Systemic TVET reforms

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Impact on employment outcomes

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1. Foreword from the British Council

At its core Technical and Vocational Education and Training (TVET) is about equipping people with the skills that enable them to work in a specific occupation, either for themselves or a company. For young people in particular it can be a direct bridge between education and employment. Even in economies with an over-supply of labour, many employers in important economic sectors report difficulty in finding recruits with the right skills, whilst informal sector workers may forego higher incomes because their skill levels mean their services or products are not competitive in the market.

Implicitly, TVET therefore provides an important tool to help address the employment challenge. Despite increased investment and political prioritisation in some countries, however, TVET systems in many developing countries are still weak and not fulfilling their potential.

As a result, there is concern amongst some donors that investment in TVET projects does not represent value for money. Those of us that work in, and with, the TVET sector are concerned that poor evidence, or the inefficiency of some direct training programmes, has dominated the conversation and less emphasis has been given to understanding the effectiveness and efficiency of more holistic systemic interventions.

The British Council commissioned this independent study to help us better understand which systemic reform projects in TVET have been most effective at improving employment prospects for graduates and what characteristics they have. We also wanted to use the results to provide an alternative perspective and widen the debate about the effectiveness of TVET interventions on improving employment outcomes. The impact of COVID-19 on labour markets and societies has added a heightened sense of urgency to this conversation.

We are really pleased that this study has been able to bring together evidence that reaffirms our belief that investing in TVET can have a positive impact on employment as well as wider benefits. We hope that the study will encourage those who are more sceptical about TVET interventions to think again and consider the greater potential gains of integrating a more systemic approach. We also hope it will help those with a broader development remit to recognise the benefit of complementing other job focused measures, such as private sector investment and sector development programmes, with TVET actions linked to systemic improvements so that growth is enhanced, but also more sustainable and equitable. At the very least we believe the study illustrates that the provision of high quality TVET is a necessary, although not the only, condition for sustained improvement in employment outcomes.

The report also emphasises that there is much more to do to deepen and expand this evidence base so that we can make more informed decisions about what works and in which context. It makes some recommendations that we will reflect on carefully, but we know that this is just a start and further collaboration between partners and donors is needed to advance this agenda. Ultimately, we know that employment outcomes are a key ambition of donors, governments and development agencies. We are sure that together as a community we can improve the evidence base and shape TVET programmes to demonstrate their effectiveness.

Chris Cooper, Principal Consultant

Skills Systems, British Council
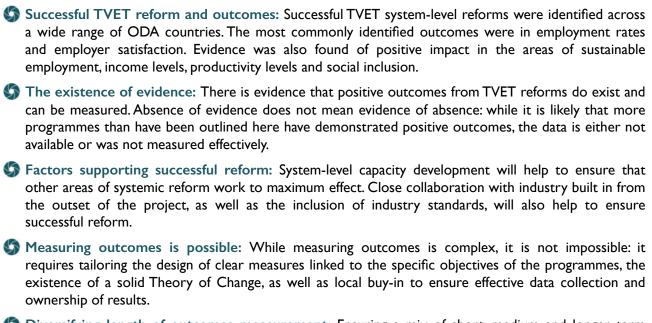
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2. Executive Summary

Research Overview

The British Council commissioned The Research Base to carry out an assessment of the relative effectiveness of systemic TVET programmes on employment outcomes in ODA countries. Where previous research on TVET programmes has focused on the effectiveness of single-point training programmes, this project has sought to address a gap in the literature by exploring the evidence available for the outcomes associated with reforms of TVET systems. It aims to inform debate among stakeholders at local, national and regional levels on how systemic TVET programmes can be most successfully conducted, monitored and evaluated in order to facilitate stronger employment outcomes.

Many programmes could not be used in this research because sufficient data, particularly relating to outcomes, was not available. However, through a combination of desk research and interviews with relevant experts and programme managers, a number of examples of successful systemic TVET reform were identified and a summary of the conclusions drawn from an analysis of these reforms can be found below.

Key Findings

- **Successful TVET reform and outcomes:** Successful TVET system-level reforms were identified across a wide range of ODA countries. The most commonly identified outcomes were in employment rates and employer satisfaction. Evidence was also found of positive impact in the areas of sustainable employment, income levels, productivity levels and social inclusion.

- **The existence of evidence:** There is evidence that positive outcomes from TVET reforms do exist and can be measured. Absence of evidence does not mean evidence of absence: while it is likely that more programmes than have been outlined here have demonstrated positive outcomes, the data is either not available or was not measured effectively.

- **Factors supporting successful reform:** System-level capacity development will help to ensure that other areas of systemic reform work to maximum effect. Close collaboration with industry built in from the outset of the project, as well as the inclusion of industry standards, will also help to ensure successful reform.

- **Measuring outcomes is possible:** While measuring outcomes is complex, it is not impossible: it requires tailoring the design of clear measures linked to the specific objectives of the programmes, the existence of a solid Theory of Change, as well as local buy-in to ensure effective data collection and ownership of results.

- **Diversifying length of outcomes measurement:** Ensuring a mix of short, medium and longer term outcomes measurement will satisfy donor requirements for demonstrable outcomes, while also creating an environment to enable deeper, longer term systemic change.

3. Introduction

Research Overview

Research on employment outcomes linked to TVET to date has focused primarily on single-point training programmes that are unconnected to, and run independently from, systems-level reforms. Some recent comparative work reviewing evaluations of vocational training programmes in developing economies has found disappointingly low ('*at best mixed*'[1]) levels of impact on employment outcomes and insufficient returns on investment.[2] However, consideration of the outcomes of system-level reforms were not considered in these academic papers, in one case due to the perceived challenges in assessing and attributing impact.[3]

This research project has been commissioned to evaluate such systemic programmes, or projects, and their outcomes in order to analyse the extent to which system-level approaches can be shown have a positive impact on employment outcomes. The conclusion of this research is that it is possible to demonstrate, albeit with some caveats, that such approaches have had positive impacts in some programmes. A further aim of the research was to determine how levels of success are assessed within systemic programmes, and to identify good practice in this area. Examples of systemic TVET reforms include:[4]

- Governance and capacity development.
- Creating an education-to-employment system integrator.
- The establishment of National Qualification Frameworks (NQFs).
- Occupation classifications/industry standards.
- Curriculum adaptation/development.
- Institution building.

The target audiences of this research included the following groups:

International thought leaders/donors: to inform debate around effective systemic reforms that can improve employment outcomes on a national level, and to identify suitable examples of successful systemic interventions.

Regional and national policy makers: to inform debate about when and how systemic TVET reforms can support learners' career ambitions and facilitate access to employment.

Employers, education institutions and social partners: to inform debate about the best ways that systemic TVET interventions can enhance learners' prospects of acquiring long-term, meaningful employment and in so doing meeting the needs of employers.

