plastic waste control.	Recycling training, plastic recovery, policy compliance and organised collection jobs.
<u>Victoria Falls circularity initiatives / Pristine Society</u>	Zimbabwe	Demonstrates local circular enterprise opportunities around plastic and food-loss waste, including spin-off businesses.	Community recycling, food waste recovery, circular enterprise and local service jobs.
<u>Geo-Pomona waste management site</u>	Zimbabwe	Illustrates how waste infrastructure can be connected to broader public-use and commercial facilities.	Waste-site operations, facility management, sorting, service jobs and local enterprise opportunities.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
Green skilling hubs for circularity	Regional / Africa	Provides a skills pathway reference for circular economy training, especially for youth and women.	Circular economy trainers, apprentices, repair workers, designers, recycling technicians and enterprise trainees.

Priority Resolutions and Actionable Interventions

THEMATIC AREAS ▼

1. Policy and Governance

- **Strengthen circular economy and EPR governance** by establishing clear legal and regulatory frameworks, harmonising EPR systems, defining institutional roles, improving national–local coordination and clarifying EPR as a shared responsibility mechanism through which producers track, finance and recover waste.
- **Improve compliance and market access** by simplifying licensing and regulatory requirements for circular enterprises, particularly youth- and women-led businesses, while strengthening enforcement of sorting, transport, dumping and waste-handling rules.
- **Harmonise regional standards and product requirements** for plastics, recycling, e-waste, circular manufacturing and recycled-content products, including requirements for recyclability, reuse, repair and lifecycle tracking, to support AfCFTA-linked markets.
- **Invest in enabling circular infrastructure** including source separation, collection and transport systems, recovery and composting facilities, engineered landfills and effective municipal or county waste-management systems.

2. Finance and Investment

- **Position circularity as a strategic economic opportunity** by strengthening evidence on its contribution to GDP, employment, trade, competitiveness and material recovery, and using this evidence to attract policy attention and investment.
- **Expand appropriate finance for circular enterprises and infrastructure** through patient and blended finance, EPR funds, green bonds, concessional capital and guarantees tailored to circular SMEs, informal enterprises, aggregators, recyclers, composters, repair businesses and e-waste operators.
- **Build viable markets and investment-ready enterprise pipelines** by moving promising circular businesses beyond donor-funded

pilots, strengthening demand for recovered materials and creating incentives for underdeveloped waste streams such as organic waste, e-waste, post-consumer materials and fresh produce waste.

- **Use procurement and innovation support**

to stimulate local circular production by introducing recycled-content requirements in public procurement and supporting the commercialisation and intellectual property protection of locally developed circular economy innovations.

3. Skills and Training

- **Embed circular economy skills in formal training and certification systems** by integrating priority competencies into TVET and vocational curricula, developing occupational standards and certification, and recognising prior learning among informal waste workers.
- **Create inclusive, work-linked training pathways** through apprenticeships and circular-economy skilling hubs targeted at youth, women and informal workers,

with clear routes into safer, better-paid employment and enterprise opportunities.

- **Link skills development and public awareness to real market demand** by connecting training to circular enterprises, municipal contracts, EPR systems, recovery facilities and public procurement opportunities, while building awareness of waste as an economic resource among households, institutions, traders, collectors and buyers.

4. Social Inclusion

- **Dignify and protect informal waste work** by providing legal recognition, appropriate protective equipment, digital identification, fair and transparent payment systems, safety standards, grievance mechanisms and access to social protection, while preserving existing livelihoods.
- **Integrate informal workers and underserved groups into circular value chains** by creating fair access to EPR systems, municipal contracts, recovery infrastructure,

enterprise support and cooperative models, with deliberate pathways for youth, women and underserved communities.

- **Strengthen community-level resilience and economic participation** through cooperatives, SACCOs, VSLAs, local training finance and social investment, while designing circular systems that can continue operating during climate shocks, conflict, technological disruption and economic stress.

TARGET BENEFICIARIES ▼

- **Informal waste pickers and waste workers:** Legal recognition, safer work, PPE, digital IDs, fairer payment systems, EPR-linked contracts, social protection and improved income.
- **Women:** Sorting, recycling, composting, eco-alternative manufacturing, cooperative management, circular retail and community-level circular enterprise roles.

- **Youth:** Digital waste tracking, e-waste refurbishment, repair, circular product design, recycling innovation, logistics, data systems and circular start-ups.
- **Small traders and aggregators:** Access to formal supply chains, working capital, storage, credit, producer responsibility networks and municipal contracts.
- **Circular SMEs and innovators:** Simplified licensing, procurement access, investment readiness support, blended finance, technology support and stronger market demand.
- **Municipalities and county governments:** Improved collection, sorting, recovery, engineered disposal, enforcement capacity and local job creation.
- **Households, markets and institutions:** Better sorting systems, clearer disposal services and participation in waste reduction, reuse and circular behaviour change.



Quick-Win Opportunities:

12 TO 24 MONTHS

- » Launch informal waste worker dignifying formalisation pilots in major cities, with worker registration, PPE, digital IDs, payment wallets, safety standards and links to municipal or EPR contracts.
- » Establish AfCFTA-aligned circular product standards for recycled plastics, e-waste handling, construction materials and recycled-content products.
- » Deploy community-based organic waste composting cooperatives in selected cities to convert market and household organic waste into fertiliser and related products.
- » Create recycled-content procurement quotas for schools, hospitals, public offices and selected government infrastructure projects.
- » Build e-waste collection partnerships between retailers, producers, counties and municipalities.
- » Establish circular enterprise licensing support desks for youth- and women-led recyclers, composters, repair businesses and circular manufacturers.
- » Roll out household, market and institutional sorting campaigns linked to collection schedules, recovery points and local circular enterprises.
- » Pilot EPR-funded recovery infrastructure in selected municipalities, including aggregation centres, sorting lines, composting sites and digital waste tracking.
- » Set up green skilling hubs for circularity linked to real enterprises, municipal systems and EPR compliance needs.

Green Jobs Created

Waste collectors and sorters; formalised waste pickers; recycling plant operators; compost producers; organic waste processors; e-waste technicians and refurbishers; repair technicians; circular product designers; recycled-content manufacturers; waste data officers; EPR compliance officers; aggregation centre managers; cooperative managers; waste logistics workers; demolition waste recovery workers; circular economy trainers; public awareness officers; municipal waste enforcement officers.

SECTOR 3: Climate-Resilient Agriculture and Smart Food Systems

SECTOR OVERVIEW ▼

Agriculture is one of Africa's largest livelihood sectors and is also among the most exposed to climate-related disruption, particularly drought, water scarcity, heat stress and ecosystem degradation. Agriculture and nature account for approximately **11% of Africa's projected green employment by 2030** equivalent to roughly **0.4–0.8 million jobs**, rising to as many as **7.7 million jobs by 2050**. Climate-resilient agriculture can expand employment across extension services, digital agriculture, climate-information systems, organic input production, irrigation, agro-processing, cold storage, farmer cooperatives, regenerative farming, indigenous crop value chains, carbon finance and food-system logistics. The opportunity is strongest where smallholder farmers, youth, women, informal food workers and cooperatives are recognised as economic actors and given practical access to land, finance, climate data, markets, infrastructure and extension support.

Investment in productive-use energy and cold-chain systems is particularly important because it can reduce post-harvest losses while generating jobs in equipment supply, installation, operations, maintenance, storage and distribution. However, the quality and resilience of these jobs will depend on sustained adaptation investment, since climate impacts can simultaneously increase demand for resilient agricultural services while reducing production and employment in highly exposed areas.

Refined Issues and Jobs Implications

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Policy	Digital agriculture remains pilot-based, with weak coordination across agriculture, climate, water, land, ICT, education and finance systems.	Youth innovation, digital advisory services and climate-smart agriculture enterprises struggle to move from pilots into national and county delivery systems.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Smallholders, cooperatives, informal food workers and non-formal training providers are insufficiently recognised in policy, planning, labour statistics, skills systems and climate adaptation programmes.	Farmers and food system workers remain outside formal support systems, finance channels, training pathways and green jobs data.
	Agricultural data and digital traceability systems lack trusted governance frameworks on ownership, consent, responsible use, smallholder access and government obligations.	Farmers may be excluded from export markets or digital value chains where traceability becomes a condition for market access without safeguards and support.
	Youth and women face land access barriers, unclear tenure pathways and limited links between land access, entrepreneurship and agribusiness scaling.	Agricultural entrepreneurship remains inaccessible for many young people and women, while farming jobs remain ageing, informal and male-dominated.
	Food systems policy gives insufficient priority to local value addition, local markets, affordable cooling, cold-chain access and post-harvest loss reduction.	Value-chain jobs remain concentrated in primary production, with fewer jobs in aggregation, processing, storage, logistics, cold chains and market services.
 Finance	Climate-smart agriculture adoption is constrained by high upfront costs, labour intensity, limited affordable inputs and weak incentives for smallholders.	CSA practices remain difficult to scale beyond demonstration sites, limiting jobs in organic production, soil restoration, agroecology and regenerative farming.
	Climate finance for smallholders farmers is unclear and misaligned, while agricultural insurance, input finance, carbon finance and blended finance remain underdeveloped.	Youth- and women-led ventures cannot access patient capital; farmers face income instability and limited capacity to invest in climate-resilient production.
	Farmer creditworthiness remains weak due to limited collateral, low institutional trust and insufficient farm-level financial products.	Smallholders, cooperatives and youth agribusinesses cannot access finance for inputs, irrigation, storage, processing, transport or climate-smart technologies.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Market systems remain fragmented, with post-harvest losses, weak transport infrastructure, limited value addition and poor linkages for local and indigenous crops.	Jobs in agro-processing, local crop value chains, logistics, storage, aggregation and premium markets remain underdeveloped.
 Technology	Rural farmers face affordability barriers, limited smartphone access and weak real-time advisory systems.	Digital agriculture jobs and farmer-facing innovation remain limited, while farmers lack timely information for planting, pest control, water use and market decisions.
	SMS-based advisory tools provide some support but remain insufficient for timely, data-driven decision-making.	Climate information officers, digital agriculture agents and extension workers cannot fully support farmer adaptation without stronger data systems and communication channels.
 Skills	Agricultural extension, reskilling and upskilling systems are under-resourced and insufficiently linked to climate-smart production, commercialisation and farmer progression.	Farmers, workers and cooperatives lack practical support to shift into higher-resilience, higher-value and market-linked production systems.
 Social	Youth and women lack equal access to land, technology, finance, information, markets and leadership in agricultural systems.	Women and young people remain concentrated in low-return agricultural roles and excluded from enterprise ownership, cooperative leadership and higher-value agribusiness jobs.
	Informal, rural, migrant, displaced and non-commercial agricultural workers lack social and labour protection.	Existing food system livelihoods remain exposed to climate shocks, unsafe work, income instability and exclusion from formal transition support.
	Farmer access to localised and translated climate information remains insufficient, while misinformation on climate-smart agriculture technologies affects adoption.	Farmers may reject or misuse climate-smart technologies, reducing demand for extension services, climate information jobs and resilient production practices.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Market linkages, rural roads, storage, post-harvest systems and food distribution channels between surplus and deficit areas remain inadequate.	Food loss remains high and employment stays limited in distribution, logistics, cold storage, aggregation and rural-urban food supply chains.
	Agriculture and food systems are insufficiently designed for conflict, displacement, climate shocks, technological disruption and other emergencies.	Jobs and livelihoods remain fragile where delivery systems cannot withstand disruption or reach vulnerable farmers and communities.

Consolidated Case Studies and Jobs Models

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>Rwanda coordinated institutional model</u>	Rwanda	Shows how agriculture, land, digital infrastructure, finance, irrigation, extension and youth inclusion can be aligned under one delivery framework.	Coordinated public delivery jobs, extension roles, digital agriculture services, irrigation support and youth agribusiness pathways.
<u>Sierra Leone Feed Salone Programme</u>	Sierra Leone	Provides an example of government-backed food production and capacity building for agricultural businesses.	Public-sector support roles, farmer training, agribusiness development and food production jobs.
<u>Ethiopia Agricultural Development Agent System</u>	Ethiopia	Demonstrates community-level extension for soil conservation, drought-resistant crops, watershed management, water harvesting, agroforestry and climate adaptation.	Public-sector extension agents, farmer field school facilitators, watershed workers, agroforestry workers and climate adaptation support jobs.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
Uganda sub-county agricultural extension officer network	Uganda	Offers a decentralised model for farmer support and climate-smart agriculture training.	Sub-county extension officers, farmer trainers, local advisory workers and CSA support roles.
Chad SMS and voice outreach adaptation	Chad	Provides a low-access digital extension pathway for farmers in rural and climate-vulnerable areas.	Digital extension agents, voice advisory workers, climate information communicators and rural data support jobs.
<u>Malawi Climate-Smart Agriculture input-finance model</u>	Malawi	Bundles loans with organic soil amendment technology to improve productivity and soil health.	Organic input producers, soil health technicians, input finance agents, farmer trainers and CSA service providers.
<u>Uganda food forest and agroecology model</u>	Uganda	Combines tree planting, intercropping, food security and climate mitigation.	Agroforestry workers, food forest managers, seedling producers, agroecology trainers and local food system enterprises.
<u>Zimbabwe Conservation Agriculture Model</u>	Zimbabwe	Demonstrates low-input, high-resilience regenerative farming livelihoods.	Conservation agriculture trainers, farmer groups, soil restoration workers and regenerative agriculture enterprises.
<u>Kenya Digital and Carbon Innovation Model</u>	Kenya	Links climate-smart agriculture training, market linkages, digital traceability and carbon income for smallholders.	Climate data agents, carbon project officers, digital agriculture workers, farmer aggregators and carbon-linked cooperative jobs.
Kenya Taita Taveta County extension officer network	Kenya	Shows ward-level extension officers translating agricultural policy into locally understood, practical farmer guidance.	Ward extension officers, farmer trainers, county climate support workers and local implementation jobs.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>Kenya farmer field school and demonstration farm model</u>	Kenya	Combines technical training, social support committees, commercialisation and consent-based land access for women farmers.	Farmer field school facilitators, women-led farm enterprises, demonstration farm workers and cooperative managers.
<u>Uganda refugee self-reliance land allocation policy</u>	Uganda	Provides agricultural land access for refugees while showing the limits created by land scarcity.	Refugee farmer livelihoods, extension support, community agriculture roles and local food production jobs.
<u>Ethiopia value addition and indigenous crops</u>	Ethiopia	Shows how indigenous crop value chains can strengthen resilience and local processing.	Indigenous crop entrepreneurs, processors, aggregators, cooperative managers and local market jobs.

Priority Resolutions and Actionable Interventions

THEMATIC AREAS ▼

1. Policy and Governance

- **Strengthen integrated policy and delivery systems** by aligning agriculture, climate, water, land, nutrition, digital systems and finance within a coherent implementation framework.
- **Clarify institutional responsibilities and strengthen accountability** across national and sub-national institutions, with greater emphasis on enforceable implementation, monitoring, transparency and accountable public-private delivery.
- **Build inclusive land, data and institutional systems** by recognising smallholders, cooperatives, informal food actors and non-formal training providers in policy, statistics, censuses, skills frameworks and adaptation plans; strengthening trusted agricultural data and climate intelligence systems; and improving land access and tenure pathways for youth, women and excluded groups.
- **Prioritise resilient local food economies and value addition** through support for indigenous crops, local markets, affordable cooling, cold-chain infrastructure, cooperative enterprise and agribusiness growth.

2. Finance and Investment

- **Expand inclusive and appropriate finance for climate-smart agriculture** by combining public, private, concessional and community finance, and scaling VSLAs, SACCOs, input finance, micro-insurance and weather-index insurance for smallholders, youth and women.
- **Finance locally driven innovation and regenerative production models** by supporting youth-led digital tools, early-warning systems, post-harvest technologies, context-specific CSA solutions, carbon finance, soil restoration and regenerative agriculture models that generate additional income for farmers and cooperatives.
- **Strengthen market access and demand for climate-smart production** through aggregation, transport, storage, post-harvest handling, value addition and bulk sales, supported by public procurement, certification, tax incentives, preferential finance and premium market opportunities.

3. Skills and Training

- **Strengthen accessible agricultural extension and climate information systems** by expanding farmer-facing extension officers, community trainers and digital advisory workers, and delivering timely, locally translated guidance through meteorological services, farmer organisations, radio, SMS, voice tools and digital platforms.
- **Build recognised and practical agricultural skills pathways** by integrating community-based training, apprenticeships, cooperatives, producer groups and non-formal providers into national qualifications and TVET systems, while strengthening farmer capacity in climate-smart agriculture, agroecology, soil restoration, water management, safe input use, post-harvest handling and value addition.
- **Create structured youth enterprise and employment pathways** across climate-smart agriculture, organic production, agro-processing, logistics, climate data, digital agriculture and other off-farm value-chain opportunities, supported by demonstration models and trusted public education that address misinformation and encourage adoption.

4. Social Inclusion

- **Expand equitable participation and protection in agriculture** by improving access to land, technology, finance, information, markets, training and cooperative leadership for youth and women, while extending social and labour protection to informal, rural, migrant, displaced and non-commercial agricultural workers.
- **Strengthen community-based delivery and food resilience** through cooperatives, farmer groups, SACCOs, VSLAs and local production and distribution systems that improve food access in underserved and food-insecure communities.
- **Build inclusive and shock-responsive food systems** by ensuring climate-smart

agriculture models are locally understood, gender-responsive and accessible to farmers with limited digital access or formal education, while preparing agriculture

and food systems to withstand conflict, displacement, climate shocks, technological disruption and other emergencies.

TARGET BENEFICIARIES ▼

- **Smallholder farmers:** Climate finance, extension support, local-language climate information, irrigation, organic inputs, insurance, storage and market access.
- **Youth:** Digital agriculture agents, climate information officers, agro-processing entrepreneurs, logistics operators, carbon project support staff and climate-smart agribusiness owners.
- **Women:** Land access, farmer field schools, cooperative leadership, organic production, processing, VSLAs, solar irrigation, local food markets and value-addition enterprises.
- **Informal and rural food workers:** Recognition, training, social protection, safer work, better market linkages and structured progression into formal or semi-formal value chains.
- **Cooperatives and producer groups:** Aggregation, finance, certification, storage, transport, processing and bulk sales opportunities.
- **Migrant, displaced and underserved communities:** Land access where feasible, food rights support, climate-resilient livelihoods and extension services adapted to fragile contexts.
- **Local innovators and SMEs:** Support for digital tools, early-warning systems, post-harvest technologies, organic inputs, traceability systems and CSA service models.



Quick-Win Opportunities:

12 TO 24 MONTHS

- » Expand ward-level extension pilots in selected counties or districts, using local-language climate information, community radio, SMS and farmer organisation channels.
- » Launch women- and youth-focused public land leasing pilots linked to cooperatives, farmer field schools, agribusiness incubation and consent-based land access.
- » Scale VSLA-linked input finance and weather-index insurance pilots for smallholder farmers adopting CSA, organic inputs, irrigation or soil restoration technologies.
- » Establish community demonstration farms and farmer field schools for agroecology, conservation agriculture, drought-resistant crops, water harvesting and post-harvest handling.
- » Build cold storage and aggregation pilots in high-loss value chains, especially for perishable produce and indigenous crops.

