

# Introducing VET Africa 4.0

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## **A new approach to vocational education and training**

This book is about vocational education and training (VET). It is concerned with how the current policy and practice orthodoxy is not working despite the efforts of educators and learners. It is driven by a realization that the futures for which VET is intended to prepare people are ever more precarious at the individual, societal and planetary levels. And it is motivated by a sense that while better futures are possible, VET is poorly positioned to respond to the new skilling needs these will require.

Our empirical focus is on Africa, grounded in case studies from two Anglophone countries, Uganda and South Africa. Due to the effects of colonialism and aid dependence, African VET systems have sought to mimic VET in the industrialized world. Yet, these borrowings are often poorly grounded in the realities of the ‘donor’ northern systems (McGrath, 2010; Allais and Wedekind, 2020) and are even less relevant to African contexts (McGrath et al, 2020a; Allais, 2020b). However, our intention is not simply to make an African account of VET but to engage in a global debate about VET’s current weaknesses and the need to transform it to meet the challenges of coming years. Although contexts vary, what we offer in this book has implications for VET in all jurisdictions.

VET systems are not identical. In the Anglophone world in which we are based, VET north and south has been particularly grounded in an individualized human capital development paradigm that drove both colonial and industrialization programmes. Our critique points to the limitations of this modern institutional form of VET. The legacies of colonialism and industrialization continue to this day, producing exclusions from modern institutions and their logics (Patel, 2017). In Anglophone Africa, many locally

meaningful forms of VET have been excluded and relegated to ‘informality’ due to the logics of capital and particular notions of VET’s purpose. As we shall argue in greater detail in [Chapter 3](#), this VET is grounded in an extractive view of our relationship to the planet (see also [McGrath, 2012](#)).

While they do not escape the link to fossil capitalism ([Malm, 2016](#), see [Chapter 3](#) for a longer discussion), many of the world’s best VET systems, by contrast, are less individualistic than in the Anglophone model. Rather, they are based on strong relationalities between VET providers and the associated institutions and work-based communities (both employer and union) that they contribute to and depend on (see, for instance, [Deissinger and Gonon, 2021](#) for a historical review of the German and Swiss systems). These in turn relate to national political economies, especially the workings and contestations of welfare regimes ([Busemeyer, 2014](#)). As such, they are located in very different contexts than those that pertain in Africa or the rest of the south. Their potential to provide lessons, therefore, are limited, though they point to some of what is possible in going beyond the Anglophone tradition.

An awareness of historical and comparative experiences leads us to offer a consideration of what a more relational paradigm for VET may look like in contemporary Africa, remembering that such relationalities are argued to have been a feature of precolonial vocational learning, though they are weak in contemporary approaches. This weakness is influenced by contemporary governance systems and histories of exclusion and colonial imposition (see [Chapter 2](#)). Although the contexts are different, many other systems globally also need to address path dependence and think about building more relational systems that are fitted for new challenges.

VET, as currently constituted, is out of sync with contemporary experiences of work, and what work means for many young people and communities today in Africa and beyond. Notwithstanding a still strongly held desire for a linear relation between formal training and formal job, this relationship is both complex and rare. The complexity relates back to the historicity of a bifurcated notion of economy that has separated out the meanings and associated institutional structures serving ‘first and second economies’, with VET traditionally oriented towards the so-called ‘first economy’ of mining, motors, manufacturing and the like. It has often failed to include the working lives and VET needs of those that are economically active in the problematically termed ‘informal’ or ‘second’ economy (see [Chapter 5](#)). And it is even worse when it comes to the complex realities of the provisioning economy (see, for example, [Power, 2004](#)), or a consideration of the work needed for transformations to sustainability, also conceptualized as inclusive sustainable development.

Much of current VET policy attention is on the ‘fourth industrial revolution’ and digitalization. However, far less attention has been paid to

the climate emergency. Climate change and the global discourse of just transitions and sustainability transformations are driving the need for massive transformation of the global energy system and its historical construction. They also highlight the need to think about new areas of work and learning such as climate resilient agriculture, pollution reduction and improved water resources management (see [Rosenberg et al, 2020](#)). This emergency and emerging solutions impact all systems of work, including formal salaried work, less formal and more precarious work, household and livelihood work, and work for the common good. In this book, by way of empirical example, we consider transport, oil, water and food systems (see [Chapter 3](#)) as sources of work that transgress the historical binaries of formal and informal work: ecology and economy. Thinking about transport, oil, water and food systems also opens up work for sustainable livelihoods, sustainable development and provisioning work. Beyond these, there are many other such fields of work that need further investigation for their implications for reconstituting VET (including such areas as biodiversity, urban planning, water resources management and healthcare, for example).

At the same time, our critique of VET is part of a wider, parallel critique of how education policies have resulted in systems that are unable to meet the needs of the present and the major challenges that will be faced in making education fit for the future (see [Allais, 2020b](#); [Allais and Wedekind, 2020](#)). The latter amounts to nothing less than reframing the purposes of education away from the grip of histories of human capital in its various guises (including as forms of labour for colonial states). In its report to mark UNESCO's 75th anniversary, the International Commission on the Futures of Education points to important quantitative improvements in education over the past 50 years but makes clear that there have also been serious failings. It notes that

[t]he past fifty years of progress have been vastly uneven and today's gaps in access, participation and outcomes are based on yesterday's exclusions and oppressions. Tomorrow's progress is dependent not only on their correction, but on a questioning of the assumptions and arrangements that resulted in these inequalities and asymmetries. (International Commission on the Futures of [Education, 2021](#): 20)

We argue that a new account of VET needs to take account of these multiple rationalities and must overcome these segmentations of living, working and learning. An important step here is reframing the concept of work, which lies at the very heart of the meaning of VET. The futures of work may be even more different from the dominant imaginary of formal VET than are present realities. However, the VET field shows little concern with how work is being reframed and restructured by economic and technological dynamics, outside of some

limited initiatives to introduce digitalization programmes. VET approaches have also been inadequate in responding to the multidimensional nature of complex environmental challenges, partly because these issues have been treated as ‘externalities’ to mainstream economic activity and work practices, a problem that results from separating economy from ecology and society. Thus, there is much work to be done for VET to engage more substantively with ecological dynamics and influences (see [Chapter 3](#)).

