



STATE OF THE SDGs  
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## The opportunities and risks for achieving sustainable labour in a global value chain: A case study from Sri Lanka's apparel sector

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### Abstract

The Fourth Industrial Revolution (4IR), with its advanced technology, is creating new work options but also threatening job losses and job polarisation. The effects of the 4IR will impact the Sustainable Development Goals (SDGs), especially in achieving sustainable economic growth and decent work for all (SDG 8). This study used a qualitative approach complemented by secondary quantitative data. A multi-dimensional, SDG-based, sustainable-labour lens was used to form the conceptual framework that explored how automation impacts labour, particularly low-skilled workers operating within the global value chain (GVC) in the apparel industry in Sri Lanka.

The study found that automation so far, in this context, has not led to major displacement of low-skilled workers, but has narrowed the range of jobs while favouring high-skilled jobs. It also showed that the apparel sector uses GVCs to access technology and investment to gain economic benefits aligned with SDG 8. The GVCs forged synergies between skills development (SDG 4), and infrastructure and trade facilitation (SDGs 9 and 17). There were, however, some negative social consequences that affected job perception—mainly among women for routine manual work—due to the social stigma attached to jobs, higher stress levels, and a lack of flexibility. This was exacerbated with a lack of institutional support outside the workplace for housing, childcare, and training. Furthermore, the study points to gaps in the environmental domain, especially looking at global consumption (SDG 12).

**Keywords:** Global value chain, automation, apparel sector, sustainable labour, low skilled workers, technology upgrading, SDGs

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## Introduction

The Fourth Industrial Revolution (4IR), is transforming economic systems across the world and upending traditional understandings of work and skills. While technology can create new and innovative jobs, disruptions can also take place resulting in job polarisation—the loss of middle—skilled jobs—and job losses (Nedelkoska & Quintini, 2018; World Bank, 2017). Certain types of jobs—routine manual work rather than non-routine cognitive work—are expected to be more vulnerable to technological upgrading, such as automation. This could increase the gap between high-skill, high-paying jobs and low-skill, low-paying jobs (Foreign Affairs, 2016). Thus, the consequences of the 4IR could define how economic ventures take place, what sort of jobs are available, and the skilling required. But circumstances are highly contextual and depend mainly on how states, businesses, and communities respond. For developing countries, the 4IR offers opportunities to leapfrog, but also poses risks if institutional structures and the knowledge base are ill-prepared for this transition. Thus, it is vital to understand how the 4IR will impact different types of work, and the risks and costs involved.



**The 4IR is creating new work options but also threatening job losses.**

The 2030 Agenda recognises the pivotal role technology plays in achieving its objectives, but it does not adequately capture the interface with the technological or governance aspects of the 4IR. Thus, understanding the ramifications of the 4IR, particularly on the achievement of decent work for all and sustainable economic growth (SDG 8) requires further exploration.

This study examines automation as a consequence of the 4IR in a particular global value chain (GVC): the apparel industry in Sri Lanka. It examines the impact of the 4IR on workers and how this would be juxtaposed against the SDGs in a country context. It also aims to understand how the 4IR has moved along the value chain and impacted workers, especially unskilled or low-skilled workers.

The main purpose of this research is to identify the nature of the opportunities and risks facing low-skilled workers in an economy that is transitioning towards high-value, knowledge-intensive production in the manufacturing sector. The research also looks at three cross-cutting themes that are part of the overall framework of this study: the impact of global systemic issues on the implementation of the SDGs—in this case the 4IR and impact of automation; the inter-relationships among goals and targets that take place in the form of synergies and trade-offs across SDGs; and exploring the aspects of leaving no one behind. These are embedded in the sub questions of this research as follows:

- How have global systemic features such as automation been integrated into the apparel sector and thereby affected the demand and supply for different types of labour in Sri Lanka?

