Chapter 5. TVET Actors[1]

This chapter considers the organisations and individuals who participate in TVET research in SSA. It focuses on who conducts TVET research, their motivation for doing so, and their geographical location of interest. This chapter also discusses the organisations concerned with funding TVET research, as well as the range of academic disciplines engaged in TVET research. At the end of the chapter, we discuss current TVET projects and their locations. Considering such research participants as a population, we may say that this chapter considers the demographics of TVET research.

Research questions considered in this chapter

We investigate who participates in TVET research (RQ1, RQ13) and in which places/institutions TVET research takes place (RQ16). Information on who funds TVET research in SSA and the networks that can currently be found are also included here. The research questions considered in this chapter are listed below.

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Research questions considered in this chapter

RQ1. Overall background to research that is evidenced in publications or evidenced otherwise.

[RQ1.a] In what **contexts** have studies been (or are being) generated in SSA? For example, what is the institutional setting (e.g., NGO vs. university vs. government vs. industry)?

[RQ1.b] Are there specific **academic disciplines** that are more pronounced? If so, what are the academic disciplines (economic research vs. social research)?

[RQ1.c] Are specific **industrial sectors / branches** apparent? If so, what are those industrial sectors (e.g., the electronics sector, construction, tourism)?

[RQ1.d] Is the **motivation** of researchers or research projects discernable (e.g., in the background provided within research papers)? If so, what is the motivation of the study or researchers?

RQ13. Stakeholders in the **research landscape, leading experts and institutions**: the role of research institutions in the TVET actor landscape; institutional research capacities (in TVET, in SSA).

[RQ13.a] Who are the **designated experts** for TVET in SSA? Where are they located (country / institution)?

[RQ13.b] Which **research organisations** in each geographic region/country covered have particular expertise and capacity in TVET education research (in both SSA and internationally)?

[RQ13.c] What **institutionalised research capacities** exist in TVET research in SSA?

[RQ13.d] In which **institutional frameworks** do individuals and institutions operate and how does this framework influence the development of the (TVET) education system?

RQ16. Geographic analysis and geographic distribution.

[RQ16.a] What are the **regions and countries** that can be identified in the literature search (places where research is situated)?

[RQ16.b] Distribution: for which countries are most of the research findings available, and for which countries are there few findings? Which forms of training and professional fields occur in which locations?

[RQ16.c] What are the locations of the **researchers and institutions** who undertake this research?

[RQ16.d] Current TVET projects and their locations: what are the major TVET projects in SSA? Are there major TVET projects elsewhere that would be worth trialling in SSA?

We note that in contrast to the earlier German-language report (⇡Haßler, et al., 2019), the question of TVET networks (RQ14) is considered in Chapter 15 instead of in this chapter. Notably as well, additional exploration of RQ13 on stakeholders in the TVET

research landscape, specifically what the Structured Community Review (SCR) participants said on the topic, are presented in Chapter 14.

Conclusions of this chapter

The analysed publications show that research on TVET is carried out at state and non-state universities and independent institutions in various sectors — particularly in health care, education and engineering (with reference to new technologies). There are a significant number of publications about the design of TVET concepts (Burkina Faso, Senegal) and in the area of teacher education ('teacher training'; Ethiopia, Cameroon, Uganda, Kenya, Tanzania, Mozambique; RQ1.b, RQ1.c).

In answering RQ1.d, we found that the motivations for researchers are societal challenges related to the achievement of the Sustainable Development Goals (SDGs). Examples include research on agriculture (Benin, Uganda), the health sector (Ghana, Zimbabwe, Uganda, Tanzania, South Africa, Ethiopia, Malawi), education (Zambia, Ghana, Nigeria), new technology (Zambia, Tanzania, Mozambique, Botswana, South Africa, Kenya) and environmental issues (Tanzania).

Naturally, gaps in research also lead to new approaches. This is evident in studies on healthcare (South Africa), tourism and hotel management (Kenya, Uganda), entrepreneurship (Senegal, Ghana) and the internationalisation of TVET (Kenya).

In terms of the geographic distribution of TVET research, a question probed by RQ16, a large number of publications focus on East and Southern Africa (including South Africa). With the exception of Ghana and Nigeria, there are only a few research publications from West and Central Africa (when compared to East and Southern Africa). At the same time, Ghana and Nigeria have the highest number of research publications (19 and 18 respectively per country).

