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## Proposing a Model for Green Career Counselling in the Context of Sustainable Development and Green Jobs

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### Abstract

**Context:** The emergence of the sustainability paradigm is a response to global environmental and climate-related challenges, accompanied by economic and social transformations. Achieving sustainable development and growth requires the adoption of a green economy that considers both individuals and the environment. As part of the just transition to an eco-friendly green economy, new green occupations are emerging and existing occupations are changing in terms of their workforce and skill requirements. Accordingly, individuals need to update their green job-related competencies and acquire new green skills. At this point, career interventions can support the necessary skill transformation in the green transition and support individuals in building sustainable careers.

**Approach:** This study is based on a narrative literature review and proposes a model of green career services. While narrative-based literature reviews are interpretive and less replicable (Agarwal & Dewan, 2016), they are effective for identifying emerging patterns and proposing new interventions (Ferrari, 2015). Given that green career guidance and counselling is a newly developed area, this approach is well-suited and justified for the present study. A review of the Web of Science, Scopus, and Google Scholar databases on green career counselling revealed both the field's historical development and notable gaps in the literature, which informed the proposal of a new conceptual model. Grounded in Savickas's (2013) career construction theory, specifically the scheme for career interventions. Within this context, the roles and responsibilities of career counsellors are discussed in relation to supporting a just transition toward a greener and more sustainable world. The authors propose a Green Career Services System by adapting Savickas's (2013) three career interventions (education, guidance and counselling) for the context of green careers.

**Conclusions:** Career counsellors can intervene at the micro level to help clients identify and cope with career problems and at the macro level to remove structural and institutional barriers to social justice (Nota et al., 2020). Career counsellors should rethink their role in designing a sustainable future for all and develop different strategies by increasing their knowledge and

skills. In this framework, it can be said that the green career education, green career guidance and green career counselling practices proposed in this article involve inclusive services that contribute both to supporting individuals' career development within the framework of sustainability principles and requirements at the micro level and to contributing to economic, social and environmental sustainability at the macro level. The transition to a green economy, green jobs, and green employment has the power to transform the field of career counselling, and career counselling has the power to contribute to the development and transformation of these fields.

### **Keywords**

green career guidance, green career counselling, green jobs, green skills, sustainability.

## **1 Introduction**

The World Economic Forum (WEF) publishes the Global Risks Report annually, analyzing global risks across economic, environmental, geopolitical, technological, and societal domains, and drawing attention to their short- and long-term implications. Reports published since 2006 show that environmental risks are no longer distant, long-term concerns, but are increasingly becoming immediate realities, occurring more frequently and with greater intensity. According to the 2025 report, environmental risks are expected to worsen more than any other risk category over the next decade and are ranked among the most destructive long-term threats (WEF, 2025).

Sustainable development refers to achieving economic growth and development not through the exploitation of natural resources, but by maintaining them, emphasizing the need to balance economic progress with environmental protection (Nowak, 2020; Rutkowska & Sulich, 2020). The concept of sustainability is grounded in the understanding that ecological, economic, and social systems are interconnected and mutually influential. Environmental sustainability refers to maintaining the quality and renewability of natural resources, while economic growth is inherently linked to the regenerative capacity of ecosystems. Social sustainability, as the third pillar, ensures the equitable distribution of the benefits and costs of a sustainable environment and economy, in accordance with the principle of social equity. It also emphasizes the importance of meeting the needs of future generations (Nota et al., 2020). In this context, it is emphasized that not only the economic outcomes of work, but also its ecological and social consequences should be considered. Accordingly, efforts are being made to mitigate the adverse impacts of human activities on the planet (Garren & Brinkmann, 2018).

Throughout history, numerous significant steps have been taken toward achieving sustainable development. However, in today's world, such development necessitates the adoption of the concept of green economy. Grounded in the concept of sustainable development, the green economy is defined as “an economy that promotes the efficient use, conservation, and enhancement of resources; increases income and employment; reduces emissions and environmental pollution; and improves energy efficiency” (Korostelkina et al., 2022, p. 196). The green economy is not only a means to achieve economic growth but also a tool for eradicating poverty, enhancing social inclusion, improving individual well-being, and increasing access to employment and decent work opportunities for all (United Nations, 2012). In this regard, the effective realization of sustainable development requires a comprehensive understanding of the environmentally friendly green economy approach. The green economy is directly linked to several Sustainable Development Goals (SDGs), particularly: no poverty (ending poverty in all its forms everywhere); decent work and economic growth (promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.); industry, innovation, and infrastructure (building resilient infrastructure,

promoting inclusive and sustainable industrialization, and fostering innovation); sustainable cities and communities (making cities and human settlements inclusive, safe, resilient, and sustainable); and finally, responsible consumption and production (ensuring sustainable consumption and production patterns) (United Nations Environment Program [UNEP], n.d.).