- What are the synergies and trade-offs among the SDGs that relate to sustainable labour in the context of the apparel sector in Sri Lanka?
- What are the benefits and risks associated with automation for different types of labour? Who is likely to be left behind?

The study looks at a GVC, the industrial upgrading that is taking place, and its impacts on workers through a sustainable development lens. It aims to improve understanding of the role of different institutions and local and global processes in order to ensure the provision of sustainable jobs.

### **Box 1. Progress in SDG implementation in Sri Lanka**

The Government of Sri Lanka (GoSL), initially, took a very proactive role in establishing an institutional process to implement the 2030 Agenda. This included setting up a Ministry for Sustainable Development that started its work with numerous consultations, an institutional mapping, and a road map for SDG implementation. A parliamentary oversight committee was also set up to work with various ministries. Neither the dedicated ministry nor the oversight committee function anymore. The Sustainable Development Council was set up through a separate act of parliament in October 2017 to develop a Sustainable Development Action Plan and Policy to oversee and manage the 2030 Agenda. This council was finally established in late 2018 and is housed within the Ministry of Environment. In the meantime, without the guidance of the Action Plan and Policy document, the GoSL has been attempting to incorporate the SDGs into national (ministry and departmental) and provincial planning and budgeting processes, through other planning agencies—the National Planning Department and Finance Commission.

Despite a commitment to implementing the SDGs, the lack of an overall vision and policy coherence within the highly centralised institutional framework stymies efforts to streamline work towards the SDGs. Hence, although different state entities are attempting to implement the SDGs, these efforts are not guided by an overall plan and remain fragmented. This is further exacerbated by the existent data gap (with only 46 indicators having data) as well as a lack of technical knowledge and a lack of proper process of implementation that links the national- and local-level plans. A more pertinent issue is the political volatility and unrest, as reflected in the October 2018 upheaval. Although the power balance was restored, the implementation of the 2030 Agenda was sidelined and its implementation was delayed.

## **Research methodology and results**

The study adopted a qualitative approach complemented with secondary quantitative analysis. As the broader framing of this research engages critically with the concept of sustainable labour, the characteristics of sustainable labour were defined first, using a multidimensional lens that also reflected the SDG targets

(column 1 in Table 1). This lens formed the basis for data collection, which was based on three interfaces to trace how automation as a global systemic concern filters down through the national context to the industry and then to the worker (column 2). Each level explored how characteristics of sustainable labour played out and how automation transmission took place. Since the levels were not purely linear or uni-directional, inter-dependencies within the interphases were expected.

At each interface, based on the cross cutting themes (column 3), three different analytical approaches and tools were used (column 4) to explore the different questions related to this study.

