



# Decent work in emerging circular supply chains and green industries

## Lessons from the SMEP Programme

# Summary

It is often assumed that a sector, supply chain or employer contributing positively towards environmental goals will contribute equally towards social goals, including providing decent work. Sadly, that is not always the case. As the world seeks to implement a just transition towards a sustainable future, it is vital to improve working conditions in emerging circular supply chains and green industries.

Work in these industries can be highly hazardous. However, many hazards are not yet well understood. Regular and thorough worker-centred and gender-responsive risk assessment is essential, and the increasing effects of climate change on workers should be integrated throughout. The stigma of working in contaminated environments also needs to be addressed – technologies that reduce workers' contact with hazardous materials are urgently needed.

Low pay is a reality for many workers in circular supply chains, as are pay gaps that reinforce existing socioeconomic inequalities. In addition, the sector often relies on workers in informal employment, who are more likely to be women and from at-risk groups. Organisations working in circular supply chains and green industries need to understand the dynamics and challenges of informal work in their local context.

Trade unions and other workers' organisations play key roles in securing workers' rights. Businesses should engage with them proactively: collaboration can strengthen organisational development and enable social dialogue to address issues before they escalate.

## Key recommendations

- 1 Start the conversation: normalising decent work in circular supply chains and green industries is an important first step.** Many businesses in these emerging sectors have not yet engaged with these issues. Raising awareness and building basic understanding is a necessary foundation for practical change.
- 2 In the short-term, use worker-centred gender-responsive risk assessment to prioritise achievable, low cost, tangible changes that make a positive difference for workers.** This can build trust and management buy-in for longer-term and more challenging changes. Occupational health and safety (OHS) is often an effective starting point.
- 3 Bring together businesses, worker organisations, trade unions, civil society and government to share challenges and good practice** on decent work in emerging circular supply chains and green industries, including on key issues around OHS, gender and social inclusion, wage levels and informal work.

# About the SMEP Programme

The **Sustainable Manufacturing and Environmental Pollution (SMEP)** Programme aims to address the environmental and human health impacts of the manufacturing sector and plastics pollution in sub-Saharan Africa and South Asia.

SMEP works with businesses, NGOs and universities active in supply chains of plastics, organic waste, textiles and apparel, tanneries and leather, and used lead acid batteries.

This **series of three briefings** explains key lessons learnt by SMEP on supporting decent work. The briefings aim to provide practice-orientated recommendations to other actors working in these sectors and beyond.

The briefings focus on the following topics.

Enabling and supporting decent work in MSMEs

Decent work for all: Reaching workers in informal employment

Decent work in emerging circular supply chains and green industries

Photo by: Lorraine Dimairho, [SouthSouthNorth](#)



# Lessons from the SMEP Programme

## Introduction

Governments and businesses are increasingly using circular economy principles to drive progress towards [Sustainable Development Goal 12](#): Ensure sustainable consumption and production patterns. A circular economy is one where “products and materials are kept in circulation for as long as possible, and waste and resource use are minimised” ([EC 2025](#)). Circular supply chains and green industries play a critical role in this.

It is sometimes assumed that sectors, supply chains or employers that contribute positively towards environmental goals will also contribute positively towards social goals, including providing decent work. Sadly, that is not always the case. Working conditions in these industries vary considerably.

Most firms within circular supply chains and green industries are micro, small and medium-sized enterprises (MSMEs); recommendations on how to engage and support them to improve working conditions can be found in [our briefing on MSMEs](#). As these firms scale and inspire new entrants in the sector, investors, donors, partner organisations and supply chain actors must embed the concepts of decent work and workers’ rights.

As the world seeks to implement a [just transition](#) towards a viable, sustainable future, the experience of SMEP provides valuable lessons on how to support decent work in these emerging industries from the outset.

### Employment in the circular economy

- ▶ Globally, **121–142 million people** are employed in the circular economy (excluding the agriculture sector) – around 5.0–5.8% of global employment.
- ▶ This includes at least **65.2 million people** employed in repair and maintenance, and at least **11 million people** in waste-related work.
- ▶ Women account for **26%** of circular economy workers.
- ▶ **52%** of all circular economy employment is informal ([Circle Economy et al., 2025](#)).

## Sustainable Development Goals

**Decent work** is reflected in [SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all](#).

**Circular supply chains** are reflected in [SDG12: Ensure sustainable consumption and production patterns](#).

# Understanding the fundamentals

## 1. Get OHS right from the start

Occupational health and safety (OHS) risks in circular supply chains and green manufacturing vary by workplace, roles, materials, equipment and working conditions. However, these environments often involve heavy machinery, moving parts, sharp tools and heat, as well as exposure to hazardous materials such as dust, airborne pollutants, and liquid effluents. Inputs or outputs may be flammable, and workplaces are frequently noisy, dirty and dusty.