- » Develop digital climate advisory pilots that combine meteorological data, extension agents, farmer organisations and low-tech SMS or voice channels.
- » Support indigenous crop value-chain pilots linking farmers to processing, local markets, premium buyers and public procurement.
- » Create youth digital agriculture fellowships for climate data, traceability, carbon project support, early-warning systems and farmer advisory services.
- » Register and profile informal food system actors, cooperatives and non-formal training providers to improve access to finance, training and policy support.

Green Jobs Created

Extension agents; digital agriculture agents; climate information officers; farmer field school facilitators; organic input producers; soil restoration technicians; irrigation technicians; cold storage technicians; agro-processors; cooperative managers; indigenous crop entrepreneurs; agroforestry workers; conservation agriculture trainers; carbon project officers; post-harvest handling workers; aggregation centre managers; rural logistics workers; food distribution coordinators; agricultural data officers; climate-smart agriculture TVET trainers.

SECTOR 4: E-Mobility, Green Infrastructure and Urbanisation

SECTOR OVERVIEW ▼

Africa's urbanisation trajectory will shape employment, mobility, housing, infrastructure, energy demand and emissions for decades. Within the FSD, Shortlist and Shell Foundation report's modelling, mobility and transport are projected to generate approximately **0.3–0.6 million green jobs by 2030 and up to 10.1 million by 2050**, driven largely by electric two- and three-wheelers, charging systems and associated service ecosystems. Around **80% of sub-Saharan Africa's current electric-vehicle fleet is concentrated in Ethiopia, Kenya, Rwanda, Uganda and Tanzania**, giving East Africa an early advantage in assembly, maintenance, servicing and operations.

The employment opportunity extends across EV and battery assembly, charging infrastructure, diagnostics, fleet management, construction, urban energy systems, public works and climate-resilient infrastructure. Because assembly, maintenance and repair are highly localised and relatively resistant to automation, decentralised production and service hubs could sustain significant employment as markets expand. Realising this potential will require moving beyond isolated pilots towards coordinated urban ecosystems that align policy, standards, finance, local authorities, private-sector delivery, skills systems, informal transport workers and underserved communities. The uploaded report supports the e-mobility and climate-resilient infrastructure elements of this argument, but it does not provide quantified job estimates for green buildings specifically.

Refined Issues and Jobs Implications

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Policy	E-mobility, green infrastructure and urbanisation lack robust African certification, standards, MRV and data systems.	Safety, quality and investment confidence remain weak; certification pathways for EV technicians, green building workers, battery handlers and infrastructure professionals remain underdeveloped.
	HS codes, tax categories and regulatory classifications do not adequately distinguish e-bikes, e-motorcycles, batteries, charging systems, green buildings and emerging urban technologies.	Misclassification raises costs, slows adoption and limits jobs in EV distribution, charging, assembly, servicing and green construction.
	E-mobility policy is often too narrow and does not cover the full ecosystem of vehicles, batteries, charging infrastructure, reliable power, minerals, local manufacturing, smart transport and urban planning.	Jobs remain concentrated in small pilots instead of broader value chains across assembly, charging, battery management, transport operations, data systems and urban infrastructure.
	Clear national visions, targets, institutional roles and implementation pathways are still insufficiently translated into city-level and community-level delivery.	Local authorities struggle to implement e-mobility and green infrastructure projects, reducing jobs in municipal planning, maintenance, public works, enforcement and local service delivery.
	Communication between local authorities, regulators, private sector, communities, scientists, financiers and policymakers remains weak.	Climate science, finance and technical planning do not consistently translate into practical projects, reducing implementation jobs and investable local pipelines.
	Shared learning repositories and peer-to-peer systems remain limited across countries and cities.	Countries repeat pilots and mistakes instead of scaling workable models, slowing cross-border trade, standardisation and regional job creation.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Finance	High costs, risk perception and weak investment conditions constrain e-mobility and green infrastructure finance.	Youth, riders, SMEs, fleet operators and construction enterprises cannot afford EV assets, batteries, tools, charging equipment or green building upgrades.
	E-mobility and green infrastructure ecosystems remain fragmented, with weak demand, limited project preparation finance and underdeveloped PPP models.	Bankable projects remain limited, reducing jobs in charging infrastructure, fleet operations, green buildings, battery systems and public transport electrification.
	Financing often focuses on vehicle purchase instead of the full jobs ecosystem.	Mechanics, battery workers, charging operators, cooperatives, fleet managers, local service enterprises and public infrastructure providers remain underfinanced.
	Battery-as-a-service reduces upfront cost for riders but shifts financing pressure to battery providers.	Battery stock, swapping networks and charging infrastructure cannot scale without blended finance, guarantees and revenue certainty.
	Riders need finance products that match daily income patterns.	Standard loans exclude informal transport workers, while SACCO, PAYGo and lease-to-own models remain underdeveloped.
 Infrastructure	Charging station functionality, battery swapping systems, reliable electricity and digital connectivity remain inadequate.	EV jobs remain concentrated in urban pilots, while rural and underserved communities are excluded from charging, servicing, logistics and rider enterprise opportunities.
	Regional road connectivity and green infrastructure planning remain insufficiently aligned with AfCFTA and labour mobility.	Cross-border transport, logistics, construction and maintenance jobs remain below potential, and regional value chains remain weak.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Technology	E-mobility technology changes quickly, while local repair, maintenance, data and technical systems have not kept pace.	Local technicians and SMEs struggle to maintain vehicles, batteries and charging systems, increasing dependence on external suppliers.
 Skills	Training systems are not yet aligned with EV mechanics, battery safety, charging station operation, green building, electrical trades, plumbing, digital systems and energy auditing.	Skills gaps limit job quality, safety and progression in transport electrification, green construction and urban infrastructure.
 Social	Youth and women remain underrepresented across e-mobility, green infrastructure, green cities and related enterprise pathways.	Women and young people remain outside asset ownership, technical roles, fleet management, cooperative leadership and green construction opportunities.
	Informal transport and infrastructure workers require labour protection, reskilling and transition support.	Riders and workers may remain in precarious gig work or lose livelihoods during the transition without pathways into safer, higher-value work.
	Riders need soft skills, financial management, customer service, EV operation skills and cooperative organisation models.	Informal riders do not become stable micro-entrepreneurs, reducing repayment performance, service quality and investor confidence.
	Community-centred e-mobility and green infrastructure models remain underdeveloped in rural and underserved areas.	Green mobility and infrastructure jobs concentrate in better-served urban markets, widening rural-urban inequality.
	E-mobility and green infrastructure systems need resilience planning for conflict, climate shocks, technological disruption and emergencies.	Services, jobs and infrastructure access may fail in fragile or climate-affected contexts unless systems are designed for continuity.

Consolidated Case Studies and Jobs Models

Case study	Country / scope	Consolidated relevance	Jobs model
E-motorcycles, battery-as-a-service and e-buses	Kenya	Demonstrates a multi-modal EV ecosystem linking riders, fleet operators, battery systems, charging and servicing.	Rider employment, EV technicians, battery swapping operators, charging attendants, fleet managers, data workers and maintenance jobs.
<u>Government-to-government e-mobility programmes / Ethio-Green Mobility Platform</u>	Ethiopia / Zimbabwe reference	Shows how state-to-state cooperation can accelerate EV deployment, technology transfer and market formation.	EV deployment workers, assembly roles, charging infrastructure jobs, technical support and policy implementation jobs.
<u>Ethiopia combustion-engine vehicle phase-out</u>	Ethiopia	Provides a demand-shaping policy signal that can accelerate market transition toward electric mobility.	Regulatory-demand-driven jobs in EV importation, assembly, charging, servicing, fleet transition and policy compliance.
<u>Rwanda EV incentive model</u>	Rwanda	Uses government fleet electrification targets and EV tax exemptions to shift demand from fuel vehicles to electric vehicles.	Fleet electrification jobs, EV maintenance, charging operations, public procurement roles and clean transport services.
<u>Kenya electric mobility policy</u>	Kenya	Demonstrates stakeholder consultation, regulatory design and implementation planning for e-mobility systems.	Policy implementation, stakeholder coordination, EV standards, public-private delivery and compliance jobs.
<u>Progressive vehicle taxation and EV incentives</u>	Regional policy reference	Shows how fossil-fuel vehicle taxation and EV incentives can shift market behaviour.	EV sales, servicing, charging, fleet transition and regulatory compliance jobs.

Case study	Country / scope	Consolidated relevance	Jobs model
Large energy projects as catalysts for e-mobility	Africa-wide / PPP reference	Highlights the link between reliable energy infrastructure and viable EV growth.	Charging infrastructure, smart energy systems, grid services, EV fleet operations and infrastructure maintenance jobs.
<u>South Africa SETA skills development model</u>	South Africa	Institutionalised sector skills training through structured authorities, relevant for e-mobility, green infrastructure and green urbanisation.	Industry-funded training, certified technicians, trainers, apprentices and placement-linked workforce pipelines.
<u>Kenya dual apprenticeship model</u>	Kenya	Employer-linked training in electrical and plumbing trades combining public curricula, private-sector input and on-the-job learning.	Electrical apprentices, plumbing apprentices, green building technicians and work-based learning pathways.
<u>South Africa Expanded Public Works Programme</u>	South Africa	Public employment model with targeted allocations for youth, women and underserved communities.	Public works jobs, green infrastructure maintenance, community upgrading, urban services and inclusion-linked employment.
<u>Burundi green infrastructure and mobility financing models</u>	Burundi	Links youth and women's funds with a net-zero special economic zone, green technology, innovative finance and local skills.	Youth and women-led green enterprises, infrastructure jobs, technical services and special economic zone employment.
<u>Bwiza Riverside Estate</u>	Rwanda	Affordable climate-resilient housing model linked to green construction and certification.	Green construction workers, building certification jobs, sustainable materials roles and housing infrastructure jobs.

Case study	Country / scope	Consolidated relevance	Jobs model
<u>Affordable green housing models</u>	Rwanda, Kenya and Uganda	Demonstrates rural and urban housing models using climate-smart building approaches and green infrastructure standards.	Green builders, energy auditors, sustainable construction workers, materials suppliers and housing maintenance jobs.
<u>KMRC green bond</u>	Kenya	Demonstrates investor appetite for green real estate finance and construction employment.	Green housing finance, construction jobs, green building compliance, project preparation and real estate value-chain jobs.
<u>EarthEnable</u>	Rwanda	Rural green construction SME supply chain with co-created standards.	Sustainable flooring workers, local materials suppliers, SME contractors, standards development and rural green construction jobs.
<u>PropelA / SwissContact</u>	Kenya / regional reference	Dual apprenticeship TVET model for electrical and plumbing trades in green infrastructure.	Apprentices, certified tradespeople, TVET trainers and employer-linked placement jobs.

Priority Resolutions and Actionable Interventions

THEMATIC AREAS ▼

1. Policy and Governance

- **Develop coordinated national e-mobility and green infrastructure frameworks** with clear targets, institutional responsibilities, cross-ministerial coordination and implementation pathways, supported by stronger local authority capacity and structured engagement with regulators, industry, academia, financiers and communities.
- **Establish harmonised standards and regulatory classifications** for EVs, batteries, charging systems, green buildings and emerging urban technologies, including Africa-specific certification standards, updated HS and tax codes, and AU- and AfCFTA-aligned frameworks that support regional transport connectivity.

- **Use fiscal and regulatory measures to accelerate the transition** through EV tax incentives, progressive taxation of fossil-fuel vehicles, revised product classifications and a sequenced phase-down of internal-combustion-engine vehicle sales.
- **Strengthen local industrial and infrastructure development** through coordinated policy on local manufacturing

and assembly, minerals and batteries, charging infrastructure, renewable power integration and urban planning.

- **Build shared learning and market intelligence systems** that document effective approaches, improve policy and investment decisions, reduce duplication and support cross-border replication and scaling.

2. Finance and Investment

- **Prepare and finance viable e-mobility and green infrastructure investments** through project preparation support, PPP structuring, blended finance, guarantees, concessional capital, local-currency products and green bonds for charging infrastructure, battery systems, fleet electrification, green buildings and related infrastructure.
- **Develop inclusive financing models across the e-mobility jobs ecosystem** by supporting riders, mechanics, battery workers, charging operators, fleet managers, cooperatives and local service enterprises through SACCO, PAYGo, lease-to-own, youth and women's funds and public procurement mechanisms aligned with users' income patterns.

- **Strengthen commercially sustainable battery and charging systems** by scaling battery-as-a-service models supported by rider contracts, fleet agreements, swap-fee data and utilisation rates, alongside investment in battery-swapping stations, charging hubs, rural mini-grid-linked charging and digital payment and monitoring systems.
- **Position regional connectivity as a green infrastructure and labour mobility priority** under AfCFTA, including investment in cross-border transport links and exploration of road-based carbon sink approaches where technically and environmentally viable.

3. Skills and Training

- **Align training and certification with industry demand** by updating TVET, apprenticeship and certification systems for EV mechanics, battery safety, charging station operations, green building, electrical trades, plumbing, digital systems and energy auditing.
- **Expand employer-linked and industry-funded skills pathways** through private-sector input into curricula, on-the-job learning, access to tools, structured placements and sector-based workforce development models.

- **Build technical, enterprise and soft skills** by strengthening local capacity in vehicle, battery, charging and green infrastructure repair, maintenance and diagnostics, alongside financial management, customer service, communication, safe EV operation, charging discipline and responsible battery-use practices.
- **Improve access through cooperative and flexible delivery models** by organising riders into cooperatives, SACCOs or structured groups to improve access to finance,

insurance, shared infrastructure and enterprise support, while expanding virtual learning, community hubs and digital skills

pathways for youth, women and informal transport workers.

4. Social Inclusion

- **Mainstream youth and women** into e-mobility, green infrastructure, green housing, public works and related enterprise pathways through explicit targets and financing access.
- **Provide labour protection, safety standards, insurance and transition support** for informal transport workers and infrastructure workers affected by the shift to e-mobility.
- **Strengthen community-centred e-mobility and green infrastructure models** that reach rural, peri-urban and underserved areas.
- **Use inclusive public investment models**, including public works programmes, procurement quotas and youth and women's funds, to expand access to green infrastructure jobs.
- **Build social resilience** into e-mobility and green infrastructure systems so they can withstand conflict, climate shocks, unreliable power, weak digital connectivity and technological disruption.
- **Ensure green infrastructure and mobility planning** reduces rural-urban inequality and improves access for underserved communities. agriculture models are locally understood, gender-responsive and accessible to farmers with limited digital access or formal education, while preparing agriculture and food systems to withstand conflict, displacement, climate shocks, technological disruption and other emergencies.

TARGET BENEFICIARIES ▼

Informal transport workers and riders: Asset financing, soft skills, cooperative organisation, insurance, labour protection, safer EV operation and progression into micro-enterprise.

- **Youth:** EV mechanics, battery swapping operators, charging station attendants, digital mobility workers, fleet support staff, green construction apprentices and urban infrastructure technicians.
- **Women:** EV sales agents, charging operators, metering and billing staff, cooperative managers, green housing entrepreneurs, public works supervisors and sustainable construction workers.
- **Local SMEs and service providers:** EV repair shops, battery service businesses, charging operators, construction SMEs, green materials suppliers, transport cooperatives and urban maintenance firms.
- **Local authorities and municipalities:** City-level implementation capacity, standards enforcement, urban planning, public works delivery, data systems and green infrastructure maintenance.
- **Rural and underserved communities:** Rural charging hubs, mini-grid-linked mobility, affordable green housing, public infrastructure jobs and improved access to transport services.

- **TVETs and training providers:** Curriculum alignment, apprenticeships, certification, employer partnerships and placement-linked green infrastructure training.



Quick-Win Opportunities:

12 TO 24 MONTHS

- » Update HS codes and tax classifications for e-bikes, e-motorcycles, batteries and charging systems in priority countries.
- » Launch EV technician and battery safety certification pilots with TVETs, employers and regulators.
- » Establish battery swapping pilots in high-use motorcycle corridors, with rider contracts, utilisation tracking and blended finance support.
- » Create rider SACCO or cooperative pilots that combine lease-to-own EV financing, insurance, soft skills and customer service training.
- » Build rural charging hubs linked to mini-grids to prevent green mobility access from concentrating only in major cities.
- » Set up project preparation facilities for e-mobility PPPs, green housing and charging infrastructure.
- » Pilot municipal e-mobility implementation desks in selected cities to coordinate permits, standards, charging sites, data and private-sector engagement.
- » Introduce green public procurement targets for e-buses, public fleet electrification, green housing and sustainable urban infrastructure.
- » Expand dual apprenticeship programmes for electrical, plumbing, EV maintenance and green construction trades.
- » Develop an African shared-learning repository documenting EV incentives, green building models, charging pilots, standards and financing structures.

Green Jobs Created

EV mechanics and technicians; battery swapping operators; charging station engineers; charging attendants; battery maintenance workers; fleet managers; rider cooperative managers; EV sales and leasing agents; transport data officers; green building designers; sustainable construction workers; electrical and plumbing apprentices; energy auditors for buildings; urban planners; municipal implementation officers; public works supervisors; green materials suppliers; smart transport technicians; road and green infrastructure maintenance workers.

SECTOR 5: Natural Capital and Nature-Based Enterprises

SECTOR OVERVIEW ▼

Africa holds significant natural capital across forests, wetlands, marine ecosystems, biodiversity, soils, rangelands and watersheds. While **more than 62% of the continent's GDP depends on natural capital**, these assets are undervalued in national accounts, underprotected in governance systems and underutilised as a source of employment. Nature-based solutions, restoration, ecosystem-services markets, carbon and biodiversity credits, eco-tourism, agroforestry, blue economy enterprises and green-grey infrastructure can create jobs where governance, finance, skills systems and community rights are designed together. However, nature-based carbon and biodiversity projects face an estimated **global annual financing gap of US\$32.5 billion**, limiting the development of viable projects. The sector's jobs potential depends on converting conservation and stewardship into recognised, financed and accountable enterprise pathways.

