

5

SUSTAINABILITY SKILLS AND COMPETENCES



LEARNING OUTCOMES

- Gain an understanding of the types of skills and competences linked to sustainability actions in organisations.
- Critically evaluate attempts to integrate sustainability into business education.
- Critically assess the role of government in supporting access to sustainability skills and competences training.
- Determine the role of the corporate sector in supporting sustainability skills and competences.
- Understand the role of support bodies and accreditors in developing sustainability skills and competences.

INTRODUCTION

Sustainability skills and competences are wide ranging, potentially complex and apply to all workers, practitioners and professionals within business organisations. It is important that global sustainable managers understand that the knowledge, skills and competences that support sustainability actions must permeate throughout their entire organisation. That means effective communication of the sustainability strategy is a prerequisite for addressing

sustainability challenges in any business setting. Beyond that, there is a requirement to deliver the training and knowledge that help to develop skills and competences that support sustainability performance both at the individual and organisational level.

This chapter begins with an overview of the relevant skills and competences linked to sustainability practices and processes. The role of education in the development of key skills and competences is discussed with examples, such as the United Nations Principles for Responsible Management Education (PRME), used to lend context to selected interventions to boost knowledge and understanding around sustainability education. The chapter then focuses on the input and support mechanisms from government and the corporate sector for the development of skills and competences for sustainability practices. The chapter further elaborates the role of these institutions and the business community by drawing together some of the key collaborations between education, government and corporate bodies to support sustainability skills and competences. The discussion concludes with an overview of the role of support bodies and accreditors in enhancing the professionalism surrounding support for sustainability skills and competences.

SKILLS AND COMPETENCES

Research by Bhutto and Aurazeb (2016) points to the ‘green’ training of employees as having a significant effect on company performance. Thus, managers need to consider how, what and where that development will play out. In the first instance, it is useful to determine what level of skills and competence exists within the organisation. These may vary widely but tend to follow a trajectory between basic through to expert and strategic as outlined in Figure 5.1.

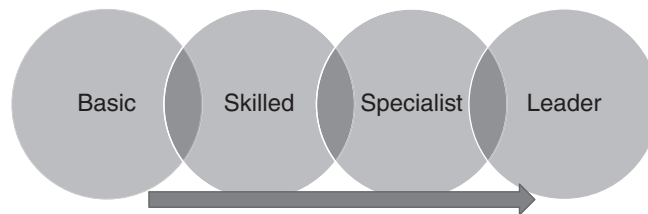


FIGURE 5.1 *Sustainability skills and competence levels*

The basic level of understanding of sustainability will not be sufficient to add value to the organisation in ways that support the sustainability strategy. Training will be required to develop workers, practitioners or managers to achieve a level where they can apply skills and knowledge in a meaningful way.

The skills may be technical, knowledge-based, experiential or a wide range of other learning development formats. They may vary according to the types of skills and competences required by the organisation to meet their sustainability strategic aims. Over time, when training is combined with experience, workers, practitioners or managers may become specialist in delivering value-added sustainability returns to the organisation in specialist areas of the business. This may include a wide range of activities including managing green supply chains, waste management, responsible marketing, carbon reducing production techniques, and so on. These may include those involved in functional roles that support core business processes within the organisation. Here, the key to improving sustainability performance depends on the effectiveness with which workers, practitioners and managers at the functional level understand how their role links to sustainability outcomes. Accessing skills and competences to enable this is a necessary part of this process. Ultimately, as sustainability actions become embedded in the organisational culture, effective leadership will deliver transformational types of value that support the achievement of the organisational sustainability strategy. There is a wide range of skills and competences linked to sustainability actions. Some are regulated and require accreditation to demonstrate minimum standards, some are optional in terms of acquiring qualification and others need only low-level training or knowledge acquisition. Table 5.1 lists some examples.

As a minimum it would be expected that workers, practitioners and managers have a basic understanding of sustainability issues pertaining to their organisation and perhaps within the industry in which they operate. Here, it is necessary to ensure that staff have a basic level of comprehension around environmental issues linked to their organisation's activities and that they are familiar with the protocols and regulations that underpin the implementation of sustainability actions. This basic level of compliance is a mandatory element of the organisation's overall sustainability strategy as negligence at this level may lead to environmental and reputational damage. Staff should also be encouraged to better understand sustainability issues and 'buy into' the ethos of sustainability that managers embed into the organisational culture. This can be achieved by access to training, experiential learning, work-based learning and the influence of mentors or change agents (Armstrong and Sadler-Smith, 2008). Staff at this level receive instruction and are expected to undertake basic compliance actions. Of course, not all companies will have in-house expertise to deliver training to staff and will, therefore, rely on consultants, external trainers or work in partnership with NGOs, accreditors or other companies.

Staff who can be considered practitioners around sustainability issues take on more responsibility and ensure that compliance is observed. This often involves managers at functional levels within organisations and their remit extends to incorporating sustainability monitoring, evaluation or actions into their sphere of influence. As practitioners they may be motivated to gain accreditation or qualifications that enhance their knowledge of sustainability in the context of their functional

TABLE 5.1 *Sustainability skills and competences*

Non-regulated	Optional	Regulated	Strategic
BASIC	SKILLED	SPECIALIST	LEADER
Environmental awareness	Sustainable business practices	Environmental Management Systems auditor	Sustainability innovation
Sustainability practices awareness	Waste best practices	Energy resource manager	Change process leadership
Understanding of and compliance with sustainability protocols	Accessing sustainability training and knowledge sharing	Sustainable procurement	Long-term sustainability targets
Attending sustainability learning workshops	Carbon monitoring, evaluation and reporting	Environmental legislation	Embed sustainability in organisational culture
	Recycling practices	Community engagement	Assess sustainability risk and opportunities
	Reconstituting products	Waste management	Integrate skills and specialist knowledge
		Water resource management	Influence industry change
		Business resilience	Integrate value chain activities for sustainability
		Sustainability Impact Assessment	Achieve sustainability targets

area. Examples include overseeing sustainability practices, waste management, recycling protocols or organising training and knowledge sharing programmes. They may also be involved in the process of monitoring and reporting on trends in carbon emissions linked to their functional area to facilitate decision-making at managerial level. Rajput and Pachauri (2018) discuss the perception of employee sustainability roles and initiatives as important drivers of organisational culture.

Specialist practitioners operate at the next level whereby sustainability management defines the roles. It would be expected that practitioners at this level have had formal training or have acquired accredited qualifications. This typically includes Environmental Management Systems and auditing, specialist roles around energy usage, waste management, water resource management, procurement,

and so on. Understanding and acting upon legislative measures may also feature at this level and is a vital element of the compliance process. For example, managers have to ensure that there is compliance with international standards such as ISO 14001 that uses an Environmental Management System (EMS) for environmental performance. Research by Darnall and Kim (2012) and research reviews by Tourais and Videira (2016) into why, how and what organisations achieve by implementing EMS both link its use to effective sustainability and eco-management performance. Managers and practitioners at this level will also be actively involved in community engagement activities where information on the sustainability plans, strategies and performance can be disseminated to stakeholders. They will also gain feedback from stakeholders what to include in future plans for sustainability actions. This may be linked to the compilation of a Sustainability Impact Assessment where the effect of the organisation's activities on the environment and communities is recorded and presented. This is a specialist task requiring a high level of understanding and knowledge around measurements of impact and the analysis of data and information.