Our intention is to go beyond a recounting of ‘what works’ in VET, or even a critique of what doesn’t. Rather, we draw on Bhaskar’s notion of an immanent critique ([Bhaskar, 1975](#)) (discussed in more detail later in the chapter) to provide a critique of the current state of VET and what underpins its being this way, *and* a vision of what a future, better VET might look like based on emerging visions of a better world (represented by the notion of just transitions) and what we see as the first stirrings of new VET practices that are aligned with this vision. Thus, we intend this book to be part of an opening up of a new phase of VET research (see also [Powell and McGrath, 2019a](#); [Rosenberg et al, 2020](#)) rather than harbouring any illusion that it is ‘the last word’ on these issues.

## **Introducing the notion of skills ecosystems**

As well as reconstituting the notion of work, we must reconstitute the relational system of education and training. This must be done for broader educative purposes (see [International Commission on the Futures of Education, 2021](#)) but also to make VET better at providing access to knowledge, learning pathways and pedagogical encounters for a broadening concept of work. In considering this, we have looked at existing VET theories for a thinking tool that could help us start to explore what is needed. Here, we have chosen the notion of the social ecosystem for skills model. This was first proposed for advancing VET in response to rapidly emerging economic sectors. The fundamental premise of this model is that a more complex ‘ecosystem’ of knowledge, learning and work-based engagement is needed. This can strengthen place-based skills development in collaborative spaces that are enabling work and learning innovation. As we explain in more detail in [Chapter 4](#), the model emerged from contexts such as Silicon Valley and in industrial sectors and cities in Australia and Britain (see also [Wedekind et al, 2021](#)). However, it has been identified as a potentially important model for sustainability-oriented education and training programmes where place-based relationally constituted learning around complex problems is needed ([Hodgson and Spours, 2016, 2018](#); [Lotz-Sisitka, 2020](#); [McGrath and Russon, 2022](#)). We seek to build on the model and expand it to address other aspects of VET, other contexts and other imagined futures.

Regardless of context, VET institutions are widely understood as important partners in economic development, expected to deliver responsive curricula and engage relationally with employers and work environments. Until [Lotz-Sisitka \(2020\)](#), the social ecosystems approach had not been applied in southern contexts, where work cannot be reduced to formal employment by ‘big industries’ only, and where sustainability challenges are particularly pressing. Her South African Expanded Public Works Programme case points to the need to think beyond the conventional notion of the VET institution as public and formal, as this applies to only a small part of vocational learning, albeit a crucial one. Relevant to this book, and the work undertaken to further advance our understanding of the potential for this skills development model, Lotz-Sisitka argues that

[t]he [Hodgson and Spours \(2018\)](#) social ecosystemic model also highlights an important role for learning institutions such as technical education and training and further education and training colleges [that is, VET institutions] in cementing ... potential skills development pathways into local economies over time, with a role of not only providing skills, but also operating as developmental ‘hubs’ in partnership with local development and business entities. In a South African context, this would require a combination of local economic development (LED) structures working closely with relevant learning institutions, such as TVET colleges, agricultural training institutes or community colleges, and where these are absent other training institutions such as non-governmental organisations (NGOs), faith-based organisations, etc. especially in rural areas where formal learning infrastructure is often sparse, or limited to schools. ([Lotz-Sisitka, 2020](#): 118)

In the same volume, [Lotz-Sisitka and Pesanayi \(2020\)](#) reflect on the mediation processes in the early development of a learning network in Alice (one of our case studies) that led to diverse horizontal connections between a range of actors in a regional skills ecosystem for advancing water for food knowledge and practice for local economic development. The mediation processes, while building and supporting horizontal connectivities, were doing this by facilitating links with national policy, curriculum, research and funding systems. A VET learning institution, in partnership with local universities and the local economic development office, provided the ‘skills ecosystem leadership’, which was extended with the influence of socialized digital technologies (which we reflect on further in [Chapter 5](#)). This offered an embryonic reflection on the Alice case as an emerging regional or social ecosystem for skills, which we brought into the current project. We have been reflexively considering this case from the vantage point of what we term here an expanded social ecosystem model for VET Africa (see [Chapter 4](#)).

In their reflection on these mediation processes, Lotz-Sisitka and Pesanayi (2020: 159) note that ‘establishing regional skills ecosystemic approaches requires mediation, but as yet, not much has been said about this mediation, and how it is to be constituted’. This is an issue that we consider further in this book. Lotz-Sisitka and Pesanayi (2020) also note the need for a more complex systemic view of knowledge flow and dissemination than that traditionally practised in formal VET that can link research, education, extension and social learning activity in more dynamic relations, offering a potential source of curriculum innovation in VET institutions, and social learning innovations in the regional setting. Hodgson and Spours (2018) began to develop such an analysis in London, and we were curious to examine this perspective further in African contexts, hence this book.