Refined Issues and Jobs Implications

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Policy	Natural capital is insufficiently integrated into economic planning, national accounts, budgeting and investment decision-making.	Restoration, conservation and nature-based enterprises remain undervalued, reducing public investment, private finance and formal job recognition.
	NbS governance remains fragmented across forestry, water, wildlife, climate, land, urban planning and local government institutions.	Implementation is slow and poorly coordinated; restoration workers, community conservation groups and nature enterprises operate without clear institutional support.
	Harmonised policy, regulatory, standards and certification frameworks for NbS remain underdeveloped across African countries.	Green jobs in restoration, natural capital accounting, ecosystem monitoring, carbon projects and biodiversity enterprises lack professional recognition and mobility.
	Land tenure, ownership, permitting and benefit-sharing frameworks remain unclear for restoration, conservation and nature-based enterprise development.	Youth, women, indigenous peoples and local communities struggle to access productive land, enterprise opportunities and secure benefits from natural assets.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Localised policy frameworks do not sufficiently reflect land ownership structures, ecosystem assets, local food systems, indigenous knowledge and community implementation realities.	Nature-based projects risk remaining externally designed, weakly owned and poorly linked to local enterprise and livelihood systems.
	Awareness and implementation capacity on existing environmental laws, NDCs, natural capital strategies, green skills and green jobs frameworks remains weak.	Existing policy tools do not translate into enforceable delivery, jobs pipelines or accountable community benefits.
 Finance	Nature finance, biodiversity markets, blue economy investment and financing for nature-based enterprises remain underdeveloped.	Eco-tourism SMEs, restoration enterprises, blue economy operators and community conservation ventures remain at pilot scale.
	In-country carbon and biodiversity credit frameworks remain insufficiently developed and weakly protected against extractive practices.	Communities managing forests, wetlands and coasts cannot reliably monetise stewardship, while external actors may capture value without fair local benefit.
	Financial products are not sufficiently tailored to nature-based solutions, eco-tourism, restoration, community enterprises and PPP models.	Community-level NbS enterprises struggle to access working capital, patient finance, insurance, grants, blended finance or investment readiness support.
	African nature assets have weak positioning in global financial infrastructure and receive limited recognition and pricing power.	Africa captures less value from carbon, biodiversity and ecosystem service markets, reducing job creation in conservation, verification, monitoring and enterprise development.
 Market	Biodiversity markets, carbon markets, eco-tourism and blue economy value chains remain nascent and weakly linked to local enterprises.	Jobs in eco-tourism, blue economy services, ecosystem restoration, biodiversity credits and community conservation remain small, informal or seasonal.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Technology	Use of technology for nature research, ecosystem monitoring, natural capital accounting and youth green skills development remains limited.	GIS, remote sensing, biodiversity monitoring, carbon measurement and digital reporting jobs remain underdeveloped.
 Skills	Green skills pipelines for restoration, natural capital accounting and nature-based enterprise development remain insufficiently accredited and weakly linked to emerging NbS job profiles.	Workers and communities lack recognised pathways into restoration, ecosystem monitoring, biodiversity finance, eco-tourism and natural capital accounting roles.
 Social	Youth, women, indigenous peoples and local communities are insufficiently included in natural capital management, enterprise leadership, skills systems and decision-making.	Higher-value nature-based jobs and revenue opportunities bypass groups already stewarding land, forests, wetlands and marine resources.
	Informal and community-based workers in nature-based sectors lack labour protection, social protection and structured progression pathways.	Community conservation workers, restoration workers, guides and local resource managers remain exposed to low pay, unsafe work and income instability.
	Community consent, benefit-sharing, local ownership and accountability remain uneven in conservation, carbon market and biodiversity credit projects.	Carbon and biodiversity revenues may be captured without genuine community benefit, weakening trust and limiting durable local employment.
	Safeguards, ESG compliance, revenue tracking and community protection are not consistently managed across the project lifecycle.	Communities may carry conservation restrictions or land-use trade-offs without transparent compensation, revenue sharing or grievance systems.
	Public participation is often technical, inaccessible or insufficiently communicated in local languages.	Communities cannot assess rights, risks, responsibilities and revenue arrangements, reducing informed consent and local ownership.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Nature-based enterprise systems need stronger resilience to conflict, climate shocks and emerging crises.	Jobs in restoration, eco-tourism, conservation and community enterprises remain fragile where income systems collapse during shocks.

Consolidated Case Studies and Jobs Models

Case study	Country / scope	Consolidated relevance	Jobs model
Natural capital in national statistics	Rwanda, Ethiopia and Uganda	Demonstrates integration of natural capital into national statistics and economic planning.	Natural capital accountants, environmental statisticians, policy analysts, ecosystem valuation specialists and data officers.
<u>Chyulu Carbon Development Foundation</u>	Kenya	Community benefit-centred carbon model with documented local benefits from conservation.	Carbon project officers, community conservation monitors, rangers, restoration workers, revenue administrators and local enterprise jobs.
<u>Vanga Blue Carbon Project</u>	Kenya	Blue carbon model linking mangrove and coastal conservation with community livelihoods.	Mangrove restoration workers, coastal conservation monitors, blue carbon project staff, eco-tourism workers and community enterprise roles.
<u>Mauritius debt-for-nature swap</u>	Mauritius	Sovereign conservation finance model redirecting debt resources into marine conservation.	Marine conservation workers, blue economy enterprise operators, monitoring staff, fisheries-linked livelihoods and conservation finance roles.

Case study	Country / scope	Consolidated relevance	Jobs model
<u>Liberia community-led prior engagement model</u>	Liberia	Civil society and community-led engagement before project approval, strengthening awareness, consent and accountability.	Community engagement facilitators, safeguards officers, local monitors and conservation accountability roles.
<u>Ethiopia cash-for-work conservation model</u>	Ethiopia	Rehabilitation of conservation areas and infrastructure during COVID-19, supporting resilience through paid work.	Paid restoration workers, conservation area maintenance teams, public works supervisors and community resilience jobs.
<u>Northern Corridor green freight frameworks</u>	East Africa	Regional model for integrating nature across road, railway, air and waterway networks.	Green infrastructure planners, restoration workers, corridor monitors, environmental compliance officers and transport-linked ecosystem jobs.
<u>Utangamano Initiative</u>	Indian Ocean / regional	Blue economy governance model for regional coordination on ownership, stewardship and benefit sharing.	Blue economy governance roles, marine stewardship jobs, coastal enterprise support and regional coordination roles.
<u>Large-scale restoration, agroforestry and ecosystem service programmes</u>	Multi-country	Shows how NbS can create work in land management, restoration, agriculture and forestry.	Restoration workers, agroforesters, nursery operators, watershed workers, forest managers and ecosystem service technicians.
<u>Urban green-grey infrastructure pilots</u>	Urban / regional	Demonstrates restoration and flood management as employment-generating climate resilience.	Urban restoration workers, drainage and flood-management teams, landscape technicians and municipal green infrastructure jobs.

Case study	Country / scope	Consolidated relevance	Jobs model
<u>Cleargreen and Biochar Industrial Group</u>	Regional / Africa	Carbon-financed biochar model linking farmer income, soil health and sequestration.	Biochar producers, farmer aggregators, carbon measurement officers, processing workers and soil health enterprises.
<u>Align Africa Spirulina farming</u>	Ethiopia	Blue algae farming as a nature-based health and nutrition enterprise.	Aquaculture workers, bio-processing staff, nutrition enterprise workers, quality control technicians and market agents.
<u>AEDI Town and Niger Delta forest biodiversity credit models</u>	Nigeria / community-based	Biodiversity credit models in community-based forest projects.	Biodiversity monitors, forest stewards, project developers, benefit-sharing administrators and community enterprise workers.
<u>Tanzania Dodoma Food Way</u>	Tanzania	Integrates urban planning, food systems and ecological restoration.	Urban food system workers, restoration teams, local food enterprise roles and ecological planning jobs.
<u>Ghana land manager mode</u>	Ghana	Agricultural producers and forest managers engaged as stewards of natural capital.	Land managers, forest stewards, agroforestry workers, farmer monitors and natural resource management jobs.

Priority Resolutions and Actionable Interventions

THEMATIC AREAS ▼

1. Policy and Governance

- **Establish coherent natural capital and NbS governance frameworks** at national, regional and continental levels, with harmonised standards, certification, safeguards, integrated planning guidance and clearer regulatory pathways for land, permitting, ownership, benefit sharing and enterprise development.
- **Integrate natural capital into economic and development planning** by embedding

natural capital accounting and NbS within budgeting, national and regional planning cycles, NDC implementation, urban development, infrastructure, restoration, agriculture, blue economy and climate resilience strategies.

- **Strengthen institutional coordination, enforcement and data systems** across forestry, water, wildlife, climate, land, urban planning and local government institutions to reduce policy silos and improve monitoring, accountability and implementation.
- **Localise policy and delivery frameworks** to reflect land ownership arrangements, ecosystem assets, indigenous knowledge, local food systems and community-level realities, while improving awareness and use of existing environmental laws, green jobs, green skills and policy instruments.
- **Strengthen Africa's position in global natural capital finance** to improve negotiating power, access to finance and recognition of the continent's natural capital value.

2. Finance and Investment

- **Establish inclusive and transparent nature-finance frameworks** by fast-tracking in-country carbon and biodiversity credit systems with strong community safeguards, clear benefit-sharing arrangements and protection against extractive models, while allocating national budgets to NbS as standard development expenditure rather than treating it only as donor-funded conservation.
- **Scale diverse financing instruments for nature-based enterprises** through debt-for-nature swaps, blue economy finance, green bonds, biodiversity finance, carbon finance, blended finance and PPP models, delivered through African financial institutions, regulators and national budget instruments and structured to reach community-level enterprises.
- **Develop tailored financial products and community finance pathways** for eco-tourism, forestry, restoration, agroforestry, marine conservation, biodiversity credits and community-owned nature enterprises, using cooperatives, SACCOs, VSLAs, local funds and other mechanisms that connect nature finance directly to workers and communities.
- **Build viable markets and income streams for nature-based activity** by strengthening markets for eco-tourism, biodiversity credits, blue economy products, restoration-linked enterprises and ecosystem services, while supporting agro-ecology and biochar models that enable farmers and communities to generate carbon-linked income.

3. Skills and Training

- **Define and coordinate NbS green jobs and skills frameworks** by establishing a clear sector definition and aligning labour, education, environment and finance institutions with NDCs, restoration plans and natural capital strategies.
- **Build accredited education, training and certification pathways** through TVET, university and professional programmes spanning basic to advanced levels and aligned with emerging roles in restoration, natural capital accounting, ecosystem

monitoring, biodiversity finance and nature-based enterprise development.

- **Strengthen technical and digital capabilities** in MRV, GIS, remote sensing, ecosystem monitoring, nature research, natural capital accounting and technology-enabled youth skills development.

- **Reskill workers and communities for responsible participation in NbS enterprises** by building practical capacity in safeguards, community engagement, benefit sharing, carbon and biodiversity finance, and project lifecycle accountability.

4. Social Inclusion

- Co-design nature-based solutions with communities from the outset, ensuring informed consent, transparency, accountability and clear communication of rights, responsibilities, risks, revenue arrangements and benefit-sharing in local languages and accessible formats.
- Ensure nature-based projects are sustainable, non-extractive and deliver measurable ecological and community benefits, guided by the precautionary principle and inter-generational equity in the use of natural resources.
- Mainstream youth, women, Indigenous Peoples and local communities into nature-based enterprise leadership, skills systems,

decision-making and benefit-sharing, supported by gender-responsive biodiversity programmes and tailored finance products.

- Extend appropriate social and labour protections to informal and community-based workers in nature-based sectors, while strengthening the resilience of communities and natural-capital systems to conflict, climate shocks and emerging crises.
- Establish lifecycle monitoring, reporting and accountability systems covering safeguards, ESG compliance, revenue flows and delivery of promised community benefits, including transparent tracking of carbon and biodiversity revenues.

TARGET BENEFICIARIES ▼

- **Local and indigenous communities:** Benefit-sharing, land and resource rights, community conservation jobs, restoration enterprises, safeguards and revenue accountability.
- **Youth:** Restoration workers, GIS and remote sensing technicians, ecosystem monitors, eco-tourism operators, biodiversity data officers and nature enterprise founders.
- **Women:** Biodiversity programme leaders, nursery operators, agroforestry entrepreneurs, eco-tourism managers,

blue economy enterprise operators and community finance leaders.

- **Community conservation workers:** Legal recognition, safer work, social protection, reskilling, payment systems and structured progression into formal roles.
- **Smallholder farmers and land managers :** Agroforestry, biochar, soil restoration, watershed protection, carbon-linked income and ecosystem stewardship roles.

- **Coastal and marine communities:** Blue carbon, mangrove restoration, fisheries-linked conservation, marine eco-tourism and debt-for-nature-supported livelihoods.
- **Nature-based SMEs:** Eco-tourism, forestry, restoration, biodiversity credits, blue economy, spirulina, biochar and ecosystem service enterprises.
- **Public institutions:** Natural capital accounting, policy integration, environmental statistics, planning, monitoring and budget alignment.



Quick-Win Opportunities:

12 TO 24 MONTHS

- » Launch natural capital accounting pilots in selected countries or counties, linked to budgeting, planning and green jobs tracking.
- » Develop national carbon and biodiversity credit framework pilots with explicit safeguards, benefit-sharing rules and community revenue tracking.
- » Establish community consent and benefit-sharing templates in local languages for carbon, biodiversity, conservation and restoration projects.
- » Pilot gender-focused biodiversity enterprise funds for women-led eco-tourism, agroforestry, nursery, restoration and blue economy enterprises.
- » Set up restoration and ecosystem monitoring training pilots for youth using GIS, remote sensing, community mapping and biodiversity data tools.
- » Expand cash-for-work restoration pilots in degraded landscapes, wetlands, forests and urban green-grey infrastructure.
- » Create blue carbon enterprise pilots in coastal communities, linked to mangrove restoration, fisheries livelihoods and transparent revenue systems.
- » Support biochar production hubs linked to farmers, soil restoration, carbon finance and local processing jobs.
- » Create fast-track permitting support desks for community-owned nature-based enterprises.
- » Build public participation and safeguards training for local authorities, project developers, civil society and community representatives.

Green Jobs Created

Restoration workers; agroforesters; nursery operators; watershed technicians; mangrove restoration workers; blue economy enterprise operators; eco-tourism guides and managers; natural capital accountants; ecosystem valuation specialists; carbon project developers; carbon credit verifiers;

biodiversity credit officers; community conservation monitors; GIS and remote sensing technicians; safeguards officers; ESG compliance officers; community benefit administrators; biochar producers; spirulina farming workers; forest stewards; land managers; green-grey infrastructure workers; TVET trainers in nature-based solutions.

SECTOR 6: Industrial Decarbonisation, Green Manufacturing and Mining

SECTOR OVERVIEW ▼

Africa's critical minerals, industrial base and growing infrastructure demand create a high-value green jobs opportunity across mineral processing, green manufacturing, clean-technology assembly, industrial energy efficiency, battery value chains, recycling, sustainable procurement and low-carbon production. **Solar PV assembly alone could generate approximately 140,000 jobs annually through to 2050 if industrial hubs are developed at scale**, while waste recycling could support **0.6–1.1 million jobs by 2030 and as many as 14.7 million by 2050**. South Africa's extended producer responsibility regime illustrates the potential employment dividend, having created **more than 24,000 formal jobs since 2022 and supported approximately 47,000 waste pickers**.

The core challenge is that Africa continues to export raw minerals and import finished green technologies, exporting higher-value processing, manufacturing and assembly jobs alongside its raw materials. Industrial decarbonisation therefore needs to be designed as a value-retention, local-manufacturing, skills-deployment and community-benefit agenda, supported by localisation requirements, domestic-content provisions and strong safeguards against labour exploitation, greenwashing and weak host-community returns.

Refined Issues and Jobs Implications

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Policy	Industrial energy access remains a foundational constraint for decarbonisation in agribusiness, manufacturing and mining.	Industrial firms cannot shift to cleaner production at scale, limiting jobs in green manufacturing, processing, energy efficiency and low-carbon industrial services.
	Mineral value retention laws, domestic processing requirements and local sourcing obligations remain weak or poorly enforced.	Africa continues exporting raw minerals while higher-value jobs in processing, component manufacturing, assembly and technology production are created elsewhere.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Sustainable procurement, eco-standards and product quality rules are not consistently mandatory or monitored.	Local factories lack predictable demand for cleaner products, while low-quality imports undermine maintenance jobs, investor confidence and domestic manufacturing.
	Industrial decarbonisation policies lack rigorous implementation, monitoring and operational accountability.	Frameworks do not reach workers, host communities or intended beneficiaries, weakening local hiring, skills transfer and community benefit outcomes.
	Permitting, tax distinctions and compliance requirements remain unclear or costly for green industries.	Green entrepreneurs and industrial SMEs face delays and high compliance costs, slowing investment, upgrading and job creation.
	AU-level industrial standards and certifications remain fragmented across countries.	Firms face duplication and limited market access, reducing continental trade, labour mobility and scaling of green manufacturing jobs.
 Finance	Clean machinery, low-carbon technology and industrial upgrading remain costly, with limited financing for SMEs and local firms.	Local manufacturers and suppliers cannot upgrade equipment, reducing jobs in cleaner production, industrial services and green supply chains.
	Investment in physical capital is not sufficiently matched by investment in human capital, maintenance systems and local operational capacity.	New equipment is underused or poorly maintained, reducing return on investment, productivity and stable technical employment.
	Financing models do not sufficiently link industrial investment to local job creation, local procurement, skills transfer and community benefit.	Large projects create limited local employment and weak enterprise participation, particularly for youth, women, artisans and host communities.
	Green industrial markets lack structured demand, offtake arrangements and procurement incentives.	SMEs remain excluded from industrial supply chains, while local green products struggle to compete or scale.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
 Technology	Imported industrial technologies are expensive and often poorly adapted to local operating conditions.	Local operators depend on external expertise, while jobs in adaptation, repair, maintenance and local fabrication remain underdeveloped.
	Limited experience with emerging technologies, including hydrogen, green ammonia, battery systems, clean machinery and mineral-processing technologies, creates operational risk.	Skills mismatch reduces productivity and job stability, especially where workers are trained without exposure to the actual equipment being deployed.
	Product longevity, end-of-life regulation, battery recycling, e-waste management and circular industrial systems remain insufficiently developed.	Jobs in repair, refurbishment, recycling, materials recovery and circular manufacturing remain below potential.
 Skills	TVET and training systems remain insufficiently aligned with site-specific industrial technologies, capital equipment and production processes.	Youth and workers receive certificates without clear routes into industrial deployment, placements, apprenticeships or performance-based progression.
	Work-based learning, modular certification, apprenticeships and structured placements are still limited in industrial and mining projects.	Local technicians, operators, artisans and graduates lack practical experience, limiting local hiring and workforce progression.
 Social	Youth and women remain underrepresented in industrialisation, green manufacturing and mining value chains.	Higher-value jobs in engineering, operations, maintenance, supervision, enterprise ownership and procurement remain concentrated among established actors.
	Labour exploitation, occupational safety risks, weak wages and child labour persist in some mining and industrial value chains.	Green transition value chains may reproduce harmful work conditions unless labour protection, inspection and social safeguards are enforced.

PILLAR	CONSOLIDATED ISSUE	JOBS IMPLICATION
	Host communities receive limited benefit-sharing from industrial, manufacturing and mining projects.	Communities may experience project impacts without local hiring, procurement, shared infrastructure, enterprise participation or income stability.
	Informal workers, technicians, operators and artisans in industrial value chains lack full labour rights, social protection and structured progression.	Existing workers remain exposed to unsafe or unstable work, while pathways into formal green industrial jobs remain weak.
	Industrial and mining enterprises require stronger resilience to conflict, climate shocks, technological disruption and market stress.	Jobs and enterprises remain vulnerable where production systems lack continuity planning, worker protection and local support systems.

