

BUILDING GREEN SKILLS TO SUPPORT SUSTAINABLE ECONOMIC TRANSITION IN THE WORKPLACE

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Abstract - *In the face of global challenges related to environmental sustainability, the transition to a green economy requires a concerted effort in developing workplace skills. Human resource management (HRM) plays a critical role in preparing a workforce capable of supporting green initiatives and corporate sustainability goals. This article examines how HRM can identify and develop the skills needed for the transition to a green economy. Emphasis is placed on the importance of skills mapping, market-based training design, and inclusive sustainability policy implementation. The analysis shows that appropriate skills development will help companies achieve sustainability goals and improve long-term performance. Training programs should include both technical and non-technical skills that support environmental sustainability, and should engage employees at all levels to create effective change. While challenges in closing the skills gap remain, companies that actively invest in green skills will gain competitive advantages and make a positive contribution to global sustainability.*

Keywords: *green economy, skills, human resource management, sustainability, training, policy, transition.*

INTRODUCTION

As global awareness of the importance of sustainability increases, the green economy has become an important aspect introduced to maintain a balance between economic growth and environmental preservation. The green economy requires specific skills and knowledge, both for individuals at the grassroots level and for professionals at the top level involved in natural resource management, renewable energy, and waste management. To facilitate the transition to a green economy, various industrial sectors need to adjust their work patterns, systems, and policies, with a focus on developing skills that support the implementation of environmentally friendly technologies and sustainable practices at every level of the company (Yordanova & Bichurova, 2019).

In this regard, human resource management (HRM) plays an important role in identifying and developing the skills needed to support the transition to a green economy. This skills development process involves not only technical training, but also a change in mindset and attitude towards sustainability that must be embedded in employees at various levels of the organization. Organizations must have a clear strategy to create human resources who are not only competent in their fields, but also sensitive to ecological needs, such as energy management, use of clean technology, and circular economy practices (Ping, 2016).

The adoption of policies to support the development of these skills often encounters obstacles. One of them is the lack of understanding of what should be prioritized in the development of these skills. Not only that, despite the encouragement from various parties to encourage the green transition, concrete implementation in the HR sector is often delayed, citing high costs or the lack of appropriate skills in the labor market (Kuznecov & Nebol'sina, 2022). Therefore, it is important to analyze how the HR management sector can effectively identify and develop the skills needed to support this transition.

One of the major challenges in developing skills for a green economy is the mismatch between the skills of the current workforce and the needs of the sustainability-oriented industrial sector. Many workers do not yet have the relevant skills to adapt to new technologies and more environmentally friendly working methods. This creates a significant skills gap between what is needed and what is available in the labor market, thus affecting the efficiency and sustainability of green economy policy implementation (Khan et al., 2020).

Furthermore, the lack of support for green economy-related education and training is also a significant issue. Many education and training institutions have yet to adapt their curricula to meet the skills needs of the green economy. The lack of involvement of the education sector in the formulation of skills development policies means that graduates are often unprepared to enter sustainability-focused sectors. This further exacerbates the shortage of skilled workers in sectors such as renewable energy and waste management (Lund et al., 2018).

Moreover, companies often lack a clear and systematic strategy to identify the skills needed in the green economy. Many organizations still rely on traditional employee assessments, which may not be relevant to the new skills needs in the sustainable sector. As a result, despite efforts to implement green policies, employees' ability to support these policies is limited. This limitation slows down the pace of transformation towards a green economy in various sectors (Fischer et al., 2019).

The inability to continuously update and improve skills is also a barrier to the transition to a green economy. With rapid technological developments and increasing demands for sustainability, it is important for workers to continue

to obtain the latest training and certification that is relevant to the needs of the green industry. However, existing training systems are often not flexible enough and responsive to rapid changes, leaving many workers stuck in obsolete skills and unable to adapt to new technologies (Heath & Galdon, 2020).

It is important to observe how developing skills relevant to the green economy can create positive impacts for organizations and society as a whole. By focusing on sustainability and adopting green technologies, companies can improve their long-term performance, reduce operational costs, and enhance their reputation as environmentally responsible industry players. Developing relevant skills will provide opportunities for workers to adapt to global labor market trends, which are increasingly oriented towards the green and sustainable economy.

The purpose of this study is to explore how HR management can identify the skills needed to support a green economy and develop strategies to train and prepare a competent workforce in sustainability-focused sectors. In this regard, organizations need to design appropriate training programs to meet the needs of the transition to a green economy and ensure that the workforce is ready to face the new demands.

RESEARCH METHODS

A literature review approach was used in the topic of skills development for the green economy to explore and analyse existing sources of information on how relevant skills can be built in relation to the transition to a green economy. The literature review involved the collection, analysis and evaluation of research, policy reports, academic articles and industry publications that discuss skills development in the green economy sector. Research conducted by Hodge et al. (2018) and Neumayer et al. (2019) suggests that the green economy requires an integrated approach that encompasses technical training and skills development across industry sectors, from renewable energy to waste management, to ensure that the workforce can adapt to the changes. Using literature as the primary source, this approach enabled researchers to identify existing skills gaps and explore how the education and training sector can respond to industry's need for green skills.