The Fogarty International Center, the United Kingdom's Department for International Development (DFID) and the United Nations International Children's Fund (UNICEF) are prominent funders of research. Curiously, the reviewed literature does not highlight the role of active German TVET sponsors such as the Federal Ministry of Education and Research (BMBF) and the German Academic Exchange Service (DAAD).

At the end of this chapter we present current TVET programmes (RQ16.d) and an overview of countries, institutions, and experts / researchers (RQ13). Chapter 15 considers the important point of networks. Internationally initiated networks for TVET in SSA (e.g., UNEVOC and VET-Net) are included, which also include research-related institutions such as universities. We briefly note that — with the exception of ERNWACA (Educational Research Network for West and Central Africa) — the U-publications mention no African-initiated research networks. The vast majority of identified networks focus on all aspects of VET rather than research on TVET. Similarly, apart from VET-Net (Ethiopia, Mozambique, South Africa: Haseloff, 2017), there does not appear to be any significant international cooperation between German and African researchers. Even though there are examples of partnerships, we do not find any specific research networks between African and other European countries, or networks in which other important

international research institutions are involved. Overall, the identification of existing networks was not an easy process, as these are difficult to find (including via the internet), and are not centrally recorded. However, the fact that corresponding information is unavailable does not necessarily mean that no other networks are active. Chapter 15 also lists some studies that make reference to smaller, network-like cooperations, which have limited duration and pertain only to one research project.

As in the other chapters, the following sections represent individual aspects of the chapter summary above.

5.1. Participants in TVET research

In this section we examine the specific academic disciplines of researchers who study TVET in SSA (RQ1b). Based on the U-publications, we have recorded the institutional links of the authors (faculties and departments). Our analysis shows a wide range of researcher / institute locations, including those embedded in international organisations, research foundations and other NGOs across Africa and America (as well as a sole contribution from a UNICEF worker located in Myanmar). Those working in national ministries and TVET institutions were predominantly located in African nations. The largest group of contributors, however, were those based in university or college departments across the globe (with a particular emphasis on the USA, the UK and multiple African nations). The table below (Table 5.1.) lists the total number of references to each faculty / department in the reviewed U-studies.

We list the TVET projects that are currently being developed in SSA and note that the majority are funded by international organisations and / or being carried out in multiple nations.

Table 5.1. Number of references to different faculties and departments in the U-publications

Faculty or department	Total	Total (SSA)
Education (including departments that focus specifically on TVET)	21	5
Health	27	16
Global health	2	0
Economics	3	1
Business or entrepreneurship	2	2
Engineering	9	4
Technology (including 'science and technology')	6	5
Miscellaneous	16	7

Table 5.2. Number of references to non-university and non-college entities in the U-publications

Other non-university and non-college entities	Number (all)	Number (SSA)
International organisations, research foundations and other non-university and non-college, not-for-profit institutions	16	10
TVET training institutions	1	1
National ministries, organisations and institutes	9	8

In Table 5.2, we note the high number of national ministries, which often act as collaboration partners.

5.2. Reasons for and factors in research in TVET

We will now consider the motivations cited by researchers for their involvement (RQ.1d). Some researchers explicitly identify their motivations. We distinguish between a personal motivation (e.g., based on previous work or a known research gap) and research that is carried out within the framework of specific commissions or projects. In this chapter, we call the former 'researcher motivation' and the latter 'project motivation'. From the large number of motivational statements on publications considered for this report, this section selects a few examples that have been identified as typical for the type of motivations appearing in the U-literature.

5.2.1. Societal challenges as motivation

Where researchers give their reasons for doing research, it becomes clear that social and ecological challenges (e.g., poverty, unemployment, health, education, technological change, environment) are important motivational factors for undertaking research in SSA. To a large extent, such challenges relate to Sustainable Development Goals (SDGs). Below we list the SDGs for which research work could be recorded.

Agriculture (SDG 2)

A focus on agricultural TVET is justified, as the majority of SSA's population who live below the minimum subsistence level reside in rural areas. Here, the primary source of employment is agriculture (Benin, Ethiopia: ⬆Walker & Hofstetter, 2016). Rivera points out that

> *"the development of human capital now constitutes a major constraint in Africa's agricultural advancement, and leads to the conclusion that greater attention should be given to strengthening institutional capacities for technical and professional education for the agricultural sector, especially at the post-secondary level"* (⬆South Africa: Rivera, 2008:54).