Consolidated Case Studies and Jobs Models

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>Namibia hydrogen-powered freight locomotive</u>	Namibia	Demonstrates Africa's potential to participate in frontier green industrial technology and low-carbon logistics.	Hydrogen technicians, green logistics operators, rail maintenance workers, industrial engineers and advanced technology operators.
<u>TalusAg modular green ammonia system</u>	Agri-industrial / regional reference	Links green ammonia production to food security, fertiliser systems and industrial decarbonisation.	Green ammonia technicians, fertiliser production workers, clean chemical operators, maintenance teams and agri-industrial jobs.
<u>Uganda National Sustainable Public Procurement Action Plan</u>	Uganda	Shows how state procurement can create demand for cleaner local manufacturing through a Ministry of Finance-led framework.	Green manufacturers, procurement compliance officers, eco-standard auditors, local suppliers and cleaner production workers.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>Uganda National Just Transition Framework</u>	Uganda	Provides a model for identifying workers vulnerable to displacement and linking them to skilling pathways.	Reskilled workers, just transition officers, training providers, placement coordinators and worker-support roles.
<u>Nigeria local content policy in oil and gas</u>	Nigeria	Offers a transferable model for local workforce participation, supplier development and domestic value retention in industrial projects.	Local technicians, supplier firms, fabrication workers, apprentices, procurement-linked SMEs and domestic service providers.
<u>Ethiopia waste-to-energy and solid waste management experience</u>	Ethiopia	Links waste recovery, energy generation and green industrial systems.	Plant operators, waste recovery workers, maintenance teams, energy technicians and circular industrial workers.
<u>Rwanda plastic restrictions</u>	Rwanda	Demonstrates how strong regulation and enforcement can shift markets and public behaviour toward cleaner products.	Eco-alternative manufacturers, compliance officers, circular manufacturers and clean product enterprises.
<u>Kenya AGPO model</u>	Kenya	Shows how procurement can ring-fence opportunities for women, youth and persons with disabilities.	Youth- and women-led suppliers, procurement-linked SMEs, service providers and inclusive industrial enterprises.
<u>Rwanda community-based health insurance</u>	Rwanda	Provides a social protection model relevant to formal and informal industrial workers.	Worker protection systems, health coverage administration, social protection-linked employment support and safer industrial labour.
<u>Zambia mining regulation examples</u>	Zambia	Provides reference points for value retention, mining standards and industrial policy alignment.	Mineral processing workers, compliance officers, mining service providers and community-linked industrial roles.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
<u>Kenya and Zimbabwe e-mobility policy experience</u>	Kenya and Zimbabwe	Provides lessons on standards, local manufacturing, green industrial alignment and emerging technology regulation.	EV assembly workers, battery technicians, charging infrastructure workers and green transport manufacturing jobs.
<u>Nigeria skills integration in green industry</u>	Nigeria	Demonstrates workforce systems linked to industrial deployment and performance progression.	Apprentices, certified technicians, industrial trainees, supervisors and production workers.

Priority Resolutions and Actionable Interventions

THEMATIC AREAS ▼

1. Policy and Governance

- **Prioritise reliable and affordable industrial energy access** through mixed low-carbon energy strategies that address existing deficits while supporting decarbonisation across agribusiness, manufacturing and mining.
- **Strengthen domestic industrial value creation** by enforcing mineral value-retention requirements for local processing, beneficiation and value addition before export, particularly for critical minerals linked to the global energy transition.
- **Use sustainable public procurement, green industrial zones and special economic zones** to stimulate green manufacturing, including eco-standard requirements and zero-rated clean machinery imports tied to local hiring, local procurement and skills transfer.
- **Improve the implementation and monitoring of industrial decarbonisation policies** so that their benefits reach firms, workers, host communities and intended beneficiaries, while streamlining permitting, clarifying tax treatment for green and traditional industries and reducing compliance costs for green manufacturers and industrial SMEs.
- **Establish and harmonise product quality, longevity, certification and industrial standards at national and AU level** so to reduce duplication, strengthen investor confidence, improve maintenance, reflect real industrial practice and support continental trade.
- **Develop and enforce circular industry regulations** covering product end-of-life, battery recycling, e-waste management and the growth of domestic recycling and resource-recovery industries.

2. Finance and Investment

- **Mobilise emissions-tax reinvestment funds, concessional finance, guarantees, green bonds, blended finance and dedicated industrial credit lines** to support clean machinery upgrades and wider industrial decarbonisation.
- **Attach technical assistance, training subsidies, credit-based training and deferred-payment models to industrial finance**, linking support for SMEs, local suppliers and workers to employment, productivity and skills-development outcomes.
- **Make local manufacturing capacity, local procurement and skills transfer core conditions of industrial financing**, while strengthening access to finance for local firms and artisans supplying industrial, mining and manufacturing value chains.
- **Develop targeted investment packages** for mineral processing, battery recycling, green ammonia, clean-technology assembly, industrial energy efficiency and circular manufacturing.
- **Use public procurement, offtake agreements and eco-standards to create predictable demand** for locally manufactured green products and improve the commercial viability of domestic producers.
- **Finance shared circular infrastructure**, including recycling facilities, industrial symbiosis platforms, repair systems, waste-to-energy facilities and materials-recovery systems.

3. Skills and Training

- **Align TVET, university and industry training** with green manufacturing, mineral processing, industrial energy efficiency, battery systems, green ammonia, clean machinery and maintenance needs.
- **Mandate structured placements, apprenticeships and work-based learning** in industrial, mining and manufacturing projects.
- **Move from certificate-based training** to workforce systems that include practical exposure, deployment, performance-based progression and employer-led certification.
- **Build local technical support** for imported machinery, including installation, repair, maintenance, adaptation and safe operation.
- **Reskill workers vulnerable to displacement from high-carbon industries** and link them to green industrial roles.
- **Support youth and women's progression** into technical, supervisory, engineering, maintenance and enterprise roles in industrial value chains.
- **Strengthen institutional coordination** between industry, training providers, finance actors and public institutions.

4. Social Inclusion

- **Embed communities** into industrial, mining and manufacturing value chains through local hiring, local procurement, community enterprises, shared infrastructure and clear benefit-sharing.

- **Align industrial activity with visible social benefits**, including decent jobs, safer work, skills transfer, community infrastructure, income stability and protection from exploitation.
- **Extend labour rights, occupational safety and social protection** to formal and informal workers, including technicians, operators, artisans and community workers.
- **Prevent child labour and labour exploitation** through stronger inspection, supply-chain accountability and company-level monitoring.
- **Require operational accountability systems**, including maintenance structures, performance tracking, safety monitoring and independent oversight of company commitments to communities.
- **Prioritise local technology development and localisation** to reduce dependence on imported expertise and retain more value in African economies.
- **Design social resilience measures** for industrial, manufacturing and mining enterprises facing conflict, climate shocks, technological disruption and market volatility.

TARGET BENEFICIARIES ▼

- **Youth:** Industrial apprentices, machine operators, green manufacturing technicians, battery recycling workers, mineral processing trainees, maintenance workers and clean technology installers.
- **Women:** Procurement-linked suppliers, quality-control officers, green manufacturing workers, cooperative managers, industrial service entrepreneurs and technical trainees.
- **Informal workers and artisans:** Recognition, training, safety standards, social protection and structured routes into formal manufacturing, maintenance, recycling and industrial service roles.
- **Host communities:** Local employment, enterprise participation, shared infrastructure, skills transfer, benefit-sharing and community accountability systems.
- **Industrial SMEs and local suppliers:** Access to procurement, finance, machinery upgrades, eco-certification, maintenance contracts and value-chain integration.
- **Workers in high-carbon industries:** Reskilling, income protection, placement pathways and transition support into cleaner industrial sectors.
- **Training institutions:** Employer-linked curricula, modular certification, apprenticeships, industry placements and performance-based progression models.
- **Governments and regulators:** Standards, certification, procurement, permitting, monitoring and enforcement systems that connect industrial policy to jobs.

Green Jobs Created

Green manufacturing engineers; industrial energy auditors; mineral processing technicians; battery recycling specialists; green ammonia technicians; clean machinery operators; industrial maintenance workers; e-waste and materials recovery workers; sustainable procurement officers; eco-standard auditors; quality-control technicians; green industrial finance officers; local supplier development officers; industrial apprentices; machine operators; hydrogen technology technicians; circular manufacturing workers; community benefit officers; occupational safety officers; TVET trainers in green manufacturing and mining.

TOOLKIT NOTE:

Each sector module should be read alongside Tool 1: Sector Green Jobs Diagnostic Checklist in the Annex, which helps users assess sector readiness across policy, market, finance, skills, inclusion, data and accountability dimensions.

8. Cross-Cutting Themes

Youth Employment

Youth unemployment is Africa's most urgent social and economic crisis, appearing in every sector of this Toolkit. Youth are active innovators, entrepreneurs, and implementers if given land access, financing, skills, and markets. Key interventions include land access in agriculture; cooperative and SACCO models in e-mobility; enterprise models in solar, circularity, and NbS; and explicit youth quotas in public procurement and green infrastructure programmes.

Women's Inclusion

Gender mainstreaming is a priority in all six sectors. Women face structural exclusion through three channels: lack of access to financing; underrepresentation in TVET and training; and exclusion from governance and policy formulation. Programmes such as BuildHerAFuture, Kenya's AGPO, Burundi's Youth and Women Funds, and Circular Energy South Africa demonstrate that targeted mechanisms work, and the need for institutionalisation for success of the mechanisms.

TVET Reform

TVET is the single most cross-cutting institutional requirement across all six sectors. African TVET systems are not aligned with actual green skill demands, do not include work-based learning, do not issue internationally recognised certifications, and systematically exclude women and informal workers. TVET reform must be the primary workforce development strategy, with mandatory industry participation, modular certification, gender-responsive enrolment, and blended financing pairing training with enterprise development.

Informal Economy Recognition

The informal economy is both the dominant reality and the most excluded group across agriculture, waste, energy, and natural capital. The shift required is from treating informality as a problem to treating informal workers as central implementers of the green transition, with legal recognition, social protection, cooperative pathways, and inclusion in policy formulation.

Data and Monitoring Infrastructure

Africa's capacity to measure its own green economy is insufficient. Priority gaps include energy access data, carbon credit tracking, biodiversity monitoring, waste flow data, and green jobs measurement. Investment in African data infrastructure, including natural capital accounting, green jobs definitions, and monitoring systems, must be treated as a strategic priority.

Land Rights

Land access and tenure security are foundational enablers in agriculture, natural capital, and urban development, and structural barriers when absent. Youth land access is specifically identified across multiple sectors. Land tenure reform must be an explicit component of green jobs strategy, not a separate social policy concern.

9. Green Skills and TVET Architecture

Africa needs a green skills pipeline that is formal, non-formal, and informal, simultaneously.

LAYER	ACTION REQUIRED	LEAD ACTORS
Formal (TVET / University)	Overhaul curricula for modular certifications in energy auditing, battery recycling, EV maintenance, green building, restoration, and natural capital accounting. Align with NDCs and relevant national, continental (AU Agenda 2063 etc.) and global restoration plans.	Education Ministries, Industry Associations, Regulators, Curriculum Developers
Non-Formal (Private / CSO)	Recognise community-based apprenticeships and informal training providers within national qualifications frameworks.	TVET Authorities, NGOs, private sector, development partners

LAYER	ACTION REQUIRED	LEAD ACTORS
Informal (On-the-Job)	Integrate waste pickers, smallholders, and artisanal miners into enterprise systems with PPE, digital IDs, and progressive certification pathways. Offer work based learning and support dual TVET	Local Government, Cooperatives, Private Sector, development partners

Priority Green Skills by Sector

SECTOR	PRIORITY SKILLS
Renewable Energy	Solar PV installation, clean cooking technology, battery maintenance, biogas construction, energy auditing
Circularity and Waste	Waste sorting and recovery, recycling plant operations, e-waste handling, repair and reuse, circular product design
Climate-Smart Agriculture	Extension services, climate data use, organic farming, value addition, cold storage operations
E-Mobility and Green Infrastructure	EV mechanics, charging infrastructure, battery swapping, rider enterprise skills, green building trades
Natural Capital and NbS	Restoration ecology, carbon monitoring, biodiversity credits management, eco-tourism, GIS and remote sensing
Green Manufacturing and Mining	Industrial energy auditing, clean machinery operations, battery recycling, mineral processing, environmental compliance

Cross-Cutting TVET Priorities:

- Mandate employer participation in curriculum design for all green skills programmes
- Scale the PropelA dual apprenticeship model across sectors and countries
- Ensure every training programme has a concrete deployment pathway – work placement, SME incubation, or cooperative membership
- Mandate quotas for women and youth enrolment in all green skills programmes
- Strengthen regional accreditation so green skills certifications are portable across AfCFTA borders

Financial Pathways

INSTRUMENT	APPLICATION	TARGET BENEFICIARIES
Blended Finance	De-risk early-stage green enterprises in circularity, NbS, and climate-smart agriculture	Youth-led SMEs, women cooperatives
Green Bonds	Large-scale green infrastructure, housing, waste-to-energy, industrial SEZs	Municipalities, state corporations, developers
VSLAs	Smallholder transition, organic inputs, local processing	Rural communities, women farmers
SACCOs	E-mobility, transport, cooperative asset finance	Riders, informal workers
EPR Funds	Waste collection, sorting, and recycling infrastructure	Informal pickers, circular SMEs
Carbon and Biodiversity Credits	Biochar, community forestry, blue carbon, renewable energy	Communities, project developers, indigenous groups
Public Procurement Quotas	Recycled-content products, local food, eco-friendly construction	Green manufacturers, women and youth suppliers
Tax Incentives and Zero Tariffs	Clean machinery imports, EV adoption, green building materials	Industrial investors, SACCOs
Debt-for-Nature Swaps	Marine conservation and large-scale ecosystem restoration	Coastal communities, conservation agencies
Project Preparation Facilities	E-mobility, green infrastructure, and industrial decarbonisation	PPPs, infrastructure developers
Results-Based Finance	Pay-for-performance in energy access, waste recovery, restoration	Service providers, cooperatives

Key Principle:

Finance must follow the worker. Donor-driven pilots must transition to investment-ready pipelines with local currency options, digital payment integration, and simplified due diligence for community enterprises. Every green jobs investment must answer: What jobs will be created? Who will access them? Are youth and women included? Are informal workers protected? What revenue model sustains the investment beyond grants?

Social Inclusion and Just Transition Safeguards

1. Informal Economy Formalisation

Adopt a national informal economy policy recognising informal workers, smallholders, and micro-enterprises as legitimate economic actors. Integrate informal economy data into national labour statistics and agricultural censuses.

2. Gender Mainstreaming

Ringfence public procurement quotas for women, youth, and persons with disabilities (Kenya AGPO model). Ensure all green jobs programmes have explicit gender targets and safe working environments.

3. Land Rights and Access

Enable youth land access through public land leasing. Address structural exclusion in land ownership that blocks green job creation for the continent's youngest generations.

4. Community Benefit-Sharing

Simplify community engagement information into local languages. Ensure informed consent, transparent carbon revenue sharing, and ESG compliance monitoring for all nature-based and carbon projects.

5. Labour Protection

Enforce labour rights in mining and manufacturing supply chains. Eliminate child labour. Provide social impact investment instruments for vulnerable groups.

6. Resilience and Shock Responsiveness

Design green jobs to be resilient to conflict, climate shocks, and technological disruption. Use cash-for-work models such as the Ethiopia AWF programme for shock-responsive employment. Build reskilling pathways for workers leaving high-carbon sunset industries.

Implementation Roadmap

YEAR 1: Foundation and Policy

Q1 TO Q2:

- Convene national green jobs task forces in six pilot countries
- Define green jobs by sector and map priority policy gaps
- Begin skills-gap assessments and map informal worker groups
- Identify finance-ready projects across all six sectors

Q3 TO Q4:

- Launch informal worker formalisation pilots for waste pickers and artisanal miners
- Begin TVET-industry curriculum reform planning processes
- Integrate natural capital accounting in pilot national statistics offices
- Update e-mobility tax and HS Code frameworks; establish green jobs monitoring indicators

YEAR 2: Scale and Investment

Q1 TO Q2:

- Launch blended finance windows; issue or prepare green bonds for green infrastructure and housing
- Scale VSLAs and SACCOs for agriculture and e-mobility; develop EPR-funded waste infrastructure plans

Q3 TO Q4:

- Launch dual apprenticeship programmes in five countries using the PropelA or other similar model
- Deploy community carbon and biodiversity credit pilots; launch green industrial SEZ pilots
- Develop regional circular product standards and expand green skills certification frameworks

YEAR 3: Institutionalisation and Regional Scale

Q1 TO Q2:

- Integrate green jobs into national labour statistics and economic planning systems
- Audit community benefit-sharing systems; expand natural capital accounting
- Harmonise green skills certification regionally across AfCFTA member states

Q3 TO Q4:

- Scale successful pilots through AfCFTA-linked value chains
- Launch continental green jobs knowledge and learning platform
- Institutionalise monitoring, accountability, and annual reporting systems

Priority Recommendations for the GreenWorks Forum

Based on the validated outcomes of all three pre-convening pillars, the GreenWorks Forum should prioritise the following ten recommendations:

1. Establish a continental Green Jobs Definition and Measurement Framework with the African Union, providing a common baseline for tracking green employment across all six sectors and 54 countries.
2. Launch a continent-wide TVET Reform and Green Skills Initiative aligned with actual sector demand, with mandatory industry participation, modular certifications, gender-responsive enrolment, and blended financing pairing training with enterprise creation.
3. Create an African Investment Mobilisation Architecture for Green Jobs moving from donor-driven pilots to investment-ready pipelines – project preparation facilities, blended finance vehicles, and green bonds – across all six priority sectors.
4. Adopt the AU Continental Circular Economy Action Plan as a binding regional trade and industrial strategy instrument, aligned with AfCFTA, with implementation targets and monitoring mechanisms.
5. Mandate Natural Capital Accounting integration into all African national development plans and budgets by 2030, drawing on the Rwanda, Ethiopia, and Uganda models.
6. Establish Mineral Value Retention Frameworks across critical mineral-producing countries, ensuring Africa captures manufacturing and processing value rather than exporting raw materials.
7. Develop a continental Community Benefits Standard for carbon, biodiversity, and nature-based solution projects with enforcement mechanisms preventing extractive practices.
8. Institutionalise Youth and Women's Inclusion Conditions across all green economy financing instruments, making gender-responsive and youth-inclusive design non-negotiable.
9. Accelerate EPR framework adoption across all African countries, with harmonised regional standards for recycling, circular manufacturing, and cross-border circular trade.
10. Build a shared African Knowledge and Learning Platform for green jobs – a live repository enabling peer-to-peer learning, reducing duplication, and accelerating the scaling of proven models.