It is essential to build understanding of workers' [fundamental right to a safe and healthy working environment](#), and integrate regular and thorough worker-centred risk assessment and action planning into business practices.

As explained in [our briefing on MSMEs](#), worker-centred risk assessment ensures hazard identification is informed by those who know the work best. This is particularly important in new and emerging industries where hazards may not yet be widely documented.

## 2. Ensure no worker's experience goes unseen

As discussed in [our briefing on MSMEs](#), worker-centred tools and processes, such as the International Labour Organisation's (ILO) [five-step guide](#), are essential for understanding the specific hazards faced by women, migrant workers and others whose experiences are often overlooked. They help identify the experiences of different sections of the workplace, and ensure agreed actions are responsive to different needs. This is particularly important in circular supply chains where workforces may include multiple different groups and risks are poorly understood.

Hazards in roles more commonly held by women may be less obvious to an external observer. For example, long hours spent standing or sitting doing intricate and dextrous tasks such as sorting and grading can result in musculoskeletal impacts and eye strain. Workers from lower socio-economic groups and migrants may struggle to read safety information and signage, and may be less confident to seek support due to lower levels of literacy. Safety information should be available in different formats, with clear visual explanations, and sometimes in different languages.

Gender-based violence and harassment is a reality in many workplaces, including those with strong environmental credentials. [ILO convention 190](#) requires it to be integrated into OHS risk assessment. Addressing it requires trust, a safety culture and genuine collaboration between management and workers, particularly women and other at-risk workers.

### 3. Don't overlook the most serious risks: forced labour and child labour

The combination of high levels of informal employment, low pay, high participation of at-risk workers, and the shame and stigma attached to some jobs means that [forced labour](#) is a high risk in the waste management and recycling sector. [Child labour](#) is also a high risk, particularly in waste-picking, which provides material for many recycling businesses ([ILO 2025](#)). These severe human rights abuses are often symptoms of deeper failures of governance, law enforcement and public service provision. Businesses operating in these supply chains cannot address these root causes on their own, but they can still take action if they are supported to understand the risks, establish safeguarding systems, and collaborate with trade unions, civil society and relevant government agencies.

### 4. Understand the implications of informal labour

Circular supply chains and green industries often rely on workers employed informally – that is, without written contracts, clear employment relationships, and clarity over pay, hours and working conditions ([Circle Economy et al., 2025](#)). Examples include seasonal workers in industries linked to agriculture, or waste pickers providing raw material to recycling businesses. The extent of formality and informality varies across sectors, geographies and types of business. As explained in [our briefing on informality](#), informal work can bring challenges around decent work, but any attempt to address these should do so sensitively, informed by workers' own priorities, and in ways that ensure changes do not introduce new barriers for the existing workforce.

Workers employed informally are more likely to be women and from at-risk groups, and this work may therefore reinforce other social and economic vulnerabilities. Organisations working in circular supply chains need to understand these dynamics and the specific drivers and risks for workers in their local context. Where appropriate, they should seek support and partnership with trade unions and local civil society organisations led by and for these groups.

### 5. Build in worker voice, agency and representation from the start

Freedom of association and collective bargaining are one of the [five fundamental principles and rights at work](#). They are also the enabling rights that allow workers to secure other rights. However, trade union membership is low in many circular businesses and green industries due to high levels of informal employment, a predominance of smaller enterprises, the newness of many industries and supply chains, and [global pressures on these rights](#).

Organisations working to support and grow these industries must see trade unions and other forms of workers' organisations as social partners. They can help ensure workers' right to decent work is upheld, develop workforce skills and knowledge that improve productivity and business resilience, and engage in social dialogue with employers to address issues proactively before they develop into workplace disputes. As explained in our [briefing on MSMEs](#), a pathway from worker voice → agency → representation can be a useful approach towards unionisation.

# Addressing specific risks

## 1. Don't ignore the basics – toilets!

Access to sanitation is a right recognised in national laws and international conventions such as [ILO convention 161](#). However, many workers across many industries lack access to even basic facilities. Sanitation must be integrated into workplace risk assessment, using worker-centred and gender-responsive tools to capture different needs and experiences.

Employers must ensure workers have access whenever needed to safe, clean and private toilet facilities, equipped with water and soap, with separate facilities for women and men where possible. Access to menstrual health products and disposal facilities is essential.

It can be challenging to provide adequate sanitation facilities for those working outdoors, such as in public spaces (e.g. waste collectors), on farms (e.g. harvesting or processing agricultural material), or in transportation (e.g. drivers). However, some businesses operating in circular supply chains and green industries have overcome these challenges. Examples include transporting portable toilets with workers in large outdoor settings, developing agreements with local organisations so workers can use their facilities, and influencing municipal government to improve public provision.