The literature study approach also facilitates understanding of education policies and skills development in the green economy that have been implemented in various countries. By analyzing the existing literature, researchers can assess the successes and challenges in implementing these training policies and how companies and educational institutions can collaborate to produce a workforce that is ready to face the demands of the green economy. Therefore, the literature study offers a comprehensive framework for understanding the relationship between policies, skills, and the green economy and provides insights for further strategy formulation in the field of human resource development.

RESULTS AND DISCUSSIONS

The transition to a green economy is one of the major challenges for many countries and companies around the world. Amid the climate crisis and the urgent need to reduce carbon footprints, businesses must start adopting environmentally friendly practices. One of the crucial steps in this journey is ensuring that the workforce has the skills needed to support sustainability goals (Soderholm, 2020). Therefore, HRM plays a vital role in this process, with the responsibility to identify and develop skills relevant to the transition. These skills include technical, social, and managerial aspects needed to support green initiatives within the company.

A major challenge in facing the transition to a green economy is the lack of understanding of the skills required by employees and companies. Various sectors, from renewable energy to natural resource management, require a workforce trained in sustainable practices (Olateju et al., 2020). To address this, HR management must map existing skills and design training programs that are in line with evolving market needs. The development of "green" skills also depends not only on a set of measures aimed at the application of "green" technologies and the formation of knowledge related to the transition to a "green" economy, but also on processes implemented in all sectors and countries (Huseynova, & Sultan, 2025). This requires close collaboration with governments, educational institutions, and other stakeholders so that the need for green skills can be met effectively.

Therefore, it is important to dig deeper into how HR management can identify and develop the skills needed to support the transition to a green economy. This process does not only involve technical training alone, but also includes the development of soft skills and sustainability-oriented organizational policies (Mardikaningsih, 2024). According to Pavlova and Singh, green skills are tailored to the specific needs of companies, such needs arising, for example, from new environmental regulations, from the need for sustainability certification, or from technical innovations (Pavlova, & Singh, 2022). Only with the right and comprehensive approach can the transition to a green economy be carried out successfully, producing a workforce that is not only ready for change, but also contributes directly to the achievement of sustainability goals (Mehta & Chugan, 2015).

HRM plays a critical role in helping organizations and countries transition to a green economy. A green economy, which focuses on environmentally friendly and sustainable development, requires a workforce with specialized skills to support related sectors such as renewable energy, waste management, and energy efficiency (Blain, 2020). There

is also some concern for the environment and the need to make a green economy transition such as reducing pollution and starting to address climate change issues that are exacerbated by the continued use of finite resources and fossil fuels (Brown, 2015). One way that HRM can do this is by conducting an in-depth and comprehensive skills needs analysis. This process involves mapping green industry trends, identifying sectors that require specialized skills, and analyzing the match between skills available in the labor market and those needed in the transition to a green economy.

The skills identification process begins with a mapping of existing sustainability trends and policies both inside and outside the company. This mapping is critical as it helps organizations understand market dynamics and evolving industry needs (Akyazi et al., 2022). For example, the renewable energy sector increasingly requires a workforce skilled in wind, solar and biomass technologies. Through an in-depth analysis of these trends, companies can identify the specific skills required to support the transition to a green economy, and adjust their human capital development strategies to meet the demand (Arcelay et al., 2021).

Human resource management (HRM) has a central role in analyzing government policies that support the green economy transition, such as policies to reduce carbon emissions and manage natural resources efficiently (Vogt et al., 2019). By understanding these policies, companies can predict what skills will be prioritized in the future. This not only helps in planning employee training and development programs, but also ensures that the organization remains competitive in the face of regulatory and market changes. HR's active involvement in this process is critical to creating a workforce that is adaptive and ready to face new challenges. As such, a skills identification process based on analyzing sustainability policies and trends enables companies to prepare a relevant and competent workforce. This proactive approach not only ensures individual readiness, but also enhances the organization's overall capability in achieving sustainability goals. By preparing the right skills, companies can contribute more effectively to the development of a green economy, while creating an innovative and future-oriented work environment. It is also important to involve external stakeholders in the skills identification process, such as educational institutions, industry associations, and governments. This collaboration will enrich insights and help HR management to design more targeted training and skills development programs. One approach implemented by various companies is to hold a joint forum involving related parties to map skills needs in sectors related to the green economy (Murnieks et al., 2018). That way, companies not only see from an internal perspective, but can also understand broader market demand.

Once the required skills are identified, the next step is to develop these skills through various training and development programs. HR management can design a training curriculum based on green skills, which includes technical competencies such as the use of green technologies, as well as managerial skills to manage sustainability projects effectively. Green skills development also needs to include an understanding of applicable environmental policies, as well as the ability to work in multidisciplinary and global teams (Grierson et al., 2020).

Companies can use various methods to develop employee skills, one of which is by offering technology-based training programs, such as online learning and simulations. This technology allows employees to access training in a more flexible and efficient way. Companies can also work with universities or training institutions to create special internship or certification programs that emphasize green skills (Fankhauser et al., 2019). These types of programs provide employees with hands-on experience and deepen their understanding of the green economy.