Researchers are striving to develop concepts for improving conditions for employment and income through TVET. The Japanese Agency for International Cooperation (JICA) is one example of an organisation supporting research on — and seeking to further develop TVET for — agriculture. The published findings were obtained in a

> *"...project on lowland rice production in Eastern Uganda that provides training to rice farmers on lowland rice cultivation practices based on the Asian experience"* (⇡Uganda: Kijima, et al., 2012:161).

Nursing education and health-related motivations (SDG 3)

Improvements in the health sector were cited as a motivation in some papers. In many regions of SSA, the training of specialised staff is considered inadequate. Miceli states that *"advances in health professional education have been slow to materialise in many developing countries"* (⇡Uganda: Miceli, et al., 2012:70).

Papers on TVET courses for nurses note drastic personnel shortages (⇡Ghana: Bell, et al., 2014; ⇡Nigeria: Salami, et al., 2016; ⇡Zimbabwe: Abas, et al., 2014). This is despite the fact that nurses are

> *"[numerically] the largest group of healthcare workers and [form] the backbone of healthcare delivery in Africa"* (⇡Tanzania: Cunningham, et al., 2017:1).

Other publications focus on the topic of emergency care. For example,

> *"inadequate training prevents nurses from providing optimal emergency care"* (⇡South Africa: Dulandas & Brysiewicz, 2018:84).

Another project is developing a trauma team training programme that covers trauma assessment and resuscitation to address the fact that (in SSA). They report that

> *"...injury is responsible for more deaths and disability-adjusted life years than AIDS and malaria combined"* (⇡Ethiopia: Belwal, et al., 2010:879).

Regarding psychosocial health issues, another publication explicitly examines how such issues are addressed. Researching the impact of training on the motivation of teachers and students, Kutcher and colleagues report that

> *"...successful application of a school MHL curriculum resource may be an effective way to increase teacher MHL and therefore help to improve mental health outcomes for students"* (⇡Tanzania: Kutcher, et al., 2016:1).

Education (SDG 4)

Various articles that broadly focus on the education sector emphasise the importance of teacher education for quality education as a motivation for research (Cameroon: ⇡Lange & Benavot, 2016; Uganda, Kenya, Tanzania: ⇡Hardman, et al., 2011; and Mozambique: ⇡Mucauque, 2010). Examples include reports on

- curriculum development for the training of academic TVET staff for vocational training in the fields of renewable energies and photovoltaics (TU Dresden, Germany; GIZ, PERACOD[2], ↕Hartman & Sawadogo, 2016) and
- subject-related partnership for the establishment of a Master's programme (Master en Techniques et Formations Professionnelles, MTFP, at the University of Koudougou, Burkina Faso; TU Dresden, Germany).

The situation is described in more detail in the relevant literature (see ↕General: Global Monitoring Report, 2014; ↕Zambia: Haßler, et al., 2018). A few researchers focus on the training of TVET-teachers (e.g., ↕South Africa, Mozambique, Ethiopia: Eicker, 2017).

Employability and entrepreneurship (SDG 8)

The high unemployment rate of young people in Zambia motivated researchers to consider informal apprenticeships more closely than before, because they *"offer young people access to both affordable training and future employment"* (↕Zambia: Ryan, 2015:1).

Another key motivator is the perception of opportunities associated with training that focuses strongly on entrepreneurship. One publication examines the central role of questions about entrepreneurial action in training in order to demonstrate that employees trained in this way contribute to the success of companies (↕Ghana: Dzisi, et al., 2018). A similar motivation underlies another publication that analyses the role of entrepreneurship as an important driver of national development (↕Nigeria: Eze & Nwali, 2012).

The marine environment (SDG 14)

The issue of environmental conservation in relation to TVET motivates researchers to work in this field for various reasons. In SSA countries bordering the sea, professions related to the marine environment are of great importance. A country's proximity to and dependence on the sea make it necessary to deal with the conservation and use of the marine environment at different levels. For example, the research on the marine environment initiated by Howe justifies the provision of systematically developed specific TVET (↕Tanzania: Howe, 2001).

The potential of new technologies (SDG 4.4)

The introduction or use of new technologies leads to new approaches in TVET and is thus a source of motivation for TVET research. Among the opportunities offered by new technologies are Open Educational Resources (OER), Open and Distance Learning (ODL), technology-based learning, flexible learning and Information and Communication Technologies (ICT).