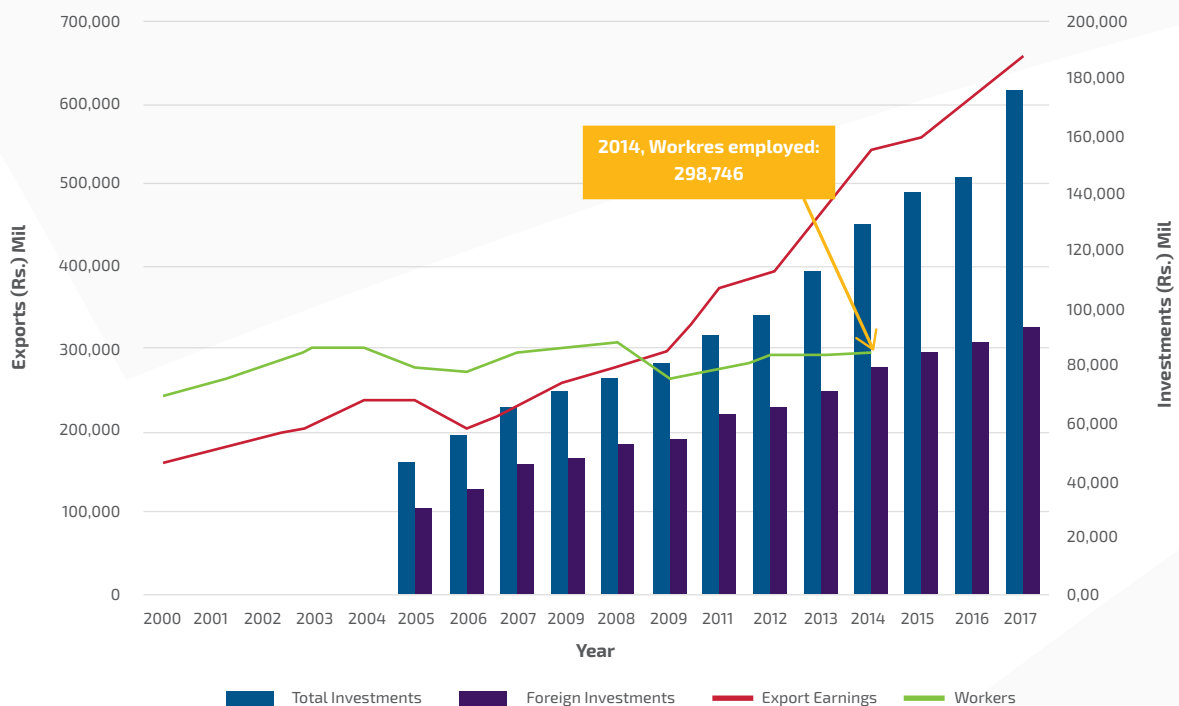
**Table 1. Conceptual framework**

SDG domains – sustainable labour characteristics	Interfaces for data collection	Cross-cutting themes for analysis	Analytical approach and tools
<p><b>Social</b> Equality of opportunity, treatment / dignity, education / skills, networks Related targets – 4.4, 4.3, 5.4, 8.5, 8.8</p>	<p>Global</p> <p>National industry</p> <p>Worker</p>	<p><b>Systemic concerns</b></p>	<ul style="list-style-type: none"> <li>• Literature reviews, 15 key person interviews (KPIs) for trend analysis (1978–2018)</li> <li>• Labour capital ratios using industry data to infer diffusion of technology</li> </ul>
<p><b>Environmental</b> Safe working environment, low carbon industries Related targets: 12.2 (8.4), 12.6</p>		<p><b>Synergies and trade-offs</b></p>	<ul style="list-style-type: none"> <li>• Policy and programme mapping for alignment</li> <li>• SDGs to SDGs interactions scoring with network analysis</li> </ul>
<p><b>Economic</b> Productivity, profitability, wages and income, Unemployment Related targets – 8.1, 8.2, 8.3, 8.5, 8.6</p>		<p><b>Leave No One Behind (LNOB)</b></p>	<ul style="list-style-type: none"> <li>• Life histories of workers (based on gender, age, location – 43 interviews)</li> </ul>
<p><b>Institutions</b> Representation, social safety nets/protection Trade/technology regulations /guidelines Related targets – 1.3, 10.4, 8.8 (also social) 17.11</p>			

Elaborated by the authors.

The government of Sri Lanka has introduced favourable trade and investment policies through the years to support the apparel sector's integration into the global value chain (Panditharathna & Jayatilake, 2017). This was further strengthened by the global trade environment that allowed the setting up of joint ventures, thus channelling foreign direct investment (FDI) to the sector. Emphasis was placed on low-volume, high-value exports, industrial upgrading, and research and development. The sector strategically used these to transform from a basic cut, make, and trim model to the original brand manufacturing model. Plus, due to fast fashion's constant demand for shorter lead times, automation has increased. As Figure 1 demonstrates, integration into the GVC enabled the economy to benefit by improving export share and GDP. While FDI remains important, local investments are becoming more significant for the growth of the sector. Then, from 2008, the data also show that the number of jobs and wages started to stagnate and more recently there is shortage of labour. As firms integrated into GVCs and became more capital intensive, there have been shorter lead times with greater demands on productivity, increasing the pressure on jobs and leading to greater automation. Some routine manual jobs are still in demand (i.e. sewing machine operators), but gains will be less at the low skilled level. Gains are higher at high skilled level with more emphasis on innovation. While it was at the small and medium enterprise (SME) scale that the industry forged partnerships and established itself, as it transformed into the OBM model. The SMEs became less competitive, for they cannot meet the required standards, cannot afford to automate, and also find it harder to retain staff.

