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THE STRATEGIC ROLE OF HUMAN RESOURCE MANAGEMENT IN BUILDING COMPETENCIES AND BRIDGING THE SKILLS GAP TOWARDS A GREEN ECONOMY

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Abstract - *The implementation of a green economy has become an urgent necessity amid growing global awareness of the importance of sustainable development. This study provides a comprehensive analysis of how human resource management (HRM) can identify essential skills and develop effective training strategies to prepare a competent workforce for the transition to sustainability-based economic sectors. A literature review approach was employed to assess workforce competency gaps, implementation challenges, and best practices in skills development across various industries, particularly in renewable energy and waste management. The results indicate significant challenges, including the gap between industry needs and worker competencies, lack of educational policy support, limited training resources, and suboptimal cross-sectoral collaboration. To address these barriers, HRM must adopt an integrated approach—developing technical, managerial, and social skills—while building an organizational culture centered on sustainability. Managerial implications emphasize the importance of long-term investments in training, the adjustment of recruitment and performance assessment policies according to green principles, and the strengthening of strategic partnerships with educational institutions and other stakeholders. Thus, the development of green skills not only enhances organizational competitiveness in the global market but also significantly contributes to sustainable development goals.*

Keywords: green economy, skills, human resource management, human resource management, skills development, sustainability, workforce training.

INTRODUCTION

As global consciousness regarding the imperative of sustainable development continues to rise, the green economy has emerged as a crucial element introduced to maintain equilibrium between economic growth and environmental conservation. The realization of a green economy requires not only general awareness but also the acquisition of specialized competencies and knowledge at all organizational levels, encompassing both grassroots individuals and professionals engaged in natural resource management, renewable energy, and waste management. In order to facilitate the transition towards a green economy, various industrial sectors must modify their operational patterns, systems, and internal policies, with a pronounced emphasis on cultivating capabilities that support the adoption of environmentally friendly technologies and sustainable practices across all organizational strata (Yordanova & Bichurova, 2019).

Within this context, Human Resource Management (HRM) occupies a strategically significant role in the identification and development of the requisite skills to underpin the transition towards a green economy. The process of skill development entails more than the provision of technical training; it necessitates a transformative change in mindset and attitudes regarding sustainability, which must be thoroughly embedded at every level of the workforce (Halizah & Mardikaningsih, 2022). Consequently, organizations are required to devise comprehensive strategies to develop human resources who are not only professionally competent but also acutely sensitive to ecological imperatives, such as energy management, the employment of clean technologies, and implementation of circular economy principles (Ping, 2016).

Nevertheless, the adoption of policies intended to foster such skill development is often confronted with considerable obstacles. A primary barrier is the insufficient clarity regarding prioritization in green skill development, despite increasing pressure to accelerate the green transition. Implementation within the HRM sphere is frequently hampered by resource constraints or a shortage of suitably skilled personnel in the labor market (Kuznecov & Nebol'sina, 2022). Thus, an in-depth analysis is necessary to formulate effective HRM strategies for accurately identifying and nurturing the skills required to support this transition.

A major challenge in the development of skills for the green economy is the mismatch between existing workforce capabilities and the needs of sustainability-oriented industrial sectors. The majority of employees currently lack the requisite skills to adapt to emerging technologies and environmentally sound work practices (Oluwatosin, 2022). This results in a substantial skills gap that negatively impacts the efficiency and sustainability of green economic policy implementation (Khan et al., 2020).

Furthermore, the insufficiency of educational and training support oriented toward green economy needs compounds the problem. Many educational institutions have yet to revise their curricula to address the skills requirements of the green economy, resulting in graduates who are often ill-prepared to enter sustainability-focused sectors (Lund et al., 2018). The disconnect between educational providers and labor market demands exacerbates the scarcity of skilled workers in areas such as renewable energy and waste management.

Moreover, companies often lack clear and systematic strategies for identifying the skillsets required in the context of the green economy. Many organizations persist with traditional employee evaluation methods, which are increasingly misaligned with the evolving competencies required within the sustainability sector (Hariani et al., 2022). Consequently, despite efforts to implement green policies, employee capabilities to support such policies remain limited, thereby impeding transformational progress towards a green economy across various sectors (Fischer et al., 2019).