Specialists are also involved in the innovation process since they are best positioned to understand how new ideas can enhance sustainability performance in their functional area. This may include new and better ways of packaging, production, design, distribution, marketing and sales. They may also consider better ways of informing consumers on sustainable actions linked to their product use such as recycling, disposal or reducing waste. Specialists may also generate new ways of adapting products or reconstituting them after use. Whatever the area of intervention, this level delivers the added value that makes a significant contribution to the achievement of the sustainability strategic aims of organisations.

Leadership in sustainability can incorporate those with specialist skills too. However, much of the leadership around sustainability actions are played out at the strategic level. This may not necessarily involve technical expertise but rather the ability to drive forward the change necessary to achieve sustainability strategic aims. The type of leadership referred to in this context links to leadership, analytical skills, decision-making, influencing and communicating ideas and goals. Necessarily, this type of expertise requires inter-personal skills, a deep understanding of where the organisation needs to be positioned in terms of sustainability goals sometime into the future, and a clear strategy of how to achieve those goals. Leadership expertise in this context will involve a superior understanding of how innovation can be the catalyst for change, how collaborative networks across supply chains can add value to sustainability goals, or how a systems thinking approach (an integrated and holistic view of the component parts of a system) can help deal with complex issues. Metcalf and Benn (2013) provide a compelling account of just how complex sustainable organisations can be and how they require extraordinary forms of leadership. This form of leadership is also expressed in the entrepreneurial mindset whereby an understanding of risk and opportunities that sustainability challenges present can deliver improved

economic performance for the organisation whilst addressing environmental and social needs.

Perhaps one of the biggest challenges facing managers with this type of expertise is to embed the values and beliefs around sustainability into the organisational culture (Polman and Bhattacharya, 2016). Leaders need followers to validate their position and much of this will depend on how well they communicate the vision, mission, ideas and concepts around sustainability to key stakeholders both inside and external to the organisation. The deployment of these types of leadership skills and competences will prove pivotal to the extent to which strategic aims are achieved. Ultimately, the success of any sustainability strategy will rely on how coherent and collaborative the combined and interrelated actions are across the entirety of the organisation. The issue of leadership is of such importance to the process of change required to drive forward sustainability actions that a more in-depth treatment of it comprises Chapter 10. For this current chapter, the focus is on the triple helix of education, government and business contributions to developing sustainability skills and competences. The role of accreditors and support bodies are also included to reflect the valuable contributions made from those sources.

EDUCATION

The educational sector plays an important role in supporting the skills and competences that the next generation of practitioners and managers will need to address the challenges of sustainability as a means of reducing carbon emissions and averting a climate catastrophe. Sustainability is a feature of curricula across schools, higher educational institutions and universities around the globe. It features as part of the learning process in many different contexts including business, engineering, healthcare, fashion, construction, transport, and many more. The modes of learning have also developed significantly and now include formal lectures, e-learning, the virtual classroom, distance learning, work-based learning and applied learning, among others. There are a number of important support bodies that have been created to improve understanding and knowledge of sustainability and responsible management across the globe. Many emanate from educational institutions such as business schools in universities or educational support organisations. One of the most high-profile initiatives has been the Principles for Responsible Management Education (PRME) created by the United Nations.

Principles for Responsible Management Education (PRME)

Developed in 2007, Principles for Responsible Management Education (PRME) is a United Nations Global Compact-backed initiative to promote and inspire responsible management education and research in academic institutions around the globe. As PRME signatories, universities have to declare their willingness to

progress the implementation of key principles as outlined in Figure 5.2. The purpose of PRME is to equip the next generation of leaders and managers with the skills and competences to deliver change based on the UN Sustainable Development Goals (SDGs) for a better future. The initiative is designed to raise the profile of sustainability across educational institutions around the globe. There are over 800 signatories to the initiative, which now forms the largest of all relationships between the UN and the management-related educational sector. The PRME vision is to ‘create a global movement and drive thought leadership on responsible management education’ (www.unprme.org).

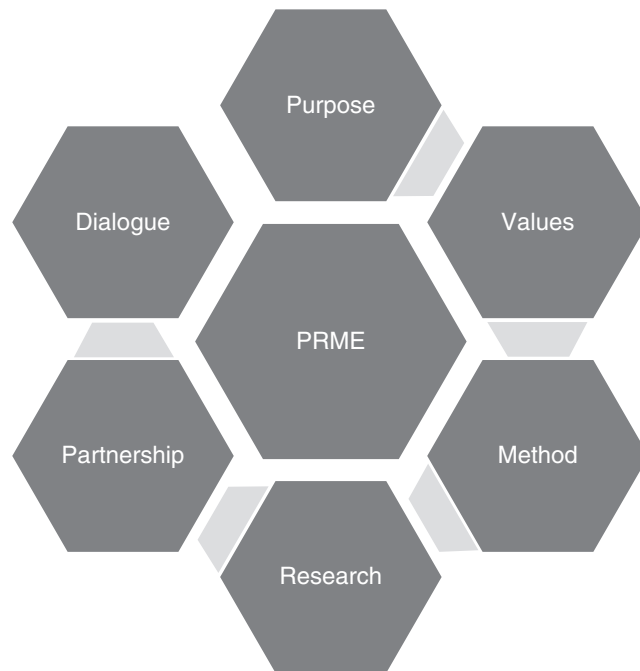


FIGURE 5.2 *Principles of PRME*

Source: www.unprme.org/what-we-do

Purpose: to develop the capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and sustainable global economy.

Values: to incorporate into our academic activities and curricula the values of global social responsibility as portrayed in international initiatives such as the United Nations Global Compact.

Method: to create educational frameworks, materials, processes and environments that enable effective learning experiences for responsible leadership.

Research: to engage in conceptual and empirical research that advances our understanding about the role, dynamics and impact of corporations in the creation of sustainable social, environmental and economic value.

Partnership: to interact with managers of business corporations to extend our knowledge of their challenges in meeting social and environmental responsibilities and to explore jointly effective approaches to meeting these challenges.

Dialogue: to facilitate and support dialogue and debate among educators, students, business, government, consumers, media, civil society organisations and other interested groups and stakeholders on critical issues related to global social responsibility and sustainability.

To reflect the diversity of conditions that affect different parts of the world, the PRME signatories are divided into 14 regional chapters aligned to geography, national, regional, cultural and linguistic characteristics. The chapters provide the platform for dialogue, learning and action on responsible management. Importantly, the six principles of PRME (and the UN SDGs) are promoted and actioned within each of the chapters.

Critical evaluation of PRME

It is evident that the PRME initiative has had a global impact by providing a framework that unifies membership in the ways and means of changing business education in a transformative manner. It has facilitated the communication of the UN SDGs and the core values and goals that underpin them. It has also been the catalyst for debate and discussion among business-school professionals on the key themes of ethics, responsible leadership and sustainability. Indeed, in large measure, the topic of sustainability is an integral part of learning across most business school programmes. PRME has facilitated the dissemination of global values through an ever-increasing network of change agents, both at regional and national level, to help advance the role of social responsibility and sustainability in business education environments.