Systemic TVET reforms aim to improve employment outcomes through the employment, productivity and skills available in labour markets, while also improving the quality of learner, employer and employee experiences. As the report considers changes in TVET systems it assumes contexts within which job-creation is possible, and some of the reviewed projects were linked directly to broader economic reform. Thus, while wider impacts of systemic approaches, such as national economic growth, are considered insofar

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[1] Fox & Kaul (2017)
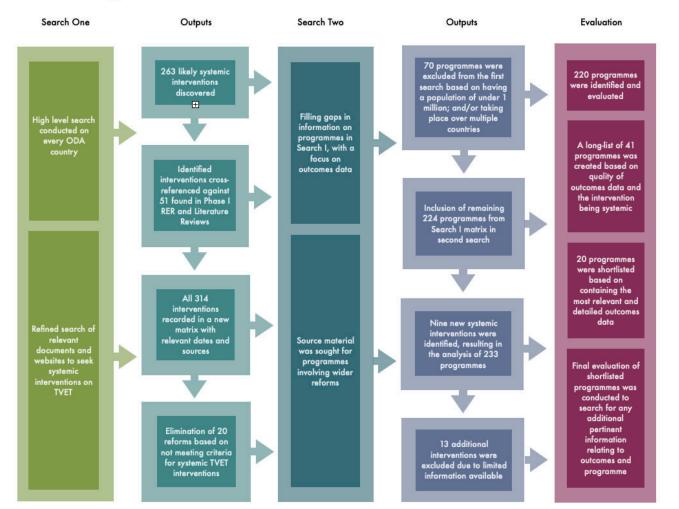[2] Fox & Kaul (2017), McKenzie (2017).
[3] Fox & Kaul (2017)
[4] Examples drawn from this report's own finding and the McKinsey Report.

as they are connected to measures such as productivity, employability and income, the primary focus of analysis remains on measures and outcomes relating to employment.

Method Summary

This project was divided into two phases. The first phase was designed to assess the availability and robustness of publicly available data. A literature and rapid evidence review (RER) found 51 system-level TVET reform programmes; nine of these programmes had published data on employment outcomes from which early conclusions were drawn. The second phase involved a full evidence review in ODA countries, which resulted in a total of 314 programmes for further exploration. A long-list of 41 programmes with some outcomes data was then identified, from which a final shortlist of 20 programmes was created; these contained the most relevant and detailed outcomes data. More information regarding the shortlisting method and limitations in the data can be found in the appendices.

To supplement the second stage of research, 15 interviews were conducted with key stakeholders. These interviewees included general experts in the field of TVET design, delivery and research, as well as individuals who had worked on the shortlisted reforms. Once initial conclusions had been formed, a workshop was held with expert interviewees in order that they could offer final insights and clarifications. All evidence from the two phases was then collated and triangulated to form the basis of this report, which brings together key findings and recommendations for future best practice.

Search Strategy

4. TVET Reforms and Employment Outcomes

This section begins by positioning this research as a response to existing literature, before presenting both its initial and full findings in relation to outcomes data. A high level overview of the outcomes of 220 identified reform programmes are presented, followed by more detailed analyses of employment outcomes from shortlisted programmes.

4.1 Context

There has been a focus in recent years on the effectiveness, and value for money, presented by youth employment programmes and labour market policies that focus on TVET systems. Publications by Louise Fox[5] and David McKenzie[6] have been at the forefront of discussions and the findings from these papers have also influenced DFID education policy.[7] These papers have theorised that single-point skills programmes[8] are '*often expensive relative to the income or welfare gains they achieve*'. However, these studies are limited to the outcomes of training interventions for youth programmes specifically and do not address the impact of system level reforms.[9]

One reason for this omission in the Fox and McKenzie papers is that the impacts of such expansive reforms are considered difficult to evaluate. Difficulties arise when attempting to assess tangible outcomes from broad programmes with structural outputs, such as NQFs. These problems are compounded by increasing requirements for programme architects and delivery teams to demonstrate outcomes as a proxy for value for money.[10] Further challenges include the time required to do rigorous evaluations of systemic reforms, given the long period over which outcomes become apparent and the amount of resources that this requires.[11]

Absence of a high volume of evidence is not in itself evidence that system level reforms are either few in number or ineffectual, however. As Allais' work on NQFs has shown, premature examination of evidence with insufficient data can lead an initial lack of evidence, while more detailed research at a later date can highlight some evidence of positive impact.[12] Further, since the TVET system is uniquely positioned at the interface between training and work, its proper design and review ought to consider the full 'education to employment' context in determining its outcomes. Strong links between TVET and outcomes such as employment rates or income levels are unlikely to be found through an examination of isolated training programmes unless they take this full context into account.

In contrast, by considering TVET beyond the limits of stand alone training interventions, this study has been able to identify a number of examples of outcomes and impacts associated with systemic reform

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[5] Fox, L. and Kaul, U. (2017). The evidence is in: How should youth employment programmes in low-income countries be designed? US Aid.

[6] McKenzie, David. (2017). How Effective Are Active Labor Market Policies in Development Countries? A Critical Review of Recent Evidence. Policy Research Working Paper, 8011. World Bank Group.

[7] DFID. (2018). DFID Education Policy: Get Children Learning. DFID & UK Aid.

[8] Those conducted independently of wider system reforms; most often concerning limited training programmes.

[9] They also do not address reforms that are introduced as a targeted response to a specific incident, e.g. the discovery of oil and gas or the collapse of a specific industry. Such reforms are outside the parameters of this report but would benefit from further research on their value.

[10] Fox, L. and Kaul, U. (2017). The evidence is in: How should youth employment programmes in low-income countries be designed? US Aid.

[11] Allais, S. (2017). Labour market impact of NQFs in six countries, Centre for Researching Education and Labour, University of Witswatersrand and the ILO

[12] Allais, S. (2017). Labour market impact of NQFs in six countries, Centre for Researching Education and Labour, University of Witswatersrand and the ILO

programmes.[13] These areas, which are explored in more detail below, include:

- **Access to employment:** A skills development programme in Albania[14] saw an increase from 15% to 74% in employment, apprenticeship participation and self-employment amongst participants.

- **Sustainable employment:** A TVET reform programme in Armenia led to 60% of unemployed women and youth in rural areas securing permanent work.[15]

- **Higher incomes:** Salaries of TVET graduates increased by 214% following a reform programme in the Chinese region of Yunnan.[16]

- **Labour productivity:** A Ghanaian skills reform programme saw labour productivity in participating firms increase by 426%.[17]

- **Inclusion:** Increased earnings of women, youth and marginalised farmers were shown in a systemic skills project in Afghanistan.[18]

4.2 Types of Outcomes

220 identified programmes[19] were initially analysed in order to form an impression of the frequency of successful outcomes across different systemic intervention types. Reported outcomes of programme delivery were divided into categories and additionally grouped according to intervention type.

The findings were converted into a score out of 10 (see table below), representing the number of interventions that were assessed to have had a positive outcome compared with the total number of interventions of that type.[20] The scores out of 10 for each outcome type were then totalled to indicate the approximate level of success each targeted outcome enjoyed across all intervention types. While it is not possible to assess the quality of evaluation design or delivery,[21] and the sample size was limited,[22] employment rate and employer satisfaction scored most highly.