The transition to an environmentally friendly green economy has various implications for employment, including the emergence of new jobs, the transformation of existing ones, and the redefinition of occupational roles. Jobs associated with environmental goals and policies can be considered “environmentally friendly (green) jobs” (Bowen & Kuralbayeva, 2015). Martinez-Fernandez et al. (2010) define green jobs as those that contribute to environmental protection, the reduction of the harmful impacts of human activities on the environment, or better coping with the current conditions of climate change. The Green Jobs Initiative, launched in 2009 through the collaboration of UNEP, International Labour Organisation [ILO], the International Trade Union Confederation (ITUC), and the International Organisation of Employers (IOE), promotes a just transition to a green economy. Within this framework, the ILO (2013; 2016) emphasizes that green jobs must not only be ecologically sound but also decent, thus incorporating a social component into the definition of green jobs. According to this approach, green jobs should also meet the criteria of decent work, including adequate income, safe working conditions, respect for workers’ rights, and social protection.

Green jobs require new and green skills in addition to traditional skills. Green skills are defined as “the knowledge, abilities, values, and attitudes needed to live in, develop and support a society which reduces the impact of human activity on the environment” (Cedefop, 2012, p. 20). Green skills refer to the specific skills required to adapt products, services, or operations within the framework of climate change adjustments, requirements, or regulations (Miranda and Larcombe, 2012). In other words, green skills refer to the knowledge, expertise, and competence required to use green technologies and processes effectively (United Nations Framework Convention on Climate Change [UNFCCC], 2023).

These skills include environmental awareness and a willingness to learn about sustainable development; leadership skills for policymakers and business leaders to create favorable conditions and drive change; systems and risk analysis skills to assess, interpret, and understand both the need for change and the necessary measures; innovation skills to identify opportunities and develop new strategies in response to green challenges; and guidance skills to advise consumers on green solutions, promote the use of green technologies, and help them choose the best option. Employees' ability to learn and apply new technologies and processes needed to make their jobs greener depends on their adaptability and transferable skills (ILO, 2011). In their research on the transition to a green economy and green jobs, Consoli et al. (2016) found that green jobs require more intensive, higher-level cognitive and interpersonal skills than non-green jobs.

Individuals who lack the necessary skills for green growth and green employment are at a greater risk of experiencing economic marginalization. As a result, the importance of both upskilling and reskilling has become increasingly evident in the transition to green jobs. Promoting skill development across the workforce is therefore essential for advancing broader socioeconomic development (UNEP, 2008). In this context, differentiated green career services play a critical role in career counselling, as they are tailored to support individuals’ career development in alignment with their specific needs and capacities within the evolving green economy. Hence, it is emphasized that supporting green employment and reducing unemployment will require new and innovative approaches (Rutkowska & Sulich, 2020).

## 2 Sustainable Careers

There are several conceptualizations approaches to defining the sustainability of careers in the literature (De Vos and Van der Heijden, 2017; De Vos et al., 2020; Kossek et al., 2014; Newman, 2011; Van der Heijden and De Vos, 2015). Sustainability in career development is the ability to meet one's current needs through lifelong learning and competency development without compromising future needs. The sustainability of a career depends not on stability but on the ability to adapt to a constantly changing work environment, i.e., flexibility (Van der Heijden and De Vos, 2015; Schweitzer et al., 2023). It is also used to address the fact that careers may be increasingly at risk due to current trends and contextual factors such as economic and political factors (Greenhaus and Kossek, 2014). To understand the contemporary concept of a career, it is important to recognise that careers are both contextual and individual; in other words, to consider the interaction of various factors in sustaining a career. According to Newman (2011), there are three characteristics of a sustainable career. The first is opportunities for renewal. A sustainable career should include times when employees pause to renew themselves. Renewability supports a longer working life and life balance. Second, a sustainable career should be flexible and adaptable. Individuals and organisations must learn continuously and flexibly and be able to embark on new paths as conditions change. Flexibility and adaptability also promote resilience. Third and finally, a sustainable career should include experiences that provide integrity and meaning across life domains. Planned renewal periods involve learning new skills and taking on important tasks for the future. In summary, a career that provides opportunities for renewal, is flexible and adaptable, prepares individuals for change and continuous learning, and integrates experiences in an individual's life to provide a sense of integrity and meaning is a sustainable career (Newman, 2011). When environmental, economic, and social conditions are considered together, a sustainable career approach is becoming increasingly important. This approach highlights the multidimensional nature of careers and emphasises the interrelationship between contextual career-related factors. In a changing world, there is a need for new perspectives in career services, and the sustainability approach provides a basis for evaluating individuals' career development within the framework of contextual influences.

In response to emerging environmental challenges and the growing importance of sustainability, this paper proposes a Green Career Services Model situated within the frameworks of sustainable development and green employment. Grounded in Career Construction Theory (Savickas, 2005), the model comprises three core career interventions: career guidance, career education, and career counselling. Career construction theory allows counsellors to draw on different perspectives when working with clients and selecting the most appropriate career interventions (Savickas, 2011). Savickas (2015) states that guidance, education, and counselling interventions can be implemented depending on the needs of clients and associates these services with individual differences, the life cycle, and life design paradigms. Career guidance, based on the trait-factor and person-environment fit approaches, aims to help individuals find occupations that match their characteristics. Career education helps clients develop new attitudes, beliefs, and competencies by considering their current life stage and developmental tasks and providing support with exploration, decision-making, planning, and job searching. Career counselling is used to help clients reflect on life themes and career transitions in the process of meaning-making and identity formation (Savickas, 2011; Savickas, 2019). We used Savickas' (2019) distinction as the basic framework when structuring the components of our model, considering the needs of different clients. It is designed to assist individuals in developing career pathways aligned with sustainability principles and environmentally responsible practices. Furthermore, the paper examines the competencies required of career counsellors to effectively implement these services, alongside the ethical considerations that may arise in the context of green career counselling.