There has been significant progress among signatories in embedding the principles into teaching and research and, although the extent of this varies between different institutions, the initiative continues to evolve. Hamid and Johner (2010) suggest that a minimum number of principles should be established to ensure acceptable levels of progress. They also point to a lack of comparison between institutions as a weakness of the existing format. Alcaraz et al. (2011) take a critical view of PRME and conclude that membership comes with certain ideological, integration and implementation tensions. For example, signatories are expected to align their strategies to a paradigm shift based on a rethinking of the relationship between business and society. Consequently, the previously held pre-eminence of profitability, shareholder value and growth has been replaced

by issues of sustainability and social responsibility. Porter and Kramer (2006) put forward arguments on how these issues cannot only co-exist, but thrive in a mutually advantageous manner.

Louw (2015) questioned the notion that PRME initiated paradigm change in business schools and claimed that, in fact, there had been little real scrutiny of the initiative. A key argument presented was that business school signatories to PRME are servants to the corporate sector. Forray et al. (2015) present a different view by highlighting the rigour to which PRME membership is assessed and point to some institutions being de-listed as evidence of the standards required for inclusion. Debate around the efficacy of the PRME initiative continues apace with some arguing that it has failed to produce business leaders with the capacity to deliver on the challenges of sustainability (Crawford-Lee and Wall, 2018). This assertion follows that of Wall (2017) who believes that business education programmes produce graduates more interested in profit than people or planet. Miller and Xu (2016) produced empirical evidence to suggest that MBA students from a sample typically exhibited more self-serving graduates compared to other programmes.

Despite some well-formed criticisms of PRME, some of which have been presented here, it is clear that the champions of the initiative have set an evolutionary tone to its implementation with adaptations and improvements being sought constantly. The initiative calls on expertise from multiple different disciplines on a global basis to effect the paradigm change around social responsibility, ethics and sustainability. The initiative has invigorated campus teaching through transformations in the business education curriculum, reconfiguring learning methodologies for deeper thinking of key issues by students, and supporting effective and practical research. Much of the success of PRME depends on faculty actively engaging with the principles in meaningful ways that reframe the way in which business education is taught. The challenge is to inform, educate and facilitate faculty for engaging with PRME so that the associated values can be transferred to students as next generation business leaders.

Mini case 5.1: Intentional Sustainable Communities

Carla Nogueira (University of Algarve, Portugal) and Hugo Pinto (University of Coimbra, Portugal)

Intentional Sustainable Communities (ISCs) are self-organised groups that are agents of change contributing to the transition to a more sustainable environmental, social and economic paradigm. There has been a significant rise in the number of ISCs around the world in recent decades as more and more people seek a more sustainable lifestyle. ISCs are characterised by their focus on sustainable lifestyles based on principles and concerns consistent with the ecological movement. The pioneers

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of this movement began to experiment with new ways of living in the community and reflecting diverse areas of life including consumption, production, organisation and governance (Bang, 2005). According to the Global Ecovillage Network (GEN), these intentional communities are consciously designed through participatory processes, with local ownership, for the regeneration of social and natural environments. They are based on three main dimensions of sustainability – environmental, social and economic – integrated into a holistic perspective (Bang, 2005). Although there is a great diversity within the family of ISCs, it is also possible to identify some common pillars: the community impulse, the citizen initiative of resistance and action, the sharing of values, research and training. As they assume an experimental and laboratory character, these communities tend to combine forms of governance, production and technology in a creative way.

There is consensus that ISCs should be based on founding principles including the social or political dimension (since people must feel simultaneously supported and responsible for the group), building a sense of belonging through the ability to be part of the decision-making process in a transparent way; the ecological or environmental dimension through the interconnection between the individual, group and land that satisfies needs within respect for the cycles of nature; the cultural or spiritual dimension through the promotion of activities that enhance the artistic and creative spirit; and the economic dimension, based on the principles of redistribution of resources within a solidarity economy framework.

These communities have contributed to developing experiences at a societal level to build management skills and competencies that contribute and adapt to contemporary contexts of sustainability. ISCs have developed practices that directly align with the United Nations Sustainable Development Goals (SDGs), particularly in the social dimension (Barani et al., 2018). More precisely, all ISCs offer education in areas related to sustainability (SDG4), gender equality (women occupy at least 40% of decision-making roles in 90% of cases) (SDG5), 80% have established conflict resolution procedures and 100% provide training in the decision-making processes (SDG16 on responsible institutions, peace and justice). The governance dimension, decision-making process, management and the resolution of conflicts are structural features for these communities' development and success. Many of them use alternative formal governance methods. Others prefer informal methods that are better suited to their characteristics. In all cases, the ISCs thrive under the premise that these organisations, and/or communities, have collective intelligence and are capable of self-organisation.

Question and tasks

1. What are the characteristics of an Intentional Sustainable Community?
2. Identify three UN SDGs that an Intentional Sustainable Community supports.
3. Identify an example of an Intentional Sustainable Community and explain the guiding principles and ethos of the community.

GOVERNMENT SUPPORT

As many economies around the world transition towards a more sustainable future, the role of government has become increasingly important in supporting skills and competence development in the workforce and management. Governments pass legislation (such as carbon emission regulations) to underpin the development of sustainability as part of wider economic growth strategies. Alongside this, governments around the world have been proactive in designing policies to support the transition towards what has been termed a ‘green economy’. In the UK, the low carbon and renewable energy economy employed almost a quarter of a million people in 2018 with a total investment of £8.1 billion, a 48% rise since 2015. Energy, manufacturing and construction accounted for over 80% of the turnover in the sector. In Australia, a country with a relatively high carbon emission output per capita, the government has been proactive in setting out plans for the transition to a net zero carbon target by 2050 in alignment with the Paris Agreement. Research from the University of Melbourne in 2019 points to a \$549 billion saving for the Australian economy by transitioning to a clean economy with all the social and environmental benefits that would also accrue (Kompas et al., 2019). In the US, research by the World Resources Institute showed that clean energy investment in the US reached a record high of \$78 billion in 2019, a 20% increase from the previous year (Jaeger and Saha, 2020). Similar trends are evident in other parts of the world too as increasing numbers of governments turn their attention to climate change policies. Part of these policy trends has been governmental support for developing the skills and competences that help implement sustainability actions and drive the transition towards a net zero carbon economy by 2050.

Government support for sustainability skills and competence development

Governments have authority and a wide range of policy tools to support the development of sustainability skills and competences. These need to be used collectively and in an integrated manner to deliver a coherent strategy that supports skills and competences in all settings including the workplace, higher education, training facilities or online. Figure 5.3 presents a framework for government support for sustainability skills and competences development. Effective support requires government leadership to drive forward the goals and aims linked to identified needs. This means establishing a coherent and coordinated government effort that spans multiple departments including those overseeing industry, environment, education, technology, communities and others.