Other Cross Cutting Case Studies

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
Mr Green	Kenya	Demonstrates how integrating informal waste collectors into formal recycling value chains can improve waste recovery, livelihoods and access to markets.	Waste collection, sorting, recycling, logistics, quality control and informal waste-sector enterprise jobs.
SwissContact in Turkana – From Waste to Worth	Kenya	Demonstrates how waste can be converted into economic value through community-based collection, recycling and local enterprise development.	Waste collection, sorting, recycling, upcycling, waste enterprise and community circular economy jobs.
DOT – How Youth-Led Climate Action is Driving a Circular Economy Transition Across Africa	Kenya	Shows how youth-led climate action can turn local environmental challenges into practical circular economy solutions and livelihoods.	Climate champions, waste recovery, composting, upcycling, community mobilisation and green enterprise jobs.
PACJA – Kenya Plastic Ban Policy	Kenya	Demonstrates how policy and public awareness can support the reduction of single-use plastics and encourage sustainable alternatives.	Policy compliance, public awareness, alternative packaging, recycling, collection and environmental management jobs.
AGRA	Africa	Provides a model for strengthening agricultural systems through climate-smart practices, market linkages, skills and support for smallholder farmers.	Climate-smart agriculture, extension services, agro-processing, input supply, agribusiness and market-linkage jobs.
Corus International	Africa	Demonstrates how livelihood programmes can combine skills, enterprise development and community-based approaches to strengthen economic resilience.	Livelihoods support, enterprise development, skills training, agricultural services and community-based jobs.
FLLoCA – Model from National Treasury	Kenya	Demonstrates how devolved climate finance can support locally-led climate action, livelihood diversification and community resilience across counties.	Climate adaptation, natural resource management, water conservation, livelihood diversification and community climate jobs.
GIZ TVET	Africa / Global	Provides a model for aligning TVET systems with labour-market needs and strengthening skills for emerging sectors, including the green economy.	Green skills trainers, technicians, apprenticeships, curriculum development and industry-linked TVET jobs.
CAP-YEI	Kenya	Demonstrates how TVET systems can integrate climate-smart agriculture skills and connect young people to employment and enterprise opportunities.	Climate-smart agriculture technicians, trainers, farm service providers, agribusiness and youth enterprise jobs.
Save the Children	Kenya	Demonstrates how climate-smart agriculture, agroforestry and livelihood interventions can build technical skills and strengthen climate-resilient livelihoods.	Agronomy, climate-smart agriculture, agroforestry, farmer support, extension and livelihood jobs.
GSMA – Koolbox Cooling as PUE	Africa	Demonstrates how productive use of energy, including cooling solutions, can support enterprise development and income-generating activities.	Cooling technicians, equipment sales, maintenance, energy services, cold-chain and productive-use enterprise jobs.
GEA PUE	Africa	Shows how productive use of energy can connect electricity access with agriculture, enterprises, local economic growth and job creation.	Energy technicians, appliance installation, maintenance, agricultural processing, productive-use enterprises and energy service jobs.
Octavia Carbon/Kengen	Kenya	Demonstrates opportunities to develop carbon removal technologies and climate technology solutions while building local technical capacity.	Engineering, manufacturing, carbon removal operations, monitoring, reporting, verification and climate technology jobs.
CGD	Africa	Provides a model for identifying and scaling TVET providers that can deliver industry-aligned green skills for local and international markets.	Green skills training, technical instruction, apprenticeships, certification and industry-linked employment jobs.
GEAPP – Women in Green Jobs	Kenya	Demonstrates approaches for increasing women's participation in green sectors and improving access to skills, employment and enterprise opportunities.	Green enterprise, technical skills, renewable energy, circular economy, entrepreneurship and women-led green jobs.
Anti- Sexual Harassment		Supports the creation of safer and more inclusive workplaces, particularly for women entering and remaining in employment.	Workplace compliance, safeguarding, human resources, training, reporting and gender-inclusive workplace jobs.
Roam Motorcycles	Kenya	Demonstrates how local electric mobility manufacturing and deployment can create new technical and service opportunities while reducing transport emissions.	Electric vehicle assembly, battery services, mechanics, charging, sales, maintenance and e-mobility enterprise jobs.

CASE STUDY	COUNTRY / SCOPE	CONSOLIDATED RELEVANCE	JOBS MODEL
Ebee – How eBee’s E-Bicycles Create Green Jobs and Cut Carbon	Kenya	Demonstrates how electric bicycles can support low-carbon mobility while creating local employment and enterprise opportunities.	E-bike assembly, sales, maintenance, battery services, delivery and e-mobility enterprise jobs.
SwissContact – A Scalable Faecal Sludge Management Model Enhancing Jobs and Climate Resilience in Turkana	Kenya	Demonstrates how improved faecal sludge management can address sanitation challenges while creating local employment and enterprise opportunities.	Faecal sludge collection, transport, treatment, sanitation services, facility operations and waste management enterprise jobs.
Blue Savannah	Kenya	Demonstrates how blue economy activities can support sustainable use of coastal resources, community livelihoods and local economic development.	Fisheries, aquaculture, marine conservation, eco-tourism, value addition and blue economy enterprise jobs.
Main Signal Solutions (KGBS)	Kenya	Demonstrates how green building practices, standards and sustainable construction can support resource efficiency and the transition to greener buildings.	Green building design, energy efficiency, sustainable construction, green building assessment, certification and sustainable materials job

Risks and Assumptions

RISKS

- Policy ambition may continue to outpace implementation, with strong frameworks remaining weakly enforced due to institutional fragmentation, weak accountability, political transitions and limited continuity.
- Green jobs may remain poorly defined, inconsistently measured and weakly tracked, limiting comparability, accountability, investment confidence and evidence of impact.
- Financing may remain concentrated in large infrastructure projects and grant-dependent pilots, with limited reach to SMEs, workers, cooperatives, informal actors and community enterprises.
- Skills programmes may remain disconnected from actual deployment, producing trained workers without apprenticeships, placements, enterprise pathways, employer demand or performance-based progression.
- Informal workers, youth and women may remain excluded from real economic opportunity, especially where formalisation, inclusion or skilling processes do not provide access to assets, finance, land, procurement, leadership, protection and income pathways.
- Local content and value addition may remain weak, allowing green investments to import technology, labour and services while local manufacturing, supplier development, repair, maintenance and technical capacity remain underdeveloped.
- Technology adoption may increase dependence on imported systems, where local adaptation, maintenance, repair, recycling and end-of-life management are not built into programme design.
- Community benefit-sharing may remain poorly governed, particularly in energy, mining, natural capital, agriculture and infrastructure projects affecting land, livelihoods, local resources and community rights.
- Private-sector participation may remain limited, where revenue models, standards, incentives, procurement pathways, risk mitigation and project preparation support are weak.
- Case studies may be difficult to replicate across contexts, given differences in regulation, finance, infrastructure, institutional capacity, markets and political economy.
- Climate shocks, conflict, displacement and economic stress may disrupt implementation, particularly in rural, fragile and underserved contexts.

ASSUMPTIONS

- African governments will continue to prioritise green growth, industrialisation, climate resilience and employment creation, and will embed these priorities in national, regional and sector plans.
- Stakeholders will use the Toolkit as a practical design and coordination tool, rather than as a standalone knowledge product.
- Green jobs can be created across all six sectors when investment, skills, policy implementation, local content, market demand and accountability are deliberately linked.
- Informal workers, youth, women and communities are already active economic actors, and can be supported into safer, more productive and better-recognised roles.
- Finance can be structured to reach local

- enterprises and workers, including through blended finance, EPR funds, green bonds, carbon finance, SACCOs, VSLAs, public procurement and concessional capital.
- TVET institutions, universities and employers can align curricula with industry demand, especially through apprenticeships, modular certification, work-based learning and employer-led design.
 - African case studies can provide useful implementation models, provided they are adapted to local policy, finance, market and institutional conditions.
 - Regional harmonisation through AU and AfCFTA-linked standards can support scale, trade, certification and labour mobility across green value chains.
 - Data, indicators and accountability systems can be simple enough for practical use, while still tracking jobs, inclusion, enterprise growth and community benefits.

10. Proposed Roadmap

PHASE	TIMELINE	KEY ACTIONS
Short Term	0 to 12 months	Define green jobs by sector. Map opportunities across all six sectors. Compile African case studies. Conduct skills-gap assessments. Identify finance-ready pipelines. Launch informal worker formalisation pilots. Update e-mobility tax and standards frameworks. Establish green jobs monitoring indicators.
Medium Term	1 to 3 years	Align TVET systems with industry demand. Scale blended finance windows and issue initial green bonds. Formalise informal worker pathways. Develop regional circular product and EV standards. Strengthen sustainable procurement and local content requirements. Launch dual apprenticeship programmes.
Long Term	3 to 5 years	Scale national green jobs programmes through AfCFTA-linked value chains. Integrate green jobs into national labour and economic systems. Harmonise green skills certification regionally. Institutionalise monitoring and accountability systems. Launch a continental African green jobs knowledge and learning platform.

11. Conclusion

The African Green Jobs and Skills Toolkit provides a practical, Africa-centred resource for moving from green growth ambition to job creation. It connects policy, finance, technology, markets, skills, inclusion and accountability into one coherent framework, helping stakeholders design programmes that are implementable, investable and linked to real employment outcomes.

The GreenWorks for Africa Forum is well positioned to produce and champion this Toolkit. The three pre-convening pillars have already completed the foundational work: validating priority issues, identifying practical African case studies and agreeing concrete resolutions across policy, finance, technology, markets and social systems. The Toolkit now translates that collective intelligence into an action resource for governments, development partners, private sector actors, TVET institutions, financiers, civil society and communities.

Its value lies in making green jobs visible, accessible and measurable. It helps stakeholders identify where employment can be created, how excluded groups can participate, which systems need to change and what must be tracked to ensure that Africa's green transition delivers livelihoods, enterprise growth and community benefit alongside climate and environmental outcomes.

Annexe 1: Quick Reference Summaries

One-page summaries for each sector, designed for use in policy briefings, advocacy materials, and programme design.

SECTOR 1: Renewable Energy and Productive Use of Energy

ELEMENT	SUMMARY
Opportunity	Universal clean energy access + local manufacturing + carbon finance = massive green employment
Core Issues	Rural access deficit; over-reliance on grants; disconnect between investment and local labour; weak TVET alignment; gender and youth exclusion
What's Working in Africa	Kenya geothermal and wind; EnDev commercial model; CASDEV Cameroon youth solar enterprise; African Biogas Carbon Programme Tanzania; Malawi solar irrigation; Circular Energy South Africa
Priority Actions	Integrated financing linking energy and jobs. Local content mandates. Gender and youth mainstreaming. TVET alignment. Scale decentralised renewables.
Green Jobs	Solar technicians; clean cooking manufacturers; rural mini-grid operators; biogas engineers; carbon credit developers; energy TVET trainers

SECTOR 2: Circularity Industry and Waste Systems

ELEMENT	SUMMARY
Opportunity	Waste as economic asset + circular manufacturing + AfCFTA regional trade = industrial green jobs
Core Issues	Weak EPR implementation; informal workers excluded; donor-driven financing; fragmented value chains; inadequate infrastructure
What's Working in Africa	Kenya EPR and HAPROK; Rwanda plastic ban; TakaTaka Solutions; Benin circular roadmap; South Africa take-back schemes; Zimbabwe Geo-Pomona
Priority Actions	EPR acceleration. Reframe circularity as an industrial strategy. Formalise informal workers. Move from pilots to investment pipelines. Regional standards harmonisation.
Green Jobs	Recycling plant operators; e-waste technicians; waste-to-energy engineers; circular product designers; EPR compliance officers

SECTOR 3: Climate-Resilient Agriculture and Smart Food Systems

ELEMENT	SUMMARY
Opportunity	60% of Africa's arable land underutilised + climate-smart intensification + value chains = green rural jobs at scale
Core Issues	Misaligned climate finance; land access barriers for youth; weak extension systems; informal economy exclusion; inadequate insurance models
What's Working in Africa	Ethiopia Agricultural Development Agent system; Kenya county-level integrated systems; Zimbabwe conservation agriculture; Malawi CSA; Kenya digital and carbon model
Priority Actions	Integrated national CSA policies. Youth and women land access reform. Blended finance including index insurance. Strengthen cooperatives. Recognise informal food economy.
Green Jobs	Extension agents; organic certification officers; digital platform operators; food processing entrepreneurs; cooperative managers; carbon project officers

SECTOR 4: E-Mobility, Green Infrastructure and Urbanisation

ELEMENT	SUMMARY
Opportunity	Africa's urbanisation wave + green building standards + EV transition = construction, transport, and technology jobs
Core Issues	Missing certification standards; tax classification barriers; high financing costs; policy-implementation gap; inadequate local authority capacity
What's Working in Africa	Kenya green bond (KSh 9.4bn, 312% oversubscribed); Rwanda Bwiza green housing; Kenya e-motorcycle battery-as-a-service; EarthEnable Rwanda; South Africa SETA model
Priority Actions	Africa-specific EV and green building certification. HS Code reform for e-bikes. Project preparation financing. Soft skills integration. Progressive fossil fuel taxation.
Green Jobs	EV technicians; charging engineers; green building designers; sustainable construction workers; energy auditors; transport cooperative managers

SECTOR 5: Natural Capital and Nature-Based Enterprises

ELEMENT	SUMMARY
Opportunity	Africa holds the world's richest natural capital and the largest restoration opportunity on the planet
Core Issues	Natural capital absent from national accounts; land tenure insecurity; carbon market accountability gaps; governance fragmentation
What's Working in Africa	Rwanda, Ethiopia, Uganda natural capital accounting; Kenya Chyulu carbon; Vanga Blue Carbon Kenya; Mauritius debt-for-nature swap; Liberia community engagement model
Priority Actions	Continental NbS governance framework. Natural capital accounting integration. Community benefit-sharing standards. In-country carbon and biodiversity frameworks.
Green Jobs	Restoration ecologists; carbon credit verifiers; eco-tourism managers; natural capital accountants; blue economy operators; community conservation monitors

SECTOR 6: Industrial Decarbonisation, Green Manufacturing and Mining

ELEMENT	SUMMARY
Opportunity	Africa's critical minerals + domestic processing capacity + green manufacturing = high-value industrial employment
Core Issues	Raw mineral export without value addition; skills mismatch; weak community benefit-sharing; labour exploitation; unequal global trade rules
What's Working in Africa	Namibia hydrogen locomotive; TalusAg green ammonia; Uganda sustainable procurement; Kenya AGPO inclusion model; Rwanda community health insurance for workers
Priority Actions	Mineral Value Retention Laws. SEZs for green manufacturing. Operational data systems. Workforce systems not isolated training. Community benefit-sharing enforcement.
Green Jobs	Green manufacturing engineers; industrial energy auditors; battery recycling specialists; mineral processing engineers; green ammonia technicians

Annexe 2: Practical Toolkit Instruments

TOOL 1: Sector Green Jobs Diagnostic Checklist

Worked example: Circularity Industry and Waste Systems

1. Purpose of the tool

This tool helps governments, development partners, private sector actors, TVET institutions, financiers and civil society assess whether a green sector is ready to generate jobs at scale.

It supports users to identify:

Diagnostic question	What the tool helps determine
Where are the green jobs?	The value-chain segments with current or future employment potential.
What is blocking job creation?	Policy, finance, skills, market, infrastructure, inclusion and data constraints.
Who is excluded?	Youth, women, informal workers, community actors and small enterprises.
What should be prioritised?	The most practical short-term, medium-term and systemic actions.
What should be measured?	Jobs, enterprises, skills, finance, inclusion and environmental outcomes.

2. When to use this tool

Use this tool when designing a sector programme, preparing an investment pipeline, reviewing a national or county green jobs strategy, assessing a sector's readiness for finance, or preparing a multi-stakeholder action plan.

3. Who should complete it

The tool should be completed by a small sector working group, ideally including:

Actor	Role in completing the tool
Lead ministry or public agency	Confirms policy, regulation and enforcement status.
Private sector / industry actors	Validates market demand, enterprise constraints and investment readiness.

Actor	Role in completing the tool
TVET / training bodies	Identifies skills gaps, certification needs and work-placement pathways.
Finance actors	Assesses commercial viability, risk, finance instruments and pipeline readiness.
Informal worker / community representatives	Validates inclusion, protection, income and transition realities.
Youth and women enterprise representatives	Tests whether proposed opportunities are practically accessible.
Data / MEL specialists	Confirms baseline data, indicators and tracking mechanisms.

A. Sector diagnostic scoring sheet

Score each area from 1 to 4.

Score	Meaning
1 – Weak	Major gaps; action cannot scale without foundational reform.
2 – Emerging	Some activity exists, but systems are fragmented or pilot-based.
3 – Developing	Core systems exist, but scale, coordination or enforcement is uneven.
4 – Strong	The sector is ready for structured investment, jobs programming and scale.

DIAGNOSTIC AREA 1: Policy and regulation

Question	Score	Evidence / notes	Priority action
Is there a clear national or sector policy framework for this sector?			
Are roles clear across national, regional, county/ local and regulatory institutions?			
Are laws and regulations being enforced in practice?			

Question	Score	Evidence / notes	Priority action
Are local content, procurement or enterprise participation requirements included?			
Are informal workers recognised in law, policy or implementation systems?			

Policy and regulation score: ___ / 20

DIAGNOSTIC AREA 2: Market and value-chain readiness

Question	Score	Evidence / notes	Priority action
Are there clear value-chain segments where jobs can be created or upgraded?			
Is there reliable demand for the goods or services produced in the sector?			
Are SMEs, cooperatives and informal enterprises active in the value chain?			
Are there viable business models beyond donor-funded pilots?			
Are there opportunities for local manufacturing, repair, processing or value addition?			

Market and value-chain readiness score: ___ / 20

DIAGNOSTIC AREA 3: Finance readiness

Question	Score	Evidence / notes	Priority action
Are there investment-ready enterprises or projects in the sector?			

Question	Score	Evidence / notes	Priority action
Are appropriate finance instruments available for different actor types?			
Can youth, women, informal workers or cooperatives access finance?			
Is there a revenue model that can sustain the activity after grant funding?			
Are public incentives, guarantees, funds or procurement mechanisms being used?			

Finance readiness score: ___ / 20

DIAGNOSTIC AREA 4: Skills and workforce readiness

Question	Score	Evidence / notes	Priority action
Have priority occupations been identified across the value chain?			
Are TVET or training providers offering relevant courses?			
Are employers involved in curriculum design, apprenticeship or certification?			
Are informal skills and prior learning recognised?			
Are there clear deployment pathways after training?			

Skills and workforce readiness score: ___ / 20

DIAGNOSTIC AREA 5: Inclusion and just transition

Question	Score	Evidence / notes	Priority action
Are youth and women able to access jobs, assets, finance and markets in this sector?			
Are informal workers protected through PPE, contracts, cooperatives, IDs or social protection?			
Are community consent and benefit-sharing mechanisms in place where relevant?			
Are occupational safety and decent work standards being applied?			
Are transition pathways available for workers whose livelihoods may be disrupted?			

Inclusion and just transition score: ___ / 20

DIAGNOSTIC AREA 6: Data, standards and accountability

Question	Score	Evidence / notes	Priority action
Is there reliable data on jobs, enterprises and workers in this sector?			
Are standards, certification or quality-control systems in place?			
Are green outcomes being measured?			

Question	Score	Evidence / notes	Priority action
Are job quality, inclusion and enterprise survival being tracked?			
Is there a dashboard, reporting mechanism or accountability forum?			