In considering what this means for VET in Africa, and building on the earlier work on mediation by Lotz-Sisitka and Pesanayi (2020), we have taken seriously the recommendations by Spours and colleagues (Hodgson and Spours, 2016, 2018; Spours, 2019) that there is a need to mediate between ‘facilitating verticalities’ (such as policy and funding systems) and ‘horizontal connectivities’. We understand the latter in terms of connected, relational organizations and partners in what we describe as a VET ‘learning network’ (Lotz-Sisitka et al, 2016, 2021; Metelerkamp et al, 2021). We examine the configurations and the functioning of such mediation processes and follow Spours in understanding VET providers as learning institutions with mediating powers that can support VET learning networks along with other partners. In practice, it is not the single VET institution, but rather the connection between learning institutions – for example, universities, VET colleges, workplaces and nonformal vocational providers – that provide mediation in the expanded notion of social ecosystems for skills that we have been investigating and developing, as we also reflect on in this book (see Chapter 8). Therefore, learning networks become important structures that bring multiple actors together in the expanded social ecosystem for skills. Our research also shows that there is need to give attention to how learning institutions reconstitute themselves to provide the types of mediation that can bring horizontal connectivities and facilitate verticalities together in a local, place-based social ecosystem for skills (see Chapters 6 and 8).

As part of our praxis, we have developed insights into the changing nature of vocational learning institutions. In Chapter 8 in particular, we consider the changing nature of the university as a learning institution that, via a transformative orientation and community engagement approaches, is able to provide certain kinds of mediating support within the expanded social ecosystem model. We similarly consider public VET colleges and how they are trying to provide mediating support for VET within the more complex work environment in which they are situated. We note the tensions inherent in this given these institutions’ logic is largely formed by the teleologies

of industrialization and human capital. It is encouraging, however, that within a ‘Futures of Education’ framing, African education leaders (in the South African Development Community and UNESCO) are currently contemplating ways in which higher education and VET institutions can better collaborate to strengthen local and national economies and sustainable development. In doing so, they will need to move further towards considering nonformal and informal learning actors and approaches. This is an important strand of this book, explored through expanded social ecosystems and how these support VET in the context of the notions of work outlined earlier (see [Chapter 5](#)). Of interest to the expanded social ecosystem model is the role of vocational teachers and their agency for curriculum design enactment and pedagogical praxis development. This is our focus in [Chapter 6](#).

We have taken on this challenge of critically exploring the model in African contexts, via empirical case contexts that reflect the complexity of the notion of work we have just outlined (two each in South Africa and Uganda). Across these contexts, we have considered both a ‘large-scale’ case (the oil and maritime industries) and a ‘small-scale’ one (smallholder agriculture and informal work). In each, and despite the scale of the cases, we found that work is far more complex than this simple schema suggests. The complex configuration of work is shaped and influenced by myriad diverse factors, not least the failure of the formal economy to provide ‘jobs’ for millions of young people (for instance, 64 per cent of South Africans aged 15 to 24 are unemployed [[StatsSA, 2021: 30](#)]; 92 per cent of employment in East Africa is in the informal sector [[ILO, 2018: 28](#)]). We have found that work is not ‘assured’, that much learning for such work is informally and relationally constituted, and that learning pathways and transitioning between work and learning are often constructed as complex processes, as [Chapters 5 and 8](#) explore in further detail.

Before proceeding to introduce our cases, it is perhaps time to explain our usage of our key term, VET. We have used it throughout the book as our preferred way of talking about vocational learning experiences, providers and systems. However, this is an area fraught with terminological disagreement (and here we are confining ourselves to the Anglophone debate). [Moodie \(2002: 258\)](#) argues that definitions of VET need to be cognisant of epistemological, teleological, hierarchical and pragmatic dimensions. As [Powell and McGrath \(2019a\)](#) note, there is a huge range of terminology used here for the overall concept, for systems and for institutional types. In South Africa, a further T has been introduced to talk about the system and institutions, ‘technical’. When we use TVET later in the book, it is usually in reference to South African public colleges. In Uganda, there has been a recent shift from ‘business and technical’ as a prefix to ‘technical’ alone. TVET appears to be the currently preferred (donor-supported) Anglophone term for Africa but ‘technical’ feels superfluous and is not used globally.

Some prefer to talk about ‘skills development’ as a broader concept, or to combine the two notions as ‘vocational skills development’. Our view is that VET is the most widely understood concept and thus the most preferable. However, it is also clear that ours is an expansive view of VET, one that avoids seeing this as only referring to formal provision, more narrowly to public provision, or even more narrowly still to only that provision that falls under an education ministry. This makes us view conventional boundaries between adult/community/lifelong research and vocational as problematic, though we are concerned to avoid vocational imperialism here. Indeed, we see our concerns as having an important ontological dimension.

## Introducing the cases

Our examination of what is wrong with contemporary VET, and why, and how it might be improved is grounded in four cases of regional social ecosystems for skills. Each is geographically bounded, although the boundaries are always porous as each exists within wider systems of political–economy–ecology, education systems and labour markets that are all interconnected. In some, we focus only on one locally important sector, while in others a broader range of economic activities are considered. The cases were selected to illustrate a wide range of contexts of skills formation as part of our wider project of offering an expansive view of vocational learning. We will return to descriptions of each across several subsequent chapters but offer some introductory scene-setting here.

### *eThekweni*

Our eThekweni case is the most conventional in VET research terms. It is centred on a metropolitan area, eThekweni, home to around 3.5 million people. The municipality has grown up around Durban, South Africa’s third city and the fourth busiest harbour in the Southern Hemisphere. Other industries have developed around the harbour, including sugar, tourism and automotives, but the transport and logistics sector remain crucial. Our case focuses on this sector and particularly on the maritime skills system and labour market. This concentrates our focus spatially on the north of the city and, as will become clearer in subsequent chapters, additionally on the large bulk port of Richards Bay, around 100 miles to the north.

