

Bolli, Thomas; Kemper, Johanna; Parajuli, Mahesh Nath; Renold, Ursula;
Thapa, Binayak Krishna

Research Report

Drivers and barriers of scaling-up the dual VET- apprenticeship programme in Nepal

KOF Studien, No. 144

Provided in Cooperation with:

KOF Swiss Economic Institute, ETH Zurich

Suggested Citation: Bolli, Thomas; Kemper, Johanna; Parajuli, Mahesh Nath; Renold, Ursula; Thapa, Binayak Krishna (2020) : Drivers and barriers of scaling-up the dual VET-apprenticeship programme in Nepal, KOF Studien, No. 144, ETH Zurich, KOF Swiss Economic Institute, Zurich,
<https://doi.org/10.3929/ethz-b-000388864>

This Version is available at:

<https://hdl.handle.net/10419/219407>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Report

Drivers and Barriers of Scaling-Up the Dual VET-Apprenticeship Programme in Nepal

Author(s):

Bolli, Thomas; Bolli-Kemper, Johanna Mirka; Parajuli, Mahesh N.; Renold, Ursula; Thapa, Binayak Krishna

Publication Date:

2020-01

Permanent Link:

<https://doi.org/10.3929/ethz-b-000388864> →

Rights / License:

[In Copyright - Non-Commercial Use Permitted](#) →

This page was generated automatically upon download from the [ETH Zurich Research Collection](#). For more information please consult the [Terms of use](#).

KOF Swiss Economic Institute

Drivers and Barriers of Scaling-Up the Dual VET-Apprenticeship Programme in Nepal

Thomas Bolli, Johanna Kemper, Mahesh Nath Parajuli,
Ursula Renold and Binayak Krishna Thapa

KOF Studies, No. 144, January 2020

Imprint

Editor

KOF Swiss Economic Institute, ETH Zurich
© 2020 KOF Swiss Economic Institute, ETH Zurich

Authors

Thomas Bolli
Johanna Kemper
Mahesh Nath Parajuli
Ursula Renold
Binayak Krishna Thapa

KOF

ETH Zurich
KOF Swiss Economic Institute
LEE G 116
Leonhardstrasse 21
8092 Zurich, Switzerland

Phone +41 44 632 42 39
Fax +41 44 632 12 18
www.kof.ethz.ch
kof@kof.ethz.ch

Drivers and Barriers of Scaling-Up the Dual VET-Apprenticeship Programme in Nepal

Dr. Thomas Bolli²

Dr. Johanna Kemper²

Prof. Mahesh Nath Parajuli¹

Dr. Ursula Renold²

Dr. Binayak Krishna Thapa³

Acknowledgments:

We thank the SDC, the Swiss National Science Foundation and SDC Nepal for financing part of the research. We are grateful for the inputs and logistical support of Dr. Usha Bhandari, SDC; Subas Subedi, ENSSURE; the CTEVT and its research division. We also thank the interview partners for their time and the KOF education system research division for their inputs

¹ School of Education, Kathmandu University

² KOF Swiss Economic Institute, ETH Zurich

³ School of Arts, Kathmandu University

Table of Contents

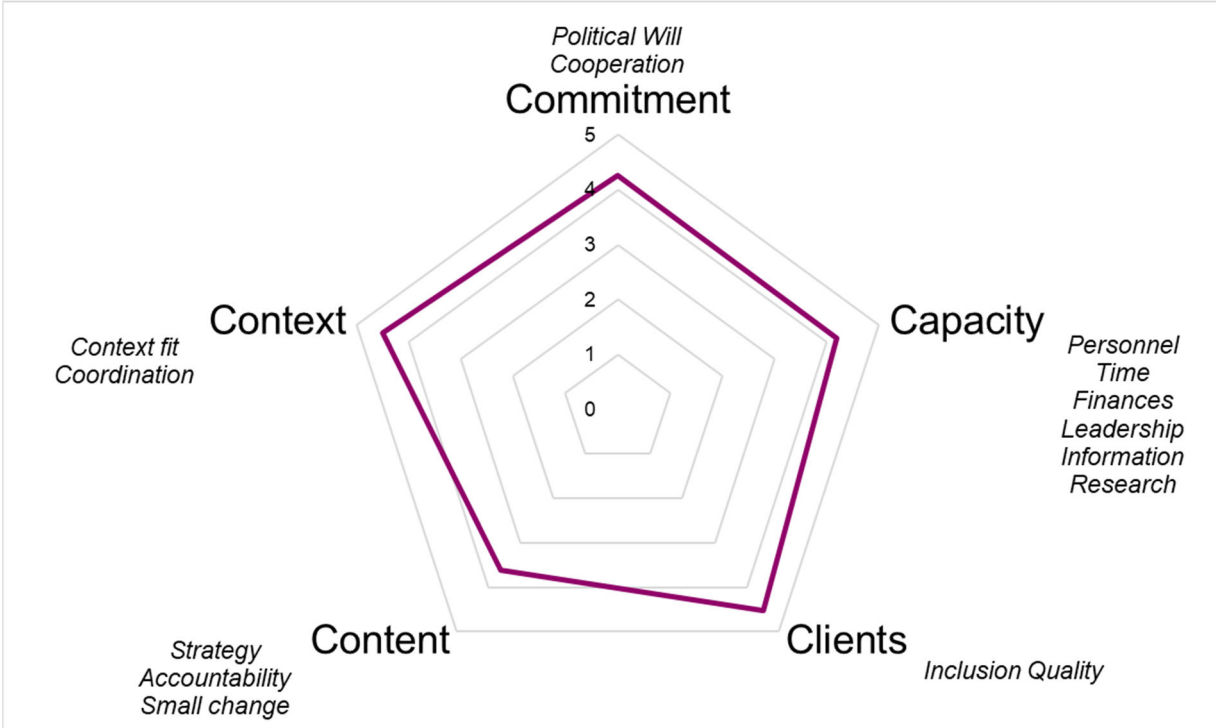
- Executive Summary _____ i
- 1 Introduction _____ 4
- 2 Analytical Framework and Data _____ 5
- 3 Results _____ 8
- 3.1 Overview _____ 8
- 3.2 Commitment _____ 9
- 3.3 Capacity _____ 12
- 3.3.1 Resource Availability _____ 12
- 3.3.2 Information Availability _____ 15
- 3.4 Clients _____ 17
- 3.5 Content _____ 19
- 3.5.1 Quality Assurance _____ 19
- 3.5.2 Long-Term Strategy _____ 21
- 3.5.3 Small change _____ 22
- 3.6 Context _____ 23
- 3.6.1 Context Fit _____ 23
- 3.6.2 Coordination _____ 24
- 3.6.3 Federalisation _____ 24
- 4 Summary and Conclusions _____ 26
- References _____ 28
- Information about the Authors _____ 31