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[13] These outcomes and impacts cannot necessarily be attributed solely to the reform programme in question, but a logical link can be made.

[14] Albania SDC Vocational Skills Development.

[15] Armenia UNDP VET Support.

[16] China Yunnan TVET Project.

[17] Ghana Skills and Technology Development Project.

[18] E.g. Afghanistan Skills Development Project.

[19] The 220 programmes identified at the close of Search 2 as matching sufficient criteria for further investigation.

[20] It should be noted that some interventions were coded as more than one type, and there were often more than one type of outcome per intervention (so there is some cross-over in results).

[21] There was not sufficient data on the interventions to ascertain quality at this stage.

[22] The majority of the 220 programmes had insufficient data to be able to categorise them by either intervention or outcome type and thus are not included in this analysis. A smaller number had data on programme type but had either no outcomes data or negative outcomes data. These programmes are reflected in the total count of intervention type.

Positive Outcomes Score by Type of Intervention and Outcome

Intervention Type	Total Count	Outcome Type							
		Business Start-Ups	Inclusion	Employment Rate	Earnings	Work Performance	Employer Satisfaction	Pathways to HE	Life Outcomes
Governance & Capacity	9	1	1	4	1		1		
Institution Building	7	1	2	2		1			
NQF/NVQs	9		1	3			1	1	
OC/Industry Standards	14	1	1	6			4		
Employer Collaboration	12	3	3	3	2		1		1
Curriculum	11	1	1	4	3		3		1
All		7	10	22	5	1	10	1	2

4.3 Examples of Employment Outcomes

A long-list of 41 reforms was drawn up, about which enough relevant information had been found to suggest further analysis would be beneficial. Following additional targeted research and follow up interviews, 20 reforms were shortlisted on the basis that they could be defined as systemic, and contained the most relevant and detailed outcomes data. Of the 20 reforms shortlisted with outcomes data, 10 reported positive results; of these, almost all had at least one unambiguously positive outcome compared with data drawn from baseline studies, control group comparisons or whole country data.[23] It was not possible to assess the remaining shortlisted programmes' outcomes data, mostly due to a lack of baseline data or other comparative data. Below are short summaries of the programmes deemed to have positive outcomes data. These summaries focus on these outcomes rather than the success of shorter-term outputs; further detail is available in Appendix 2.

Afghanistan Skills Development Project

Duration

2008 - 2014

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[23] Nine of 10 programmes; the exception is Armenia, see the table below.

Stakeholders

The World Bank; the Government of Norway; the Government of Afghanistan.

Aims

To create an equitable, market-responsive and cost-effective TVET system to increase the number of employable graduates. This included the establishment of a new national administration system, a national board and awarding bodies, a quality assurance framework for TVET, and a NQF with updated and market-relevant curricula.

Metrics and Data Collection

Tracer studies were carried out to measure graduate employment and earnings. Baseline data on graduate earnings was identified part way through the monitoring, evaluation and learning (MEL) process.

Reported Outcomes

- 75% of graduates were employed six months after training.
- The earnings of women, youth and marginalised farmers increased by varying but positive degrees within six months of training.

Albania SDC Vocational Skills Development

Duration

2006-2014

Stakeholders

The OECD; the Swiss Agency for Development and Co-operation (SDC)

Aims

To develop a TVET system that *'links and matches with the labour market requirements, attracts participants, strives to- wards European standards, and thus contributes to economic development and poverty alleviation'.*[24] This would include quality and innovation projects, taking a market-relevant training approach, decentralisation and financing training delivery.

Metrics and Data Collection

Tracer studies with baseline data were used.

Reported Outcomes

85% of Phase I voucher scheme beneficiaries were unemployed prior to training, whereas 74% were in full-time employment following the programme, either working as apprentices, self-employed, 'working for self-supply',[25] or working abroad. The time that elapsed between the programme and the tracer study data is not clear.

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[24] https://www.oecd.org/derec/switzerland/48574942.pdf
[25] No further details were available on the programme's definition of this.

Armenia UNDP VET Support

Duration

2006-2013

Stakeholders

The UNDP; the Norwegian Government; the Danish Government; the Armenian Government.

Aims

To introduce competency-based qualifications, improve the legal environment relating to TVET, and provide large-scale vocational training and job placement for the registered young unemployed. It was intended that selected colleges would be supplied with additional laboratories and workshops, while professional manuals and teachers' guides would be set up for 15 vocational trades.

Metrics and Data Collection

No background information on metrics or data collection was identified.

Reported Outcomes

Approximately 60% of 1,000 unemployed women and youth from rural areas areas found permanent jobs.

Bangladesh TVET Reform Project

Duration

2007-2013

Stakeholders

The EU; the ILO; the Bangladeshi Government.

Aims

To introduce new competency-based training and assessment approaches as well as structured apprenticeships, quality vocational training and recognition or prior learning. It was hoped this would lead to increased competitiveness and reduced poverty.[26]

Metrics and Data Collection

Primary data was collected through semi-structured interviews and focus group discussions. Findings were triangulated and compared against project objectives and indicators.

Reported Outcomes

- Early findings from the pilot stages of the project showed the employment rate of NTVQF graduates in their field had risen from 79% to 100% within 6 months of completion.

- Representatives of employers including RMG, Leather, IT, Tourism, Shipbuilding, and Agro Food all reported that trainees from the CBT trials under TVET-R were more highly skilled and 'job ready' than those recruited from other training courses, or those who had only received on the job training in their

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[26] https://www.ilo.org/dhaka/Whatwedo/Projects/WCMS_106485/lang--en/index.htm

workplaces.

Burkina Faso SDC Vocational Skills Development

Duration

2000-2008

Stakeholders

The SDC; Association Tin Tau; other smaller donors.

Aims

To improve vocational training in the Tin Tau region as part of a wider regional reform package.

Metrics and Data Collection

Due to difficulties collecting baseline data or forming control groups, artificial control groups were set up comparing graduates to their family, friends and colleagues.

Reported Outcomes

- The unemployment rate among beneficiaries of the Centre Banma Nuara 2 programme was reported to be below 2.6%.

- Graduates of the Centre Banma Nuara 2 programme were likely to have higher incomes than their parents. There was also strong evidence for an increase in income for some beneficiaries of Formation Technique Spécifique programme.

China Yunnan TVET Project

Duration

2012-2017

Stakeholders

The World Bank; the Chinese Government.

Aims

'To improve the quality and relevance of TVET to produce skills that respond to labour market demand and contribute to Yunnan's economic development.'[27] The main reform initiatives focused on teacher training in industry, school-industry collaboration and curriculum development, including the introduction of high quality competency-based training. Student assessment manuals were also to be created.

Metrics and Data Collection

A graduate tracer study, enterprise satisfaction survey and school internal impact survey were conducted in 2014. Baselines were included for percentage of graduates in employment and graduate earnings. However, the quality of the study was weak, with a small sample size and poor sampling methods. Thus, another consultant was called upon to conduct further teacher and student evaluations.