## **Green Career Services Model**

The expansion of green sectors and the growing demand for green jobs, coupled with the imperative of a green transition for a sustainable future, are reshaping the economy, altering business needs, and redefining the career expectations of the workforce. In this evolving landscape, career counsellors are increasingly expected to play a proactive role in supporting green transitions and contributing to solution-oriented efforts aligned with shared sustainability goals (Plant, 2014). Although career counselling alone may not have the power to solve ecological problems, it can play a significant role by serving as a bridge between individuals' career goals, the labour market, and environmental factors (Plant, 1999). This highlights the necessity of integrating perspectives that support environmentally friendly green jobs and the development of related skills into career counselling practices. In this context, career counsellors are expected to take into account global challenges such as increasing inequality, the depletion of limited natural resources, and the impact of technology on the world of work and quality of life (Nota et al., 2020).

Bakke et al. (2024) identified three key approaches to green guidance practices: developmental (helping individuals successfully manage the green transition), technocratic (aligning individuals with societal needs through the development of green skills), and emancipatory (supporting individuals in transforming their contexts for a socially just green transition). The developmental approach is constructivist and learning-oriented; it focuses on self-discovery, decision-making, and life design through individual learning. The technocratic approach is positivist and information-driven; it is associated with person–environment fit, trait-factor theories, realism, economic models, and quantitative assessments. The emancipatory or social reconstructionist approach is related to challenging social structures that reinforce inequality in terms of opportunities, challenges, and resources (Sultana, 2017).

Inspired by this classification and based on career construction theory, we propose the Green Career Services Model, as presented in Figure 1. In designing this model, Savickas's (2013) three core career interventions have been adapted to the framework of green career services. Savickas (2011) conceptualizes career interventions based on the needs of clients and the requirements of the current era and labour market, and identifies three fundamental services provided by career counsellors: career education, career guidance, and career counselling. The model places green career education from a developmental perspective at its core. It is surrounded by green career guidance from a technocratic approach, and both are encompassed by green career counselling from an emancipatory standpoint (see Figure 1).

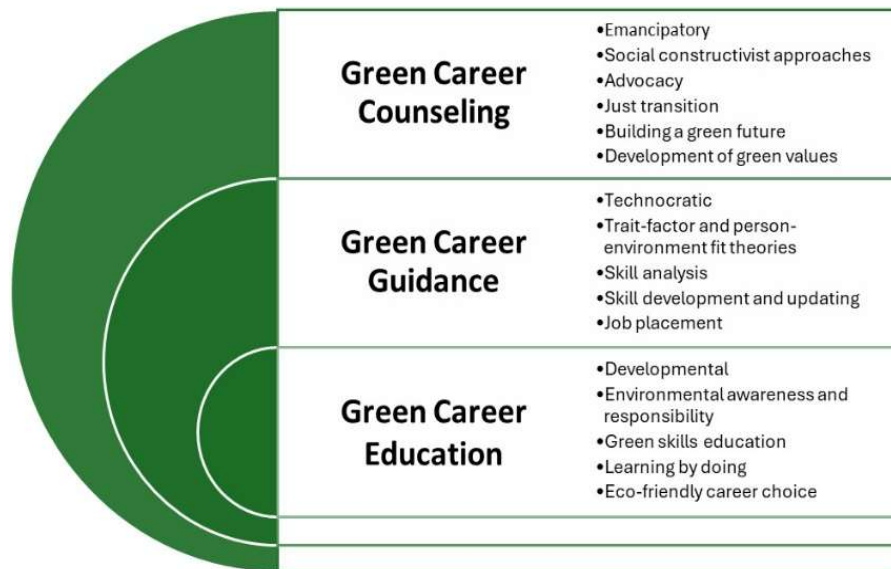


Figure 1 Green Career Services Model

## 2.1 Green Education

## Career

The first component of our model, *green career education*, concerns supporting the career development of children and young people from a developmental and environmentally friendly perspective, in order to help them adapt to green restructuring and orient themselves toward green careers. Hooley (2022) regards career education as the most powerful tool to enable individuals to think about environmental issues. Green career education seeks to integrate environmental awareness into career services that support career adaptability—such as exploring occupations, evaluating options, identifying personal strengths and values, building decision-making skills, setting goals, and planning a career—by reshaping these services to encourage greater sensitivity to environmental issues. In this direction, green career education, based on the development of environmental awareness and a sense of responsibility, will help children and young people successfully carry out their career development tasks by contributing to their adaptation to the ecological transition and supporting them as the builders of a green future.

Aligned with green career education component of our model, the existing 87 guidance programs aimed at developing green career awareness among K–12 students in 20 OECD countries (Chang & Mann, 2024). It was noted that most green guidance programs include a component aimed at increasing students' environmental literacy and knowledge of environmental sciences. Environmental literacy enables students to think about, explore, and experience career development opportunities related to green jobs. With environmental literacy, students gain access to personalized career development and experiential learning opportunities that provide deep understanding of green jobs. Social and environmental issues can be addressed through group-based interventions or by integrating environmental topics into school curricula (Bakke et al., 2024).