South Africa’s VET system was profoundly shaped by colonialism and apartheid, leading to a racially segmented skills system that was dominated by industrial skills needs, particularly in the mining, metals and motors sectors, but that was negligent of rural subsistence and informal sector skills (see, for instance, [McGrath et al, 2004](#)). Since the beginning of democracy in 1994, a complex new skills system has emerged, based on a national qualifications

framework, a large public TVET college system and a relatively well-developed industrial training system, organized around sectoral skills bodies, a levy-grant system and learnerships (a form of modern apprenticeship). Originally under two ministries, Labour and Education, the system was reformed in 2009 under the Department of Higher Education and Training, but issues of coordination remain. While intended to be highly facilitatory, the South African skills system is widely seen as containing considerable dysfunctionality (Allais, 2013, 2020a).

In addition to the wider colonial and apartheid system that racialized access to education and work and built ethnic tensions as part of a regime of control, the Durban skills and work ecosystem around the docks has been shaped further by three important moments. First, a wave of labour unrest in the early 1970s helped develop a strong trade union presence and ideology on the docks. Second, a neoliberal turn by the apartheid state in the 1980s ended a history since the 1920s of using parastatal industries – such as the docks and railways – as a way of oversupplying apprentices to the national economy (see Chapter 2). This had the effect of undermining a historical relationship between public vocational colleges and public employers, but memories of this linger on, largely in views of what current public provision isn't. Third, the coming of multiracial democracy resulted in these historically White colleges merging with historically Black neighbours and a further distancing of the sector from a still largely White managerial cadre.

Theoretically, our interest in this case initially lay in exploring how this evolving skills system was responding to major national government policy initiatives around infrastructural development for economic development. Since the early years of the new millennium, the city has been the site of a series of major infrastructural development projects. These were kickstarted by South Africa's hosting of the FIFA World Cup in 2010, which led to the construction of a new sports stadium and international airport for Durban. These were built upon in the National Development Plan (NPC, 2012), the National Infrastructure Plan (PICC, 2012) and the Operation Phakisa initiative (Operation Phakisa, nd). Within the National Infrastructure Plan, Strategic Integrated Project 2 (SIP2) was the Durban-Free State–Gauteng corridor, linking the port to the country's main industrial region but also promising new industrial development along the route. Within KwaZulu-Natal province (KZN), the project prioritized two Special Economic Zones (SEZs): Dube TradePort, at the new airport, just to the north of the city, and the satellite port of Richards Bay, mentioned already; the expansion of container handling facilities in the Port of Durban; and the development of a new 'dig-out' port just to its south. Operation Phakisa was supposed to balance employment and environment imperatives. However, the economic imperative was clearly paramount, with the environmental element being located within a green growth paradigm.

The South African political system allows for considerable provincial responsibility for economic and related policies. The KZN Provincial Office of the Premier is responsible for overall policy coordination regionally including SIP2 oversight. The provincial Department of Economic Development, Tourism and Environmental Affairs has responsibility for the Dube TradePort Company, a public entity operating the SEZ. The municipality is also an important actor, reflected in its membership of the C40 global cities' alliance. One relevant municipal project is the eThekweni Maritime Cluster, which brings together key sectoral actors.

The municipality has a well-developed education sector with several high performing schools (both public and private), three public universities, three public TVET colleges, a provincial public sector skills academy and many private postschool providers. However, access and educational attainment are highly uneven, reflecting the continuation of longstanding inequalities derived from colonialism and apartheid. Important actors in the maritime skills system include the parastatal Transnet, which has its own training centre for new and existing staff, and Grindrod, a South African-based transnational company with interests in both offshore and onshore aspects of the maritime sector, which also has its own in-house training academy.

One initiative that will feature strongly in subsequent chapters is the new public Maritime Academy, a centre of excellence established at the uMfolozi TVET College in Richards Bay. This has been offering a suite of new maritime studies courses, accredited by the South African Maritime Safety Authority, since 2019.

### *Hoima*

The Bunyoro Kitara Kingdom of Western Uganda, centred on the town of Hoima, historically has been located far from the major economic and political centres of East Africa. At Ugandan independence, the region had relatively little economic or educational development. Economically, it has had a heavy reliance on subsistence farming and fishing, supplemented by largely informal sector activities and remittances from those who have migrated to Kampala or other larger centres. As of 2000, there were no major public education institutions. It is important to stress that although it is called a 'Kingdom', this is a cultural, not political, institution. Moreover, local government is relatively weak.

Into this context since 2000 has come the catalytic economic presence of massive investment in the oil and gas sector, with significant multiplier effects expected for other sectors and across the economy. Lake Albert, which forms the western border of the region, had been identified as having oil and gas reserves nearly a century ago, but it was only in 2006 that it was confirmed that there were significant commercially exploitable reserves. Getting to the

point of production, however, has been far from simple. Tullow, the main actor initially, clashed with the government, which eventually took them to court over alleged tax evasion. Combined with the usual oil price volatility, costly technical issues as Ugandan oil requires heating to flow in a pipeline and diplomatic challenges in finalizing a pipeline route for exports given both Kenya and Tanzania wanted it routed through them, the project has been subject to considerable delays.

Nonetheless, progress has been made. As well as early work on an oil refinery, an airport is under construction, and the major roads into the area are being upgraded from their previous unpaved state. Hoima's amenities have improved, and it now has branches of several banks, new restaurants and hotels, and a large new market building. As part of this transformation, Hoima was granted city status in July 2020. However, as we note in [Chapter 3](#), there are crucial political–economy–ecology challenges with the development of a new fossil fuel-based economy.