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[27] https://projects.worldbank.org/en/projects-operations/project-detail/P122008

Reported Outcomes

- Employer satisfaction with graduates was at 92.7%, relative to a target of 88%.
- Graduates finding initial employment in their specialties was at 87.5% relative to the 77% target and up from 58% in 2011.
- Base salaries of graduates increased from a baseline of CNY 884 to CNY 2,779 at completion.

Ghana Skills and Technology Development Project

Duration

2011-2016

Stakeholders

The World Bank; the Ghanian Government.

Aims

'To stimulate improvements in productivity and expand employment in priority economic sectors and participating enterprises'.[28] This included the introduction of a council of TVET management and a new national skills strategy. Institutional development plans and quality assurance guidelines were to be adopted, as well as new training programmes, partnerships and technologies being established.

Metrics and Data Collection

The MEL framework was adjusted in 2013 due to concerns it was not sufficiently robust. Regular data collection and random site visits were subsequently conducted. Baselines for the monitoring studies were set at zero as there were previously no participating firms.

Reported Outcomes

- Labour productivity of participating firms increase exceeded the target at 426%.
- Employers' positive ratings of competencies of trained employees exceeded the target at 97.5%.

Moldova Dual Vocational Education and Training Project

Duration

2018-2021

Stakeholders

GIZ; the SDC; the Moldovan Government.

Aims

Building on the success of the project's previous iteration in transferring responsibility for TVET from state

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[28] https://projects.worldbank.org/en/projects-operations/project-detail/P118112

authorities to the private sector, this phase seeks to strengthen '*the system of demand-oriented dual VET[29] for the promotion of ecological, economic and social development in Moldova*'.[30] This involves mainstreaming more dual VET options and cooperating with a greater number of private companies to create apprenticeship opportunities.

Metrics and Data Collection

A survey was conducted with companies involved in TVET and although there was no baseline data available, the recruitment rate was highlighted as being higher than average.

Reported Outcomes

The recruitment rate of graduates is 60%, which is considerably higher than in the traditional training system.

Mozambique Transition in TVET Programme

Duration

2006-2015

Stakeholders

The World Bank; the Dutch Government; the Government of Mozambique.

Aims

'*To improve the quality and relevance of technical and vocational training in Mozambique, with a focus on selected TVET institutions and programmes.*'[31] This included the introduction of a competency-based training regime and related training for teachers, a NVQF, new school regulations and a skills development fund.

Metrics and Data Collection

Following a revision of the results framework to make it more robust, a 2015 tracer study included baseline values from 2006/2007 to measure the increase in graduate employment.

Reported Outcomes

- 80% of employers reported satisfaction with the quality of new training programmes.
- 57% of graduates from targeted programmes found or created a directly linked job within six months of training, up from 27% in 2007.

Vietnam Reform of TVET Programme

Duration

2017-2020

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[29] The German model of dual VET works with the private sector to combine vocational teaching in a school setting and industry training as part of the same programme. https://www.dualvet.eu/docs/productos/ 1_The%20Dual%20VET%20system.pdf
[30] https://www.giz.de/en/worldwide/37587.html
[31] http://documents.worldbank.org/curated/en/302871468196181186/pdf/ICR3601-P087347-Box394885B-OUO-9.pdf

Stakeholders

BMZ; the Vietnamese Government.

Aims

The adaptation of TVET to support a green economy through development of the legal framework, training experts and managers, and co-operation with private companies.

Metrics and Data Collection

No background information on metrics or data collection was identified.

Reported Outcomes

• More than 80% of all graduates had found jobs related to their training six months after graduation.

4.4 Factors Supporting Successful Reform

As a result of the limited number of systemic reforms with comprehensive outcomes data in the current dataset, it is not possible to draw definitive conclusions on which factors will guarantee the effectiveness of system reform. Patterns may emerge more strongly if or when higher volumes of data are available. Nonetheless, analysis of this small subset brings to light some emerging trends which may be of interest.

Geography: There is evidence of systemic reforms with positive outcomes across a range of geographies (central, east and southeast Asia, southern and eastern Europe, and west and southern Africa).

Poverty: Positive outcomes were found across the ODA levels of least developed, lower middle income and upper middle income countries.

Capacity development and training: Eight of the 10 reforms with positive outcomes included a systemic capacity development component.[32] This included the delivering of training as well as the development of strategy. It also included capacity development offered to managers of TVET institutions and their teachers, both from national ministries and provincial bodies. Some examples are: the adoption of development plans for TVET institutions in Ghana, including financing and revenue generation, decision-making and improving quality and relevance of TVET programming;[33] and the training of more than 160 experts and managers from the Vietnamese departments of VET and of Labour, Invalids and Social Affairs to reform the TVET system and develop its legal framework.

Industry collaboration: There is evidence that successful TVET systems reforms are characterised by close collaboration with industry, though the data is not comprehensive enough to attribute impact. Six of the ten reforms with positive outcomes were found to involve an industry collaboration component. This is much higher than the incidence of industry collaboration components in the rest of the shortlist: only three out of ten of the shortlisted reforms whose outcomes data was not deemed to be positive were found to involve an industry collaboration component. Examples include China, where part of this programme aimed to improve the quality and relevance of TVET, responding to labour market demand. Outcomes included the establishment of 48 school-industry and sector specific industrial advisory committees (17 committees over target), the increase of TVET instructors recruited from industry (more than doubling to 28%), and the percentage of instructors trained in industry attachments rising to 23% from 2%.

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[32] This figure includes the AlbVet programme, as part of which study tours were organised for instructors. However, this fell short of the programme's target to hold five training workshops for training. This is a smaller scale of capacity development that has been counted for the other six programmes.
[33] http://documents.worldbank.org/curated/en/222071499717582704/pdf/ICR00004241-06292017.pdf

🌀 **Industry standards:** The third most common shared feature of the reforms with positive outcomes was the inclusion of industry standards. Although, again, the number of reforms with clear data is too low to draw strong conclusions, six of the nine reforms with positive outcomes were found to feature this component. Reforms with positive outcomes commonly included provisions for the development or implementation of industry standards for learning and qualifications. A specific example of this is Ghana, where certification processes and quality assurance mechanisms were put in place, along with 23 manuals produced to guide TVET providers in developing and delivering programmes on a competency-based training approach.[34] Another example is Armenia, whose programme aimed to introduce competency-based qualification standards for 15 vocational trades.

5. Metrics in Practice

As part of this study, the metrics and data collection protocols used by shortlisted programmes have been reviewed; key metric areas included employment, income, employer satisfaction, productivity, and recruitment and retention. Discussion of the specific measures used and implications for good practice are outlined in this section. Potentially effective metrics that were recommended by experts are discussed later in section 6.

Employment

Almost all programmes included in this study used a measure relating to employment outcomes[35]; the two key focal areas were employment rates, and the type and quality of employment.

🌀 **Employment rate:** A combination of qualitative and quantitative measures were used for the programmes using employment rate as an indicator. There were minor differences in measurement as some projects measured the percentage of graduates who had found employment, and others also looking at graduates actively seeking work in the labour market. A challenge with measuring direct impact on employment levels, according to one expert, is assessing the deadweight, or the extent to which the outcome would have occurred if the reform had not taken place.[36] It is also key to understand what an 'employment rate' means in practice; if it is benchmarked against baseline data, for example, then the nature of the endline employment also needs to be outlined to ensure that the data is comparing like for like (e.g. hours employed).