## 2. A changing climate means changing risks

Climate change is impacting the world of work. The ILO estimates that 70% of workers globally face climate change-related health risks, and 2.4 billion people are exposed to excessive heat on the job ([ILO 2024](#)). Many workers involved in circular supply chains and green industries work outdoors where there are risks from heat waves, prolonged sun exposure, heavy rain and flooding, and unpredictable weather. In indoor workplaces, rising temperatures also impact workers, particularly when machinery generates heat and in manual labour roles.

Regular worker-centred risk assessment is essential to identify and understand these hazards for different sections of the workforce, and to ensure actions are effective. Experience shows that many changes bring productivity benefits as well as improving working environments.

Employers may need to make changes to physical infrastructure, such as the provision of shaded or cooled areas, and ensure unrestricted access to cool water. They may need to adjust working hours, increase rest breaks and reduce the physical loads that workers carry. Workers increasingly cite discomfort at higher temperatures as a reason for not wearing personal protective equipment (PPE) consistently. Employers must provide suitable PPE for the changing conditions – it should be lightweight, light coloured and breathable – and all adjustments must be made in consultation with workers and their representatives.

### 3. Recognise and address stigma

Much of the essential work in circular supply chains and green industries is in dirty and contaminated environments, sometimes close to or in contact with hazardous material. For example, waste pickers collecting PET bottles from waterways may come into contact with raw sewage; workers sorting household waste at recycling facilities may have to remove rotting food waste and medical or sanitary waste items; and workers on agricultural sites may get covered in mud or dust, or come into contact with animal faeces. These daily realities mean that despite its increasing importance to the health of our planet and society, this work is often devalued or accompanied by stigma and shame. Some workers travel long distances to work in these jobs to avoid people in their communities knowing.

Organisations working in circular supply chains and green industries need to be aware of these realities, and must improve working conditions to reduce these hazards. Technologies that reduce workers' direct contact with hazardous materials are essential. As working conditions improve, so can community acceptance and recognition, as well as worker retention and productivity.

### 4. Fair pay is a foundation, not an aspiration

Many essential roles in circular supply chains are low paid, particularly in industries using widely available materials that would otherwise be considered waste, such as agricultural byproducts or discarded plastic packaging. However, workers are entitled to minimum wages set in law, and increasingly global firms expect workers in their supply chains to be paid living wages. But new businesses in circular supply chains and green industries often find it challenging to meet these requirements and expectations. Funders, investors, partner organisations and lead firms must collaborate with employers to ensure they can meet minimum wage requirements and progress towards living wages. This is essential for both legal compliance and to attract the workers needed for growth.

In addition, there is a risk that existing socioeconomic inequalities are reinforced within businesses operating in circular supply chains and green industries. Women-dominated roles such as sorting are often paid less than male-dominated loading and unloading roles, reinforcing gender pay gaps. Addressing these pay gaps requires careful awareness raising and sensitisation to prevent a backlash from male workers.

### 5. Be aware of vested interests

Waste management and recycling sectors can attract vested interests ranging from informal networks and non-transparent operators through to organised crime. Emerging circular supply chains and green industries that use waste as a raw material may disrupt these existing arrangements, which can create tensions and, in some cases, safety risks for the workers and businesses.

This must not be taken lightly. Funders, investors, partner organisations and lead firms must be aware of this risk in their local context and engage with relevant local and national government agencies to ensure the safety of workers and protect the long-term viability of emerging industries.

# Concluding remarks

For circular supply chains and green industries to fulfil their potential for local and global environmental and economic development, coordinated action is required by funders, investors, partner organisations, lead firms and MSMEs at multiple scales. They must support employers to use worker-centred risk assessment to create a proactive and preventative safety culture within workplaces.

Peer-to-peer learning within the sector is essential so emerging good practice can be shared between employers. Businesses should partner with trade unions and civil society organisations led by and for at-risk groups of workers that are under-represented in decision-making but over-represented in these workforces. And local and national governments need to understand the needs of these industries and implement support structures and incentives to enable them to thrive.

Circular supply chains and green industries have a critical role to play in the transition to an economy that operates within [planetary boundaries](#). However, it can only be a [just transition](#), as set-out in the [Paris climate change agreement](#), if the growing employment opportunities in this rapidly advancing sector uphold workers' right to decent work.



A worker sorts organic waste for processing into biochar.  
Photo by: Henrique Pacini, UN Trade and Development

## Case study: GIVO Africa and University of Warwick collaborating to achieve decent work in circular supply chains

**GIVO Africa** (Garbage In, Value Out) is a circular economy company operating in Nigeria and Liberia, working in partnership with the **University of Warwick**. It offers decentralised plastic waste management and recycling services and processes around 10 to 15 metric tonnes of plastic every month. GIVO's centres employ around 40 men and 45 women who collect, sort and process plastic waste. Their work involves lifting and carrying loads, repetitive tasks, exposure to unknown substances, and machinery-related hazards such as noise, vibration and microplastic inhalation.