Data, standards and accountability score: ___/ 20

B. Scoring summary

Diagnostic area	Score	Readiness level	Interpretation
Policy and regulation	___ / 20		
Market and value-chain readiness	___ / 20		
Finance readiness	___ / 20		
Skills and workforce readiness	___ / 20		
Inclusion and just transition	___ / 20		
Data, standards and accountability	___ / 20		
Total score	___ / 120		

Readiness interpretation

Score	Meaning	
0–39	Low readiness	Foundational systems are weak; begin with policy, data, institutional coordination and pilots.
40–79	Moderate readiness	The sector has activity and potential, but scale requires targeted reforms, finance and delivery systems.
80–120	High readiness	The sector is ready for structured investment, job creation programming and measurable scale.

Worked example: Circularity Industry and Waste Systems

Sector focus

Circularity and waste systems include waste collection, sorting, recycling, composting, repair and reuse, e-waste management, circular product design, producer responsibility systems, waste data management and circular manufacturing.

The current opportunity is significant because informal waste workers already sustain much of Africa's recovery system, while EPR, circular product standards, local recycling and AfCFTA-linked markets can convert fragmented activity into structured employment, enterprise growth and industrial value addition.

DIAGNOSTIC AREA 1: Policy and regulation

Question	Score	Evidence / notes	Priority action
Is there a clear national or sector policy framework for this sector?	3	<i>Several countries now have circular economy roadmaps, plastic bans, waste regulations or EPR instruments. Implementation remains uneven.</i>	<i>Consolidate circular economy policy into enforceable sector plans with clear institutional mandates.</i>
Are roles clear across national, regional, county/ local and regulatory institutions?	2	<i>Mandates are often split across environment, industry, local government, trade, health and standards bodies. Coordination is weak.</i>	<i>Establish a circular economy coordination mechanism with public, private and worker representation.</i>
Are laws and regulations being enforced in practice?	2	<i>Enforcement gaps persist in source separation, dumping, producer responsibility, licensing and standards.</i>	<i>Link licensing, inspection and producer obligations to measurable collection, recovery and worker-protection targets.</i>
Are local content, procurement or enterprise participation requirements included?	2	<i>Public procurement for recycled-content products and local circular enterprises remains underused.</i>	<i>Introduce public procurement quotas for recycled-content products, repair services, compost and local circular materials.</i>

Question	Score	Evidence / notes	Priority action
Are informal workers recognised in law, policy or implementation systems?	1	<i>Informal waste workers remain central to recovery but often lack formal recognition, contracts, PPE, social protection or voice.</i>	<i>Register informal waste workers and integrate them into municipal, EPR and cooperative systems.</i>

Policy and regulation score: 10 / 20

DIAGNOSTIC AREA 2: Market and value-chain readiness

Question	Score	Evidence / notes	Priority action
Are there clear value-chain segments where jobs can be created or upgraded?	4	<i>Collection, sorting, recycling, composting, e-waste, repair, reuse, data and compliance all have job potential.</i>	<i>Map jobs across each material stream: plastics, organics, e-waste, textiles, construction waste and packaging.</i>
Is there reliable demand for the goods or services produced in the sector?	2	<i>Demand for recycled products is growing but remains inconsistent due to quality issues, weak standards and price competition.</i>	<i>Develop circular product standards and market commitments from producers and public buyers.</i>
Are SMEs, cooperatives and informal enterprises active in the value chain?	4	<i>Waste pickers, aggregators, small recyclers, composters and repair enterprises already operate across the value chain.</i>	<i>Formalise existing actors through contracts, cooperatives, SACCOs and offtake arrangements.</i>
Are there viable business models beyond donor-funded pilots?	2	<i>Some enterprises are commercially viable, but many pilots do not reach investment readiness or stable offtake.</i>	<i>Build investment-ready circular enterprise pipelines linked to EPR, public procurement and private offtake.</i>

Question	Score	Evidence / notes	Priority action
Are there opportunities for local manufacturing, repair, processing or value addition?	3	<i>Recycling, repair, composting, eco-products and local manufacturing can create value, but machinery, standards and finance gaps persist.</i>	<i>Support local processing infrastructure, repair hubs and circular manufacturing clusters.</i>

Market and value-chain readiness score: 15 / 20

DIAGNOSTIC AREA 3: Finance readiness

Question	Score	Evidence / notes	Priority action
Are there investment-ready enterprises or projects in the sector?	2	<i>Many circular enterprises exist, but few have structured financial records, contracts, offtake agreements or growth plans.</i>	<i>Provide project preparation support for circular SMEs and municipal waste PPPs.</i>
Are appropriate finance instruments available for different actor types?	2	<i>Grants dominate. EPR funds, concessional finance, SACCOs, working capital and guarantees are underdeveloped.</i>	<i>Match finance instruments to actor type: grants for early-stage pilots, working capital for SMEs, EPR funds for collection systems, concessional debt for infrastructure.</i>
Can youth, women, informal workers or cooperatives access finance?	1	<i>Informal workers and small enterprises face documentation, collateral and risk-assessment barriers.</i>	<i>Develop SACCO, cooperative and group-based financing products linked to contracts and buyer commitments.</i>
Is there a revenue model that can sustain the activity after grant funding?	2	<i>Revenue is possible through collection fees, material sales, compost, EPR payments and offtake, but often poorly structured.</i>	<i>Require every circular project to show revenue sources, cost recovery and buyer commitments.</i>

Question	Score	Evidence / notes	Priority action
Are public incentives, guarantees, funds or procurement mechanisms being used?	2	<i>Public procurement, EPR funds and tax incentives are available in some contexts but weakly deployed.</i>	<i>Use EPR, procurement and tax instruments to create reliable demand and reduce investment risk.</i>

Finance readiness score: 9 / 20

DIAGNOSTIC AREA 4: Skills and workforce readiness

Question	Score	Evidence / notes	Priority action
Have priority occupations been identified across the value chain?	2	<i>Job types are known, but occupational profiles and competency standards are limited.</i>	<i>Develop circular economy occupational profiles for collectors, sorters, recyclers, e-waste technicians, composters and compliance officers.</i>
Are TVET or training providers offering relevant courses?	2	<i>Training exists in environmental management, engineering and enterprise, but practical circular economy training is limited.</i>	<i>Develop modular courses in material handling, e-waste safety, recycling operations, composting, repair and circular enterprise management.</i>
Are employers involved in curriculum design, apprenticeship or certification?	1	<i>Employer-linked training is weak and informal workers are rarely included in certification systems.</i>	<i>Establish employer-led training partnerships with recyclers, PROs, municipalities and circular SMEs.</i>

Question	Score	Evidence / notes	Priority action
Are informal skills and prior learning recognised?	1	<i>Informal workers hold practical skills but lack certification or progression routes.</i>	<i>Create recognition of prior learning pathways for waste pickers, sorters, repair workers and aggregators.</i>
Are there clear deployment pathways after training?	2	<i>Training often lacks guaranteed placement, contracts or enterprise pathways.</i>	<i>Link training to municipal contracts, EPR schemes, cooperatives, SMEs and recycling facilities.</i>

Skills and workforce readiness score: 8 / 20

DIAGNOSTIC AREA 5: Inclusion and just transition

Question	Score	Evidence / notes	Priority action
Are youth and women able to access jobs, assets, finance and markets in this sector?	2	<i>Youth and women participate, but often in low-margin, insecure roles.</i>	<i>Ringfence enterprise support, equipment access and procurement opportunities for youth- and women-led circular enterprises.</i>
Are informal workers protected through PPE, contracts, cooperatives, IDs or social protection?	1	<i>Informal workers often lack PPE, contracts, safe working conditions and social protection.</i>	<i>Make worker registration, PPE, contracts and grievance channels mandatory in EPR and municipal systems.</i>
Are community consent and benefit-sharing mechanisms in place where relevant?	2	<i>Community benefit is rarely formalised in waste infrastructure or recycling projects.</i>	<i>Require community engagement and benefit-sharing plans for waste sites, sorting centres and recycling infrastructure.</i>

Question	Score	Evidence / notes	Priority action
Are occupational safety and decent work standards being applied?	1	<i>Exposure to hazardous waste, unsafe sorting and unstable income remain common.</i>	<i>Introduce minimum occupational safety standards and compliance checks for all funded circular projects.</i>
Are transition pathways available for workers whose livelihoods may be disrupted?	1	<i>Formalisation can displace informal workers if poorly designed.</i>	<i>Require transition plans that protect existing workers before introducing mechanised or private waste systems.</i>

Inclusion and just transition score: 7 / 20

DIAGNOSTIC AREA 6: Data, standards and accountability

Question	Score	Evidence / notes	Priority action
Is there reliable data on jobs, enterprises and workers in this sector?	1	<i>Waste worker numbers, informal enterprises, recovery rates and job quality are poorly tracked.</i>	<i>Build a circular jobs registry linked to municipalities, PROs, cooperatives and recyclers.</i>
Are standards, certification or quality-control systems in place?	2	<i>Some standards exist, but recycled product quality, e-waste handling and circular product certification remain weak.</i>	<i>Develop standards for recycled content, compost quality, e-waste handling and circular products.</i>
Are green outcomes being measured?	2	<i>Waste recovery, recycling and emissions impacts are measured inconsistently.</i>	<i>Track tonnes collected, diverted, recycled, composted and safely disposed.</i>
Are job quality, inclusion and enterprise survival being tracked?	1	<i>Most programmes count activities, not sustained jobs, income, contracts or safety improvements.</i>	<i>Track jobs sustained at 6, 12 and 24 months, income change, safety, gender and youth participation.</i>

Question	Score	Evidence / notes	Priority action
Is there a dashboard, reporting mechanism or accountability forum?	1	<i>Reporting is fragmented across municipalities, donors, producers and regulators.</i>	<i>Establish a circular economy dashboard with public reporting on EPR, jobs, enterprises, finance and recovery.</i>

Data, standards and accountability score: 7/ 20

COMPLETED SCORING SUMMARY: Circularity Industry and Waste Systems

Diagnostic area	Score	Readiness level	Interpretation
Policy and regulation	10 / 20	<i>Moderate</i>	<i>Policy direction exists, but implementation, enforcement and informal worker recognition remain weak.</i>
Market and value-chain readiness	15 / 20	<i>Developing</i>	<i>Strong job potential exists across the value chain, but demand, quality standards and offtake need strengthening.</i>
Finance readiness	9 / 20	<i>Emerging</i>	<i>Finance is available in principle, but pipelines, revenue models and access for informal actors are weak.</i>
Skills and workforce readiness	8 / 20	<i>Emerging</i>	<i>Skills needs are visible, but occupational standards, certification and deployment pathways are underdeveloped.</i>
Inclusion and just transition	7 / 20	<i>Weak</i>	<i>Informal workers, women and youth remain exposed to unsafe, low-income and poorly protected work.</i>
Data, standards and accountability	7 / 20	<i>Weak</i>	<i>Weak data and standards limit planning, investment, enforcement and accountability.</i>
Total score	56 / 120	Moderate readiness	<i>The sector has strong job potential and active value chains, but scale requires enforcement, finance, formalisation, skills systems and data infrastructure.</i>

E. Diagnostic conclusion

Circularity and waste systems are a moderate-readiness green jobs sector. The employment base already exists, especially through informal waste workers, small recyclers, aggregators, composting enterprises, repair businesses and emerging EPR systems. The strongest opportunity is to convert existing fragmented work into safer, more productive and better-financed circular employment.

The binding constraints are weak enforcement, limited investment-ready pipelines, low access to finance for informal and small actors, insufficient occupational certification, weak recycled product standards and poor sector data. A jobs-focused circular economy programme should therefore begin with worker formalisation, EPR-linked financing, recycled product standards, municipal contracting, enterprise pipeline preparation and a basic circular jobs data system.

F. Priority action plan

Timeframe	Priority action	Lead actors	Output
0–6 months	Register informal waste workers and map existing collectors, sorters, aggregators and recyclers.	Municipalities, PROs, worker organisations, environment agencies	Circular worker and enterprise registry
0–6 months	Develop minimum occupational safety standards for waste collection, sorting, e-waste and recycling.	Labour ministry, environment agency, standards body, worker groups	Safety checklist and compliance protocol
6–12 months	Create EPR-linked contracts for collection, sorting and aggregation.	Producer Responsibility Organisations, municipalities, private sector	Contracted waste-worker and SME participation
6–12 months	Build a circular enterprise pipeline with finance readiness support.	Development partners, finance institutions, incubators, circular SMEs	Investment-ready SME pipeline
12–24 months	Develop modular TVET and recognition of prior learning pathways.	TVET bodies, employers, recyclers, worker organisations	Certified circular economy occupations
12–24 months	Introduce public procurement quotas for recycled-content products and compost.	Finance ministry, procurement authority, local governments	Market demand for circular products

Timeframe	Priority action	Lead actors	Output
12–24 months	Launch a circular economy jobs dashboard.	Environment agency, labour ministry, municipalities, PROs	Public reporting on jobs, recovery, finance and inclusion

G. Minimum indicators to track

Indicator area	Indicator	Disaggregation
Jobs	Number of jobs created or formalised in circular value chains	Sex, age, location, occupation, formality status
Job quality	Share of workers with PPE, contracts, regular income or social protection	Worker type, gender, municipality
Enterprises	Number of circular SMEs, cooperatives or worker groups contracted	Enterprise size, ownership, sector segment
Finance	Amount of finance mobilised for circular enterprises and infrastructure	Instrument, beneficiary type, sector segment
Skills	Number of workers trained, certified or recognised through prior learning	Occupation, gender, age, informal/formal status
Markets	Value and volume of recycled, repaired, reused or composted products sold	Product type, buyer type, domestic/export
Environment	Tonnes of waste collected, sorted, recycled, composted or diverted from landfill	Material stream, location
Inclusion	Share of youth, women and informal workers benefiting from contracts, finance or training	Beneficiary group
Accountability	Number of EPR, municipal or producer reports publicly disclosed	Institution, reporting period

H. How to use the results

If the score shows...	Recommended response
Weak policy score	Begin with mandates, enforcement, institutional coordination and legal recognition of workers.
Weak market score	Focus on value-chain mapping, standards, offtake agreements and procurement demand.
Weak finance score	Build project preparation support, revenue models and appropriate instruments for each actor type.
Weak skills score	Develop occupational profiles, modular training and employer-linked certification.
Weak inclusion score	Require worker protection, social safeguards, gender/youth access and transition plans.
Weak data score	Establish a minimum viable data system before scaling investment.

This tool should be repeated every 12 months to track whether the sector is moving from fragmented green activity toward structured green jobs, enterprise growth and measurable circular economy outcomes.

TOOL 2: Green Jobs Opportunity Mapping Template

The tool draws from global practice that links jobs diagnostics, green employment diagnostics, skills assessment and MEL. ILO's Green Employment Diagnostics Toolkit uses adaptable checklists, frameworks and templates for country-level green employment analysis, while the World Bank Jobs Diagnostics approach supports structured analysis of labour-market constraints, job quality and vulnerable groups. (International Labour Organization) The ILO green jobs and skills handbook also stresses clear measurement of green jobs and skills within monitoring, evaluation and learning systems. (International Labour Organization)

1. Purpose

This tool helps users identify where green jobs are found across a sector value chain, who can access them, what skills are required, what financing is needed, and which opportunities can be converted into practical employment or enterprise pathways.

It should be used after the Sector Green Jobs Diagnostic Checklist. The diagnostic shows whether the sector is ready. This tool shows where the jobs are.

2. When to use this tool

Use this tool when designing a green jobs programme, preparing a sector investment pipeline, reviewing a TVET or skills intervention, identifying enterprise opportunities for youth and women, or translating a sector strategy into concrete jobs and livelihood pathways.

3. Who should complete it

Actor	Role
Sector ministry / regulator	Confirms policy priorities, licensing requirements and standards.
Private sector / industry actors	Validates demand, job roles, business models and work-placement options.
TVET / training institutions	Identifies skills, certification and training pathways.
Finance actors	Identifies finance needs, risks and suitable instruments.
Youth, women and informal worker representatives	Tests whether opportunities are practically accessible.
Programme designer / MEL lead	Converts the map into targets, indicators and implementation actions.

A. Blank template

STEP 1: Define the value chain

Value-chain stage	Main activities	Existing actors	Jobs already present	New or upgraded jobs possible
Planning and design				
Inputs and equipment				
Installation / production				

Value-chain stage	Main activities	Existing actors	Jobs already present	New or upgraded jobs possible
Operations and maintenance				
Distribution and sales				
Productive use / end use				
Enabling services				

STEP 2: Map job opportunities

Job opportunity	Value - chain stage	Skill level	Likely pathway	Target group	Access constraints	Priority action
		Entry / Technical / Enterprise / Advanced	Wage job / self- employment / cooperative / SME / apprenticeship	Youth / women / informal workers / SMEs / communities		

STEP 3: Map skills and certification needs

Job opportunity	Core skills required	Training route	Certification route	Work-placement option
		TVET / short course / apprenticeship / recognition of prior learning	National qualification / modular certificate / industry certificate	Employer / cooperative / SME / public works / internship

STEP 4: Map finance needs

Job or enterprise opportunity	Finance need	Suitable instrument	Likely financier	Revenue source
	Tools / working capital / asset finance / project preparation / infrastructure	Grant / SACCO / loan / guarantee / PAYGo / carbon finance / procurement / blended finance		

STEP 5: Apply inclusion and viability test

Test question	Yes / No	Notes	Required adjustment
Can youth enter this opportunity without high upfront capital?			
Can women access the training, finance, assets and work sites required?			
Can informal workers or community actors participate safely and fairly?			
Is there a clear buyer, employer, customer or revenue source?			
Is the job likely to last beyond the pilot or grant period?			
Can the job be measured and tracked?			

B. Worked example: Renewable Energy and Productive Use of Energy

Sector focus

Renewable energy and productive use of energy covers solar, mini-grids, clean cooking, biogas, battery systems, energy efficiency, productive-use appliances and rural energy enterprise models. The toolkit's renewable energy module already identifies solar technicians, mini-grid operators, biogas masons, clean cooking manufacturers, briquette producers, energy auditors, battery maintenance workers, carbon project officers and productive-use equipment technicians as priority job opportunities.