Some organisations, such as the Greener Jobs Alliance in the UK, have called for the establishment of a specific post dedicated to coordinating efforts for the transition to a low carbon economy. For example, the UK government has separate ministerial posts covering environment and climate change and each

have separate remits and aims, even though stakeholder interests may overlap. Similarly, there are separate posts covering education and communities and local government. There are sound reasons for having these posts separated due to the size and complexity of the remit covered in each. However, sustainability issues are relevant to all and, therefore, to meet the challenges of climate change there is a strong argument for effective coordination between departments if a coherent skills and competences strategy is to be realised.

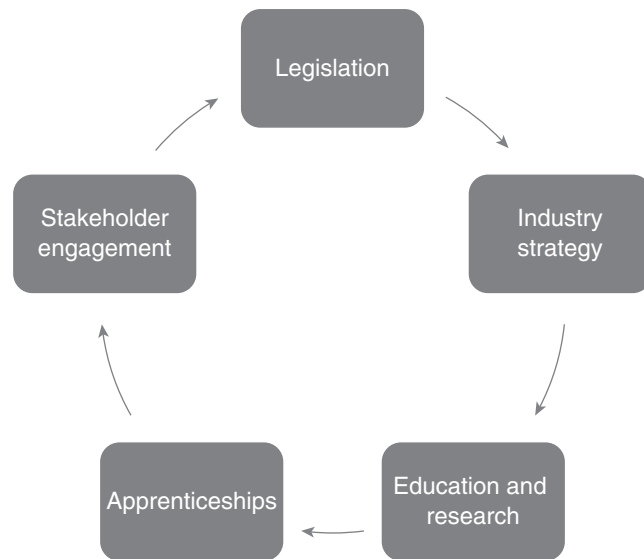


FIGURE 5.3 *Government support for sustainability skills and competence development*

Governments apply policy tools and legislative power to address the pressing need to identify and fill gaps, and enhance sustainability skills and competences. Legislation may be necessary to drive forward strategies where voluntary initiatives fail to deliver. Pressure to meet net zero carbon levels by 2050 has increased the pressure on governments to deliver on the skills needed to achieve this and it may require increasingly robust legislative measures to enforce compliance across all public bodies and industry sectors. However, this form of enforcement sometimes proves unpalatable for some decision-makers who favour a more collaborative approach based on an effective industrial strategy designed to form the catalyst for delivering the skills and competences required to meet aims and objectives. Industrial strategies need to have skills training at the core of implementation so that the benefits help drive future economic growth around sustainability actions. This links to funded apprenticeship schemes, education and research where sustainability features wholly, or in part, to the learning process. Combined with the formal qualifications for industry professionals and practitioners delivered

by accredited bodies, governments have policy opportunities for supporting the generations of skilled and knowledgeable managers and workforce that are so vital to shaping the way industry tackles the challenges of sustainability into the future. Here, the relationship with stakeholders forms another important aspect of government intervention by creating the mechanisms for working with local communities on identifying opportunities for accessing skills and competence-based employment, training and education.

Mini case 5.2: Greener Jobs Alliance, UK

Established in the UK in 2012, the Greener Jobs Alliance (GJA) is a partnership organisation comprising local authorities, trade unions, training providers, employers, housing associations and campaign groups with the aim of promoting skills training and job creation to meet the needs of the industries as they transition to a net zero carbon economy. Having been initially funded by Battersea and Wandsworth Trades Union Congress, the organisation has become an important contributor to the local and national effort to develop the workforce skills and competences required to deliver on carbon reduction targets to 2050. This necessarily involves liaising and working with partners in policy and investment decision-making and with multiple stakeholder groups including local and national governments.

The Greener Jobs Alliance also works closely with colleges and universities to advise on how curricula can be developed to reflect the need for skills and competences across different sectors of industry. The organisation also delivers a range of training modules themselves in topics such as climate change awareness and air quality. Other important partnerships include the Institute of Public Policy Research (IPPR), the Trades Union Congress (TUC) and the environmental campaign groups Friends of the Earth and Greenpeace. The partnership with the TUC has been aimed at developing 'green apprenticeship partnerships' for low carbon skills in construction, waste management and horticulture, among others.

The organisation is a key contributor to debates on all aspects of skills development policies linked to a low carbon economy. In particular, there has been scrutiny and critique of the UK government's 'Green industrial revolution' strategy launched in 2021. The Greener Jobs Alliance has been vocal in pushing for a clear link between the strategy and the follow-up actions that create green jobs. For example, in 2020 the organisation responded to the consultation on green jobs set up by the UK Parliament Environmental Audit Committee (UK Parliament, 2020) by highlighting the lack of clarity in official forecasts of green job creation. The debate has highlighted the gulf in political thinking between the UK government under the premiership of Boris Johnson and the perspective of the Greener Jobs Alliance with

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the former viewing the private sector as the main drivers of the 'green revolution' whereas the latter believe that only greater public sector ownership can deliver the scale of change needed to meet net zero carbon targets by 2050.

Questions and task

1. What are the main aims of the Greener Jobs Alliance?
2. Identify four partner organisations of the Greener Jobs Alliance and outline how they combine to help job creation in the low carbon economy.
3. What training courses do the Greener Jobs Alliance deliver?

Skills for a sustainable economy

As noted, governments play a key role in driving change through introducing policies that support skills and competences as part of wider economic and industrial strategies. Central to many government policies is the identification of the types of skills needed to build sustainable economic growth. Although the specifics of what skills are deemed necessary vary between different countries, it is possible to determine some common themes that feature in decision-making at governmental level around identified skills and competences. These themes are highlighted in Figure 5.4.

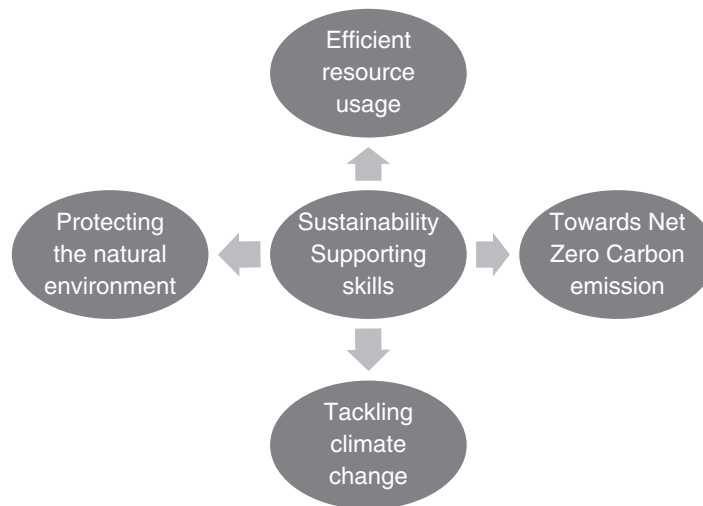


FIGURE 5.4 *Skills for a sustainable economy*

The Earth has finite resources and it is clear that human consumption of those resources has extended far beyond the planet's capability to replenish them.