In line with these findings, the green career education component in our model is expected to support students in developing environmental sensitivity and awareness through school-based career development programs and interventions; to help them adapt to the green transition by increasing their knowledge of and interest in green careers; and to enable them to make environmentally friendly career choices. In addition, it is stated that green skills are particularly important for young people who can contribute to the ecological transition over a longer period

(UNFCCC, 2023). Similarly, assessing the skills and values required to enter environmentally friendly occupations is identified as an important point (Chang & Mann, 2024). Therefore, a key focus of green career education within our model is the development of green skills and competencies that support individuals in recognizing, evaluating, and making decisions about sustainable and green career options. Consoli et al. (2016) emphasized that a distinguishing feature of new green jobs is “learning by doing.” Consequently, education policies should promote the integration of green skills development practices into school curricula at the K–12 level, including vocational and technical education, and encourage “on-the-job learning” through work-based experiences. Effective training of green skills should be time-distributed, systematic, developmental, repetitive, and practice-based to ensure deep and lasting learning (Fox & Lentini, 2006; Lawson et al., 2019).

## 2.2 Green Career Guidance

The second component of our model, *green career guidance*, adopts a technocratic approach and concerns the updating, development, and placement of the skills of the current workforce, those preparing to enter the workforce, or young adults and adults already participating in the workforce, in line with labour market analyses and the needs related to green careers. For this purpose, it includes career services that are based on approaches such as trait-factor theory and person–environment fit to support individuals in adapting to green restructuring and transitioning into green work life.

In this context, individuals entering the workforce may need to learn about green sectors, reassess their existing knowledge and skills within the scope of green skills, utilize various professional networks, and update their résumés. Green career guidance may include meeting the informational and educational needs of individuals not yet part of working life regarding green careers, assessing their interests and skills, updating and/or developing their green job-related competencies, and creating opportunities for green skills development through work-based learning. Individuals already in working life who wish to transition to a green career may need to review and renew their green job search skills (Taberham, 2021). Accordingly, efforts may also be made to support the green skills of the current workforce through on-the-job or in-service training and to guide them in how to update their existing jobs in ways that contribute to sustainability with environmental sensitivity. For example, a civil servant may not be directly engaged in tasks that require green skills (such as using green technologies), but they can still contribute to sustainability through simple actions such as turning off their computer at the end of the workday, switching off lights before leaving the office, closing windows, or using a personal thermos instead of disposable cups. Indeed, green guidance practices aim not only to facilitate individuals’ transition into ‘sustainable’ sectors, but also to support them in understanding the environmental impacts of their professional choices and in constructing more sustainable career trajectories (Green Guidance, n.d.).

It is noted that universities can play a pioneering role in societies’ transition toward a sustainable future. In its *Global Guidance for Education on Green Jobs* report published in 2021, UNEP states that all higher education institutions can support academic and professional development through three main strategies: enhancing knowledge, developing skills and competencies, and facilitating job opportunities. The creation of sustainability policies and the provision of skills that enable students to tackle sustainability-related challenges can yield positive and meaningful environmental, economic, and social outcomes (North & Ryan, 2018). In this regard, we propose that green career guidance should be considered a key component of career services at the higher education level as well.

In conclusion, green career guidance, which also encompasses green career education, includes career services that contribute to employability and workplace adaptation. These services involve analyzing the green skills needed in the labour market, supporting the

development or updating of green skills for job-seeking young adults and adults, and strengthening their green job search skills.

It is known that there are numerous education and guidance initiatives that address sustainability issues and include green concepts. For example, the California Environmental Literacy Initiative aims to provide environment-based education from pre-school to high school. Within the scope of this initiative, different programs are being conducted to increase environmental literacy, raise environmental awareness, and ensure climate and environmental justice (California Environmental Literacy Initiative, 2025). Another example is the Green Career Awareness Program. This program is an example of a project that raises awareness among K–12 students about green careers. This project supports students in recognizing green job opportunities, understanding sectoral transformations, and developing basic green skills. This program supports students in recognizing green job opportunities, understanding sectoral transformations, and developing basic green skills (San Mateo County Office of Education, 2025). Another example is the Sustainability Support for Education (SSE) service, which is carried out in line with the strategic goals of the Department of Education in the United Kingdom. The program offers sustainability support systems from early years to higher education, particularly in areas where sustainability and environmental awareness inequalities are high. The aim is to create a sustainable career plan for students to pursue green careers or join a broader workforce with green skills (Sustainability Support for Education, 2025). In Ireland, ECO-UNESCO runs comprehensive education and green employment programs to enhance young people's sustainability-focused career awareness and green skills (ECO-UNESCO, 2025). In Ireland, ECO-UNESCO runs comprehensive education and green employment programs aimed at developing young people's sustainability-focused career awareness and green skills (ECO-UNESCO, 2025). Similarly, in Canada, environmental career and green skills development programs run by ECO-Canada are initiatives that support young people's participation in the environmental sector workforce. Similarly, in Canada, ECO-Canada runs environmental career and green skills development programs, which are initiatives that support young people's participation in the environmental sector workforce (Environmental Careers Organisation of Canada, 2025). These examples, which could be expanded upon, include a wide range of applications, practical tools, and guidelines for students, families, teachers, those preparing to enter the workforce, employers, and career practitioners. Examples demonstrate the applicability of the education and guidance components included in the green career model into real-world educational settings through various initiatives. These practices, carried out by government agencies, private organisations, and NGOs in various countries, are mostly considered as education and guidance practices. The green career services model aims to support green career development with the addition of career counselling and introduces a new perspective in the field of career counselling. In other words, we believe that the green career services model provides a framework for the holistic structuring of services aimed at supporting sustainable and green career development