**Figure 1. Board of Investment Enterprises: exports in apparels (Rs. Mil) compared to total investments, FDI foreign investments (Rs. Mil), and workers**



Source: Central Bank of Sri Lanka (2018); compiled by authors

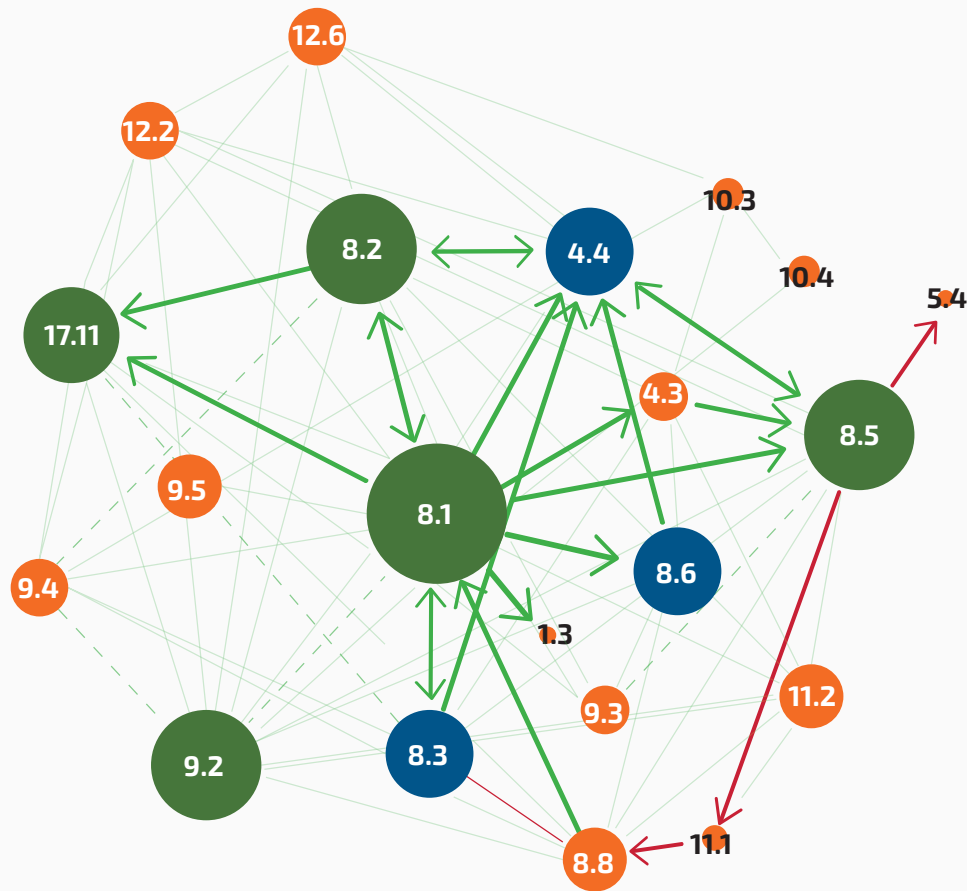
When looking at the inter-relationships between the different characteristics of sustainable labour and looking at what policies and programmes support what aspects, it is clear from Figure 2 that there are strong synergies with the targets in SDG 8.8.1, 8.2, 8.5, and 8.6. This is indicated in Figure 2 by the size of the circles, which indicates the emphasis of the initiatives, while the thickness and colour of the lines indicate the strength and type of interaction—green for synergy and red for trade-off—and the arrow heads indicate the direction—bi-directional or uni-directional—of the relationship. The emphasis on synergies among the economic domain are seen in aspects such as trade facilitation, FDI-enabled upgrading, and strategic partnerships, coupled with relatively stable labour laws, benefitting both the sector and the workers. Hence, synergies are strongest among a few SDG 8 targets with some links to SDGs 4, 17, and 9.