This trend has been especially marked since the 1950s with an exponential rise in consumption and carbon emission output leading to dangerous increases in global warming. Perhaps the most immediate area of need for skills development is in supporting new and innovative ways to be more efficient in resource usage. At industry level the government has scope for addressing this pressing need by introducing regulations that limit carbon emissions by companies. Other regulatory measures can ensure minimum standards of compliance are observed in numerous other sustainability actions such as water resource efficiencies, health and safety, pollution limits and so on.

Alongside regulation as a policy tool for more efficient resource usage is the development of skills and competences that support new and innovative ways of managing resources and consumption. Resource-efficient business requires the specialised knowledge and skills that transform ideas and concepts into actions that deliver benefits to the environment through lower carbon outputs linked to resources and consumption. Examples include the development of new technologies that capture carbon, support lean manufacturing of products, support project management based on sustainable practices, and waste-reducing processes that lower the overall consumption of resources. The skills and competences around better use of resources can also extend to professional services such as finance and accounting whereby environmental and social factors are included in the audits and reports.

Governments around the world have agreed to sign up to the ambitious target of net zero carbon emissions by 2050. To achieve this requires the deployment of skills around sustainability actions that delivers innovative solutions to the myriad challenges facing global managers and practitioners. Skills and competence development needs scientists and engineers to design and implement technological solutions for everything from carbon capture to renewable energy, from green supply chains to waste management systems. The investment in training is geared towards creating and sharing knowledge that gives impetus to delivering better and more effective sustainable solutions across all industry sectors. Skills and competences need to be most fully deployed in the development of new technologies, products and processes specifically designed to reduce carbon emissions.

The overarching objective behind the investment in skills and competences is to tackle climate change. There is already an increasing level of skills evident in the way in which climate change is monitored and evaluated and the knowledge gained helps managers and policy makers make better informed decisions on a global basis. However, understanding such a complex system requires a long-term approach and one that involves multiple collaborations around the world. The management of these interactions and collaborations continues apace with many influential organisations such as the United Nations leading the way in terms of coordinating efforts and channelling resources to areas that deliver best returns in terms of knowledge and expertise. A wide range of other skills and competences make valuable contributions too, such as risk management, impact assessment, investment planning, environmental management, and designing. These skills support the efforts linked to creating new products or processes that drive

sustainability actions, many of which support environmental protection. Managing natural resources involves a wide range of skills both in situ (forestry and land use) and support services (consultants, lawyers, accountants, design services, ecologists, water management engineers and many more). Government plays a crucial role in policy making, industry support and coordination of resources to help deliver the skills and competences needed for the transition to a net zero carbon economy.

CORPORATE SUPPORT

Corporations provide the platform for developing the skills and competences required to address sustainability challenges. Many business leaders around the globe have been proactively seeking ways in which their organisation can contribute to this. In many ways, it can be seen that businesses are at the cutting edge of managing economic wealth creation within the parameters of environmental and social protection. There are opportunities for corporate bodies to engage with sustainability actions as many of the skills and competences can lead to the development of new products and services, cost reduction technologies, less resource-intensive manufacturing techniques and so on. Competitive advantage may be determined by the effectiveness with which workers and practitioners can contribute to these developments. Global sustainable managers need to access new skills and training too. Many of the processes described above rely on a range of key management skills and competences such as strategic thinking, systems thinking, a global entrepreneurial mindset, critical thinking, networking and collaboration, and, most crucially, an understanding and commitment to embedding the sustainability ethos throughout the organisation they lead. In many industry sectors these management skills and competences deliver economic, social and environmental benefits.

Corporate bodies also need to offer opportunities for the workforce and practitioners to gain new skills and competences around sustainability actions. Many of the innovative solutions to sustainability challenges stem from specialists across different functions both internal and external to the organisation. At the basic level, all workers need a basic understanding of how sustainability development adds value to the organisation and how they can contribute to it. At the strategic level corporate bodies need to be proactive in investing in the sustainability capability of the workforce to enable sustainability development through innovation. First, though, companies need to determine the context within which skills and competences training is developed. The training needs to be designed around key activities and processes that form the core aims and objectives of the business. It is important that targets linked to these remain achievable and uninterrupted while skills and competences training takes place. In many instances, sustainability skills and competence development takes place 'in-house' to minimise the disruption during the training phase.

It is also important that businesses demonstrate the value they place in education by making skills and competence development a strategic priority as they transition to a net zero carbon trading environment. This means better understanding of what skills and competences are needed to drive the transition by implementing human resource policies that support sustainability actions. The Aldersgate Group are a multi-stakeholder alliance that supports a competitive and environmentally sustainable economy in the UK. A report published by the group in 2020 called for urgent action to plug the gap in skills that undermines the growth of a low carbon supply chain across the UK economy (Aldersgate Group, 2020). Corporate bodies can channel resources to fill skills gaps especially in those areas that drive change such as engineering and technical skills, cognitive adaptability skills that support innovation, and problem-solving skills that help tackle the challenge of delivering low carbon products and services whilst maintaining competitiveness. The sustainable value framework in Figure 5.5 illustrates the process that corporate bodies need to follow to address the skills and competences challenge as part of the transition to a net zero carbon economy.

In some countries, such as the UK, there may be an imbalance between current skills and those needed to attain future low carbon targets. The first stage in the process of identifying the skills that will be needed is to determine the current position. This can be assessed in the context of the projections made on a range of economic, social and environmental criteria that influence the anticipated skills requirements for the future. The insights offered by these assessments provide the basis for a sustainability value framework that identifies opportunities for businesses to create value based on the alignment to anticipated skills. Schaltegger et al. (2016) note that this process helps to create business models that present a sustainable value proposition to customers and stakeholders that captures economic value whilst maintaining or regenerating natural assets.

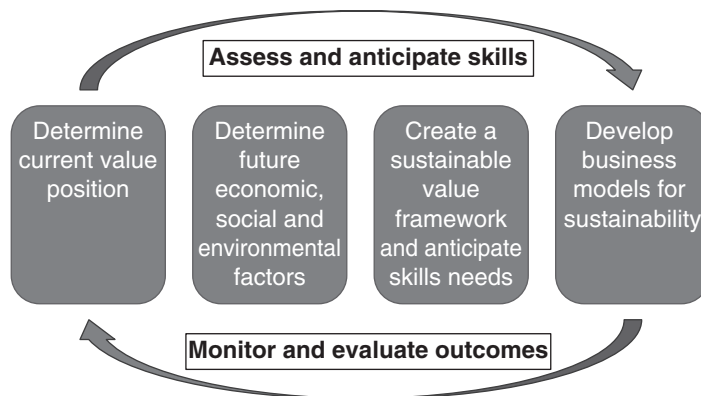


FIGURE 5.5 *Sustainability value framework*

One of the biggest challenges facing corporate bodies is to anticipate what skills and competences will be required in future. Much will depend on how accurate managers can identify the types of jobs needed in different parts of the economy while they transition to a net zero carbon future. Figure 5.6 outlines the four key drivers of sustainability skills and competences.