> '*It's not just improved employment results, but also a reduction in skills shortages and a reduction in hard to fill vacancies. We need to be talking to employers to say 'do you have difficulty recruiting in certain sectors, for certain types of jobs etc?' So that's another metric that I would look at - whether employers are comfortable that they can get the skills in.*'
>
> *- Expert interview*

🌀 **Type and quality of employment:** It is also important to look beyond simple 'employment rate' figures to the nature of that employment. Two experts interviewed discussed the importance of assessing the quality of employment and ensuring that the jobs being measured fell under a category that might be described as 'decent' or 'productive' work. The distinction between a job and a 'significant job' was described as potentially being a job with at least a six month, 20 hour per week contract; it was noted, however, that

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[34] http://documents.worldbank.org/curated/en/778171518099122871/pdf/ICRR-Disclosable-P118112-02-08-2018-1518099112684.pdf
[35] Albania (NESS), Armenia, Bosnia & Herzegovina, Burkina Faso, China, Kazakhstan, Liberia, Georgia, Mauritania, Mozambique, Philippines, Nepal.
[36] Expert interviews.

this has been an area of ongoing discussion in the sector.[37] Three programmes included metrics on employment type: in Armenia, the rate of graduates finding permanent work was specified, while in Nepal the type of employment gained was assessed against a control group. While Albania did not specify a metric associated with employment type per se, they did collect data on different employment levels (e.g. self employed, employed). The Mozambique project specifically measured the extent to which graduates of targeted programmes had jobs *'directly related to their field of study'*.

🌀 **Design and data collection:** The majority of metrics did not specify a timeframe in which employment should be obtained; others, however, such as in Afghanistan, Bosnia & Herzegovina and Mauritania, included a tracer element looking at outcomes over six or nine months, or a year. Outcomes should generally be measured over a longer timeframe, for example three to ten years, depending on the particular reform. Most programmes appear to have had difficulties with the clarity and reliability of data collected. It is often unclear what outcomes have been measured, when they have been measured and where the information on this measurement came from. Sampling and recruitment also appeared to be an issue for many programmes, although an interesting approach was undertaken in the Burkina Faso SDC project, where siblings and peers of beneficiaries were used as the control group (with checks on comparability of groups).

Income

Five programmes included metrics related to income.[38] Of these, most measures concerned direct changes in earnings for graduates; in Liberia there was a slightly different focus on the average monthly income and number of working hours. Almost all of the income-measuring outcomes data was drawn from quantitative tracer studies and, like employment metrics, establishing the baseline was often difficult. In Afghanistan, where there were issues with the baseline data being unreliable, proxy calculations were made by looking at income levels for graduates of other, similar projects.

Employer Satisfaction

Of the seven programmes with metrics relating to employer satisfaction levels,[39] most focussed on the level of employer satisfaction with graduates. The reform in Ghana had a slightly different approach, however, as employers ranked the competency level of programme-trained employees. Three programmes[40] used tracer studies, presuming that employer satisfaction would be maintained or would continue to rise over time; it is unclear, however, how baseline data was collected. In Mozambique, it was noted that the baseline data used was drawn from some years before the programme, and in China there were serious concerns generally about the quality of the MEL approach and delivery.

Productivity

Changes in labour productivity were only measured in the Ghana project, which noted an increase in labour productivity by participating firms.

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[37] Expert interviews.
[38] Burkina Faso, China, Liberia, Afghanistan, Nepal.
[39] Afghanistan, China, Liberia, Ghana, Mozambique, Nepal, Uganda.
[40] Afghanistan, Liberia, Mozambique.

Recruitment and Retention

The Moldovan project is the only shortlisted project to have considered recruitment rates, by surveying the rate at which companies involved in dual VET recruit graduates versus those in the traditional training system. Expert interviewees,[41] as well as the IAG-TVET Working Group, noted that this metric can be useful in assessing impact of reforms on employers. Studies that monitor the nature of recruitment can also be very effective in highlighting underlying issues of social mobility in TVET and the wider labour market, however. Individuals from more socially advantaged backgrounds who have high social capital can use networks to help find work, while those who are less advantaged may not have the same connections and thus may find it more difficult to progress in their career. For example, the Bosnian tracer study found that half of employed graduates had found their job through a personal connection. Alternatively, half of unemployed graduates were seeking work through the State Employment initiative.

6. Widening the Evidence Base

This section draws on collected data, expert and project interviews and existing literature to present lessons learned on best practice for approaching impact assessments of systemic reform. It aims to provide informed guidance on securing a higher quantity and quality of reliable evidence.

6.1 Conceptual Approaches

In single-point interventions, such as the development of training programmes or the adaptation of curricula, identifying impact and outcomes is generally straight-forward: the inputs lead to outputs and outcomes, and possibly longer-term impact. Conversely, system-level reforms, with broad ranges of inputs and outputs, are faced with a significant attribution challenge. While system-level reform pillars vary, a large proportion include outputs such as the creation of NQFs and the improvement of governance systems, relevant policy and employer engagement. While the implementation of these outputs can be assessed quantitatively and qualitatively, their onward impact on learners, workers or the economy as a whole can be complex to ascertain.

Consensus from experts interviewed for this study indicated that while attributing employment outcomes to system-level TVET reforms is challenging, establishing logical links (such as through the model theory of change outlined in section 3.2 below) is more straightforward. Given the complexities of the landscape, this method could suffice in cases where measurable changes occur over time in key areas, such as employment rates and TVET graduate income levels.

> *'The wave of reforms through the late 90s into the 2000s was about system level reform and it was just… assumed that system level change would lead to a whole range of benefits, and so they were never set up, really, to measure anything in any way.'*
>
> *- Expert interview*

According to one expert, paying sufficient attention to developing appropriate metrics is a key factor in preventing poor attribution practices. Considering the implementation of NQFs, there are a number of questions which could be used to determine individual and industry-level outcomes: '*For example, do employers take a preference to employing people with qualifications developed under a new NQF? Are there any wage premiums paid to workers that have qualifications developed under a new NQF?*'[42]

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[41] Two expert interviewees.
[42] Expert interview.

Many reforms list employment outcomes with measures relating to a single-point training programme, which has been delivered as part of a broader reform or at the same time. By viewing systemic TVET reforms through a longer-term lens, and accepting that trends in employment and education can be observed over time, a more comprehensive picture of impact may be possible. Ultimately, this may be necessary to better understand, and to be better able to demonstrate, the effectiveness of TVET investment and reform.

6.2 Metrics and Measurement

Recommendations for effective metrics, and measurement of outcomes, have been identified through analysis of available programme data (including lessons learned), and through interviews conducted for this study. These interviews were held with individuals who had worked on the shortlisted reform programmes as well as general TVET experts with knowledge of programme design and delivery. These recommendations are aimed to influence and support TVET donors, thought leaders and programme facilitators in conversations on and the planning of systemic programmes.