A substantial proportion of the coded literature that we surveyed indicated a motivation to explore the role of these new technologies for programme design, teaching approaches, data review and, in general, methods for enhancing TVET.

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2 ↕GIZ, Programme for the promotion of renewable energy, energy efficiency and access to energy services (PERACOD), *available at* https://www.giz.de/en/worldwide/20886.html ↕

For example, the availability of conventional teaching and learning materials for entrepreneurship students poses challenges to TVET in Zambia, while

> *"the availability of Open Educational Resources [...] offer[s] an opportunity to address [such ongoing issues]"* (⭥Zambia: Konayuma, 2013:2).

A number of papers consider the availability of ODL to enhance the delivery of TVET (e.g., ⭥Mozambique: Romiszowski, 2015; ⭥Tanzania: Nartker, 2010). Policymakers acknowledge that ODL might provide a

> *"cost-effective means of tackling the challenges of access, equity and quality in education"* (⭥Botswana, Namibia, South Africa, Zambia: Hoosen, 2017:185).

The overall importance of ICT in TVET instruction is the main justification for several researchers' work (⭥Kenya, Rwanda: Agufana, et al., 2018; ⭥eSwatini: Hlophe & Mindebele, 2001). ICT is also being studied with the intention of informing policymakers of the difficulties encountered by teachers in TVET colleges in implementing adequate models for ICT use (⭥Kenya: Agufana, 2015).

Finally, flexible teaching is currently employed by multiple institutions in Kenya, but this occurs *"at a low level"* (which limits the effect of this pedagogic approach; ⭥Kenya: Tiony, 2016:2). We did not find any studies that ask explicitly whether new technologies also require new pedagogical approaches in TVET.

5.2.2. Research gaps as motivation

In the studies that we surveyed, researchers and research projects were often motivated by knowledge gaps they had identified in the literature. Such knowledge gaps were identified in various areas, including the following.

1. Prior to 2006, no studies concerning company-/firm-based training had been carried out in SSA (⭥Ghana, Kenya, Tanzania, Uganda: Kweka, et al., 2006).
2. Delivery of nursing training through an SMS-based approach has not yet been tested (⭥South Africa: Duys, et al., 2017).
3. Kenya's tourism industry *"has been the subject of little previous investigation either in Kenya or internationally"* (⭥Kenya: Mayaka, 2002:112). The same applies to the hotel sector in Uganda. "*Despite the centrality of students' motivations and industry perceptions to the success of education,"* there is little research on this topic (Uganda: ⭥Tukamushaba & Xiao, 2012:334). More research is required in these areas.
4. There is limited empirical research concerning training and development among mid-level managers in the Global South region (⭥Ghana: Abugre & Adebola, 2015).
5. While prior studies in developed contexts have considered the effects of entrepreneurship programmes on *"participating students' entrepreneurship potential",* there has been an absence of corresponding research in LMICs (⭥Senegal: Garcia-Rodriguez, et al., 2017).

6. More comparative research is needed regarding teacher training, "*including the culturally determined differences of its social value and status, as well as the natio-nal peculiarities of educational thinking and underlying traditions still waiting for an in-depth analysis*" (⇅Deissinger, et al., 2014:105).

7. It is important to support the design of curricula and, more specifically, of teaching through research. The focus should be on existing practice-relevant issues and further development of practical aspects (⇅Deissinger, et al., 2014).

8. A paucity of research on China's role in education and training in Africa was identified (⇅Kenya: King, 2010). We note that China has a steadily growing role in Kenya and other countries in SSA. The publication highlights China's role in TVET in the context of China's cooperation with Kenya. Research should further ask how international cooperation can be made advantageous for all partners involved.

9. Very few studies assess the impact of technical training for artisans, particularly in rural areas (⇅Kenya: Ndegwa, 2015).

10. More research is required in the areas of hospitality and tourism education:

    "despite the centrality of students' motivations and industry perceptions to the success of education" (⇅Uganda: Tukamushaba & Xiao, 2012:334).

11. More research into the indigenous philosophy of adult education is needed (⇅Ghana: Fordjor, et al., 2003).

We note that research gaps necessarily relate to a specific moment in time, and subse-quent research needs to be examined to determine whether previous gaps have been addressed.

5.3. Locations for TVET research

In this section, we illustrate the countries (or regions) in the U-literature where research is being undertaken (RQ16). This literature focused on multiple geographic areas within SSA (or the African region as a whole), with 33 distinct nations or regions recognised (in addition to a small number of articles concerning multiple nations or subregions).