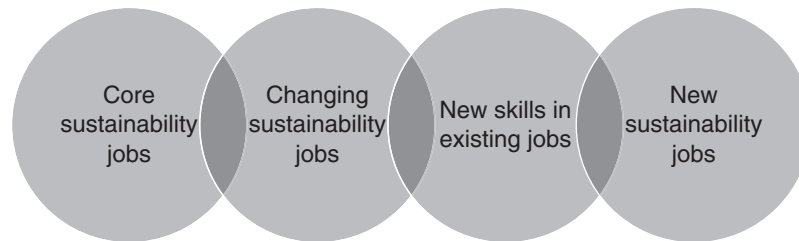


FIGURE 5.6 *Drivers of sustainability skills and competences*

A great many jobs already have a sustainability aspect to them and require some specialised skills and competences in engineering, design, waste management, environmental management, and so on. It is likely that many existing sustainability jobs will evolve to become changing sustainability jobs or even new sustainability jobs. As the challenges and opportunities increase so the demand for new skills and competences will evolve too; many will replace existing ones or be adapted to add value to a maturing sector of industry based on sustainability actions. For example, the installation of low carbon boilers will require new skills by heating engineers. New skills in existing jobs are similar but refer to areas where there is not a specific sustainability focus. These are jobs that will require additional skills and competences as sustainability actions become a necessary part of the work. Many functional managers within organisations may need to incorporate sustainability skills into their overall skillsets. New sustainability jobs will emerge in industries that require specialist skills and competences to drive forward their sustainability strategies. This driver of skills requires some strategic thinking regarding what types of skills will add value in the evolving environment. Much will depend on how demand for goods and services evolves around sustainability issues. In other circumstances, it may be required to comply with new regulations or to improve performance in industries where sustainability forms the basis of competitive advantage. These drivers of sustainability skills and competences will be a feature of strategic thinking in corporations around the world in the years to come and will play a key role in determining the outcome of the challenges presented by commitments to net zero carbon targets across a wide range of industries.

Mini case 5.3: KPMG in India

KPMG is an Anglo-Dutch professional services multinational company with headquarters in the Netherlands. One of the 'big four' accounting firms alongside Deloitte, PwC and Ernst & Young, the company has offices in 147 countries and employs over 200,000 people. The main service provision is financial accounting and audits, tax and management consultancy and key to the organisation's success is the quality of staff it recruits in all of its specialist areas of business. Much of the quality is derived from bespoke in-house training programmes which cover a wide range of technical, business and strategic skills. To meet client expectations, the company has partnered with the non-profit organisation Global Reporting Initiative (GRI) to access a specific programme on sustainability to help staff gain the necessary knowledge and expertise around sustainability reporting. The programme has been rolled out in offices in India under Climate Change and Sustainability Services leading to the award of the Global Reporting Initiative (GRI) certificate. It is primarily aimed at staff with responsibilities in the development or assessment of sustainability reports and may include managers in finance, communications, information technology, human resources, legal, marketing and operations, among others. There are six key learning and skills development parts to the course including:

- An introduction to sustainability reporting and GRI
- Planning the GRI sustainability reporting process
- Initiating and conducting dialogue with stakeholders
- Focusing efforts towards the key aspects of the report
- Building the report
- Checking progress and communications

The training programme is a response to the skills required to meet the challenges of ensuring long-term stakeholder value around sustainability issues. KPMG look to next-generation managers and consultants to better understand and manage risk, and identify opportunities brought about by economic, social and environmental change. Indian companies are increasingly including corporate responsibility and sustainability into their strategies and many rely on skilled and knowledgeable KPMG staff to help them navigate an appropriate route to integration. These core skills can be deployed effectively in the process of ensuring that client businesses that build sustainability into their operations and establish goals and measures of sustainability performance are capable of reporting outcomes in a manner that complies with recognised accountability and transparency standards.

(Continued)

Questions and task

1. Explain what the Global Reporting Initiative (GRI) is and what it aims to achieve.
2. What does KPMG aim to achieve by allowing their staff to undertake the GRI certificate?
3. Why is reporting training important to companies like KPMG?

COLLABORATIONS: EDUCATION, GOVERNMENT AND BUSINESS

Each of the organisational settings covered in this chapter make valuable contributions to skills and competences development for sustainability across the globe. Each has a distinctive role to play and level of knowledge and expertise that can support the myriad ways in which skills and competences can be improved. There is also value to be gained from these sectors collaborating to achieve common goals. For example, universities and colleges need to work closely with business to better understand what forms of learning support their sustainability development needs. In particular, educational programmes need to be designed to fit with career pathways and, therefore, require the input from business on course design, methods of teaching and a range of experiential learning opportunities. Government also needs to have an input by introducing educational policies around skills and competences for sustainability development and economic strategies for growth.

Collaboration is also necessary for creating the next generation of business leaders. Here, companies can collaborate with the educational sector to embed responsible leadership into established programmes such as the Master of Business Administration (MBA) or executive programmes. They can also encourage workers to participate in educational programmes by giving access to work-based learning opportunities that directly link the learning to ways in which sustainability development can support the company's aims and objectives. Importantly, all sectors can benefit from the shared learning from teaching and research around sustainability development. Thus, educators, business managers and government decision-makers can all gain from knowledge sharing linked to business practice, research outputs and policy evaluations. A common sense of purpose encourages companies to share knowledge of the insights gained from sustainability development initiatives and innovations.

SUPPORT BODIES AND ACCREDITORS

Support bodies

Support bodies such as non-governmental organisations (NGOs), associations, community groups and campaign groups play important roles in the development

of sustainability and environmental causes. Some may partner with public- and private-sector organisations, or social enterprises to further their specific area of interest. Figure 5.7 highlights different types of support bodies. There are many thousands of small-scale support bodies that proliferate around the world and each makes a contribution to social and environmental causes with sustainability at the heart of many of their activities. However, NGOs provide some of the most influential and effective support bodies such as CERES, an organisation that promotes sustainability business practices; the World Resources Institute which works with world leaders to action solutions linked to climate change, energy usage and food waste; and the Carbon Trust that works with companies to help the transition to a low-carbon economy.

NGOs are often well placed to engage with communities, business and civil society to address challenges to sustainability caused by a wide range of factors including over-consumption, resource extraction, deforestation, industrialised fishing, pollution and waste, population growth and the effects all of these have on climate change. NGOs can help by using their influence, knowledge and expertise to undertake research that supports better decision-making and resource allocation, building institutional capacity and engaging with communities to educate on how to live more sustainable lives. There is a growing awareness of environmental issues across many societies and this has led to an increasing demand for acquiring the skills and knowledge required to manage sustainability actions that protect communities and the planet. NGOs can play an important support role in leading and promoting initiatives and opportunities for accessing skills and knowledge.



FIGURE 5.7 *Types of sustainability support bodies*

The many thousands of support bodies that have been created in recent decades have reflected the growing awareness and concern over social and environmental factors that has led to a climate emergency. The role of support bodies will become increasingly important in the future as the transition towards a net zero

carbon target gathers pace. These support bodies are broad-ranging in their areas of interest but each makes a valuable contribution to sustainability efforts. Some support bodies are well funded and can rely on institutional support such as business associations and government agencies. These support bodies are well placed to generate information and disseminate to relevant stakeholders. Some support specific functions and specialist areas of business such as accountancy, engineering, design and conservation. Others rely on donations to support their preferred causes, such as pressure groups and community groups. Nevertheless, they play an important role in furthering understanding of environmental and sustainability causes or issues around these that impact on local communities. Not-for-profit organisations and research organisations can harness the skills, knowledge and expertise of a wide range of supporters and employees to deliver the insights and new understanding of environmental and sustainability issues. This helps inform decision-makers and other important stakeholders including business managers. Table 5.2 lists some examples of support bodies around the world.