The inability to continually update and enhance employee skills constitutes another significant barrier to the transition towards a green economy. Rapid technological advancements and mounting sustainability demands require workers to pursue up-to-date training and certifications relevant to the green industry (Heath & Galdon, 2020). However, extant training systems frequently lack sufficient flexibility and adaptability, leaving many employees confined to outdated skillsets and unable to assimilate new technological advancements.

It is essential to recognize that developing competencies relevant to the green economy can yield significant benefits for both organizations and society at large. Focusing on sustainability and the adoption of green technologies facilitate long-term organizational performance, cost reductions, and enhanced reputational standing as environmentally responsible market participants. Furthermore, cultivating the appropriate skills provides workers with the opportunity to adapt to global labor market trends that are increasingly directed towards green and sustainable economies.

The purpose of this study is to explore how human resource management can identify the requisite skills for supporting the green economy and develop comprehensive training strategies to prepare a competent workforce for sustainability-focused sectors. To this end, organizations must design relevant training programs that support the transition towards a green economy and ensure that the workforce is adequately prepared to meet the demands of sustainable development.

RESEARCH METHODS

A literature review methodology was employed to systematically explore and evaluate existing scholarly works pertaining to skills development in the context of the green economy. This comprehensive review entailed the aggregation, critical analysis, and synthesis of research studies, policy documents, academic publications, and industry reports that address the cultivation of relevant competencies required for facilitating the transition towards a green economy. Empirical findings put forth by Hodge et al. (2018) and Neumayer et al. (2019) underscore the necessity for an integrated framework that combines technical education and skills enhancement across diverse industrial sectors—including but not limited to renewable energy and waste management—to ensure workforce adaptability amid sectoral transformations. Leveraging literature as a primary data source, this approach enabled the identification of prevailing competency gaps and provided a foundation to examine how education and training systems may effectively address the emergent demand for green skills within the labor market.

Moreover, the literature review approach afforded a nuanced understanding of the education policies and skills development strategies that have been operationalized in various national contexts. Through critical examination of extant literature, researchers were able to assess both the achievements and the challenges encountered in implementing training initiatives, as well as to elucidate potential modalities for collaboration between corporate entities and educational institutions in producing a workforce that is proficient and responsive to the exigencies of the green economy. Consequently, the literature review serves not only as a robust analytical framework for deciphering the dynamic interplay between policy, skills acquisition, and the advancement of the green economy, but also yields valuable insights to inform future strategic endeavors in the domain of human resource development.

RESULTS AND DISCUSSIONS

The transition towards a green economy constitutes a formidable challenge for nations and enterprises globally. Amidst intensifying climate crises and the imperative to markedly curtail carbon footprints, organizations are increasingly compelled to integrate environmentally sustainable practices into their operational frameworks. A foundational prerequisite in this transition is the establishment of a workforce equipped with the requisite competencies to advance sustainability objectives (Soderholm, 2020). Consequently, Human Resource Management (HRM) occupies a critical position in this transformation, being tasked with the identification and development of skill sets aligned with the demands of a green economy. These competencies encompass a spectrum of technical, social, and managerial proficiencies essential for the successful implementation of environmental initiatives within corporate structures.

A substantive barrier in navigating the shift towards a green economy is the pervasive lack of clarity regarding the specific skill requirements among personnel and organizational entities. Diverse sectors—including, but not limited to, renewable energy and natural resource management—demand a labor force proficient in sustainable methodologies (Olateju et al., 2020). In response, HRM must systematically map prevailing skill levels and architect training paradigms that are congruent with the dynamic exigencies of the market (Essa & Mardikaningsih, 2021). The cultivation of green skills, therefore, is predicated not only on the dissemination of knowledge pertaining to emerging green technologies and processes, but also on multi-sectoral and cross-national collaboration. Effective fulfillment of green skill requirements necessitates synergistic engagement with governmental bodies, academic institutions, and key stakeholders to ensure comprehensive preparedness.

Given this context, it is vital to further investigate methodologies by which HRM can accurately identify and foster the competencies critical for a successful transition to a green economy. Such processes extend beyond mere technical capacity building to encompass the enhancement of soft skills and the institutionalization of sustainability-oriented organizational policies. As noted by Pavlova and Singh (2022), green skills are uniquely tailored to the particular requirements of firms—emerging from new environmental regulations, mandates for sustainability certifications, and the advent of technological innovations. The attainment of an effective and all-encompassing strategy is indispensable for a seamless transition, ultimately generating a workforce that not only adapts to change but also actively contributes to the realization of sustainability milestones (Mehta & Chugan, 2015).