STEP 1: Define the value chain

Value-chain stage	Main activities	Existing actors	Jobs already present	New or upgraded jobs possible
Planning and design	<i>Energy needs assessment, site selection, system design, productive-use planning</i>	<i>Energy agencies, counties, developers, consultants</i>	<i>Energy officers, engineers, project developers</i>	<i>Community energy planners, productive-use assessors, carbon project officers</i>
Inputs and equipment	<i>Import, assembly, distribution and storage of panels, batteries, stoves, biogas parts and appliances</i>	<i>Importers, distributors, SMEs, manufacturers</i>	<i>Sales agents, logistics workers, assemblers</i>	<i>Local assembly workers, quality-control technicians, spare-parts suppliers</i>
Installation / production	<i>Solar installation, mini-grid set-up, biogas construction, clean cooking distribution</i>	<i>Solar firms, technicians, TVET graduates, local artisans</i>	<i>Solar installers, biogas masons, stove distributors</i>	<i>Certified installers, women clean-cooking agents, youth installation teams</i>

Value-chain stage	Main activities	Existing actors	Jobs already present	New or upgraded jobs possible
Operations and maintenance	<i>Repairs, servicing, battery maintenance, system monitoring, customer support</i>	<i>Energy companies, SMEs, technicians, PAYGo firms</i>	<i>Maintenance technicians, call-centre agents, field agents</i>	<i>Battery technicians, mini-grid operators, productive-use equipment technicians</i>
Distribution and sales	<i>PAYGo sales, appliance leasing, clean cooking sales, customer onboarding</i>	<i>Energy SMEs, SACCOs, cooperatives, agents</i>	<i>Sales agents, distributors, customer agents</i>	<i>Rural energy entrepreneurs, cooperative energy agents, women-led distribution businesses</i>
Productive use / end use	<i>Solar irrigation, cold storage, milling, drying, agro-processing, refrigeration</i>	<i>Farmers, cooperatives, SMEs, processors</i>	<i>Pump operators, processors, cold-room attendants</i>	<i>Solar irrigation technicians, cold-chain operators, agro-processing equipment operators</i>
Enabling services	<i>Training, finance, insurance, carbon finance, standards, data and compliance</i>	<i>TVETs, banks, carbon developers, regulators</i>	<i>Trainers, loan officers, compliance staff</i>	<i>Energy auditors, green finance officers, MRV officers, certification assessors</i>

STEP 2: Map job opportunities

Job opportunity	Value - chain stage	Skill level	Likely pathway	Target group	Access constraints	Priority action
Solar installation technician	Installation / construction	Technical	Wage job, apprenticeship, SME	Youth, TVET graduates, women technicians	Certification gaps, tools, work-place-ment access	Link TVET training to employer placements and toolkits.
Mini-grid operator	Operations and maintenance	Technical	Wage job, cooperative, community enterprise	Rural youth, local technicians	Limited local technical capacity, weak after-sales systems	Train local operators and require local staffing in mini-grid contracts.
Biogas mason / technician	Installation / construction	Technical	Self-employment, SME, cooperative	Rural youth, artisans, farmers	Low awareness, lack of certification, limited finance for clients	Develop modular biogas training and connect technicians to carbon or subsidy programmes.
Clean cooking distributor	Distribution and sales	Enterprise	Micro-enterprise, agent network, cooperative	Women, youth, community groups	Working capital, mobility, market trust	Provide stock finance, sales training and producer-backed agency contracts.
Battery maintenance worker	Operations and maintenance	Technical	Wage job, SME service provider	Youth, TVET graduates	Safety risks, lack of standards, limited specialised training	Create battery safety and maintenance certification.

Job opportunity	Value - chain stage	Skill level	Likely pathway	Target group	Access constraints	Priority action
<i>Productive-use equipment technician</i>	<i>Productive use / end use</i>	<i>Technical</i>	<i>Wage job, SME, cooperative service</i>	<i>Rural youth, agricultural service providers</i>	<i>Equipment cost, weak local repair systems</i>	<i>Pair appliance deployment with local technician training.</i>
<i>Rural energy entrepreneur</i>	<i>Distribution and productive use</i>	<i>Enterprise</i>	<i>SME, cooperative, SACCO-backed enterprise</i>	<i>Youth, women, farmer groups</i>	<i>Asset finance, weak business skills, low purchasing power</i>	<i>Link PAY-Go, SACCO finance and business development support.</i>
<i>Energy auditor</i>	<i>Enabling services</i>	<i>Advanced</i>	<i>Consultancy, wage job, public programme</i>	<i>Engineers, advanced TVET/ university graduates</i>	<i>Limited demand and certification</i>	<i>Build certification and public procurement demand for energy audits.</i>
<i>Carbon project officer</i>	<i>Planning / enabling services</i>	<i>Advanced</i>	<i>Wage job, project developer, NGO</i>	<i>Graduates, community organisations</i>	<i>Technical MRV skills, market complexity</i>	<i>Train officers in MRV, safeguards and community benefit tracking.</i>

STEP 3: Map skills and certification needs

Job opportunity	Core skills required	Training route	Certification route	Work-placement option
Solar installation technician	Electrical basics, installation, safety, troubleshooting, customer service	TVET short course + apprenticeship	Modular solar PV certificate	Solar company or county energy project
Mini-grid operator	System monitoring, basic repairs, metering, customer support, safety	TVET + employer training	Mini-grid operations certificate	Mini-grid developer or cooperative
Biogas mason / technician	Masonry, biodigester construction, plumbing, maintenance, user training	Artisan training + recognition of prior learning	Biogas technician certificate	Biogas programme or rural SME
Clean cooking distributor	Product knowledge, sales, stock management, customer education, basic finance	Short enterprise course	Enterprise participation certificate	Clean cooking producer or distributor
Battery maintenance worker	Battery safety, diagnostics, storage, repair protocols, disposal rules	Technical course + employer placement	Battery handling and maintenance certificate	E-mobility or solar company

Job opportunity	Core skills required	Training route	Certification route	Work-placement option
<i>Productive-use equipment technician</i>	<i>Pump, cold-room or processing equipment servicing; safety; user support</i>	<i>TVET + supplier training</i>	<i>Equipment-specific certificate</i>	<i>Appliance supplier, cooperative, processor</i>
<i>Rural energy entrepreneur</i>	<i>Business planning, PAYGo sales, bookkeeping, after-sales, customer care</i>	<i>Enterprise bootcamp + mentorship</i>	<i>Enterprise readiness certificate</i>	<i>SACCO, cooperative or PAYGo company</i>
<i>Energy auditor</i>	<i>Energy assessment, efficiency calculations, reporting, standards</i>	<i>Advanced technical course</i>	<i>Energy audit certification</i>	<i>Public buildings, SMEs, industry</i>
<i>Carbon project officer</i>	<i>MRV, community engagement, benefit tracking, data collection</i>	<i>Specialist short course</i>	<i>MRV / carbon project certificate</i>	<i>Carbon project developer or NGO</i>

STEP 4: Finance needs map

Job or enterprise opportunity	Finance need	Suitable instrument	Likely financier	Revenue source
<i>Solar technician teams</i>	<i>Tools, safety gear, transport, working capital</i>	<i>Tool grants, youth enterprise loans, SACCO finance</i>	<i>Donor programme, SACCO, youth fund, employer</i>	<i>Installation fees, maintenance contracts</i>

Job or enterprise opportunity	Finance need	Suitable instrument	Likely financier	Revenue source
<i>Mini-grid local operators</i>	<i>Training, equipment, operating systems</i>	<i>Developer obligation, grant-funded training, service contracts</i>	<i>Mini-grid developer, public agency, donor</i>	<i>Operator salary, service fee</i>
<i>Biogas technicians</i>	<i>Tools, demonstration units, client finance</i>	<i>Carbon finance, concessional loans, results-based finance</i>	<i>Carbon project developer, climate fund, MFI</i>	<i>Construction fees, maintenance fees</i>
<i>Clean cooking distributors</i>	<i>Stock, transport, sales materials</i>	<i>Working capital, PAYGo, producer credit</i>	<i>Manufacturer, MFI, SACCO</i>	<i>Stove sales, commission, after-sales</i>
<i>Battery maintenance workers</i>	<i>Tools, safety equipment, specialised training</i>	<i>Employer finance, technical training grants</i>	<i>Battery company, TVET programme, donor</i>	<i>Maintenance fees, wage income</i>
<i>Productive-use technicians</i>	<i>Tools, spare parts, supplier training</i>	<i>Supplier credit, SME working capital</i>	<i>Appliance company, bank, cooperative</i>	<i>Repair fees, service contracts</i>
<i>Rural energy entrepreneurs</i>	<i>Product stock, appliances, business support</i>	<i>PAYGo finance, SACCO loans, guarantees</i>	<i>SACCO, bank, PAYGo company</i>	<i>Product sales, leasing fees, service income</i>
<i>Energy auditors</i>	<i>Certification, equipment, market access</i>	<i>Professional training finance, public procurement</i>	<i>Government, firms, donor</i>	<i>Audit fees, consultancy contracts</i>
<i>Carbon project officers</i>	<i>Training, data tools, field operations</i>	<i>Project preparation grant, carbon revenue</i>	<i>Carbon developer, conservation fund</i>	<i>Project salary, MRV service fees</i>

STEP 5: Apply inclusion and viability test

Test question	Assessment for renewable energy / PUE	Required adjustment
Can youth enter this opportunity without high upfront capital?	<i>Partly. Technical roles require tools, certification and placements; enterprise roles need stock or asset finance.</i>	<i>Bundle training with toolkits, apprenticeship, PAYGo finance or SACCO-backed working capital.</i>
Can women access the training, finance, assets and work sites required?	<i>Partly. Clean cooking and distribution pathways are more accessible; technical roles require intentional recruitment and safe training environments.</i>	<i>Set women's enrolment targets, provide mentorship, childcare-sensitive schedules and employer placement commitments.</i>
Can informal workers or community actors participate safely and fairly?	<i>Yes, especially as artisans, distributors, local operators and enterprise agents, but safety and certification gaps remain.</i>	<i>Use recognition of prior learning, safety training and cooperative contracting.</i>
Is there a clear buyer, employer, customer or revenue source?	<i>Stronger where there are mini-grid operators, PAYGo firms, clean cooking companies, cooperatives and productive-use customers.</i>	<i>Require each mapped opportunity to identify an employer, customer base or offtake route.</i>
Is the job likely to last beyond the pilot or grant period?	<i>Higher where revenue comes from maintenance, leasing, sales, productive-use services or carbon income.</i>	<i>Prioritise opportunities with recurring revenue, after-sales demand and local enterprise models.</i>
Can the job be measured and tracked?	<i>Yes, if training providers, employers, SACCOs and energy firms report consistently.</i>	<i>Track jobs created, jobs sustained, income change, certification, enterprise survival and gender/youth participation.</i>

C. Output summary for the toolkit user

Highest-potential job pathway	Why it matters	Minimum design requirement
Solar installation and maintenance teams	High demand across decentralised energy, public facilities, businesses and households.	Training must include certification, tools and employer placement.
Clean cooking distribution enterprises	Strong women and youth enterprise pathway with community health and climate benefits.	Stock finance and producer-backed contracts are essential.
Productive-use equipment technicians	Links energy access directly to agriculture, food systems, cold storage and rural income.	Appliance deployment must include local repair capacity.
Mini-grid local operators	Keeps value in the community and improves long-term system reliability.	Local staffing should be built into procurement and concession contracts.
Biogas technicians and masons	Creates rural artisan work linked to clean energy, waste use and carbon finance.	Certification and demand-side finance are needed.
Energy auditors and carbon project officers	Builds advanced jobs in compliance, data, MRV and climate finance.	Requires specialist training and clear market demand.

D. Minimum indicators to carry into the MEL framework

Indicator	Disaggregation
Number of renewable energy jobs created or upgraded	Sex, age, location, occupation, wage/self-employment
Number of workers trained and certified	Skill level, institution, gender, age
Number of apprentices placed with employers	Sector segment, employer type, completion status

Indicator	Disaggregation
Number of youth/women-led energy enterprises supported	Enterprise type, location, survival at 12 months
Amount of finance accessed by workers or enterprises	Instrument, beneficiary type, value-chain stage
Number of productive-use assets deployed	Asset type, user group, business model
Number of maintenance contracts or service agreements signed	Actor type, duration, location
Income change for supported workers or entrepreneurs	Gender, age, occupation, baseline/endline
Energy access or productive-use outcome	Systems installed, uptime, users reached, enterprises served
Green outcome	Emissions avoided, clean energy generated, clean cooking units adopted, diesel displaced

This mapping should be completed before training, financing or enterprise support is designed. A green jobs programme should only train people for roles that have a clear market, employer, customer base, revenue model or public delivery pathway. For renewable energy and productive use, the strongest opportunities are those that combine technical skills, local maintenance, enterprise finance and productive use in agriculture, food systems, small industry and community services.

TOOL 3: Green Jobs Finance Readiness Checklist

1. Purpose

This tool helps users assess whether a green jobs opportunity, enterprise model or sector intervention is ready to absorb finance.

It answers five practical questions:

Question	What the tool checks
What is being financed?	Worker, enterprise, cooperative, asset, infrastructure, training or market system.

Question	What the tool checks
Who needs the finance?	Youth, women, informal workers, SMEs, SACCOs, developers, TVETs or public institutions.
What type of finance fits?	Grant, working capital, asset finance, guarantee, concessional loan, procurement, carbon finance or blended finance.
What jobs will result?	New jobs, upgraded jobs, formalised informal work, apprenticeships, enterprise jobs or maintenance roles.
What reduces risk?	Contracts, offtake, subsidies, guarantees, insurance, standards, data and public policy support.
Weak data score	Establish a minimum viable data system before scaling investment.

Use this tool after the Green Jobs Opportunity Mapping Template. The opportunity map shows where jobs exist; this tool tests whether those opportunities can be financed.

2. When to use this tool

Use this tool when preparing a green jobs programme, reviewing an enterprise pipeline, assessing whether a sector is investment-ready, designing a finance window, or determining which opportunities should receive grants, loans, guarantees, procurement support or project preparation.

3. Finance decision tree

Decision question	If yes	If no
Is there a clear revenue source?	Assess commercial or blended finance options.	Use grant, subsidy or project preparation support first.
Does the beneficiary have contracts, customers or offtake?	Consider working capital, asset finance or guarantees.	Build market linkages before financing scale.
Is the finance need mainly for tools, stock or small equipment?	Use microfinance, SACCO finance, working capital or tool grants.	Assess whether the need is infrastructure, training or project preparation.
Is the finance need for expensive assets?	Consider leasing, PAYGo, asset finance, guarantees or concessional debt.	Use smaller enterprise finance instruments.

Decision question	If yes	If no
Is the finance need for public or shared infrastructure?	Consider PPPs, concessional debt, green bonds or project preparation facilities.	Use enterprise-level finance.
Are youth, women or informal workers the primary users?	Include flexible collateral, group finance, guarantees and technical assistance.	Standard finance may be sufficient, but inclusion targets should still apply.
Will finance create or improve jobs?	Proceed to jobs-linked finance assessment.	Redesign the investment or exclude it from green jobs financing.

A. Blank finance readiness checklist

Score each area from 1 to 4.

Score	Meaning
1 – Weak	Not ready for finance; foundational design gaps remain.
2 – Emerging	Potential exists, but major risks need to be addressed.
3 – Developing	Finance-ready with targeted technical assistance or risk reduction.
4 – Strong	Ready for financing, scale or investment structuring.

Finance readiness assessment

Area	Question	Score	Evidence / notes	Required action
Revenue model	Is there a clear and realistic source of income or repayment?			
Market demand	Is there evidence of customers, buyers, users, contracts or offtake?			

Area	Question	Score	Evidence / notes	Required action
Beneficiary readiness	Can the enterprise, worker group or institution manage finance responsibly?			
Job linkage	Are the jobs to be created, sustained or upgraded clearly identified?			
Inclusion	Can youth, women, informal workers or community enterprises access the finance?			
Risk reduction	Are guarantees, subsidies, contracts, insurance, standards or technical assistance available?			
Green outcome	Is the climate or environmental outcome measurable?			
Data and reporting	Can jobs, finance use, repayment and outcomes be tracked?			

Total score: ___ / 32

Readiness interpretation

Total score	Readiness level	Recommended response
0–10	Low finance readiness	Provide grants, diagnostics, project preparation and market-building support first.
11–20	Moderate finance readiness	Provide technical assistance, guarantees, offtake support or blended finance.

Total score	Readiness level	Recommended response
21–32	High finance readiness	Proceed to financing, with jobs, inclusion and green outcome conditions.

B. Matching finance instruments to need

Finance need	Suitable instrument	Best suited to	Notes
Early-stage concept or pilot	Grant	Youth enterprises, women-led SMEs, innovation pilots, community groups	Should be time-bound and linked to market validation.
Business formalisation and records	Technical assistance grant	Informal enterprises, cooperatives, SMEs	Helps enterprises become investable.
Tools, stock and small equipment	Working capital, tool grants, SACCO finance	Technicians, distributors, artisans, micro-enterprises	Useful where repayment can come from sales or service fees.
Productive assets	Asset finance, leasing, PAYGo	Riders, farmers, SMEs, cooperatives	Works where the asset generates income.
Higher-risk lending	Guarantee or first-loss facility	Banks, SACCOs, MFIs lending to SMEs or youth/women	Reduces perceived risk.
Shared infrastructure	Concessional debt, PPP finance, project preparation facility	Municipalities, developers, industrial parks, charging networks	Requires contracts, demand and governance clarity.
Large infrastructure	Green bond, concessional loan, blended finance	Public agencies, utilities, large developers	Should include local jobs and procurement conditions.
Revenue tied to verified outcomes	Results-based finance, carbon finance	Clean cooking, biogas, renewable energy, restoration	Requires MRV and safeguards.

Finance need	Suitable instrument	Best suited to	Notes
Market creation	Public procurement, offtake agreements	SMEs, cooperatives, local manufacturers	Reduces demand risk.
Worker or cooperative ownership	SACCOs, cooperative finance, group lending	Informal workers, riders, farmers, women groups	Works best with contracts and predictable income.

C. Worked example: E-Mobility and Battery-as-a-Service

Sector focus

E-mobility includes e-motorcycles, e-buses, battery leasing, charging and swapping infrastructure, repair and maintenance, fleet operations, rider cooperatives, assembly, data systems and financing models. The toolkit identifies e-mobility as a sector with strong job potential but also high costs, fragmented ecosystem development, weak standards, tax constraints and the need to support informal transport workers through structured transition pathways.

Battery-as-a-Service is used here because it lowers the upfront cost of electric vehicles by separating the vehicle from the battery. Riders or fleet operators pay to swap, lease or subscribe to battery access instead of buying the full battery upfront.

Finance readiness assessment

Area	Question	Score	Evidence / notes	Required action
Revenue model	Is there a clear and realistic source of income or repayment?	3	<i>Revenue can come from battery swap fees, rider subscriptions, fleet contracts and charging services.</i>	<i>Test pricing against rider daily income and petrol-cost savings.</i>
Market demand	Is there evidence of customers, buyers, users, contracts or offtake?	3	<i>Demand is likely where motorcycle taxis, delivery riders and fleet operators have high fuel costs.</i>	<i>Secure rider groups, SACCOs or delivery companies before scale.</i>

Area	Question	Score	Evidence / notes	Required action
Beneficiary readiness	Can the enterprise, worker group or institution manage finance responsibly?	2	<i>Operators may be ready, but riders and informal transport workers often lack formal credit records.</i>	<i>Use SACCOs, rider groups, digital repayment histories and flexible collateral.</i>
Job linkage	Are the jobs to be created, sustained or upgraded clearly identified?	3	<i>Jobs include riders, battery swap attendants, EV mechanics, charging station operators, fleet managers and data officers.</i>	<i>Define direct, indirect and upgraded jobs before financing.</i>
Inclusion	Can youth, women, informal workers or community enterprises access the finance?	2	<i>Youth riders can benefit, but women's participation may be low without targeted design.</i>	<i>Ringfence women and youth access; include training, safety and asset-finance support.</i>
Risk reduction	Are guarantees, subsidies, contracts, insurance, standards or technical assistance available?	2	<i>Risk remains high due to battery cost, technology uncertainty, standards gaps and resale uncertainty.</i>	<i>Add guarantees, battery insurance, technical standards and maintenance contracts.</i>
Green outcome	Is the climate or environmental outcome measurable?	3	<i>Diesel/petrol displacement, battery use, kilometres travelled and emissions avoided can be tracked.</i>	<i>Require simple MRV through vehicle and battery data systems.</i>

Area	Question	Score	Evidence / notes	Required action
Data and reporting	Can jobs, finance use, repayment and outcomes be tracked?	3	Digital platforms can track battery swaps, payments, uptime and rider activity.	Add jobs, income and inclusion fields to the reporting dashboard.