Accreditors

Accreditation is the process of evaluation and approval for organisations involved in sustainability practices including services. The purpose is to ensure minimum levels of quality are observed by practitioners and managers and is usually managed by a non-governmental agency comprising trained external peers with expertise to enable a thorough evaluation of standards of practice at both individual and organisational level. Although accreditation is often voluntary, the reputation and standing of an organisation may be affected if their operations and professional practices have not been certified by accreditors as being in compliance with set standards. Stakeholders including customers, suppliers, partners and industry support agencies may check organisation's accreditation status before engaging in business.

Accreditation services have grown in number and reach in tandem with the exponential rise in sustainability practices in the last two decades. The management of accreditation quality and effectiveness has been the source of interest to managers, practitioners, governments and other stakeholders as the drive for quality in sustainability practices has become a strategic issue in many settings. A key driver is the increasing attention paid to identifying the factors that most commonly derive from quality management in sustainability practices. This is one reason why accreditation has gained in importance as it is often viewed as crucial leverage for sustainability management performance linked to the development of strategies and the use of management tools that enable organisations to meet stakeholder expectations whilst simultaneously remaining competitive. There are many accrediting bodies linked to sustainability and responsible management around the globe and each delivers a service linked to standards relevant to their own environment and country characteristics. One such example in the UK is the Institute of Environmental Management and Assessment (IEMA).

TABLE 5.2 *Sustainability support bodies*

Organisation	Country	Support type
Accounting for Sustainability	UK	Practical guide and tools for embedding sustainability into reporting and decision-making.
Business in the Community	UK	Development of frameworks for responsible business.
Capitals Coalition	UK	Supports ways to ensure value created from nature, society and people informs public and private sector decision-making.
Carbon Trust	UK	Supports businesses and the public sector in reducing carbon emissions using carbon technologies.
CERES	USA	Coalition of investors, environmentalists and social advocacy groups working with companies on sustainability.
International Society of Sustainability Professionals	USA	Works towards empowering professionals to advance sustainability in organisations and communities.
Sustainable America	USA	Non-profit organisation working towards making the fuel and food systems more efficient through public education.
American Sustainable Business Council	USA	Business organisation supporting public policy interests of responsible companies.
Chinese National Platform for Voluntary Sustainability Standards	China	Platform to improve public awareness of voluntary sustainability standards.
Clean Ocean Foundation	Australia	Environmental organisation committed to stopping all forms of ocean pollution.
Canadian Business for Social Responsibility	Canada	Aims to help Canadian business and government build a sustainable future.

Institute of Environmental Management and Assessment (IEMA)

With around 15,000 members, the Institute of Environmental Management and Assessment is the largest professional body supporting environmental practitioners in the UK. IEMA was established to lead change in global sustainability standards and supporting professionals in delivering sustainable solutions in business practice. The organisation provides resources, tools and techniques, and knowledge alongside formal qualifications to meet the needs of members. These are often requirements for compliance with sustainability regulations, but they also provide the basis around which practitioners can gain a

better understanding of how to address skills gaps, drive innovation, and shape career pathways to incorporate sustainability as a core knowledge-based asset. Membership also encourages new ways of thinking about sustainability and its impact on cutting carbon emissions and reducing the negative impacts of climate change. Knowledge sharing is also an integral part of the global network created by IEMA with transferable skills and knowledge being a feature of the global connections of mobile resources that drive change. The organisation also provides recognition for meeting standards and acquiring a level of skill, knowledge and competence that is so important to managing business in a sustainable and responsible manner. Skills development is one of many support activities delivered by IEMA. Figure 5.8 outlines the three key areas of skills development training provided by the organisation.

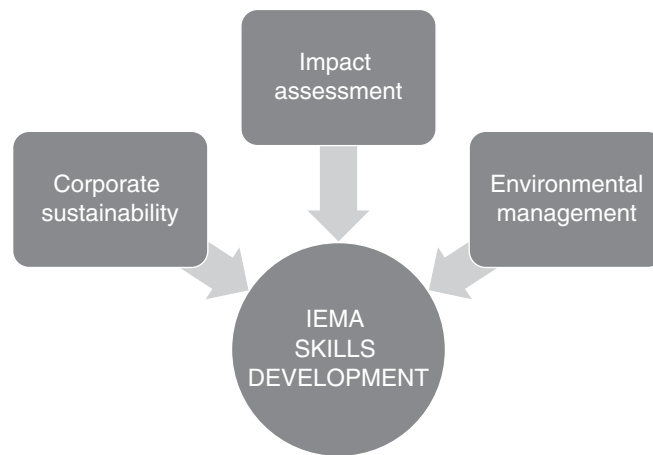


FIGURE 5.8 *Skills development training by IEMA*

Source: www.iema.net/skills/training

Impact assessment (IA) is designed to ensure that social and environmental factors are included in any impact assessment alongside economic values. The skills development helps in the identification of relevant social and environmental factors that support effective policies, plans, design and consenting processes that ensure the social value for communities and the economic value to investors is met without harming the natural environment. Environmental management helps organisations deliver goods and services in a sustainable manner by focusing on design, packaging, manufacturing, distribution, recycling, readaptation, waste and disposal, and other carbon-reducing activities. Corporate sustainability focuses on developing skills that help managers identify critical economic, social and environmental risks and opportunities that typically impact on organisations and their stakeholders. The emphasis is on strategic thinking around innovative solutions to sustainability challenges.

CASE STUDY

Glasgow Caledonian University, Scotland

Glasgow Polytechnic was awarded university status in 1993 and became Glasgow Caledonian University with a mission to deliver good quality undergraduate and postgraduate courses. The university has always had close links to the community and this has been a major part of the vision of the organisation and how it communicates its core values. The mission of the university states that 'Glasgow Caledonian University (GCU) is the University for the Common Good. Our mission is to make a positive difference to the communities we serve and this is at the heart of all we do, especially in our social innovation teaching and research'. The university has made a transformative change to the way it achieves its aims by developing and implementing Common Good principles. Common Good principles help staff when they develop courses for teaching or do research. It also helps them to make contact with the wider community in Scotland and abroad. These help the university to differentiate from other universities and attract more fee-paying students at postgraduate level who are attracted to a university with a good social mission. Thus, it is evident that the mission not only sets out the core values of the university but also helps the process of growing the number of students as an important source of income for the university. This means that the Common Good principles act as an economic driver as well as a means of building reputational capital as an institution that embeds social value into its wide-ranging activities. The main goals linked to the Common Good principles are high-quality teaching; research

that has Common Good values; activities that enhance the reputation of the university; and an increase in student recruitment at postgraduate level.