HRM serves a pivotal role as a catalyst for organizational and national advancement towards a green economy paradigm. A green economy—centered on ecological stewardship and sustainable development—demands specialized expertise across interrelated sectors such as renewable energy, waste management, and energy efficiency (Blain, 2020). Growing environmental concerns and the exigency to transition to a sustainable economic model—exacerbated by continued dependence on finite resources and fossil fuels—underscore the necessity for innovative HR strategies (Brown, 2015; Nuraini et al., 2022). One critical mechanism for facilitating this shift is the implementation of a comprehensive skills needs analysis, which encompasses systematic trend mapping, sector-specific skills identification, and an assessment of the alignment between existing workforce capabilities and the emergent requirements dictated by the green economy (Darmawan et al., 2020).

The process of skills identification is initiated through the mapping of sustainability trends and regulatory frameworks both internal and external to the organization. For instance, there is an escalating demand within the renewable energy industry for highly skilled practitioners in wind, solar, and biomass technologies. Moreover, HRM can integrate analysis of governmental policies—such as those targeting carbon emission abatement and optimized resource management—so as to anticipate future skills needs and strategically develop organizational capacity (Vogt et al., 2019).

Active engagement with external stakeholders—including educational institutions, industry associations, and policy makers—is also a critical component of the skills identification paradigm (Mardikaningsih & Darmawan, 2022). Such collaborative enterprises enrich the information base and bolster the capacity of HRM to design specialized, targeted training and skills development programs. An exemplified approach involves convening multi-stakeholder forums to map sector-specific skill requirements associated with the green economy (Murnieks et al., 2018), thus enabling organizations to appreciate not only their internal demand but also the broader trends and needs in the external market landscape.

Subsequent to the identification of requisite competencies, the next imperative involves fostering the development of these skills through a diverse array of training and professional development initiatives. Human Resource Management (HRM) is positioned to architect training curricula expressly oriented towards green skills, encompassing both technical proficiencies—such as the application and integration of environmentally sustainable technologies—and managerial capabilities essential for the effective governance of sustainability projects. Furthermore, the cultivation of green skills must extend to a comprehensive understanding of prevailing environmental regulations and foster the capacity to operate within multidisciplinary and globalized work teams (Grierson et al., 2020).

Organizations may employ a wide spectrum of strategies to enhance workforce competencies, including the implementation of technology-driven training modalities like online learning platforms and simulation-based instruction. Such technological interventions provide employees with greater flexibility and efficiency in accessing professional development resources. In addition, collaborative partnerships with academic institutions or specialized training providers can be established to deliver tailored internship or professional certification programs with a strong emphasis on green competencies (Fankhauser et al., 2019). These experiential learning opportunities enable employees to gain practical exposure and deepen their comprehension of concepts integral to the green economy.

HRM must ensure that developmental efforts are holistic, encompassing not only technical skills but also the advancement of critical soft skills. Abilities such as sustainability-oriented leadership, effective communication regarding environmental matters, and the adaptability to navigate rapidly evolving contexts are indispensable within the green economy paradigm (Gardi et al., 2021). Leadership development initiatives, in particular, should prioritize strategic management for sustainability and the alignment of organizational objectives with enduring environmental goals (Bocken et al., 2018).

In tandem, it is vital for HRM to cultivate an organizational culture conducive to the green transition. This entails engendering environmental consciousness at all organizational strata, from senior management to rank-and-file personnel. Integration of sustainability values into day-to-day business processes and the provision of incentives for proactive participation in sustainability-oriented programs represent viable mechanisms for fostering such a culture (Leonidou et al., 2020). The formulation and enactment of supporting policies will serve to galvanize employee commitment towards the continual development of green competencies and the realization of environmentally responsible practices in the workplace (Eddine et al., 2023).

Nevertheless, the journey toward comprehensive skills development in the green sector is beset by substantive challenges, chief among them being the persistent skills gap within the labor market. Despite the burgeoning trajectory of the green economy, a considerable proportion of employees remain inadequately equipped to navigate and adapt to emergent demands. This skills deficit poses a significant impediment to the cultivation of a workforce fully prepared to embrace the transition towards sustainable economic models (Johnson & Oliver, 2017). Accordingly, HRM faces a pressing mandate to systematically identify and proactively bridge this gap through the provision of robust and targeted training programs.