It was clear to the Ugandan government, the oil companies and aid donors that there was a vast gap between local skills development in the region and the requirements for employment in the new sector. It was only in 2014 that Gulu University began to develop a small branch campus in Hoima, and the district only got a public vocational institution in 2016. Otherwise, there were several small private and church-based vocational providers, each on average enrolling less than 2 per cent of the students of the mean for the eThekweni colleges. These providers offer a broad range of conventional vocational subjects – construction trades, motor mechanics, tailoring – to relatively small classes and with modest resources. Most of this training is geared to local and relatively small-scale economic activity and, indeed, domestic needs such as house building and repairs.

There have been several iterations of development in VET policy, including the 'Ugandan Vocational Qualifications Framework' in 2008, the 'BTVET [business and technical and vocational education and training] "Skilling Uganda" Strategic Plan 2011–2020' and the 2019 'Technical, Vocational Education and Training Policy' (GoU, 2008; MoES, 2011, 2019a). The new policy is intended to focus on the establishment of an employer-led system, develop a vocational qualifications framework harmonized with the regional framework, and promote public awareness and ensure sustainable financing for quality and accessible education (MoES, 2019a). This almost exactly mirrors the 'VET toolkit' discussed in [Chapter 2](#), which has been spread across Africa by international donors, with very limited real impact. The Ugandan policies have been written with major input from donors, and the system is hugely dependent on external funding, in major contrast to the South African picture, although the intellectual impact of donors has been huge there too (McGrath and Badroodien, 2006; Allais, 2007; McGrath, 2010).

Regarding sector-specific skills, the Ministry of Energy and Mineral Development (MEMD) commissioned a British consultancy firm to produce a workforce skills development strategy for oil and gas (MEMD, 2015). This made a case for the development of intermediate and higher skills for the sector within Uganda. This resulted in the decision to build the Uganda Petroleum Institute Kigumba (UPIK), with World Bank support, as one of six new centres of excellence under the Ministry of Education and Sports (MoES, 2019b). The sector is dominated by the use of international qualifications. UPIK has got accreditation to deliver some of these but plans to develop its own qualifications that adapt the international qualifications to the Ugandan context. We shall return to this story in Chapters 6 and 7.

However, the international oil companies were not convinced by the MEMD plan. They expected the peak demand for such skills to come earlier than a new institution could deliver and were sceptical of relying on skills from an unproven provider. This led to the Skills for Oil and Gas Africa (SOGA) programme cofunded by the British, German and Norwegian governments. Influenced by industry views, SOGA concluded in its inception phase that the skills gulf for entry into core industry jobs was too great for more than a handful of locals to bridge (GIZ, 2015). Therefore, it focused primarily on building skills for employment and subcontracting elsewhere in the value chain. This largely consisted in practice of NGO-delivered training programmes in business development and construction trades, the latter to international curricula and resulting in international certification. SOGA had the advantage of being very well resourced and the team clearly had some convening power, being able to get access at senior levels to the oil companies and first-tier contractors and to government, and to work with formal VET providers and local and international NGOs. We will revisit these two interventions in Chapter 6.

### *Alice*

The second South African case centres on the town of Alice and its rural surrounds in the Raymond Mhlaba Municipality, located in the Amathole District in the Eastern Cape. The area was part of the ‘homeland’ of Ciskei under apartheid. Before that, the colonial Land Act of 1913 had already set up such areas as labour reserves to keep Africans out of urban residence while providing migrant labour for mining and manufacturing. Such areas were never particularly economically viable as small-scale farming regions (also because of poor infrastructural support by the apartheid government) and were always dependent on transfer payments from migrant workers under colonialism and apartheid. This migration and remittance culture

endured the transition to democracy in 1994. Today, state expenditure, public sector employment and monthly social grant payments (for children, the elderly and those with disabilities) constitute three further pillars of the financial economy. Public sector maladministration and capacity issues limit the potentially transformative potential of the state's substantial developmental spending in the area. However, at the time of the learning network and skills ecosystem formation process, there was an active and highly functional local economic development office that proactively supported smallholder farmer development into commercialization of their products.

The Eastern Cape Province is a large, primarily rural province, made up mostly of former apartheid homelands, leaving the province with a past and continuing contemporary history of marginalization and poverty. Economic opportunities in the Alice area remain very limited. While there is a substantial citrus industry and game farming, both these industries fail to include large populations, who remain dependent on grants and the land for their livelihoods. The food sector dominates the local informal economy, but there is limited scope for growth in scale due to the intense supermarketization of the South African food system (Frayne and Crush, 2017). In response, informal economic activities are becoming ever more prominent in the region.

Notwithstanding the challenges of going to greater scale, small-scale farming of livestock, mixed crops and home gardening undertaken largely on communally owned land is common. This increasingly has an agroecological orientation through the influence of NGOs and in response to the challenge of limited water. This farming provides a livelihood for many of the region's inhabitants. However, it is striking that much (though importantly not all) of this activity is carried out by the elderly who use it as a means of supplementing the household food basket and, occasionally, its income. There are a small, but still significant, number of formal and informal commercial agricultural enterprises. Despite the relatively abundant water resources in the area, the vast majority of farming activities are carried out without irrigation, leaving farmers to rely on the region's summer rainfall for production.

Yet, these lands were set aside for African habitation precisely because they were not productive enough for commercial farming. This engineered combination of high population densities and marginal agricultural land set up an inevitable environmental challenge. This has been exacerbated by climate change, with water availability a huge constraint, especially in more frequently experienced drought periods. A reliance on rainfed agricultural practices leaves a great many of the region's inhabitants in a critically vulnerable position (see Chapter 3 for the wider political–economy–ecology in which these challenges sit).