### **2.3 Green Career Counselling**

The final component of our model, *green career counselling*, is grounded in a social constructivist approach that emphasizes the reciprocal relationship between individuals and their contexts. While contextual factors shape individuals' career development, individuals also influence the contexts in which they live. Thus, while supporting individuals' career development within the context of sustainability, it also aims to contribute to the creation of sustainable and just employment at the societal level.

In green career counselling, individuals are supported in discovering their goals, interests, and values within a framework of environmental sensitivity and a vision for a fair and sustainable society, and in making informed career decisions, planning, and structuring their

careers accordingly. Inkson and Parker (2011) discuss career choice in terms of values and argue that the rise of “green values” in society steers individuals toward green jobs. They suggest that eco-careers emerge when individuals consciously prioritize a green perspective among many competing values in their career decisions. Education and career choices transform individuals’ professional and personal development into contributions to society, building a connection between the individual and their social context, from the “self” to the “collective” and to the “world,” and thus contribute to inclusive and sustainable living conditions (Međugorac et al., 2019). At this point, a holistic and inclusive career counselling approach that incorporates social responsibility aims to protect the interests of both individuals and society in pursuit of a fair and sustainable future. Concern not only for one’s own future but also for the future of others reflects an emerging awareness of the need for efficient use of natural resources and environmental preservation. This transformative approach offers clients the opportunity to reflect on global challenges and to shape their actions accordingly (Irving & Liévano, 2019).

According to Plant (2015), green guidance, which corresponds to green career counselling in our model, represents a proactive, questioning, probing, reflexive, and genuinely client-centered approach (p. 121). Furthermore, there is a growing need for new methods and perspectives to ensure green and decent work and to promote social justice (Bakke et al., 2024). Holding green values is not only about environmental sustainability but also about advocating for justice and equality for all (Irving, 2013). Accordingly, green career counselling includes not only environmentally conscious individual career development, but also broader societal goals such as social justice, particularly by addressing the challenges disadvantaged groups may face in accessing green jobs and developing green skills. In this context, career counsellors may serve as a bridge between clients and employers, contributing to environmental protection and the reduction of youth unemployment (Irving & Liévano, 2019).

To conclude, green career counselling not only imparts knowledge about green careers and equips individuals with the necessary skills but also facilitates their transition into green job sectors. Beyond providing individualized career counselling services, it also assumes a leadership role in advancing a green and just future at the societal level.

### 3 Conclusion

The green transformation necessitates the adaptation of career counselling services. For the Green Career Services Model to be effective, its practices must align with core career counselling competencies. Professional standards in career counselling such as career development theories, counselling skills, communication, ethics, research, technology use, and multicultural competence are all directly or indirectly relevant to the delivery of green career services (Career Industry Council of Australia, 2019; International Association for Educational and Vocational Guidance, 2017; National Career Development Association [NCDA], 2009).

Multicultural competence refers to career development professionals’ awareness of cultural and diversity issues, knowledge about self and others, and the ability to apply this awareness effectively in working with individuals and groups (NCDA, 2024). It also involves understanding clients’ cultural, social, and economic contexts, which is particularly important in the delivery of equitable green career services. Disadvantaged groups such as individuals with disabilities, women, and those with limited literacy skills face difficulties in accessing new green and decent jobs. Therefore, the decent work potential of a sustainable and green economy requires that these challenges be addressed in a comprehensive and complementary manner (ILO, 2011; 2013). In this context, career counsellors can contribute to the promotion of social justice through the application of multicultural competence. Career counselling services for

disadvantaged groups may play a significant role in advancing equality and justice during the transition to a green economy.

Career counsellors can intervene at both the micro level, helping clients recognize and cope with their career-related concerns, and the macro level, addressing structural and institutional barriers to social justice (Nota et al., 2020). Inclusive and sustainable interventions are also necessary due to the social and political challenges that young people must consider when planning their futures (Di Maggio et al., 2020). Career counsellors should reconsider their role in designing a sustainable future for all, enhancing their knowledge and skills to develop various strategies. In this context, the green career education, green career guidance, and green career counselling practices proposed in this article are intended to support career development at the micro level in accordance with sustainability principles and requirements, while also offering inclusive services that contribute to economic, social, and environmental sustainability at the macro level. The transition to a green economy, green jobs, and green employment has the power to transform the field of career counselling, just as career counselling holds the potential to contribute to progress and transformation in these areas.