Furthermore, substantive challenges persist concerning the financial implications associated with the cultivation of green skills. The development and implementation of green skill training initiatives often necessitate considerable initial investments, encompassing expenditures for the design of instructional materials and the allocation of requisite resources. Additionally, the deficiency of adequate facilities to support activities related to green skills serves as a notable impediment (James et al., 2023). Accordingly, organizational prudence is required in budgeting for such training programs to ensure their effectiveness and efficiency. Financial constraints or competing organizational priorities may cause some firms to deprioritize or exhibit reluctance in allocating funds for these initiatives (Liu et al., 2019).

An additional challenge lies in the discordance between the competencies sought by the labor market and those imparted by educational and training institutions. Many curricula have yet to be fully aligned with the specific demands of the green economy, leaving graduates underprepared for roles within this emerging sector. This underscores the necessity for collaborative engagement between human resource management and educational institutions to harmonize academic offerings with the evolving needs of green industry sectors (McKinsey & Company, 2019).

Nevertheless, notwithstanding these obstacles, proactive efforts to identify and develop critical green skills are indispensable for advancing the sustainability agenda. Organizations that successfully institute comprehensive and effective upskilling systems will benefit from a workforce that is agile and responsive to sustainability imperatives. The resultant advantages extend well beyond compliance, fostering elevated productivity, reputational enhancement, and heightened competitiveness in a globalized marketplace (Kozlova & Volkova, 2019).

To optimize outcomes, HR management must adopt an integrative developmental approach encompassing technical, managerial, and interpersonal skills. Such a holistic framework is critical for embedding sustainability principles throughout the organizational fabric. Moreover, training interventions should be conceptualized as strategic, long-term investments that yield substantial socio-economic dividends. These efforts not only create career advancement opportunities for employees but also reinforce the organization's commitment to sustainable transformation (Mallika, 2022).

Given the pivotal role of green skills within the broader context of sustainable economic transformation, it is evident that cross-sectoral collaboration at both national and organizational levels is paramount to ensuring workforce adaptability amid rapid change. The formulation of targeted training programs explicitly designed to address existing skills gaps in the green economy is essential. HR management, serving as the catalyst for organizational change, must engage in continuous evaluation and enhancement of workforce competencies to guarantee that employees can contribute optimally to both sustainability initiatives and organizational objectives. It is unequivocal that the green economy fundamentally concerns sustainable development (Skarbale, Viederyte, & Snederine, 2021); thus, adeptness in identifying and advancing green skills is crucial for securing heightened competitiveness within a global arena increasingly oriented toward sustainability (Fien & Guevara, 2013).

The cultivation of a sustainability-centric organizational culture should be prioritized within HR strategies. Effectuating a paradigm shift where employees transition from passive compliance with environmental regulations to active participation in sustainability practices necessitates substantial temporal and organizational commitment. Therefore, ongoing innovation in the design and implementation of policies and programs that energize employee engagement in green initiatives is imperative. By nurturing such a culture, organizations can optimize the contributions of HR in facilitating the green economy transition, thereby generating positive ramifications for both environmental stewardship and organizational resilience (Jora et al., 2023).

Advancing competencies pertinent to the green economy is an enterprise demanding enduring commitment, cross-sector collaboration, and enabling policy frameworks. Human resource management must serve as the principal driver, ensuring that employee capabilities correspond to both present and emergent challenges and opportunities of the green transition. Strategic investment in these skills will enable organizations not only to further global sustainability objectives but also to secure tangible competitive advantages and to enhance long-term market stature.

CONCLUSIONS

This study affirms that the success of the transition to a green economy is highly influenced by the organization's ability to identify and develop skills relevant to sustainability needs in industrial sectors. Human resource management plays a crucial role as a change catalyst, whether through mapping skill requirements, designing technology-based training programs, or strengthening collaboration with educational institutions and external stakeholders. The gap between workforce competencies and the demands of the green economy, as well as limitations in educational systems, remain major challenges that must be addressed systematically and continuously. In addition, developing an organizational culture that supports sustainability is a fundamental foundation for ensuring that green practices are internalized at all employee levels.