Design Approaches

- **Developing a robust Theory of Change:** Historically, system-level reform has proven difficult to evaluate due to its breadth and complexity. An effective Theory of Change needs to acknowledge the difficulties of evaluating the connection between discrete top-line outputs, such as National Qualifications Frameworks, for example, and the resulting outcomes for individual learners or workers. A wider approach to developing a Theory of Change which addresses complexities and seeks to find logical links rather than identifying exact attribution would be beneficial. The Theory of Change outlined on the following page is a high level model which can be adapted or amended according to different contexts. It collates inputs, outputs, outcomes and impacts referenced across the 220 systemic reforms identified and in expert interviews. Successful monitoring and evaluation procedures should follow change through from inputs to impacts; an example Theory of Change is included below on p20.

- **Establishing a reliable MEL framework:** Projects with successful MEL systems will be those with timelines, indicators and a cohesive plan for data collection agreed at project inception. The establishment of a baseline is critical, as in other metric areas, in order to measure change. While this is reasonably easy to do in a programme with a defined group learners, however, it is less straightforward when looking at a sample of the graduate population to determine change from a system-wide programme. In this case, as recommended by the IAG-TVET Working Group, a comprehensive data collection regime would need to be developed at the point of entry into a learning institution; in developing countries, this may pose a significant challenge.

- **Designing creative metrics:** Investment in designing effective metrics and approaches has not been forthcoming over the past two decades, in part due to the complexity of the issue. As part of a commitment to thorough planning of the MEL framework at project inception, system reform projects should extend the lens of their metrics beyond more easily-measurable quantitative output targets that are traditionally favoured by donors[43] *and* commit to measuring outcomes in the longer-term. A rigorous system of metrics should evaluate the true quality of outcomes by testing for cost-effectiveness, relevance to project aims and sustainability.[44]

- **Ensuring local ownership and/ or co-creation with the global North:** The proliferation of North-South consultancy in TVET reform has, according to a number of interviewees[45], led to challenges both

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[43] Expert interview.
[44] UNESCO (2013) https://unesdoc.unesco.org/ark:/48223/pf0000225531
[45] Four programme leader interviews and one expert interview.

Model Theory of Change for Systemic Reform in TVET

Inputs

- Curriculum development/adaptation
- Development of a QAF/industry standards framework
- Development of occupational classifications
- Apprenticeship framework development
- Employer/industry collaboration
- Creating an education-to-employment system integrator
- Development of new institutions e.g. TVET councils
- Institutional reform
- NQF development
- Funding/resource inputs
- Monitoring & evaluation systems
- Rebranding programmes
- 'Greening' of TVET programme
- Decentralisation
- Legal framework creation/adaptation

Outputs

- Enrolments
- Completions
- Internship numbers
- Teachers trained
- New programmes
- Occupational classifications agreed
- Improved LMI and Career Guidance
- E-learning schemes/students
- Industry standards/quality assurance standards agreed
- Schools/centres opened
- Schools/centres with improved facilities and resources
- Schools/centres following new NQF, curriculum or training methodology
- Institutions benefitting from a grant scheme
- Graduate satisfaction with training
- Partnerships with private sector companies
- Promotional materials, educational materials or regulatory materials distributed
- Image rehabilitation/rebranding events.
- M&E papers published
- New laws or policies protecting and improving TVET

Outcomes

- Graduates in employment
- Sustainable/high quality employment
- Higher income levels
- Positive changes (in the above) for previously excluded or marginalised groups
- Employer satisfaction
- Graduate satisfaction with circumstances post-training
- Greater labour productivity
- Better recruitment practices

Impact

- A more highly skilled workforce with secure income
- A more inclusive labour market which creates opportunities for all
- Lower unemployment
- Stronger economy
- A TVET system which maximises links between the private and public sector
- Fewer vacancies for technically skilled jobs in the labour market
- More reliable M&E on which to base future policy
- A more environmentally conscious labour market

Notes
- Assumption: impacts are realised by combining different elements of reform.
- Assumption: in contexts where job-creation is possible, either because economic growth is strong and TVET is identified as limiting, or where direct measures are being taken to attract new investment.
- There may be other elements of change which have not yet been modelled in existing programmes, such as system quality arising from NQFs.

in developing effective and relevant measures, and also in the locus of ownership of these measures. Where international consultants are engaged to design systems-level programmes and metrics, it is crucial that they recognise the nuances of national systems, histories and practices so that buy-in is obtained from civil society, private sector actors and national government. Approaches should not be imported wholesale from other programmes and contexts. It is also key that metrics and data collection approaches reflect capacity on the ground and positive outcomes that can be sustained in the long term.

🌀 **Taking time:** System-level TVET projects take time as systemic change is not quick or easy. As a result, the monitoring of such projects will also take time. This reality does not always interact well with the 'projectised' approach of four- or five-year reform packages run by many governments and international organisations. Best practice needs to involve creating and following long-term plans that consider how TVET delivery and monitoring will continue to grow, evolve and maintain high standards. This will ensure a deeper, richer and more sustainable reform.

🌀 **Building initiative logically on top of one another:** The design of reform initiatives should respond to that of others past and present, building on their successes and limitations wherever possible. Donors should consider planning sets of interventions — for example a group of three — that build on previous programming, instead of designing each in isolation.[46] Ideally, programmes should be launched to tackle roots causes, rather than programmes repeatedly attempting to remedy only the effects of these underlying causes, effects which will need to continued remedying in the future.

Useful Metrics

🌀 **Transition to employment:** In addition to the type of work obtained by individuals, the transition time from education into a job is also a key metric, according to one expert. *'The shorter the transition time, the less pressure there is on social care systems because the young person is earning quickly, which suggests that the education they had is equipping them with skills that are needed in the workplace.'* [47]

🌀 **Utilisation of acquired skills:** While not explicitly included as a metric in any of the shortlisted programmes, measures relating to employment rate can often be taken to infer that the employment gained is relevant to the skills acquired through their training. While the IAG-TVET Working Group lists this metric as an indicator for which data is not often available, it also suggests that data could be drawn from employer and/or employee surveys. Data gathering could focus on: the percentage of TVET programme graduates working in relevant occupations; the percentage of employees in a given sector who, within a period of 12 months of completing a TVET programme, consider that their training is relevant for their current occupation; or the percentage of employers in a given sector who have been able to find TVET programme graduates with relevant qualifications and competences required for the workplace.[48] It is important to caveat, however, that TVET programmes can and should foster transferable skills, and thus, TVET graduates working in a sector that is not explicitly linked to their training should not be considered as a negative outcome.