Figure 5.1. Bar chart of the distribution of publications (by research location)
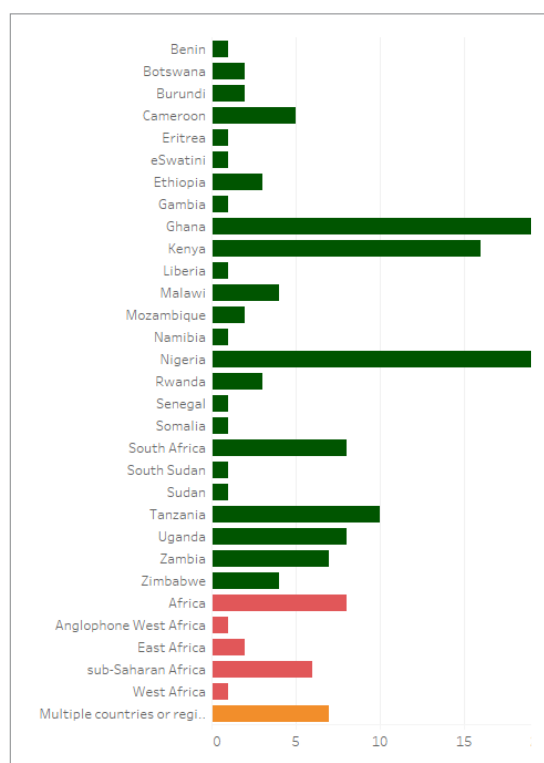
Figure 5.2. Map of the distribution of publications (by research location)
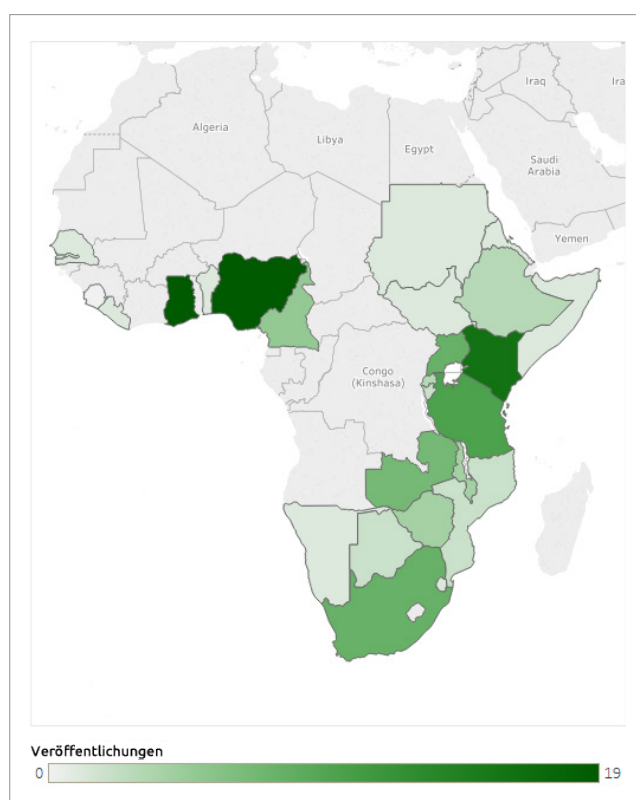
Table 5.3. Publications from selected countries. Benin, Liberia, South Sudan only have one publication each focusing on TVET, compared to a wide selection from Ghana and Nigeria. The papers are ordered by year of publication; we note the rapid increase of papers since 2010.

Countries (examples)	
Benin	⬆Okry, et al., 2014
Liberia	⬆Forh, 2014
South Sudan	⬆Atari & McKague, 2015
Ghana	⬆Nyadu-Addo & Mensah, 2018 ⬆Dzisi, et al., 2018 ⬆Ayentimi, et al., 2018 ⬆Wolf, 2018 ⬆Abugre & Adebola, 2015 ⬆Adogpa, 2015 ⬆Owusu-Daaku, 2014 ⬆Bell, et al., 2014 ⬆Amedorme, 2013 ⬆Bonsu, 2013 ⬆Smith, et al., 2013 ⬆Ntim, 2013 ⬆Alagaraja & Arthur-Mensah, 2013 ⬆Boateng, 2012 ⬆Mano, et al., 2012 ⬆David & Asamoah, 2011 ⬆Ayarkwa, 2011
Nigeria	⬆Oyebola, et al., 2018 ⬆Olaniran, et al., 2016 ⬆Moses, et al., 2016 ⬆Salami, et al., 2016 ⬆Alade, 2015 ⬆Ismail & Mohammed, 2015 ⬆Oluwafemi, 2015 ⬆Okoye, 2014 ⬆Olukanni, et al., 2014 ⬆Sharehu, 2014 ⬆Chukwuedo, 2013 ⬆Okoye, 2013 ⬆Okoye, 2013 ⬆Ebeigbe, 2013 ⬆Okpor, 2012 ⬆Eze & Nwali, 2012 ⬆Idris, 2012