Apart from state support, the industry has helped improve technical skilling opportunities in response to sectoral needs (4.3, 4.4), evident in the strong positive links in the diagram between SDG 4 and SDG 8. However, government policies have not kept pace with the sector's evolution to the original brand manufacturing model. Opportunities to reskill or upskill are scarce for youth, who in more recent years have joined the industry as routine manual workers (target 4.4).

The environmental domain receives the least emphasis. Moreover, it is related more to industry compliance than to the wellbeing of workers. While environmental compliance policies are maybe in place, compliance is difficult to track, thus the links and size of the SDG 12 circles remain light. In addition, the consumption aspects are not brought into the value chain and need to be assessed at the global level.

The trade-offs are represented through red arrows in the social and institutional domains, with stark gaps in policy having negative repercussions on workers' ability to meet the goal of full and productive employment due to inadequate social protection (1.3,10.4), lack of housing for migrants, (11.1) and lack of caregiving arrangements (5.4).

**Figure 2. Synergies and trade-offs of policies and programmes in the apparel sector (against the sustainable labour characteristics)**



Elaborated by the authors.

Factory floor workers in the apparel sector constitute a group the SDGs are most concerned with, as their employment choices are dictated by factors such as incomplete education, lack of transferable skills, weak social ties, and lack of assets, rather than being a true choice of vocation.

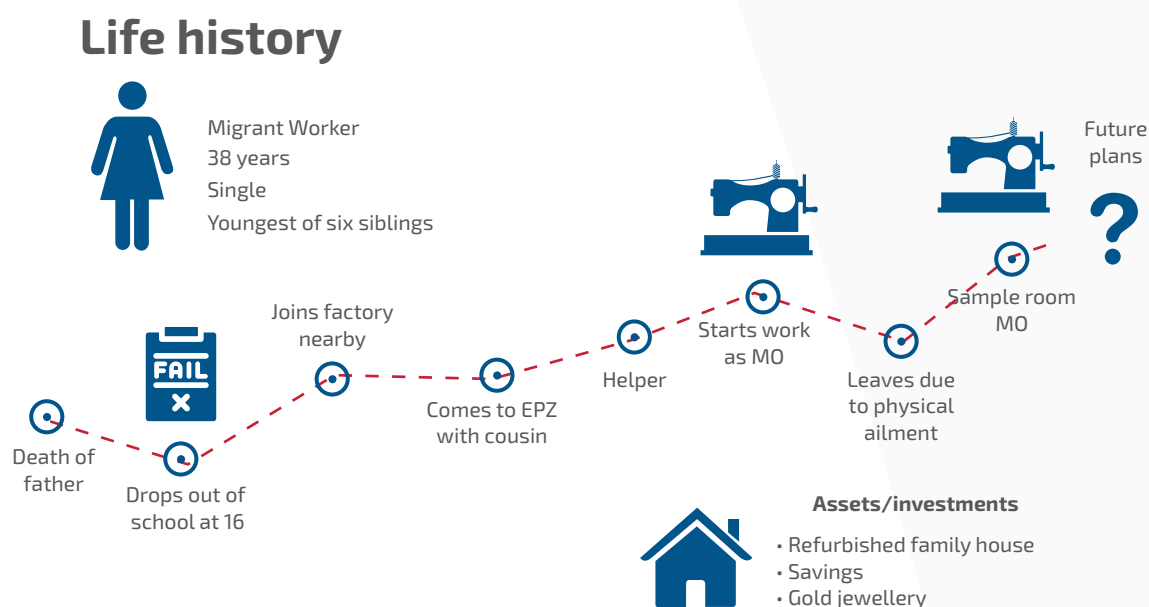
Automation has not yet resulted in significant job losses in the sector. Instead, workers losing jobs have been reassigned to other tasks because of overall labour shortages in the sector. However, the push for increased productivity, coupled with monotony and lack of flexibility in work, has made these jobs less desirable. Even though they are unable to find similar work elsewhere because of a lack of transferable skills, workers are unwilling to progress even when opportunities for skilling and upward mobility are offered. This is due to a lack of self-confidence, inability to acquire skills, and the increased pressures of the job.