Organizations are encouraged to integrate sustainability principles into recruitment policies, career development, performance assessment, and reward systems. Training and development activities should utilize digital technology and reinforce partnerships with educational institutions to ensure acquired skills remain relevant to green industry trends. Enhanced managerial commitment is also needed to support the provision of flexible budgets and adaptive training planning in line with regulatory changes and global developments.

Cross-sectoral collaboration and government support are required to strengthen the training ecosystem and align educational curricula with green economy needs. Sustainable investment in green skill development should be positioned as a core business strategy, rather than merely a compliance effort. Consequently, organizations can secure competitive advantages while simultaneously contributing to broader environmental and social sustainability.

REFERENCES

Blain, A. (2020). Skills for green jobs: A guide to creating sustainable employment opportunities. Sustainability Studies Journal, 25(3), 202-210.

Bocken, N. M., Short, S. W., & Rana, P. (2018). A review on the role of business in enabling a green economy. Business Strategy and the Environment, 27(2), 100-112.

Brown, M. (2015). Developing and Using Green Skills for the Transition to a Low Carbon Economy. Australian Journal of Adult Learning, 55(2), 183-205.

Darmawan, D., R. Mardikaningsih, E. A. Sinambela, S. Arifin, A.R. Putra, M. Hariani, M. Irfan, Y.R. Al Hakim, & F. Issalillah. (2020). The Quality of Human Resources, Job Performance and Employee Loyalty, International Journal of Psychosocial Rehabilitation, 24(3), 2580-2592.

Eddine, B. A. S., D. Darmawan, R. Mardikaningsih, E. A. Sinambela. (2023). The Effect of Knowledge Management and Quality of Work Life on Employee Commitment, Journal of Human Sciences, 10(1), 87-100.

Essa, N. E. & R. Mardikaningsih. (2021). Sustainability Communication through Green Marketing: Strengthening Consumer Awareness and Corporate Environmental Integrity, Journal of Social Science Studies, 1(2), 233 – 238.

Fankhauser, S., & Blundell, D. (2019). Green jobs and sustainable development: Building a more inclusive economy. Environmental Economics and Policy Studies, 21(4), 559-575.

Fien, J., & Guevara, J. R. (2013). Skills for a green economy: Practice, possibilities and prospects. https://doi.org/10.1007/978-94-007-5937-4_14

Fischer, C., Neumayer, E., & Rehdanz, K. (2019). Skills for a sustainable future: Green skills and their role in the workforce. Journal of Environmental Economics and Management, 97, 1-16.

Gardi, B., H. Udjari, & D. Darmawan. (2021). Understanding the Function of Communication in Building and Sustaining Quality Relationships Across Organizational Boundaries, Journal of Social Science Studies, 1(2), 245 – 252.

Gautama, E. C. & R. Mardikaningsih. (2022). Driving Sustainable Behavior Change Through Education and Public Awareness, Journal of Social Science Studies, 2(1), 259 – 264.

Grierson, J., & Jackson, K. (2020). Climate change, business, and the development of green skills. Journal of Business and Environmental Studies, 11(1), 45-63.

Halizah, S. N. & R. Mardikaningsih. (2022). Accommodating Social Change in Sustainability Policy: Solutions for a Just and Relevant Society, Journal of Social Science Studies, 2(2), 299 – 304.

Hariani, M., R. Mardikaningsih, & N. E. Essa. (2022). HR and Environmental Policy Management Strategies to Create a Sustainable Organization that Improves Company Performance, Journal of Social Science Studies, 2(2), 249 – 254.

Heath, J., & Galdon, M. (2020). Overcoming the green skills gap: Education and training for the low-carbon economy. Renewable and Sustainable Energy Reviews, 119, 109586.

Hodge, A., White, M., & Johnson, S. (2018). Green skills and the transition to a low-carbon economy. Journal of Environmental Education, 49(2), 155-170.

James, S. D., Mustapha, R., Paramasivam, T., & Nashir, I. M. (2023). A survey of facility management green skills competency among TVET educators and students in a public university in Malaysia. Proceeding on Computer and Electrical Education Research (PROCESSOR), 1-22.

Johnson, M., & Oliver, C. (2017). Overcoming barriers to green skills development in the workforce. Journal of Labor and Environmental Economics, 22(2), 159-172.

Jora, R. B., Mittal, P., & Kaushal, S. L. (2023). Tech-Enabled Sustainable HR Strategies: Fostering Green Practices. https://doi.org/10.1109/ICACCS57279.2023.10113050

Khan, S. R., Lee, M., & Zhao, Q. (2020). The role of education in advancing sustainable development and green skills. Environmental Education Research, 26(3), 339-353.