5.4. Financing TVET research

We now consider specific funders of TVET research. We note that this question is answered on the basis of the U-literature. Therefore, this section does not provide an overview of who funds all TVET research or TVET projects. Instead, it provides information on TVET research or TVET project funding that the published literature has acknowledged. If a funder did not publish details of their financial engagement (and does not appear in the literature), they will not be included in the present study. Our main finding is that there is a relatively small number of funders (whose financial engagements follow no clear pattern). These funders included the Fogarty International Center, UNICEF and the UK's DFID. Other funders were only identified on one occasion. The funders of research and projects are listed below, under the headings of 'Funders appearing multiple times' and 'Funders appearing once'.

We note in particular that national governments (and the specific ministries in charge of research) did not appear in the list of funders. Furthermore, only the DAAD (one dissertation) is visible as a German funder. We also note that although the DAAD has funded further research on the subject of vocational training in SSA, this was not visible in the literature we researched. As already mentioned, this may be explained by the insufficient use of corresponding academic (search) portals and online libraries by the authors and their institutions. As a result, there is a lack of availability of the publications produced.

Funders appearing multiple times:

1. **The Fogarty International Center**[3]
   a. **Research:** The Fogarty International Center funded research for an investigation into the training and retention of psychiatrists in Zimbabwe (through a grant to the University of Zimbabwe; ⇡Zimbabwe: Abas, et al., 2014).
   b. **Project:** A separate TVET project received funding support from the Fogarty International Center (see above, RQ7; ⇡Ghana: Bell, et al., 2014). In this instance, project funding supported a collaborative project between the University of Michigan, Kwame Nkrumah University of Science and Technology, the Ghanaian Ministry of Health, the Ghana College of Physicians and Surgeons and Komfo Anokye Teaching Hospital *"to introduce and build the specialty of emergency medicine"* (⇡Ghana: Bell, et al., 2014).

2. **UK Department for International Development (DFID)**[4]
   a. **Research:** DFID and The Marple Charitable Trust funded research into the education of pre-service kindergarten teachers (⇡Ghana: Wolf, 2018).
   b. **Research:** Other studies have acknowledged financial support from DFID and the British Council (regarding construction craft skills training) (⇡Zambia: Muya, et al., 2006).

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3 ⇡Fogarty International Center, Home, *available at* (⇡anon. Fogarty International Center, no date).

4 ⇡Department for International Development, Home, *available at* (⇡anon. Department for International Development, no date).

   c. **Project:** Outside of research, DFID has funded teacher development initiatives in Kenya (↕Uganda, Kenya, Tanzania: Hardman, et al., 2011).

3. **United Nations International Children's Emergency Fund (UNICEF)**[5]

   a. **Project:** UNICEF has supported teacher development projects in Tanzania and Uganda (↕Uganda, Kenya, Tanzania: Hardman, et al., 2011).

   b. **Research:** Hardman et al. also acknowledged the role of UNICEF in supporting teacher education research (when considering the reform of teacher education in Tanzania) (↕Tanzania: Hardman, et al., 2012).

Funders appearing once:

4. The European Commission, through its funding of the PERFORM project (↕Uganda, Tanzania, Ghana: Mshelia, et al., 2016).

5. The Swiss Agency for Development and Cooperation (SDC) (↕Kenya: Ndegwa, 2015).

6. The Japan International Cooperation Agency Research Institute (JICA-RI), the Japan International Research Centre for Agricultural Sciences (JIRCAS), and the Japan Society for the Promotion of Science (JSPS) (↕Tanzania: Nakano, et al., 2018).

7. The Canadian International Development Agency (CIDA), Plan International Canada and the Social Sciences and Humanities Research Council of Canada (↕South Sudan: Atari & McKague, 2015).