In the education sector, Alice is home to the historically prominent institutions of Lovedale School and Fort Hare University. The Amatole District is also home to a tertiary agricultural skills provider, the Fort Cox Agricultural and Forestry Training Institute (FCAFTI), under the Department of Agriculture, Forestry and Fisheries, and a public TVET college under the Department of Higher Education and Training. Educational attainment is still very uneven across the district at school level, with significant consequences for postschool institutions, and youth unemployment is high, at 59 per cent (StatsSA, 2021).

Several state agencies are active in the region. These include the Department of Rural Development and Land Reform, the Department of Agriculture, Forestry and Fisheries, the National Youth Development Agency, and the Agriculture and Water Research Commissions. In contrast to the focus on industrial skills policies in the eThekweni case, the policy environment in the Alice case is dominated by natural resources and community development, including those policies oriented towards issues specific to the agricultural sector in the National Development Plan. However, policies are experienced as top-down and uncoordinated.

As regards skills policies, three challenges are apparent in the region. First, the public TVET college is part of a system that is essentially urban-focused and industry-oriented, with rural colleges, such as this one, largely expected to offer programmes that are misaligned to local labour markets. Second, the gap between what are effectively two agricultural systems is manifested in a disconnect between a high skills ecosystem and both the public VET providers. Third, there is a disconnection between the TVET college and the agricultural college, located as they are under different ministries.

Unlike the large parastatal and private enterprises in eThekweni, the local work and skills landscape is populated by farmers and their organizations, local NGOs, youth groups and community representatives, alongside the local postschool institutions already mentioned and governmental structures. The latter include the Raymond Mhlaba Local Economic Agency, as well as provincial and national government departments with an interest in the development of the local economy and sustainable development. Relationships are often informal and very localized.

The central focus of this case study, the ‘Amanzi [Water] for Food’ programme, was partially funded by the Water Research Commission (WRC) and the SARChI Chair at Rhodes University (for more extended accounts, see Chapters 5 and 8; Lotz-Sisitka et al, 2016, 2021; and Amanzi for Food, nd). The focus was initially on rainfed water harvesting and smallholder agriculture and the development of a social ecosystem for skills that drew on existing WRC printed resources, and the knowledge of Rhodes academics, members of the community and FCAFTI staff, as well as contributions from University of Fort Hare staff, NGOs, youth

cooperatives, farmers' associations and social media partners. A learning network, Imvothu Bubomi (Water is Life), was established. This included an expanding group of horizontally connected partners, intermediary mediators and vertical facilitating groups focusing on a wider range of knowledges and practices relevant to smallholder agriculture and curriculum innovations over an eight-year period of coengaged research and praxis. As we shall show in subsequent chapters (especially [Chapter 8](#)), this intervention was able to overcome key institutional weaknesses in the regional skills system and labour market.

## *Gulu*

Gulu, which also received city status in July 2020, is the major urban centre in Acholiland in northern Uganda. Economic activity remains primarily driven by agriculture, but this is hampered by long distances from the major markets of East Africa. The population of the region is very young (around 70 per cent below 30) and unemployment rates are very high.

Until 2006, Acholiland was ravaged by 30 years of civil war, notorious for the use of child soldiers, with much of the population forced to live in internal displacement camps. The war also saw a significant change from the traditional communal and clan-based system to a situation in which much of the land was privatized and many lost access to it. Many of those with little access to land are, unsurprisingly, farming unsustainably. The largely illegal market in charcoal is encouraging deforestation, further exacerbating land degradation. Local markets for agricultural goods are limited, as are opportunities to export nationally and internationally.

Many of the same policies – apart from that on oil – that were described for Hoima apply in Gulu, and there are similar concerns about their lack of coherence and the limits of the state to be facilitatory. City status has not yet led to any significant changes in local government capacity. Given elections and the pandemic, this is hardly unsurprising. Beyond the national and local policy level sits a wider set of political–economy–ecology challenges (see [Chapter 3](#)) that also serve to disenable the people of the region.

Nonetheless, 15 years after the war, there is a real sense of transformation as people adapt to postwar settings. Lives are being rebuilt, businesses are growing, roads are being paved and streetlights put up. Gulu is growing as young people from rural areas make their way there, driving *boda boda* (motorcycle taxis), and generally hustling ([Thieme, 2013](#)) as they create pathways in their pursuit of decent livelihoods and sustainable futures. The result is a vibrant ecosystem of seemingly chaotic and entangled working, learning and living, as we shall explore in [Chapter 5](#).

The war and its aftermath brought large numbers of humanitarian agencies to the region, often based in Gulu, and one legacy of these is in

a large number of programmes aimed at skills development and agriculture development. Consequently, there is a push by the government and NGOs for self-employment. There are a few formal VET institutions in the region, both public and private. Complementing these is a vast array of nonformal training programmes and a large informal sector, with young people learning through apprenticeships at small businesses, in NGO programmes, on YouTube and from each other, as we shall explore in [Chapters 5 and 6](#).

The most important postschool institution in the region is Gulu University, founded in 2002. Its motto is ‘for community transformation’, and it is increasingly promoting organic farming and sustainability through its Faculty of Agriculture. Many of its graduates are looking to adopt sustainable farming and food practices. As we will explore in more detail in [Chapter 8](#), its UNESCO Chair in Lifelong Learning, Youth and Work plays a key role in animating a network between youth, civil society organizations (including the traditional authority, the Ker Kwaro Acholi), donors, NGOs and nonformal training providers.