On the other hand, it is important to be aware of the challenges to the widespread adoption of green career services, as highlighted by the European Commission. Since sustainability is mostly driven by schools or teachers, its impact across the system is limited. Only 42% of young people report having meaningful opportunity to learn about sustainability in school, while teachers emphasize the lack of sufficient time, guidance, and resources (European Commission, 2025). These challenges are likely to be relevant to the implementation and dissemination of the green career services we propose. It is clear that structuring career workers' services toward a green transition requires systemic changes and structures rather than individual efforts. Although emerging green careers offer employment opportunities in various sectors, it is also known that there are economic constraints, gender-based barriers, and sectoral barriers (Abdallah et al., 2024; Sweeney et al., 2009; Vásquez-Chaux et al., 2025). In addition, the transition to green practices requires investment (Shulimova et al., 2024). The necessity of awareness and training programs for the workforce to acquire green skills is highlighted (Boone et al., 2023). In this context, the green career services model provides an innovative and inclusive framework by integrating career education, guidance, and counselling into the green transformation process. However, overcoming limitations requires the joint efforts of policymakers, educational institutions, and the business world. Therefore, inadequate legal regulations, limited institutional support, and non-standard practices within education systems may complicate the implementation of green career services. It is clear that these transformations require the support of policymakers through various legal regulations and incentives.

Accordingly, we emphasize the need to restructure career counselling services and strengthen the competencies of career counsellors to effectively deliver green career education, guidance, and counselling. Green career themes should be integrated into in-service training, counsellor and teacher education programs, and broader educational curricula at all levels. Future research could focus on designing and testing interventions and training programs, as well as developing models of green career services compatible with different career development approaches such as the Systems Theory Framework. In summary, we believe that green career services components can be implemented in educational environments and integrated with guidance and counselling services. While green career awareness and knowledge can be integrated into annual plans and learning outcomes, workshops and field experiences can be planned to help students develop green skills. Career counsellors can use "life design counselling" in their practice to build a green future. Furthermore, future research should examine how green career services can be delivered across different cultural contexts

by considering local labour market dynamics and existing policy frameworks and should focus on developing measurement tools to assess the green skills of both students and counsellors.

## References

- Abdallah, A. K., Ismail, L. S., & Alkaabi, A. M. (2025). Green careers: Educating for the Future of Sustainability. In E. Alqodsi & A. Abdallah (Eds.), *Legal Frameworks and Educational Strategies for Sustainable Development* (pp. 337-366). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-2987-0.ch017>
- Agarwal, N., & Dewan, P. (2016). Writing a review article: Making sense of the jumble. *Indian Pediatrics*, 53(8), 715–720. <https://doi.org/10.1007/s13312-016-0915-z>
- Bakke, I.B., Hooley, T., Kavková, E., Košťálová, H., Lucas Casanova, M., Ostroha, L., Šprlák, T., & Wrzosek, M. (2024). *Evidence on green guidance: A review of the literature. Exploring Green Guidance*. <https://www.green-guidance.eu/resources/evidence-on-green-guidance-a-review-of-the-literature/>
- Boone, C. G., Bromaghim, E., & Kapuscinski, A. R. (2023). Sustainability careers. *Annual Review of Environment and Resources*, 48(1), 589–613. <https://doi.org/10.1146/annurev-environ-120920-105353>
- Bowen, A., & Kuralbayeva, K. (2015). *Looking for green jobs: The impact of green growth on employment* [Working paper]. Grantham Research Institute on Climate Change and the Environment. <https://gggi.org/wp-content/uploads/2017/11/2015-03-Looking-for-Green-Jobs-the-impact-of-green-growth-on-employment.pdf>
- California Environmental Literacy Initiative. (2025). *CAELI resources*. <https://ca-eli.org/resources>
- Career Industry Council of Australia. (2019). *Professional standards for Australian career development practitioners*. <https://cica.org.au/wp-content/uploads/Professional-Standardsfor-Australian-Career-Development-Practitioners-2019.pdf>
- Cedefop. (2012). *Green skills and environmental awareness in vocational education and training synthesis report*. Publications Office of the European Union. <https://www.cedefop.europa.eu/en/publications/5524>
- Chang, Y., & Mann, A. (2024). Enhancing green career guidance systems for sustainable futures *OECD Education Working Papers*, No. 318, OECD Publishing, Paris. <https://doi.org/10.1787/e6ad2d9c-en>
- Consoli, D., Marin, G., Marzucchi, A., & Vona, F. (2016). Do green jobs differ from non-green jobs in terms of skills and human capital? *Research Policy*, 45(5), 1046–1060. <https://doi.org/10.1016/j.respol.2016.02.007>
- De Vos, A., & Van der Heijden, B. I. J. M. (2017). Current thinking on contemporary careers: The key roles of sustainable HRM and sustainability of careers. *Current Opinion in Environmental Sustainability*, 28, 41–50. <https://doi.org/10.1016/j.cosust.2017.07.003>
- De Vos, A., Van der Heijden, B. I. J. M., & Akkermans, J. (2020). Sustainable careers: Towards a conceptual model. *Journal of Vocational Behavior*, 117, Article 103196. <https://doi.org/10.1016/j.jvb.2018.06.011>
- Di Maggio, I., Ginevra, M. C., Santilli, S., Nota, L., & Soresi, S. (2020). The role of career adaptability, the tendency to consider systemic challenges to attain a sustainable development, and hope to improve investments in higher education. *Frontiers in Psychology*, 11, Article 1926. <https://doi.org/10.3389/fpsyg.2020.01926>
- ECO-UNESCO. (2025). *Youth programs*. <https://ecounesco.ie/10-18-youth-programs-2>
- Environmental Careers Organisation of Canada. (2025). *Environmental employment programs & services*. <https://eco.ca/about-us/programs-services>