HR management needs to ensure that the skills developed are not only technical but also include the development of soft skills. Skills such as sustainability-focused leadership, communication related to environmental issues, and skills to adapt to rapid change are very much needed in the green economy. HR management can facilitate leadership training that emphasizes the importance of sustainability management and how to align organizational goals with long-term sustainability goals (Bocken et al., 2018).

Furthermore, it is important for HR management to create an organizational culture that supports the transition to a green economy. This culture should include awareness of environmental issues at every level of the organization, from managers to operational employees. This can be achieved by introducing sustainability values into every company activity, as well as by providing incentives for employees who are actively involved in sustainability programs (Leonidou et al., 2020). Policies that support these environmental initiatives will encourage employees to be more committed to developing green skills and implementing environmentally friendly solutions in their work.

However, there are several challenges in developing skills for the green economy. One of them is the skills gap that still exists in the labor market (Moon, 2021). Although the green economy is growing, many employees do not yet have the skills needed to adapt to the changes (Mallika, 2022). This can be a barrier to creating a workforce that is ready to face the transition to a green economy (Johnson & Oliver, 2017). Therefore, HR management must work hard to identify and address this skills gap by providing adequate training.

There are also challenges related to the costs involved in developing green skills. Green skills training programs often require significant upfront investment, both in terms of developing training materials and the resources needed. Inadequate facilities to support green skills related activities are one of the challenges (James, et al., 2023). Therefore, companies must be wise in planning the budget for this training program to remain effective and efficient. Some companies may hesitate to invest in this training due to limited budget or other more pressing priorities (Liu et al., 2019).

Another issue is the mismatch between the skills required by the labor market and the skills that education and training institutions can provide. Many educational programs are not fully focused on the green economy, and therefore, graduates are less prepared to work in these sectors. This shows the importance of collaboration between HR management and educational institutions to align the curriculum with the needs of the green industry (McKinsey & Company, 2019).

However, despite these challenges, steps to identify and develop the skills needed for a green economy are essential to advancing sustainability (Manea & Cozea, 2022). If companies succeed in creating an effective skills development system, they will have a more adaptive workforce that is ready to support sustainability goals (Aceleanu, 2015). This will also have positive impacts for the company in the long term, including increased productivity, better reputation, and higher competitiveness in the global market (Kozlova & Volkova, 2019).

To be more effective, HR management needs to implement a more appropriate approach to skills development, which includes technical, managerial, and social skills. This will create an environment that supports sustainability throughout the organization. The implementation of training programs should be seen as a long-term investment that can produce significant results in both social and economic aspects. It can also open up opportunities for employees to grow in their careers, while supporting the organization's goal of transforming to be more sustainable (Mallika, 2022).

Given the importance of skills required in the green economy, it is clear that companies and countries must work together to ensure that the workforce is ready to adapt to rapid changes (Scully-Russ et al., 2013). Appropriate training programs, tailored to the needs of the green industry, are essential to address the existing skills gap. Human resource management, as the main driver of change, must continuously evaluate and develop the skills needed so that employees can contribute optimally to sustainability and organizational goals (Tsybaliuk et al., 2023). The only thing that cannot be denied is that the green economy is always about sustainable development (Skarbale, Viederyte, & Snederine, 2021). Therefore, success in identifying and developing green skills will also help companies create higher competitiveness in a global market that is increasingly concerned with sustainability (Fien & Guevara, 2013).

Creating an organizational culture that focuses on sustainability should be a priority for HR management. Changing the mindset of employees, from merely following environmental regulations to being active players in sustainability practices, requires time and long-term commitment. Therefore, companies must continue to innovate in designing policies and programs that encourage active employee involvement in green initiatives. By building this culture, companies can optimize the role of HR in supporting the green economy transition and provide a positive impact on the environment and sustainability (Jora et al., 2023).

Overall, developing skills relevant to the green economy is not a task that can be completed overnight. It requires long-term commitment, collaboration between relevant sectors, and supportive policies. Human resource management must be a key driver in ensuring that employees have the skills needed to meet the challenges and opportunities presented by the green economy. By investing in these skills, organizations will not only contribute to global sustainability, but will also enjoy benefits in the form of better performance and a stronger reputation in the market.

CONCLUSIONS

The transition to a green economy requires the right approach to skills development in the workplace. Human resource management plays a critical role in ensuring that the workforce has the right skills to support sustainability. Mapping existing skills, developing appropriate training programs, and establishing policies that support the green economy are key elements in ensuring the success of this transition. Organizations should focus on fulfilling both technical and non-technical skills that can enhance the capacity of employees to contribute to green initiatives, while improving the company's operational performance and efficiency.

However, there are still several challenges in implementing this policy effectively. One of them is the gap between the skills needed for a green economy and the skills possessed by the current workforce. Therefore, companies must take proactive steps, such as collaborating with educational institutions, training, and related organizations to equip employees with relevant skills. Policies that prioritize sustainability must be internalized in the company culture so that every level of employee can actively participate in realizing long-term goals that focus on sustainability.

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