## Our contribution

Overall, we offer a text that rejects the tendency of too much VET research to accept the world as it is and to see VET simply as a servant of the policy imperatives of capitalism. We *begin* to reimagine VET in Africa in ways that may help to address the problem of a VET paradigm that is stuck in a past *that never was*, one of skills for mass industry or mass empowerment. We provide this primarily as a foundation for an expanded research platform for VET 4.0 in Africa with potential policy implications going forward. As such, we suggest some openings for a reimagining of VET and a futures-oriented research agenda. Here, we highlight the following contributions to that larger project:

- Further development of the critique of existing VET, as offered across this book.
- Further development of the notion of work, as experienced by communities in the everyday, which extends beyond a narrow conception of work for formal employment in the neoliberal tradition.
- Further development of the expanded social ecosystem for skills model as grounded in wider ontological and epistemic debates, and contemporary struggles to connect facilitating verticalities (that is, policy, research and resourcing) to horizontal connectivities (that is, VET system actors in local/regional economies and societies).
- Further development of the internal dynamics of the expanded social ecosystem for skills model such as mediation work and resources (for

example, informal learning approaches that complement formal learning), mediating institutions (for example, learning institutions and learning networks), mediating partners (for example, VET colleges) and mediating actors (for example, lecturers).

- Further development of an account of vocational education that incorporates the variety of sites and modes of learning and teaching that exist.

Our initial intention was to develop a realist evaluation (Pawson and Tilley, 1997) of the emerging VET Africa 4.0 cases. However, we realized that this ambition was inadequate for the task at hand, which is to reconstitute VET in relation to the challenges of contemporary times, where changing work and the conditions and assumptions of work as found in mainstream paradigms of VET no longer seem to ‘hold’ adequate sway. Therefore, we found that it was more necessary to develop depth of insight into the problematique, via the emerging cases. In so doing, we draw broadly on critical realism:

The aim of critical realist philosophy is, when the practice is adequate, to provide a better or more adequate theory of the practice; and, when it is not, to transform the practice in the appropriate way. That is to say the aim of critical realist philosophy is enhanced reflexivity or transformed practice (or both). (Bhaskar, 2013: 11)

This leads us to offer an immanent critique, as Bhaskar (1975) uses this older term (see also Cruikshank, 2003). As shown already, we are concerned to demonstrate that current approaches globally to VET contain internal contradictions. Through drawing on a historical sociology of VET in Africa, we argue that these approaches are not fit for their own defined purpose (Chapter 2). Through engagement with the rising tide of political–economy–ecology analysis, we explore the further location of the problem in wider processes that are increasingly being called the logic of the Capitalocene (Moore, 2016) or fossil capitalism (Malm 2016), as explored in Chapter 3. However, Bhaskar (1975) insists that critique needs to move on to at least partially reveal possibilities for emancipatory social change. Realizing these possibilities requires addressing the needs and aspirations of youth, seeing them as key actors in the solution and not as the problem of how current VET policy and practice is failing according to its own criteria. This leads us to consider the implications of an ontologically grounded view of VET in Africa in our analysis and transformed practice experiments.

We explicitly develop a relational orientation in our research via this critique that seeks out resolution of those dualisms that plague VET systems and logics, and their impacts on social life. Such dualisms include that of the bifurcated economy that structures VET systems and therefore also viable

learning pathways for young people in particular ways; the dualism of public versus private provision, which ignores the strengths of both; the dualism of economy versus ecology, which fails to admit curriculum innovation for sustainable development in VET; and the dualism of job versus work, which fails to allow a more complex notion of VET's purpose.

We take a relational view of structure and agency, in which 'structure always pre-exists any round of human agency and the heavy weight of the presence of the past precludes voluntarism' (Bhaskar, 2013: 17). Thus, when we consider the VET learners' transitioning pathways or experiences of work (see Chapter 7), we do so understanding the structure–agency relation as one that is relationally, historically and situationally emergent. It is neither voluntarist, entirely open to their agentic actions, nor determinist, something entirely structural.

However, in drawing here from Bhaskar, it is important to be clear that we are not using all the tools of critical realism or providing an explicit critical realist account across all chapters. Alongside critical realism as broadly underlabouring the book, we work with substantive theoretical traditions from the arena of education, training and skills development across the different chapters. As explained already, we use the social ecosystems model as a core theoretical tool. Alongside this, we draw on historical sociology and political economy accounts that show the limited effectiveness of current approaches to VET for economic development and their historical trajectory (for instance, Allais, 2013, 2020b; McGrath et al, 2020a); on participatory action research accounts of VET for community development (for instance, Blaak et al, 2013; Tukundane et al, 2015); on the critical capabilities approach to VET and human development (for instance, De Jaeghere, 2017; Powell and McGrath, 2019a; McGrath et al, 2020b); and on arguments about reorienting VET to address sustainable development concerns (for instance, McGrath and Powell, 2016; Rosenberg et al, 2020).

## The book's structure

The book has three sections. In section 1 (Chapters 1–4), we set the historical and theoretical context, including developing the core theoretical tool of social ecosystems for skills. In section 2 (Chapters 5–8), we explore and expand this model through consideration of four aspects of the data from the four case studies. Each of these focuses on an element of how we conceptualize social ecosystems that is absent from or underemphasized in Spours' work (eg, Spours, 2019). In a briefer section 3 (Chapter 9), we reflect on the implications of this approach for future research, policy and practice.

In Chapter 2, we provide a historical sociological account of the development of VET in Africa from precolonial times to the present. We

stress the need to have historical depth in thinking about how vocational systems are currently formulated, their present challenges and the possibilities for transformation. Thus, historical depth allows a consideration of both why the current approach is problematic and what are the possibilities and limits of future alternatives. We explain why we use the term ‘VET Africa 4.0’ by analysis of three previous moments of postcolonial VET discourse and practice.