As part of the Common Good ethos, the university has been proactive in embedding social responsibility, ethics and sustainability into teaching and research as part of a commitment to develop future business leaders with skills, knowledge and mindset that support these values. The university is a signatory to the United Nations Principles for Responsible Management Education (PRME) and demonstrates a willingness to progress the principles by developing teaching and learning programmes that are informed by the values of PRME, many of which align closely to the principles of the Common Good. The commitment also extends to research outputs where issues of social justice, gender equality, climate justice, responsible leadership, and many others are key features of the research strategy. Dr Alec Wersun is the GSBS Lead for the Common Good and recipient of the inaugural UN Pioneer Award at the Global Forum in New York in 2017 for 'leadership and commitment' to PRME. Dr Wersun sums up the GCU contribution by stating that:

The potential of higher education institutions to make significant contributions to this UN agenda is widely acknowledged, be that through research, community engagement and education, to produce the responsible citizens and leaders of tomorrow. GCU is playing a leading role in this area and is committed to delivering economic

and social benefits at home and across the world. It is important that higher education institutions, business and civil society come together to discuss matters of wider public concern and GCU is delighted to create a space where these important conversations can take place.

There are also opportunities for students to extend their experience of sustainability actions by participating in many of the initiatives developed with partner institutions. For example, students are encouraged to tackle some of the world's most pressing challenges through a leadership programme backed by the Clinton Foundation. GCU is part of the Clinton Global Initiative University Network, set up by former US President Bill Clinton, to help young people turn their ideas of how to make the world a better place into practical action. Participating GCU students receive support to develop projects to reduce consumer waste, tackle poverty in the developing world, and promote sustainable food production. The students, who will join scholars from institutions including Cornell University, the University of California, Berkeley, and the University of Chicago, will have access to a wide range of networking, mentoring and funding opportunities throughout their year of study.

As part of GCU, the Glasgow School for Business and Society (GSBS) is a member of Business in the Community (BITC), a Prince of Wales charity that promotes responsible business. The school aims to contribute through:

- developing a new generation of business and community leaders capable of managing the complex economic, social and environmental challenges faced by business and society in the twenty-first century

- leading relevant research and sharing findings with policy makers, business leaders and community leaders
- increasing engagement of staff and students with the wider community.

Membership of BITC is an important means of reinforcing connections in international networks that are committed to building a sustainable future for people and the planet. BITC members come from both public and private sectors and commit to transforming communities by tackling key social and environmental issues where organisations can make a real difference. The expertise, resources and capacity of BITC and its members helps GSBS to become recognised as a socially responsible school that serves both business and society.

In research, the UN Sustainable Development Goals (SDGs) inform the ethos around the research strategy which addresses three major societal challenges of inclusive societies, healthy lives and sustainable environments. To support these developing areas of expertise, GCU management created thematic inter-disciplinary research centres that are underpinned by research groups using an inter-sectoral approach to addressing societal challenges locally and internationally. As the output and recognition from the groups has developed, the reputation of the university as being a centre of excellence in business, social and environmental research has gained traction. In the Times Higher Education Global Impact rankings for 2020, GCU was placed 43rd in the world out of 766 universities and 8th in the UK (THE World University Rankings, 2020).

Alongside GSBS, two other schools that comprise the university are similarly involved in taking forward the Common Good ethos

and aligning teaching and research to the principles of the SDGs. For example, the School for Computing, Engineering and Built Environment is actively engaged in addressing sustainable environments through the Built Environment Asset Management research centre which tackles climate change issues affecting man-made structures. The centre for Climate Justice addresses climate inequality and promotes a transformative approach to tackling the root cause of climate change. The School of Health and Life Sciences hosts the Research Centre for Health (ReaCH) and draws on expertise from other schools and the Yunus centre for Social Business and Health.

The vision of GCU to be recognised as a world leading university for social innovation by 2030 forms the basis of the Strategy 2030. The commitment to SDGs provides the guiding framework for the delivery of the strategic

aims. The examples highlighted above give an indication of the direction of travel and some of the achievements that have already been recognised. The Common Good ethos is one that is supported, recognised and embedded within teaching, research and management at the university and sets guiding principles that make Glasgow Caledonian University a distinct and socially valuable educational asset.

Questions

1. What is the Common Good mission of Glasgow Caledonian University?
2. What three major societal challenges feature in the GCU research strategy?
3. What are the benefits for students of GCU membership of the Clinton Global Initiative University Network?

SUMMARY

This chapter set out the context around which skills and competences development play a crucial role in meeting the challenges of sustainability as economies transition to net zero carbon targets agreed as part of the Paris Agreement. The discussion started with actions that support different levels of sustainability skills and competences from basic to skilled, specialist and then strategic leadership. The discussion revealed the important role that practitioners and managers play in supporting skills development and creating the added value that the deployment of skills and competences delivers in the context of sustainability strategies.

The chapter then focused on the triple helix of education, government and business by critically evaluating the attempts of each to contribute to the transition to a net zero carbon economy by 2050. In education, the focus was on the impact of the Principles of Responsible Management Education initiative as a means of supporting educational institutions to deliver transformation change in the paradigm of business education that places social and environmental issues alongside that of the economic imperative driving business. The chapter also outlined the role that government plays in supporting business to engage with sustainability actions and with education in designing curricula for sustainability

skills development. The third element of the triple helix is business itself. Here, the chapter focused attention on the application of a sustainability value framework to determine how corporate bodies can identify and anticipate skills requirement and then monitor and evaluate their impact. Key drivers of sustainability skills development were also highlighted to provide some clarity on the evolving sustainability skills needs across industry. Discussion followed on how these three areas of support can collaborate to achieve the range of goals and targets linked to the development of sustainability skills and competences. The chapter was completed by a treatment of the role of support bodies and accreditors in the process of delivering the skills and competences required by future generations of practitioners and managers.

REVIEW QUESTION AND TASKS

1. Identify the three components of the triple helix of support for sustainability skills and competences.
2. Using the basic, skilled, specialist, and leading levels of sustainability skills and competences, provide details of a specific role for each level.
3. Why is accreditation important for sustainability skills and competences development?

FURTHER READING

Principles of Responsible Management Education (2012) *Inspirational Guide for the Implementation of PRME: Placing Sustainability at the Heart of Management Education* (The Principles for Responsible Management Education Series). Abingdon: Routledge.

This book highlights the process of continuous improvement in the design and implementation of responsible management educational institutions in order to develop the next generation of business leaders capable of meeting the challenges of twenty-first century business.

Rimanoczy, I. (2020) *The Sustainability Mindset: A Guide to Developing a Mindset for a Better World*. Abingdon: Routledge.

This book is a useful contribution to understanding how the challenges of sustainability intersect with the discipline or professions that are chosen. It focuses attention on the range of cognitive skills that support the development of a sustainability mindset including beliefs, values, assumptions and mental processes.

Stibbe, A. (2009) *The Handbook of Sustainability Literacy: Skills for a Changing World*. Totnes: Green Books.

Although over a decade old, this book provides the reader with a valuable insight into the many skills, attributes and values that support understanding of sustainability issues including those that drive ingenuity, creativity and new ways of thinking in changing environments.