While women continue to be vulnerable, the conditions women migrant workers encounter—substandard accommodation, transient status, lack of safety and childcare as well as social stigma—exacerbate



their vulnerabilities (Figure 3). The degree of transferable skills a worker possesses and the scale of the company she or he is employed in also affect the risk of workers being left behind.

**Figure 3 . Life history of a female migrant worker**



Note. Authors' illustration based on life history as described by a 38-year-old, single, female migrant worker  
 Elaborated by the authors.

## Conclusions and implications

The positive effects on economic growth and the availability of decent work are the result of Sri Lanka's successful integration into the apparel GVC and greater access to technology, markets, finance, and partnerships, transforming the industry into a more capital intensive industry. Target 8.1 (economic growth) has strong synergies with technological upgrading (8.2) and job creation (8.5, 8.6). Notably, the state and the industry worked together to capitalise on the opportunity created by the global trade regimes. Complementary economic policies and infrastructure as well as the development of skills and knowledge, infrastructure, and partnerships, created synergies among trade (SDG 17), economic (SDG 8), and education policies (SDG 4).

Overall, as the industry upgraded the benefits of the GVC did not transfer to SMEs as well as it did to larger companies that were able to meet social and environmental standards, build strategic partnerships, gain from FDI, and invest capital in technology and skills development. Thus, the scale of operations mattered in terms of the benefits to be gained from the GVC. A few SMEs have gained a foothold by being highly specialised, thereby showing the growing need for technological innovation in order to survive in a fast-evolving global market.





**Due to fast fashion's constant demand for shorter lead times, automation has increased in Sri Lanka.**

The emergence of fast fashion and its need for exceedingly shorter lead times and greater efficiency, coupled with Sri Lanka's transition to high-end products, has resulted in a greater amount of technology and automation entering the Sri Lankan value chain. While automation has not replaced routine manual jobs, there is greater demand and support for high skilled jobs. This will continue to be the trend, posing a future challenge for the sector and indeed for Sri Lanka. As greater innovation is needed in the knowledge economy, the skilling and reskilling processes must be linked with the industries to ensure this demand is properly understood and met.

At the same time, job disruptions are problematic and complex at the lower end of the employment spectrum. There is higher chance of job fallout of unskilled or semi-skilled workers, mainly in the fields of routine manual work and routine cognitive work. As wages stagnate and jobs become more monotonous and stressful, the lack of flexibility and the regimented pursuit of higher productivity will make these factory-floor jobs less desirable.

Among low skilled workers, and in terms of fulfilling the principle of leaving no one behind, women feature more prominently in routine manual jobs. However, the reasons that prevent women from continuing to work, such as lack of affordable childcare, a safe working and living environment, and security while travelling, limit women from full and productive employment. Women also disproportionately "suffer" the stigma of working in the apparel industry. Also among women, those who migrate face greater difficulties connected with their living conditions—inadequate housing and not being able to settle down in areas that they migrate to—making the job temporary. These issues outside of the workplace create a trade-off on women's access to full and productive employment (8.5) and shows the need to think of the interlinked social and institutional issues beyond the workplace when addressing sustainable labour.