Our approach in [Chapter 3](#) complements the more conventional approach of the previous chapter by outlining a novel historically and ontologically framed political ecology reading of skills formation. Here, we suggest that conventional approaches lack an increasingly vital engagement with the question of how industrial activity, uncritical human capital theory-dominated skills planning systems, and untrammelled consumption are pushing us beyond planetary boundaries. Rather than the usual focus on skills for metals, motors and manufacturing, we look at how existential challenges, such as climate change, are shaping skills in resource-based sectors (oil, food, water and transport) and what this opens up for us in terms of reframing VET in ways that are more aligned with the challenges of the times. The chapter opens up the possibility for political–economy–ecology framings of VET for sustainable development and just transitions, which we found to be more or less implicit in all our cases.

In [Chapter 4](#), we review and document the evolution of skills ecosystems research as it evolved in the north. We outline its historical evolution and key elements, particularly in the version developed by Spours and colleagues, as the social ecosystems model of skills introduced by them holds resonance for VET in Africa as mentioned earlier. We consider aspects of this model and its application in our cases, deliberating how it can be adapted and extended for rethinking VET in Africa within a multidimensional political–economy–ecology system.

Our focus in [Chapter 5](#) is on the informal economy to develop a notion of inclusivity in VET that builds on the premise of better learning opportunities for more people towards inclusive sustainable development. Using largely participatory methods, we draw on approaches to inclusivity and VET from the Alice and Gulu cases. We centre this chapter on the stories of people within rich learning networks in social ecosystems of connected living, working and learning processes. We demonstrate how the informal sector creates spaces for learning for those who are excluded elsewhere, for example because of poverty, gender, disability or early school dropout. This resonates with [Gupta’s \(2010: 138\)](#) view that strategies for inclusive development ‘will have to build upon the resources in which poor people are especially rich: their knowledge, values, social networks and institutions’. We argue that a concept of VET in Africa should include informality in its conceptualization of what VET is, or ought to be, in practice.

In [Chapter 6](#), we consider curriculum and teaching activities within the case studies, drawing largely on interviews, focus groups and survey data. This leads us to argue for the centrality of VET teachers (of all types) to a reimagined VET social ecosystem for skills. We suggest that vocational teachers are the mediators of knowledge and learning within incredibly complex skills ecosystems. We contend that they need to navigate the competing demands and expectations of employers, students, the formal and informal curriculum, and the expectations of funders, governments and communities. We draw on illustrative examples of emerging and innovative practices in curriculum and teaching from each of the four cases to understand VET teachers' work fundamentally as curricular and pedagogic actors connected to the world of work, conceptualized broadly as outlined earlier, especially where VET institutions are also needing to engage with more inclusive notions of learning, work and development (as in the Alice and Gulu cases).

Our aim in [Chapter 7](#) is to address how individual learning and work transitions are appearing to be more challenging than the orthodox literature would allow. In particular, the chapter raises the need to look at transitioning in the context of learning that crosses formal and informal contexts, and forms of work beyond institutional workplace contexts. With the ontologically grounded experiential focus of this chapter, we consider the reality that learning and work transitions in Africa have always been challenging given the long histories of exclusion and marginalization, except in the cases of the elite few. Drawing on a set of vignettes, largely based on interview data, we offer a stronger focus on social variables, and argue for an expanded, more complex, view of transitions that encompasses interinstitutional boundary crossing between formal and nonformal learning experiences as well as intra-institutional transitions that are focused on transitioning into different types of work, sectors and occupations, highlighting public good and livelihood intentions embedded in transitioning processes.

In [Chapter 8](#), we draw upon lessons learnt from the Alice and Gulu cases with emphasis on the mediating role played by universities in their relational encounters with VET and regional social ecosystem actors in support of local economies, sustainable development and pro-poor livelihoods construction. In particular, we consider the role of coengaged research and community engagement as two approaches that can contribute to the advancement of an expanded social ecosystem model with positive benefits for VET institutions and communities. The chapter draws on the notion of 'relational agency' ([Edwards, 2005](#)), which focuses more directly on the nature of the relationships that comprise a network of expertise, and repositions the university not as a VET institution but as a vital contributor to the emergence of a viable and relevant VET landscape in Africa.

In [Chapter 9](#), we bring together our theoretical insights from section 2 and discuss how they refine the accounts presented in section 1 and point us towards new imaginings and practices as well as critique. We suggest important directions that an immanent critique of VET offers for research. We provide some reflections on implications for policy and practice. We are honest in noting that a ‘skills for just transitions’ account is still very early in its development and that it more serves as a lens for future imaginings than a reflection on current practices. We note too that there are wider global moves towards reframing educational purposes and reconstituting social contracts for education and training that make education and training more relevant to, and capable of engaging, the future in all its complexity (see the International Commission on the Futures of [Education](#), 2021). We argue that the work offered in this book contributes conceptual tools as well as practical insight into such a process in VET in Africa and beyond.

In an afterword, we offer a short reflection on the process of the project and the collaborative multileveled construction of the book. We deliberately set out to offer a self-critical reading of a project endeavour that was northern funded by the UK’s Global Challenges Research Fund (in which real time funded contributions of the global south are not reported, but did exist), and managed out of an English university. Though imperfectly, cooperatively and with a spirit of collaboration and care, we aspired to reduce binaries and historically constituted hierarchies that most often come with development projects and northern-led research and institutional imperatives. We also include a critical reflection on intra-African hierarchies, inequalities and power imbalances, and the correctional measures that we sought to put in place, despite the difficulties that also emerged because of the COVID-19 pandemic. Ultimately, we hope to shed at least some light on how it is possible, but also difficult, to begin to make the move away from uncritical accounts of VET as a servant of extractivism, and VET research as a historically constituted extractive practice.