- Fox, L., & Lentini, R. H. (2006). "You got it!" Teaching social and emotional skills. *Young Children*, 61(6), 36–42.
- Garren, S. J., & Brinkmann, R. (2018). Sustainability definitions, historical context, and frameworks. In R. Brinkmann & S. J. Garren (Eds.), *The Palgrave handbook of sustainability: Case studies and practical solutions* (pp. 1–18). Palgrave Macmillan. [https://doi.org/10.1007/978-3-319-71389-2\\_1](https://doi.org/10.1007/978-3-319-71389-2_1)
- Greenhaus, J. H., & Kossek, E. E. (2014). The contemporary career: A work–home perspective. *Annual Review of Organisational Psychology and Organisational Behavior*, 1(1), 361–388. <https://doi.org/10.1146/annurev-orgpsych-031413-091324>
- Hooley, T. (2022, October 10). *Green guidance: Why career development needs to pay attention to environmental change*. Career Guidance for Social Justice. <https://careerguidancesocialjustice.wordpress.com/2022/10/10/green-guidance-why-career-development-needs-to-pay-attention-to-environmental-change/>
- Inkson, K., & Parker, P. (2011). Eco-careers: Expressing green values in working lives. In M. Clarke (Ed.), *Readings in HRM and sustainability* (pp. 22–35). Tilde University Press.
- International Association for Educational and Vocational Guidance. (2017). *IAEVG ethical guidelines*. <https://iaevg.com/Ethical-guidelines>
- International Labour Organisation. (2011). *Skills for green jobs: A global view. Synthesis report based on 21 country studies*. Strietska-Ilina, Hofmann, C. Duran Haro, M. & Shinyoung Jeon (Eds.) Geneva. [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/--publ/documents/publication/wcms\\_159585.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/--publ/documents/publication/wcms_159585.pdf)
- International Labour Organisation. (2013). *Green jobs becoming a reality: Progress and outlook 2013*. [https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed\\_emp/%40emp\\_ent/documents/publication/wcms\\_213586.pdf](https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_emp/%40emp_ent/documents/publication/wcms_213586.pdf)
- International Labour Organisation. (2016). *What is a green job?* [https://www.ilo.org/global/topics/green-jobs/news/WCMS\\_220248/lang--en/index.html](https://www.ilo.org/global/topics/green-jobs/news/WCMS_220248/lang--en/index.html)
- Irving, B. A. (2013). 'It's not easy being green' – re/positioning ethical values in career practice. *Paper in Symposium: 'Green Guidance': A Time for Action. Presented at the IAEVG Conference, Career Counselling: A Human or a Citizen's Right*. Montpellier
- Irving, B. A., & Liévano, B. M. (2019). Ecojustice, equity and ethics: Challenges for educational and career guidance. *Revista Fuentes*, 21(2), 253–263. <https://doi.org/10.12795/revistafuentes.2019.v21.i2.09>
- Korostelkina, I., Dedkova, E., & Korostelkin, M. (2022). Green economy: Current trends and financial aspects of development. In T. Antipova (Ed.), *Comprehensible science* (pp. 195–206). Springer. [https://doi.org/10.1007/978-3-030-85799-8\\_17](https://doi.org/10.1007/978-3-030-85799-8_17)
- Kossek, E. E., Valcour, M., & Lirio, P. (2014). The sustainable workforce: Organisational strategies for promoting work-life balance and wellbeing. In P. Y. Chen & C. L. Cooper (Eds.), *Work and wellbeing* (pp. 295–318). Wiley Blackwell. <https://doi.org/10.1002/9781118539415.wbwell030>
- Lawson, G. M., McKenzie, M. E., Becker, K. D., Selby, L., & Hoover, S. A. (2019). The core components of evidence-based social emotional learning programs. *Prevention Science*, 20(4), 457–467. <https://doi.org/10.1007/s11121-018-0953-y>
- Martinez-Fernandez, C., Hinojosa, C., & Miranda, G. (2010). *Greening jobs and skills: Labour market implications of addressing climate change. OECD Local Economic and Employment Development (LEED) Papers*, No. 2010/02, OECD Publishing, Paris. <https://doi.org/10.1787/5kmbjgl8sd0r-en>
- Međugorac, V., Šverko, I., & Babarović, T. (2019). Careers in sustainability: An application of Social Cognitive Career Theory. *International Journal for Educational and Vocational Guidance*, 20(3), 477–499. <https://doi.org/10.1007/s10775-019-09413-3>