8. The Cambridge Africa Partnership for Research Excellence – CAPREx, which itself was funded by the Carnegie Corporation of New York, the Isaac Newton Trust and the ALBORADA Trust (↕Uganda: Okiror, 2017). In addition, the Fogarty International Center deserves mention, since it contributed to raising awareness for CAPREx.

9. The African Development Bank (AfDB; ↕Tanzania, Madagascar, Ethiopia: Achandi, et al., 2018).

10. Der Deutsche akademische Austauschdienst (DAAD; Dissertation: Nigeria:Raji Moromoke Nimota, 2012).

As already mentioned, this list only contains funders that appear in the literature we researched. We note that a large proportion of the funders, especially German funders, are not very visible internationally.

5.5. Current TVET projects

Before we move to describing TVET research, we now briefly describe a number of TVET projects in which research takes place (RQ16.d). Of the TVET projects currently being undertaken in SSA, the vast majority are funded by international organisations and/or are being carried out in multiple nations. The only exceptions were Christina Boateng (University of Cape Coast, Ghana) discussing COTVET's Youth Engagement Skill

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5 ↕UNICEF UK, Home, *available at* https://www.unicef.org.uk/.

Development Fund as a significant scheme taking place in Ghana, and John Aitchison (University of KwaZulu-Natal, South Africa) citing the DHET's projects. Among international projects, participants have informed us of the following:

- WorldSkills[6] is an advocacy strategy for the TVET sector. The African country members are: South Africa, Namibia, Zambia, Ghana, Morocco, Tunisia and Egypt.

- Educata Ghana[7] (first conference in 2018, planned for October 2020). The conference is organised by the German Chambers of Commerce Abroad (Auslandshandelskammer) Accra and two foundations: the Konrad Adenauer Stiftung und the Sparkassen Stiftung.

- The Southern African Development Community Qualifications Framework (SADCQF) promotes standardised learning outcomes and quality assurance principles for aligning qualifications in the region. The member states are: Angola, Botswana, Comoros, Democratic Republic of Congo, eSwatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe. Member countries are expected to ensure alignment with UNESCO strategy 2016–2020 and to UNESCO Agenda 2063 for Sustainability for Africa. The SADCQF[8] is currently being implemented and piloted in six countries (↑Various: UNESCO, 2018).

- The Pan African Sector on Education and Technology provides training to promote greater coordination in TVET research. However, as noted already, there is a lack of researchers with expertise in TVET research.

- The UNESCO Institute for Lifelong Learning[9] (UIL) has been involved in TVET in SSA in various ways, mainly through adult learning. It has a monitoring role, having done a lot of work in accreditation and the establishment of flexible learning pathways.

- The German Volkswagen Foundation[10] finances TVET conferences in SSA.

- The Porticus Foundation[11] in the Netherlands supports TVET projects in SSA.

- Learning Cities[12] operates in over 200 cities and includes entrepreneurship education as one of its focal areas. The global network of learning cities 174 active member cities from 55 countries. Cities in sub-Saharan Africa include: Ibaban (Nigeria), Olamze (Cameroon), Zomba City (Malawi) and Mayo-Baléo (Cameroon) (↑UNESCO Institute for Lifelong Learning, 2017).

- The World Bank funds the Regional TVET Centres of Excellence Initiative in 16 TVET institutions. The first phase was conducted in Kenya, Tanzania and Ethiopia (↑World Bank, no date).

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6 ↑WorldSkills, Home, *available at* https://worldskills.org.
7 ↑Educata Ghana 2020 *available at* https://educataghana.com.
8 ↑Southern African Development Community Qualifications Framework (n.d.).
9 ↑UNESCO, *available at* https://uil.unesco.org/.
10 ↑VolkswagenStiftung, *available at* https://www.volkswagenstiftung.de/en/foundation
11 ↑Proticus, *available at* https://www.porticus.com/en/home/
12 ↑UNESCO Institute for Lifelong Learning, *available at* https://uil.unesco.org/lifelong-learning/learning-cities