Thus, automation's impact can be highly asymmetrical across different segments of society. The potential for automation to render either positive or negative outcomes is also determined by how national policies and governments respond to such trends by supporting reskilling, access to social safety nets, childcare facilities, and the possibility for workers to switch jobs, thus avoiding precarity and instability.

At the global level, while the supply of fast fashion has enacted more responsible economic, social, and environmental standards at the country level, the consumption of fast fashion itself has not been scrutinised. Sri Lankan companies can use improvements in production and research at a country level to improve their environmental footprint, albeit this is closely tied with economic viability. However, when thinking of the GVC, these efforts may not

negate the cumulative effects of an industry that is dependent upon exponential growth and consumerism that generates a large amount of waste and pollution. The advancements of the 4IR can indeed be used to fuel this high level of consumerism, even while at the same time being adopted for resource efficiency. Thus, while the industry and the GVC may be vital for achieving SDGs related to economic growth and social aspects, their impact on the environment can create multilevel synergies and trade-offs that need to be reconciled.

## Recommendations

*Strengthen access to relevant skills training.* In terms of switching to the knowledge economy, the 4IR demands more intense and targeted skilling and stronger abilities to adapt to technological change. While the apparel industry has proactively sought to provide the necessary infrastructure to build the capacity of the local workers, these efforts are limited in scope and scale, placing the onus on the state to strengthen reskilling opportunities beyond this sector. Unless the Tertiary and Vocational Educational Commission and the tertiary educational system recognise these rapid changes and adapt accordingly, the gap between youth aspirations and better job options will continue and possibly widen. Rethinking what constitutes formal education and how the education system can adapt to the changing needs of the labour market is required. Ties between educational centres and industries should be strengthened to meet the skilling requirements of the future.

*Provide adequate safety nets and social protection.* In the absence of an unemployment benefit scheme, the GoSL must look to provide or strengthen the existing safety nets. This is of fundamental importance to ensure that people are not vulnerable to being left behind, particularly as the manufacturing sector becomes more automated, and to allow the youth adequate time to acquire skills that seek out emerging work options. This is especially important in the context of the greater informality of available work that is also a consequence of the 4IR.

*Recognise the duality of the role of women.* If women are to enjoy full and productive employment, their dual roles must be recognised and supported. The provision of affordable care (both elderly and child care) and more flexibility are vital. In addition, there is a need to increase the number of women who are enrolled in the science, technology, engineering, and mathematics streams, to help in expanding the number of women who have access to high-paying jobs in the knowledge-based economy.

*Research into the 4IR and its impact on workers.* It is important to have a better sense of how technology is expected to impact industries and workers, and what types of jobs are to be gained and lost. Assessments of the impact of technology are needed to raise awareness when

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Automation has not yet resulted in significant job losses in the manufacturing sector in Sri Lanka.



**Some routine manual jobs are still in demand, but wages decline at the low-skilled level.**

drafting trade agreements and negotiations. The lack of available data and access to existing data sources makes it extremely difficult to understand the impact of the 4IR on labour dynamics in Sri Lanka. There must be a concerted effort to fill this gap, to inform better policy-making. This is crucial for the implementation of the SDGs, as trade negotiations are outside of the SDG realm but have a direct impact on workers, employment, and livelihoods.

*Streamline SDG implementation and get back on track.* More than three years into the implementation of the SDGs, Sri Lanka needs to get back on track and move forward with the implementation of the 2030 Agenda. The lack of policy coherence and fragmented planning processes must be addressed, and budget must be allocated. Unless there is an overall mechanism to ensure that these policies feed in to and complement each other, working towards the 2030 Agenda will remain challenging.

*Focusing on the entire GVC for change.* One of the implications of an industry linked to a GVC is that governments or the industry do not have the agency necessary to enhance all the synergies or address all the trade-offs. Thus, partnerships for addressing the global environmental footprint become pertinent. This requires examining the entire GVC as a social technology problem, where improvements to the weakest link can have much greater impacts upon improvements elsewhere in the GVC.

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