🌀 **Relevant income:** While income may be the simplest measure to use over time, the critical factor is attribution - establishing the extent to which the change in income is due to the training that was received (and further, attributable to the reform under which the training activity was included). It may be the case that data collected for a metric concerning the relevance of employment to the training received would contribute to establishing this attribution.[49] More generally, another means of establishing attribution, suggested by the IAG-TVET Working Group, would be to assess the ratio between the average wage of TVET graduates and the average wage of those not on a TVET learning

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[46] This approach has been included following input from the British Council.
[47] Expert interviews.
[48] The Inter-agency Group on Technical and Vocational Education and Training. (2014). Proposed indicators for assessing technical and vocational education and training: working document.
[49] Expert interviews.

pathway. As with data for employment, however, this would require a reasonably large scale data collection process to be developed nationally.[50]

🌀 **Employer satisfaction:** Data for this indicator could be gathered through employer satisfaction surveys; establishment surveys; or international tools such as the World Bank enterprise surveys, which includes a variable on firms identifying an inadequately educated workforce as a major constraint. It is worth noting, however, that these are quantitative measures. Qualitative expression of employer satisfaction would also be useful in understanding the deeper issues.[51] Furthermore, employee satisfaction would be a meaningful measurement which could help to shed light on the more holistic benefits of systemic TVET programmes such as increased individual satisfaction with career progression and the use of new and transferable skills.[52]

🌀 **Job vacancy rates:** Retention rates are not always an effective way of measuring how effect a TVET programme was in meeting industry needs. Ultimately, there may be a variety of reasons for employees to move jobs which relate to the industry itself, such as salary or progression opportunities, or for personal reasons. Another potential indicator, categorised as one for which data is not often available is that of job vacancy rates; where available, data could be collected from Public Employment Services or the Ministry of Labour.[53] Looking at vacancy rates alone will not be sufficient in certain contexts, however, where there are patronage networks or jobs are not advertised at all. Therefore, the most effective indicator on job vacancies would consider hard-to-fill vacancies and associated skills mismatch. This could include the assessment of aggregate data on over qualification and under qualification prevalent in certain roles.[54]

🌀 **Labour productivity:** Though labour productivity outcomes are a key motivation to engage in TVET reform, indicators in this area did not appear in the MEL approaches for any of the programmes with successful outcomes identified by this research, save for the project in Ghana. Productivity can be calculated by dividing the input of labour hours by the value of goods or services generated in this time. The IAT-TVET Working Group recommends productivity overall be measured per worker and per hour worked.[55]

7. Conclusions

🌀 **Successful TVET reform and outcomes:** Successful TVET system-level reforms were identified across a wide range of ODA countries. The most commonly identified outcomes were in employment rates and employer satisfaction. Evidence was also found of positive impact in the areas of sustainable employment, income levels, productivity levels and social inclusion.

🌀 **The existence of evidence:** There is evidence that positive outcomes from TVET reforms do exist and can be measured. Absence of evidence does not mean evidence of absence: while it is likely that more programmes than have been outlined here have demonstrated positive outcomes, the data is either not available or was not measured effectively.

🌀 **Factors supporting successful reform:** System-level capacity development will help to ensure that other areas of systemic reform work to maximum effect. Close collaboration with industry built in from

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[50] The Inter-agency Group on Technical and Vocational Education and Training. (2014). Proposed indicators for assessing technical and vocational education and training: working document.
[51] Expert interviews.
[52] Expert workshop.
[53] The Inter-agency Group on Technical and Vocational Education and Training. (2014). Proposed indicators for assessing technical and vocational education and training: working document.
[54] Expert workshop.
[55] The Inter-agency Group on Technical and Vocational Education and Training. (2014). Proposed indicators for assessing technical and vocational education and training: working document.

the outset of the project, as well as the inclusion of industry standards, will also help to ensure successful reform.

Measuring outcomes is possible: While measuring outcomes is complex, it is not impossible: it requires tailoring the design of clear measures linked to the specific objectives of the programmes, the existence of a solid Theory of Change, as well as local buy-in to ensure effective data collection and ownership of results.

Diversifying length of outcomes measurement: Ensuring a mix of short, medium and longer term outcomes measurement will satisfy donor requirements for demonstrable outcomes, while also creating an environment to enable deeper, longer term systemic change.

A.1 Research Methodology

The following section gives a brief overview of the methodology employed for each phase of the research.

Phase 1

- A Rapid Evidence Review (RER) was conducted guided by key search terms.

- 51 institutional TVET reform programmes were identified and coded by intervention type, region, age and, less successfully, by funding type.

- A second round of searching was conducted specifically for outcomes data for the interventions already identified. The purpose of this was to ensure that we could be reasonably confident in the proportion of interventions we had identified with such data.

- Nine interventions were assessed as having sufficient data on employment outcomes to proceed with an initial analysis. These were mapped further to include overall objectives, specific targets and structure breakdowns. Interventions were excluded where there was no evidence of systems change.

- Research papers by Fox & Kaul (2017) and McKenzie (2017) were reviewed in more detail to examine the evidence base against the value of TVET interventions. The purpose was to begin some of the more conceptual work.

- A second list of TVET interventions was generated from this review and new sources for these identified. These interventions were then classified: as 'national programmes' if where they were found to be part of or connected to a broader system-wide TVET programme or strategy and as 'stand alone interventions' where no such connection could be found. Typically, the latter interventions were independent programmes delivered by NGOs. Some of these were then mapped for comparison with those already identified.

The findings from Phase 1 were used to develop key research questions for the next stage, which were:

Is there a difference in the levels of impact that systemic reforms (or projects that are part of systemic reforms) have on employment outcomes, as opposed to standalone interventions/projects? What are the characteristics of successful programmes?

How is success measured in these programmes and what are the most effective forms of measurement?

Phase 2

A full-scale mapping of institutional reform programmes was conducted for Phase 2.

Search One

- A high-level search was conducted on every ODA country for potentially systemic TVET interventions.

- Documents and websites related to this search were analysed to seek out potentially systemic interventions on TVET.

- 263 likely systemic interventions were discovered. These were cross-referenced against the 51 systemic interventions discovered in the Phase 1 RER and literature review to make sure there was no overlap.

- All 314 interventions were recorded in a new matrix alongside relevant dates and sources. A quality

analysis of these interventions led to the elimination of 20 reforms on the basis that they did not meet the criteria for systemic TVET interventions.

Search Two

- This focused on filling information gaps on the programmes in the Search 1 matrix (with a focus on finding outcomes data).

- 70 programmes from the first search were excluded at this stage on the basis that they took place in countries with a population of under 1 million.[56] This left 224 programmes in the Search 1 matrix which were included for the second search.

- Nine new potential systemic interventions were discovered resulting in a total of 233 programmes being analysed. 13 interventions were excluded during this process due to a lack of further information on the project, leading to a total of 220 remaining programmes.

- 220 programmes were evaluated to determine which were most likely to be suitable for detailed analysis, with a focus on the richness of outcomes data.

- 41 reforms were selected for the next stage of analysis, and 20 of these were initially shortlisted for the next stage on the basis that they contained the most relevant and detailed outcomes data.

- Another document sweep was conducted at this point in order to ensure that all relevant resources on these reforms had been evaluated and any additional information included. Analysis of each reform began, considering which indicators were used in outcomes data, which outcomes had been associated with what kind of interventions, and whether outcomes were linked only to training elements or to systemic elements of the reform.[87]

- Key recommendations for effective M&E were drawn out.