- Participants also reported that in Ethiopia, UNESCO and the African Union projects are active.
- In Ghana, the T-TEL[13] project focuses on institutional capacity building. It aims to restructure the teacher education curriculum and will provide courses in TVET for all trainees of Colleges of Education.
- In Ghana, the AFDB[14] funds a Competency-Based Training Programme.
- In Kenya, NEPAD[15] supports programmes that aim to improve employment with a particular focus on remote areas. It aims to support skills development to solve a range of problems in targeted regions.
- The African Union strategy to guide policy has been used in Kenya.
- DAAD and NGOs fund a number of TVET projects in Kenya.
- In Nigeria, the Tuning Africa Project[16] aims to develop standards and principles to harmonise quality in higher education in Africa. During Phase II, the Teacher Education Subject Area Group adopted the M.Tech Education Programme to apply their tuning methodology to joint degrees. Participating African universities include the University of Nigeria, the Makerere University in Uganda, the University of Tanzania and the Open University of Nigeria.
- The International Fund for Agricultural Development (IFAD) funds projects in Uganda (see note in ⇡Ghana, Seychelles, Senegal, Botswana, Zimbabwe: Hartl, 2009).

5.6. TVET Research: Leading countries, institutions and experts

We now consider RQ13, which focuses on stakeholders in the research landscape, leading experts and institutions. We specifically consider the leading countries, institutions and experts in TVET in SSA as evidenced by the SCR participants. The leading countries were Kenya, Mauritius, Ghana and South Africa. Both the leading institutions and leading experts were, however, less clear, as participants had varying views and often named organisations instead. More information on leading countries, institutions and experts are detailed in the sub-sections below.

5.6.1. Leading countries

Kenya was cited as the leading country regarding TVET provision, and it appears to be a leader in terms of TVET research, too (cf. Chapter 15). Kenya was the most referenced country, named by six participants. Four participants mentioned Mauritius, Ghana and South Africa while three highlighted Nigeria, and a couple of stakeholders suggested that Zambia and Zimbabwe had prominent research on TVET. Other countries mentioned included Botswana, Cameroon, Egypt, Ivory Coast, Malawi, Rwanda and Uganda.

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13 ⇡T-TEL, *available at* https://www.t-tel.org/home

5.6.2. Leading institutions

Contrary to their clear message on the countries that lead TVET provision and research, the SCR participants had diverging views on the institutions that have made the most significant contributions to the development of TVET research in SSA. Most of the institutions mentioned were TVET providers, such as universities, colleges or institutes.[17]A few associations and government agencies were also highlighted, such as the International Vocational Education Teacher Association (IVETA), the Principals Association in Kenya and the Ethiopian Federal TVET agency. The JOVACET journal and the Joint Education Trust (JET) were also mentioned.

5.6.3. Leading experts

When asked to name African experts in TVET, many participants suggested the organisations they would approach in order to find the relevant experts. Amon Haufiku (Namibia Training Authority), for example, stated that Namibia relies heavily on UNESCO to identify experts based on their needs. Lova Zakariasy (Higher Institute of Technology of Antsiranana, Madagascar) usually turns to French-speaking TVET networks such as CITEF (Conférence Internationale des Formations d'Ingénieurset de Techniciens d'Expression Française). She also mentioned the UNEVOC network. John W. Simiyu (University of Eldoret, Kenya) also suggested any UNEVOC Centre team leader in Tanzania, Uganda, Rwanda, Cameroon, Malawi, Zambia, Mauritius or Zimbabwe.

An interesting point brought out by Christina Boateng (University of Cape Coast, Ghana) is that there is no organised database of TVET experts. She explained that

> *"usually, the people that call themselves TVET experts are not really experts in TVET. They do not necessarily understand what TVET is. TVET is not just about crafts or technical skills. It is training for employment".*

A different perspective, but one that also highlights the problematic nature of identifying TVET experts, was provided by John Aitchison (University of KwaZulu-Natal, South Africa). He noted that the breadth of research skills of TVET researchers tends to be limited, and is associated with a weak tradition of education research in South Africa. Quantitative research skills seem to be particularly lacking, as most researchers are only competent in descriptive qualitative analysis. We also note that among the experts specifically named by participants, most were either invited to be interviewed in or participated in the other stages of this report's research.

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17 Examples of this kind of institution include: the National Polytechnic School at the University of Yaoundé 1 in Cameroon, the Higher Teacher Training College at the University of Dschang in Cameroon, the National Advanced School of Public Works, the Rift Valley Technical Training Institute in Kenya, the Department of Technical Education at the Malawi Polytechnic, Joy Papier's Centre at the University of West Cape and the Centre for Research in Education and Labour at the University of Witwatersrand in South Africa.

5.7. Chapter bibliography

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