Total score: 21 / 32

Finance structure for the worked example

Actor needing finance	Finance need	Suitable instrument	Risk issue	Risk reducer	Jobs linkage
E-motorcycle rider	Vehicle access, deposit, insurance, safety gear	Asset finance, lease-to-own, SACCO loan, PAYGo	Low collateral, irregular income	Rider group guarantee, SACCO repayment, insurance, flexible deposit	Rider income, formalised transport work
Battery company	Battery stock, charging systems, software	Concessional debt, equity, guarantee, blended finance	High upfront battery cost	First-loss guarantee, fleet contracts, technical standards	Battery technicians, swap attendants, data jobs
Charging / swapping operator	Site set-up, chargers, rent, staff	Asset finance, working capital, PPP support	Site viability and electricity cost	Location analysis, mini-grid link, tariff agreement	Charging station operators, maintenance workers
Rider SACCO / cooperative	Group asset finance, member onboarding	Guarantee, SACCO lending, technical assistance	Weak management systems	Cooperative governance training, digital repayment tracking	Cooperative managers, rider formalisation
TVET / training provider	EV repair curriculum, tools, trainers	Training grant, employer co-finance	Training may not lead to jobs	Employer placement agreement	EV mechanics, battery maintenance workers

Actor needing finance	Finance need	Suitable instrument	Risk issue	Risk reducer	Jobs linkage
Municipality / public agency	Charging sites, permits, safety standards	Project preparation, PPP, public infrastructure support	Permitting delays, unclear standards	Standardised permitting and land-use agreements	Local infrastructure and service jobs

Jobs-linked finance conditions

Any financing facility for e-mobility should include the following minimum conditions:

Condition	Requirement
Job targets	Define the number and type of jobs expected: riders, mechanics, charging operators, battery workers, trainers and fleet managers.
Job quality	Track income, safety equipment, contracts, working hours, insurance and access to social protection where possible.
Inclusion	Set practical targets for youth, women and informal transport workers.
Training link	Require certified training for mechanics, battery handlers and charging station operators.
Local enterprise participation	Prioritise local repair, maintenance, assembly, charging and service businesses.
Affordability	Ensure repayment, lease or swap fees do not undermine rider income.
Green outcome	Track fuel displacement, emissions avoided, kilometres travelled and battery lifecycle management.
Data reporting	Require regular reporting on jobs, users, repayments, asset performance and inclusion.

Finance decision for the worked example

Opportunity	Finance readiness	Recommended finance route	Why
Individual rider access to e-motorcycles	Moderate	Lease-to-own, PAYGo, SACCO loan with guarantee	Riders need low upfront cost and repayment linked to daily income.

Opportunity	Finance readiness	Recommended finance route	Why
Battery-as-a-Service platform	High, with risk protection	Blended finance, concessional debt, guarantee, equity	Strong revenue potential, but high asset cost and technology risk.
Charging / swapping stations	Moderate to high	Asset finance, PPP support, working capital	Viability depends on location, electricity access and user density.
EV mechanic training	Moderate	Training grant plus employer co-finance	Training should be linked to placement and maintenance contracts.
Rider cooperative model	Moderate	SACCO finance, guarantee, technical assistance	Good inclusion pathway if governance and repayment systems are strong.
Public charging infrastructure	Moderate	Project preparation, PPP, concessional finance	Needs clear permits, standards, land access and utilisation model.

Minimum indicators to carry into the MEL framework

Indicator	Disaggregation
Amount of finance mobilised for e-mobility	Instrument, financier, beneficiary type
Number of riders financed	Sex, age, location, informal/formal status
Number of direct jobs created	Occupation, employer type, location
Number of mechanics and technicians trained and certified	Sex, age, training provider
Number of charging or swapping stations operational	Location, ownership model

Indicator	Disaggregation
Number of youth- or women-led enterprises supported	Enterprise type, survival at 12 months
Average rider income before and after transition	Sex, age, location
Repayment performance	Instrument, beneficiary type
Fuel displaced or emissions avoided	Vehicle type, kilometres travelled
Battery safety and disposal compliance	Operator, location

E. Output summary for toolkit users

Finance-readiness finding	Implication for programme design
E-mobility creates jobs across riding, maintenance, charging, battery management, data and fleet services.	Finance should support the full ecosystem, not only vehicle purchase.
Battery-as-a-Service reduces upfront cost but shifts financing pressure to battery providers.	Blended finance and guarantees are needed for battery stock and infrastructure.
Riders need finance products that match daily income patterns.	SACCOs, PAYGo and lease-to-own models are more suitable than standard loans.
Technical jobs require standards and certification.	Finance for e-mobility should include training, tools and employer placement.
Inclusion will not happen automatically.	Youth, women and informal transport workers need targeted finance, training and safety measures.
Finance readiness depends on revenue certainty.	Rider contracts, fleet agreements, swap-fee data and utilisation rates should be confirmed before scale.

A green job opportunity is finance-ready when it has a clear revenue model, identifiable job outcomes, realistic beneficiaries, risk-reduction measures and measurable green impact. For e-mobility, financing should support the whole jobs ecosystem: riders, mechanics, battery workers, charging operators, cooperatives, local service enterprises and public infrastructure.

TOOL 4: Inclusion and Just Transition Screen

1. Purpose

This tool helps users check whether a green jobs intervention includes youth, women, informal workers and communities in practical economic terms: access to work, finance, assets, skills, protection, voice and benefit-sharing.

Use it before approving a programme, investment, pilot, training intervention or sector action plan.

A. Quick screening template

Score each area from 1 to 4.

Score	Meaning
0	Not addressed
1	Mentioned but weak
2	Partly addressed
3	Strongly addressed

Screen area	Key question	Score	Required improvement
Access to jobs	Are youth, women, informal workers or local communities clearly linked to specific jobs or enterprise roles?		
Access to skills	Are training, certification, apprenticeships or recognition of prior learning available to the target groups?		
Access to finance/assets	Can target groups access tools, equipment, working capital, land, vehicles, stock, technology or productive assets?		

Screen area	Key question	Score	Required improvement
Job quality and protection	Are income, safety, PPE, contracts, social protection, grievance channels or working conditions addressed?		
Voice and participation	Were affected groups involved in design, decision-making or implementation structures?		
Risk of exclusion/displacement	Could the intervention push out existing workers, raise entry barriers or concentrate benefits among better-capitalised actors?		
Community benefit	Where community resources are involved, are consent, local language engagement and benefit-sharing built in?		
Tracking and accountability	Will inclusion, job quality and benefit-sharing be monitored and publicly reported?		

Total score: ____ / 24

B. Interpretation

Total score	Readiness level	Recommended response
0–8	Weak	Do not proceed without redesign. Inclusion is mostly absent.
9–16	Moderate	Proceed only with specific corrective actions and safeguards.
17–24	Strong	Proceed, with monitoring of jobs, access, protection and benefits.

C. Minimum inclusion requirements

A green jobs intervention should not be considered ready unless it answers these five questions clearly:

Requirement	Minimum standard
Who benefits?	Target groups are named and linked to specific jobs, enterprises or income pathways.
How do they enter?	Entry route is clear: training, apprenticeship, contract, cooperative, SACCO, procurement, land access, asset finance or employment.
What protects them?	Safety, income risk, contracts, PPE, social protection or grievance channels are addressed.
What could go wrong?	Exclusion, displacement, elite capture, unsafe work or unpaid labour risks are identified.
How is it tracked?	Indicators include sex, age, formality status, income, job quality and benefit-sharing where relevant.
Finance readiness depends on revenue certainty.	Rider contracts, fleet agreements, swap-fee data and utilisation rates should be confirmed before scale.

Worked example: Informal waste workers in circularity systems

Screen area	Assessment	Score	Required improvement
Access to jobs	Informal waste workers are already active in collection, sorting and aggregation, but often outside formal municipal or EPR systems.	2	Register workers and link them to municipal, producer responsibility or recycling contracts.
Access to skills	Practical skills exist, but certification and progression pathways are limited.	1	Introduce recognition of prior learning and short modules on sorting, safety, e-waste handling and enterprise management.
Access to finance/assets	Workers often lack carts, PPE, storage, sorting space and working capital.	1	Provide group-based asset finance, SACCO links, equipment grants or EPR-funded tools.

Screen area	Assessment	Score	Required improvement
Job quality and protection	Exposure to unsafe waste, unstable income and lack of PPE remain major risks.	1	Make PPE, minimum safety standards and grievance channels mandatory in funded circularity projects.
Voice and participation	Workers are often discussed as beneficiaries, with limited representation in system design.	1	Include worker representatives in EPR, municipal waste and circular economy coordination structures.
Risk of exclusion/displacement	Formal waste contracts and mechanised systems can displace existing workers.	1	Require transition plans before private operators or new infrastructure replace informal recovery systems.
Community benefit	Benefit-sharing is rarely formalised in waste sites or circular infrastructure.	1	Require community engagement and local benefit plans for sorting centres, recycling hubs and waste sites.
Tracking and accountability	Jobs and recovery data are fragmented and rarely track worker protection.	1	Track number of workers registered, contracted, equipped, trained and earning improved income.

Total score: 9 / 24

Readiness level: Moderate, but weak on protection and worker voice.

Priority corrective actions

Priority	Action
1	Register informal waste workers and existing worker groups before formalising the system.
2	Link workers to contracts through municipalities, producer responsibility organisations, cooperatives or aggregators.
3	Provide PPE, safe sorting spaces, equipment and grievance channels as minimum conditions.

Priority	Action
4	Use recognition of prior learning so existing skills count toward certification.
5	Track income, safety, contracts, gender, age and worker retention, not only tonnes of waste recovered.

Minimum Indicators

Indicator	Disaggregation
Number of informal workers registered	Sex, age, location
Number linked to contracts or cooperatives	Worker type, municipality
Number receiving PPE, tools or safe workspaces	Sex, age, role
Number trained or certified through prior learning	Occupation, provider
Change in average income	Sex, age, baseline/endline
Number of grievances raised and resolved	Issue type, resolution time

This screen keeps inclusion practical: no green jobs intervention should proceed on the basis of participation language alone. It must show how excluded groups enter, earn, stay safe, build assets and have a voice in the system.

TOOL 5: MEL Indicator and Accountability Tool

1. Purpose

This tool helps users track whether a green jobs intervention is delivering real employment, enterprise, inclusion, financing and environmental outcomes.

It is designed to avoid activity-only reporting. A programme should not only count people trained, projects launched or finance announced. It should track whether jobs are created, sustained, improved, financed, made safer and linked to measurable green outcomes.

2. Minimum indicator set

Area	Core indicator	Definition	Data source	Jobs linkage
Jobs created	Number of green jobs created	New paid work generated through the intervention	Sex, age, location, sector, occupation, wage/self-employment	Employer records, enterprise reports, surveys
Jobs sustained	Number of jobs sustained at 12 months	Jobs still active one year after support	Sex, age, sector, formality status	Follow-up survey, employer records
Jobs upgraded	Number of existing jobs improved	Existing work made safer, better paid, formalised or more productive	Informal/formal, sex, age, worker type	Worker survey, contracts, income records
Job quality	Share of workers with improved job conditions	Workers with better income, PPE, contracts, safer conditions or social protection	Sex, age, occupation, worker type	Worker survey, employer reports
Skills	Number trained and certified	Workers completing relevant training and receiving certification or recognition of prior learning	Sex, age, course, provider, certification type	TVET/training records
Placement	Number placed into jobs, apprenticeships or enterprise pathways	Trainees linked to actual work or income opportunities	Sex, age, sector, pathway	Employer, TVET and programme records
Enterprise	Number of green SMEs/cooperatives supported	Enterprises receiving technical, financial, market or asset support	Ownership, sector, location, size	Programme records

Area	Core indicator	Definition	Data source	Jobs linkage
Enterprise survival	Share of supported enterprises active at 12 months	Enterprises still operating one year after support	Sector, ownership, finance received	Follow-up survey, business records
Finance	Amount of finance mobilised	Total finance accessed by workers, SMEs, cooperatives, public actors or projects	Instrument, beneficiary, sector	Finance partner reports
Finance access	Number of youth/women/informal actors accessing finance	Beneficiaries receiving loans, grants, guarantees, SACCO finance, asset finance or working capital	Sex, age, beneficiary type	Finance partner reports
Inclusion	Share of beneficiaries who are youth, women or informal workers	Participation of priority groups in jobs, training, finance and enterprise support	Sex, age, formality, disability where available	Programme records
Policy implementation	Number of policies, standards or regulations implemented	Policies moved from drafting to operational implementation	Sector, institution, level	Government reports, legal notices
Green outcome	Sector-specific environmental result	Waste recovered, clean energy generated, emissions reduced, land restored, water saved or pollution avoided	Sector, location	Technical reports, MRV data

Area	Core indicator	Definition	Data source	Jobs linkage
Community benefit	Community benefits delivered and verified	Benefits such as income, infrastructure, services, revenue-sharing or local contracts delivered to affected communities	Community, benefit type, sex/age where relevant	Community reports, project records
Accountability	Number of public reports or review meetings completed	Disclosure of progress, risks, grievances and corrective actions	Sector, institution, reporting period	MEL reports, meeting records

3. Indicator quality check

Before approving indicators, apply this quick test.

Test question	Yes / No	Required correction
Does the indicator measure an outcome, not only an activity?		
Can the indicator be disaggregated by sex, age and location?		
Can informal workers, self-employed workers and enterprise owners be captured?		
Is there a clear data source?		
Is someone responsible for collecting and verifying the data?		
Can the indicator be tracked at baseline, midline and endline?		
Does the indicator link jobs to a green outcome?		

4. Simple reporting dashboard

Reporting area	Baseline	Target	Current result	Status	Corrective action
Jobs created				On track / delayed / off track	
Jobs sustained at 12 months					
Jobs upgraded or formalised					
Workers trained and certified					
Trainees placed into jobs or enterprise pathways					
Green SMEs/cooperatives supported					
Finance mobilised					
Youth beneficiaries					
Women beneficiaries					
Informal workers reached					
Green outcome achieved					
Community benefits delivered					

Worked example: Circularity and waste systems

Intervention example

A city-level circularity programme supports informal waste workers, recyclers and youth/women-led circular SMEs through worker registration, EPR-linked contracts, PPE, sorting infrastructure, skills certification, finance readiness support and recycled-product market development.

A. Completed indicator table

Area	Indicator	Example target	Data source
Jobs created	Number of new circular economy jobs created	500	Municipal contracts, SME reports
Jobs sustained	Number of circular jobs active after 12 months	350	Follow-up worker and enterprise survey
Jobs upgraded	Number of informal waste workers formalised or contracted	1,000	Worker registry, contracts, cooperative records
Job quality	Share of registered workers with PPE and safe sorting access	80%	Site inspections, worker survey
Skills	Number of workers certified in sorting, recycling, composting or e-waste handling	600	TVET/provider records
Placement	Number of trained workers linked to contracts, cooperatives or SMEs	450	Programme records, cooperative records
Enterprise	Number of circular SMEs/ cooperatives supported	80	Incubator and programme records
Enterprise survival	Share of supported circular SMEs active after 12 months	70%	Business follow-up survey
Finance	Amount of finance mobilised for circular enterprises	USD 1 million	Finance partner reports
Finance access	Number of youth/women/informal worker enterprises accessing finance	120	Finance partner and programme records
Inclusion	Share of beneficiaries who are youth or women	60%	Beneficiary database
Policy implementation	EPR-linked municipal contracts implemented	5 contracts	Municipality / PRO records
Green outcome	Tonnes of waste diverted from landfill	20,000 tonnes	Weighbridge, recycler, municipality reports

Area	Indicator	Example target	Data source
Community benefit	Number of safe sorting sites or community recycling hubs operational	10	Site verification
Accountability	Public circular jobs and waste recovery reports issued	2 per year	Programme dashboard

B. Accountability structure

Actor	Accountability role
Municipality / local authority	Confirms contracts, worker registration, sorting sites and waste data.
Producer Responsibility Organisation	Reports EPR financing, collection volumes and contracted actors.
Worker cooperatives / associations	Verifies worker participation, safety, income and grievances.
Recyclers / circular SMEs	Reports jobs, volumes processed, revenue and enterprise survival.
TVET / training providers	Reports training, certification and placement.
Finance partners	Reports finance disbursed, beneficiary type and repayment performance.
Programme MEL team	Consolidates data, verifies results and publishes a dashboard.
Community representatives	Reviews benefits, grievances and local-level accountability.

C. Reporting frequency

Data type	Frequency
Jobs created, workers registered, finance disbursed	Quarterly
Training, certification and placement	Quarterly

Data type	Frequency
Waste recovered, recycled or composted	Monthly or quarterly
Income, job quality and worker protection	Every 6 months
Enterprise survival	12 months after support
Community benefits and grievances	Quarterly
Public accountability report	Twice per year
Community representatives	Reviews benefits, grievances and local-level accountability.

D. Risks to mitigate

Risk	Detail	Corrective action
Many people trained, few placed	Training is disconnected from jobs	Require employer, cooperative or contract pathways before new training rounds.
Finance mobilised but few SMEs survive	Finance does not match enterprise needs	Add business support, offtake agreements and working-capital design.
Waste recovered increases but worker conditions remain poor	Green outcome is improving without decent work	Add PPE, contracts, income tracking and safety compliance.
Youth/women numbers are high but concentrated in low-paid roles	Inclusion is numerical, not economic	Track role type, income, ownership and progression.
Informal workers disappear from the system after formalisation	Formalisation is causing displacement	Require worker transition plans and representation in contracting.
Environmental data exists but jobs data is weak	Programme cannot prove green jobs impact	Add jobs reporting to all contracts and partner agreements.

Minimum reporting statement

Each reporting period should include a short statement answering five questions:

Question	Response
How many jobs were created, sustained or upgraded?	
Who accessed those jobs?	
What finance or support enabled them?	
What green outcome was achieved?	
What corrective action is needed next?	
Community benefits and grievances	
Public accountability report	
Community representatives	

The MEL system should make the toolkit accountable for the full green jobs promise: work, income, skills, enterprise growth, inclusion, protection and environmental outcomes. Training numbers, finance announcements and policy commitments should only count when they can be linked to jobs and measurable change.

This toolkit will be tabled at the GreenWorks for Africa Forum for participant review, validation and refinement to ensure that the final version reflects the priorities, evidence and implementation realities identified across the Forum process.



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