- A total of 15 qualitative interviews were conducted with stakeholders identified from the searches, who were representatives of influential international agencies, policy makers and thought leaders.

- Additional documents cited by some interviewees were scanned and clarified some earlier findings which resulted in the exclusion of shortlisted projects for Panama and Jordan and the inclusion of projects for Vietnam and Nepal, the shortlisted figure remained the same (19) as a result.

Final Phase

- Evidence from the literature review, phase 1 and phase 2 desk research/RERs and qualitative interviews with stakeholders were triangulated and data was collated to set out our key findings and recommendations.

- Further analysis was conducted to identify the characteristics of successful programmes and the context in which these lie.

- Metrics identified to measure effective systemic TVET reforms were grouped together, to identify possible approaches for the future.

- Five case studies were developed based on the projects that we were able to interview representatives from, with a focus on best practice.

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[56] This decision was taken on the basis that it would be difficult to gauge if policies were systemic against such small population sizes or to compare findings to those in more populous countries. Those which took place across various countries were also excluded on the basis that this research sought to focus on national systemic reform.

Challenges in Identifying Outcomes and Quality of Evidence

There were a number of difficulties in the process of identifying system-level reforms for analysis. Firstly, there were considerable difficulties finding system level interventions with outcomes data:

- Data on systemic interventions was far more difficult to source than data on individual training programmes. There was far less consistent reporting on such projects.

- Information on such projects in reports is often limited to brief descriptions of Project Development Objectives (PDOs) rather than sustained monitoring and evaluation data.

- Outputs data is sometimes incorrectly portrayed as outcomes data. This means that many reports focus solely on short-term changes like framework adoption and number of participants as opposed to medium-term changes like employer satisfaction or employment rates after TVET interventions have taken place.

- Tracer studies are sometimes mentioned but rarely properly referenced, frequently delayed and difficult to find online.

When outcomes data was found, it often had further limitations:

- Many projects with outcomes data had not collected sufficient baseline data.

- Different projects collected their outcomes data according to different criteria and timeframes, making comparison between reforms more difficult. Many projects also failed to explain how they had collected their outcomes data.

- As many systemic reforms incorporate multiple interventions (e.g. the introduction of a new NQF could coincide with additional funding and teacher training across TVET programmes), it is often unclear which elements of the reform contributed to recorded outcomes.

- A number of other factors could be contributing to changes in outcomes like employment levels, including the national economy, the number of beneficiaries still in full-time education and individual socio-economic status.

A.2 Shortlisted Reforms

Shortlisted Reforms with Positive Outcomes Data

Country	Programme Name	Dates	Stakeholders	Aims	Positive Outcomes
Afghanistan	Skills Development Project	2008-2014	World Bank, Norwegian Government, Afghan Government	Creating an equitable, market-responsive and cost-effective TVET system to increase the number of employable graduates. This included the establishment of a new national administration system, national board and NQF.	• 75% of graduates employed six months after training. • The earnings of women, youth and marginalised farmers increased by varying but positive degrees within six month of training.
Albania	SDC Vocational Skills Development (AlbVet)	2006-2014	The OECD, the Swiss Agency for Development and Cooperation (SDC)	To develop a TVET that, 'links and matches with the labour market requirements, attracts participants, strives to- wards European standards, and thus contributes to economic development and poverty alleviation'. This would include quality and innovation, decentralisation and financing training delivery.	• 85% of beneficiaries were unemployed prior to training, whereas 74% were in full-time employment, working as apprentices, self-employed or working for self-supply or working abroad. The time elapsed between the programme and the tracer study data is not clear.
Armenia	UNDP VET Support	2006-2013	The UNDP, the Norwegian Government, the Danish Government, the Armenian Government.	To introduce competency-based qualifications, improve the legal environment around TVET and provide large-scale vocational training and job placement for the registered young unemployed.	• Approximately 60% of 1,000 unemployed women and youth from rural areas areas found permanent jobs.

Country	Programme Name	Dates	Stakeholders	Aims	Positive Outcomes
Bangladesh	TVET Reform Project	2007-2013	The EU, the ILO, the Bangladeshi Government	To introduce new competency-based training and assessment approaches as well as structured apprenticeships, quality vocational training and recognition or prior learning. It was hoped this would lead to increased competitiveness and reduced poverty.	• Early findings from the pilot stages of the project showed the employment rate of NTVQF graduates in their field had risen from 79% to 100% within 6 months of completion. • Representatives of employers including RMG, Leather, IT, Tourism, Shipbuilding, and Agro Food all reported that trainees from the CBT trials under TVET-R were more highly skilled and 'job ready' than those recruited from other training courses, or those who had only received on the job training in their workplaces.
Burkina Faso	SDC Vocational Skills Development	2000-2008	The SDC, Association Tin Tau and other smaller donors	To improve vocational training in the Tin Tau region as part of a wider regional reform package.	• Employment rate among beneficiaries reported to be below 2.6%. • Graduates of the Centre Banma Nuara 2 programme likely to have higher incomes than their parents; strong evidence for increase in income for some beneficiaries of Formation Technique Spécifique programme.
China	Yunnan TVET Project	2012-2017	The World Bank, the Chinese Government	To improve the quality and relevance of TVET to produce skills that respond to labour market demand and contribute to Yunnan's economic development.' Main focuses were teacher training, school-industry collaboration and curriculum development.	• Employer satisfaction with graduates at 92.7% relative to 88% target. • Graduates finding initial employment in their specialties at 87.5% relative to 77% target and up from 58% in 2011. • Base salaries of graduates increased from baseline of CNY 884 to CNY 2,779 at completion.

Country	Programme Name	Dates	Stakeholders	Aims	Positive Outcomes
Ghana	Skills and Technology Development Project	2011-2016	The World Bank and the Ghanian Government	To stimulate improvements in productivity and expand employment in priority economic sectors as well as participating enterprises. This included the introduction of a council of TVET management system and new national skills strategy.	• Labour productivity of participating firms increase exceeded target at 426%. • Employers ratings of competencies of trained employees exceeded target at 97.5%.
Moldova	Dual Vocational Education and Training	2018-2021	GIZ, the SDC, the Moldovan Government	To introduce a system of demand-oriented dual VET for the promotion of ecological, economic and social development in Moldova is strengthened.	• The recruitment rate of graduates is 60%, considerably higher than in the traditional training system.
Mozambique	Transition in TVET programme	2006-2015	The World Bank, the Dutch Government, the Government of Mozambique	To improve the quality and relevance of technical and vocational training in Mozambique, with a focus on selected TVET institutions and programmes.' This included a new competency based training regime, new school regulations and a new development fund.	• 80% of employers reported satisfaction with quality of new training programmes. • 57% of graduates of targeted programmes found or created a directly linked job within six months of training, up from 27% in 2007.
Vietnam	Vietnam Reform of TVET	2017-2020	BMZ, Vietnamese Government	The adaptation of TVET to support a green economy through development of the legal framework, training experts and managers and cooperation with private companies.	• More than 80% of all graduates found jobs relate to their training six months after graduation.