- National Career Development Association. (2024). *NCDA code of ethics*. James, C. Reile, D. & Panke Makela, J(Eds.). [https://www.ncda.org/aws/NCDA/asset\\_manager/get\\_file/3395](https://www.ncda.org/aws/NCDA/asset_manager/get_file/3395)
- Newman, K. L. (2011). Sustainable careers. *Organisational Dynamics*, 40(2), 136–143. <https://doi.org/10.1016/j.orgdyn.2011.01.008>
- North, L. A., & Ryan, C. N. (2018). Green universities: The example of Western Kentucky University. In R. Brinkmann & S. J. Garren (Eds.), *The Palgrave handbook of sustainability: Case studies and practical solutions* (pp. 567–581). Palgrave Macmillan. [https://doi.org/10.1007/978-3-319-71389-2\\_30](https://doi.org/10.1007/978-3-319-71389-2_30)
- Nota, L., Soresi, S., Di Maggio, I., Santilli, S., & Ginevra, M. C. (2020). *Sustainable development, career counselling and career education*. Springer. <https://doi.org/10.1007/978-3-030-60046-4>
- Nowak, M. (2020). Career counselling in the sustainable development trend on the example of secondary schools in one of the Polish cities. *International Journal of Pedagogy Innovation and New Technologies*, 7(2), 69–77. <https://doi.org/10.5604/01.3001.0014.6874>
- Plant, P. (1999). Fringe focus: Informal economy and green career development. *Journal of Employment Counselling*, 36(3), 131–139. <https://doi.org/10.1002/j.2161-1920.1999.tb01015.x>
- Plant, P. (2014). Green guidance. In G. Arulmani, A. J. Bakshi, F. T. L. Leong, & A. G. Watts (Eds.), *Handbook of career development: International perspectives* (pp. 309–316). Springer. [https://doi.org/10.1007/978-1-4614-9460-7\\_17](https://doi.org/10.1007/978-1-4614-9460-7_17)
- Plant, P. (2015). Green guidance: Guidance for the future. *REOP*, 26(1), 115–123. <https://doi.org/10.5944/reop.vol.26.num.1.2015.14346>
- Rutkowska, M., & Sulich, A. (2020). Green jobs on the background of industry 4.0. *Procedia Computer Science*, 176, 1231–1240. <https://doi.org/10.1016/j.procs.2020.09.132>
- Savickas, M. L. (2005). The theory and practice of career construction. In S. D. Brown & R. W. Lent (Eds.), *Career development and counselling: Putting theory and research to work* (pp. 42–70). John Wiley & Sons.
- Savickas, M. L. (2011). *Career counselling*. American Psychological Association.
- Savickas, M. L. (2013). Career construction theory and practice. In S. D. Brown & R. W. Lent (Eds.), *Career development and counselling: Putting theory and research to work* (2nd ed., pp. 147–183). John Wiley & Sons.
- Savickas, M. L. (2015). Career counselling paradigms: Guiding, developing, and designing. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA handbook of career intervention: Vol. 1. Foundations* (pp. 129–143). American Psychological Association. <https://doi.org/10.1037/14438-008>
- Savickas, M. L. (2019). The world of work and career interventions. In M. L. Savickas (Ed.), *Career counselling* (2nd ed., pp. 3–14). American Psychological Association. <https://doi.org/10.1037/0000105-001>
- Schweitzer, L., Lyons, S., & Smith, C. J. (2023). Career sustainability: Framing the past to adapt in the present for a sustainable future. *Sustainability*, 15, Article 11800. <https://doi.org/10.3390/su151511800>
- Shulimova, M., Tekeeva, H., & Baysaeva, M. (2024). The role of green economy in achieving sustainable development goals: Prospects and challenges for business. *Russian Journal of Economics and Law*, No. SI 6(81). <https://doi.org/10.24412/1932-2321-2024-681-1615-1622>
- Sultana, R. (2017). Precarity, austerity and the social contract in a liquid world: Career guidance mediating the citizen and the state. In T. Hooley, R. Sultana, & R. Thomsen (Eds.), *Career guidance for social justice: Contesting neoliberalism* (pp. 63–76). Routledge.
- Sustainability Support for Education. (2025). *About sustainability support for education*. <https://www.sustainabilitysupportforeducation.org.uk/about>

- Taberham, J. (2021). *Global environmental careers: The worldwide green jobs resource*. John Wiley & Sons. <https://doi.org/10.1002/9781119052807>
- UNEP. (n.d.). *What is an "inclusive green economy"?* United Nations Environment Program. <https://www.unep.org/explore-topics/green-economy/why-does-green-economy-matter/what-inclusive-green-economy>
- UNEP. (2008). *Green jobs: Towards decent work in a sustainable, low-carbon world*. United Nations Environment Program. [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---emp\\_ent/documents/publication/wcms\\_158727.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_158727.pdf)
- UNFCCC. (2023). *Why are green skills important for youth?* UN Climate Change News (August, 2023). <https://unfccc.int/news/why-are-green-skills-important-for-youth>
- United Nations. (2012). *The future we want*. <https://sustainabledevelopment.un.org/content/documents/733FutureWeWant.pdf>
- Van der Heijden, B. I. J. M., & De Vos, A. (2015). Sustainable careers: Introductory chapter. In A. De Vos & B. I. J. M. Van der Heijden (Eds.), *Handbook of research on sustainable careers* (pp. 1–19). Edward Elgar Publishing.
- Vásquez-Chaux, P., Soto, J. D., & Gallego, V. (2025). Pathways to green careers: Using MICMAC analysis to address gender barriers in STEM-related TVET education in Colombia. *Empirical Research in Vocational Education and Training*, 17(1). <https://doi.org/10.1186/s40461-025-00196-2>
- World Economic Forum. (2025). *The global risks report 2025*. Elsner, M, Atkinson, G & Zahidi, S. (Eds.). <https://www.weforum.org/publications/global-risks-report-2025/>

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