Kozlova, O., & Volkova, I. (2019, May 1). 'Green skills' of a new generation of managers and entrepreneurs as a potential of company leadership. https://doi.org/10.2991/ICSEAL-19.2019.57

Kuznecov, S., & Nebol'sina, V. (2022, February 17). Green economy as a new course of movement. https://doi.org/10.34220/zeif2022_48-51

Leonidou, L. C., Katsikeas, C. S., & Morgan, N. A. (2020). The influence of green culture on sustainable business practices. Journal of Business Research, 115, 378-388.

Liu, L., Zhang, J., & Wang, Z. (2019). Challenges in green skills development in emerging markets: A case study of China. Sustainability and Environment Journal, 18(5), 493-508.

Lund, P., Salim, R., & Smit, E. (2018). The evolution of green skills: Challenges and opportunities. Sustainability, 10(7), 2303.

Mallika, D. S. (2022). An Empirical Study on the Green Skill Development Programme and its Inclusiveness in Green Industries for Effective Green Marketing and Sustainable Development: Key Success Factors and Challenges. https://doi.org/10.54646/bijfmr.017

Mardikaningsih, R. & M. Hariani. (2021). Realizing Sustainability in Public Policy: Building a Balance between Economy, Social, and Environment, Journal of Social Science Studies, 1(1), 191 – 196.

Mardikaningsih, R. & M. Hariani. (2022). Integrating Diversity and Sustainability in Organizations: How to Impact Performance, Corporate Competitiveness, and the Creation of Inclusive Work Environments, Journal of Social Science Studies, 2(2), 77 – 84.

Mardikaningsih, R. & D. Darmawan. (2022). Ethical Principles in Business Decision Making: Implications for Corporate Sustainability and Relationships with External Stakeholders, Journal of Social Science Studies, 2(2), 131 – 138.

Mardikaningsih, R. & D. Darmawan. (2023). Building Sustainability Policies Relevant to Local Cultural Values, Journal of Social Science Studies, 3(1), 127 – 132.

McKinsey & Company. (2019). Sustainability and workforce development in the green economy. Global Green Economy Report, 7(1), 120-133.

Mehta, K., & Chugan, P. K. (2015). Green HRM in Pursuit of Environmentally Sustainable Business. https://doi.org/10.13189/UJIBM.2015.030302

Neumayer, E., Rehdanz, K., & Fisher, C. (2019). The future of green skills in the workforce: A review of existing frameworks and policies. Sustainability, 11(15), 4123.

Nuraini, R., S. N. Halizah, R. Mardikaningsih, Y. Vitrianingsih, & M. E. Safira. (2022). The Role of Social Entrepreneurship in Environmental Conservation: Challenges, Strategies, and Sustainability, Journal of Social Science Studies, 2(1), 47 – 54.

Olateju, A., Aminu, A. W., & Danmola, R. A. (2020). Green human resources management (green hrm) and sustainable development: prospects and challenges. International Journal of Social Sciences and Humanities Review.

Oluwatosin, A. (2022). Examining Managerial Practices that Foster Sustainable and Health-Promoting Work Environments for Employees, Journal of Social Science Studies, 2(2), 305 – 310.

Pavlova, M., & Singh, M. (2022). Recognizing green skills through non-formal learning: A comparative study in Asia (p. 286). Springer Nature.

Ping, W. (2016, April 9). Study on Training Process of Green Jobs to Green Skills. https://doi.org/10.2991/ICEMCT-16.2016.75

Skarbale, J. N., Viederyte, R., & Sneideriene, A. (2021). The Significance of "Green" Skills and Cometencies Making the Transition Towards the "Greener" Economy. Rural Sustaibility Research, 46(341), 54-65.

Söderholm, P. (2020). The green economy transition: the challenges of technological change for sustainability. https://doi.org/10.1186/S42055-020-00029-Y

Vogt, M., & Schreiber, A. (2019). The role of sustainable human resource practices in shaping green economies. International Journal of Sustainable Development, 22(1), 94-109.

Yordanova, P., & Bichurova, I. (2019). The green economy- an approach for the sustainable development of the food industry. https://doi.org/10.35120/KIJ34051289Y