When the partnership began, there were no OHS systems or workplace risk assessment procedures. Through the collaboration, GIVO introduced OHS and environmental policies, systems for incident and near-miss reporting, and PPE such as gloves, reflective vests, safety goggles and masks.

However, initial reports indicated no OHS incidents, which seemed unlikely given the nature of the work, and probably reflected limited engagement with decent work across the plastic recycling industry in the region. GIVO and the University of Warwick developed a health and safety toolkit to strengthen operational oversight and improve data capture. SMEP training on decent work, including on OHS and risk assessment, prompted them to engage more deeply in this area.

A structured and collaborative approach to risk identification and management was introduced. Work activities across the supply chain were systematically mapped, and workers were actively involved in identifying risks. A five-step risk assessment tool was adapted into a user-friendly Excel format, which enabled risks to be filtered by operational areas, improving visibility of responsibilities and follow-up actions. These changes increased openness, workers became more engaged in identifying and addressing risks, and a fuller set of risks and operational challenges were identified and actions agreed.

While further work is needed to ensure consistent implementation across all sites, the collaboration demonstrates how practical system improvements and trust-based partnerships can lead to more accurate risk identification and better protection for workers. In circular supply chains, improving decent work depends on making systems usable, building trust to reveal hidden risks, and actively involving workers in identifying and addressing challenges.



# Recommendations

## Recommendations for **businesses in circular supply chains and green industries:**

- ▶ **Conduct regular worker-centred risk assessment and action planning.** In emerging circular supply chains and green industries, hazards may not yet be well understood, making this even more important than in established sectors.
- ▶ **Use gender-responsive tools to understand and address hazards that affect women and other at-risk workers,** including those arising from repetitive tasks, sustained sitting or standing, and gender-based harassment.
- ▶ **Implement practical, worker- and context-informed improvements to working conditions,** ensuring changes do not inadvertently exclude the existing workforce from employment opportunities.

## Recommendations for **partner organisations:**

- ▶ **Embed decent work in business development programmes, including those where the primary aims are environmental.** Decent work deficits in workplaces and supply chains can rapidly undo environmental progress; a proactive, preventative approach is always more effective.
- ▶ **Advance technologies that reduce workers' contact with hazardous materials and improve safety and productivity,** while addressing the stigma associated with vital tasks in circular supply chains and green industries.
- ▶ **Work collaboratively with businesses and their associations, workers and their representatives to ensure minimum wage levels are met** and gender-based pay gaps are understood and closed.

## Recommendations for **large companies and lead firms** sourcing from circular supply chains and green manufacturers:

- ▶ **Map circular supply chains and conduct risk assessments to understand working conditions** for workers in formal and informal employment.
- ▶ **Use this analysis to support tangible improvements to working conditions that are informed by worker priorities and local context,** ensuring that changes do not exclude existing workers.

## Recommendations for **funders and investors:**

- ▶ **Integrate decent work into expectations and support on safeguarding,** including at design, set-up and implementation of programmes supporting circular supply chains and green industries.
- ▶ **Bring together businesses, worker organisations, trade unions, civil society and government to share challenges and good practice** on decent work in emerging circular supply chains and green industries, including on key issues around OHS, gender and social inclusion, wage levels and informal work.
- ▶ **Work proactively with local and national government and industry bodies to ensure the safety and security of workers** and the long-term viability of the businesses that employ them, particularly where circular supply chains intersect with unregulated or unlawful waste networks.



Sustainable Manufacturing and  
Environmental Pollution Programme

## About the SMEP Programme

The Sustainable Manufacturing and Environmental Pollution (SMEP) Programme is funded by UK International Development and implemented in partnership with UN Trade and Development (UNCTAD), who provide technical support. UK International Development has appointed a Project Management Agent (PMA) to manage programme delivery. The PMA comprises a consortium partnership between Pegasys and SouthSouthNorth.

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## About the Ethical Trading Initiative (ETI)

The Ethical Trading Initiative is the leading alliance of companies, trade unions and NGOs working together to advance human rights in global supply chains. ETI brings together diverse stakeholders to identify and address complex labour rights issues, promoting responsible business practices and respect for internationally recognised labour standards. ETI has been working with SMEP grantees to strengthen safeguarding practices and decent work outcomes. A Resource Pack on Decent work is [available here](#).



Ethical  
Trading  
Initiative

SOUTH  
SOUTH  
NORTH



Front cover: Workers recovering plastic waste from waterways. Photo by [RiverRecycle](#)