Executive Summary

The ENSSURE project entails a component of introducing a Dual VET-Apprenticeship in Nepal. This new formal upper secondary education programme combines about one day of classroom education with about five days of workplace training each week for two years. While this project is in its pilot phase, the question arises whether and how this pilot might represent a first step towards a Dual VET-Apprenticeship system in Nepal. Therefore, this working paper analyses challenges of scaling up the Dual VET-Apprenticeship based on eight semi-structured interviews with experts representing government and industry conducted in May 2019. Hence, this working paper takes a long-term perspective, providing insights regarding potential challenges and **implementation barriers to scaling up** the programme in the future.

The analytical framework distinguishes **five dimensions that could be drivers to implementation: commitment, capacity, clients, content and context**. Caves and Baumann (2020) differentiate this so-called 5C framework of Najam (1995) into several aspects, allowing to measure implementation drivers and barriers empirically. Figure A1 summarises the results. The results of the expert interviews provide the following insights. Commitment of actors involved in the Dual VET-Apprenticeship is generally high and represents an implementation driver. Capacity in terms of personnel, finances and time also represents an implementation driver. However, capacity in terms of available information represents a potential implementation barrier. The clients dimension captures to what extent actors have the appropriate roles in the programme. Generally, the interview partners assess this as an implementation driver. The content dimension represents the most critically evaluated implementation barrier dimension. Half of the interview partners consider the reform a medium-sized change and half of the respondents even consider it a substantial change. This suggests that the implementation requires substantial adaptations from the involved actors. Furthermore, since the programme involves companies and industry association, the reform requires coordination among more stakeholders than a conventional education reform. This complexity makes scaling up the programme more challenging. Finally, the context dimension is an implementation driver as the interview partners believe that the Dual VET-Apprenticeship fits the Nepali context well.

Figure A1: Assessment of Implementation Drivers



Notes: Source: Own depiction. The figure displays to what extent the five dimensions represent implementation drivers on a scale from 1 (Not at all) to 5 (Very much). Italic text describes the aspects of each dimension. Data based on semi-structured interviews with government and industry representatives. N=8

For example, respondents assess the commitment of actors as an implementation driver but consider the content a potential implementation barrier.

In **summary**, the interviews present a positive view about the presence of implementation drivers to scaling up the programme. However, the working paper also reveals a number of implementation barriers that need to be considered carefully.

The results show that **schools and teachers** might lack commitment to the new programme because they lack the resources to implement it. Furthermore, schools and teachers lack information about the Dual VET-Apprenticeship. Hence, scaling up the programme requires to ensure that schools and teachers have the necessary resources and information.

The interview partners assess roles of various actors involved in the programme as mostly appropriate. The main exception is that **industry associations** could play a more pronounced role in the programme in the future. This might include more intense involvement in terms of curriculum development, company recruitment and the assessment and evaluation of apprentices. In the current version of the programme, companies and industry associations are not used to fill these roles. Hence, they need to develop the capacity to do so and to learn how to cooperate effectively and efficiently with the government actors and schools along these processes.

The need for investment in terms of capacity building by the industry associations also raised questions about the **long-term strategy** in terms of uncertainty regarding the future. Hence, the respondents from industry report feeling uncertain whether their investment in building up the programme will pay off. However, this uncertainty is common within a pilot project and will

remain until and unless the success of the programme can be proven. In the specific case of Nepal it will remain until the new TVET regulation is done.

Trade unions currently do not play any role in the Dual VET-apprenticeship and are mostly not yet aware of the program. Since apprentices are students from a legal point of view, trade unions might not necessarily have a more intense role in the future. Furthermore, many respondents doubt the commitment of trade unions to ensure the quality of apprenticeships. Hence, exclusion and lack of information of trade unions represents a potential implementation barrier to scaling-up the programme if trade unions oppose the programme and have power in the system. Hence, it might be ideal to include them more closely in the future process.

Finally, the interviews show that a fit of the Dual VET-Apprenticeship with the Nepali context might be **sector specific**. Sectors with a large skill-shortage are a better fit for the Dual VET-Apprenticeship, since companies that have more need for the programme are more ready to invest into it. Conversely, sectors with a large share of temporary contracts, informal work arrangements or informal companies are a worse fit. Interview partners say that companies are less willing to commit to a two year contract if they are not used to hiring employees for such an extended period formally.

1 Introduction

Technical and vocational education and training (TVET) prepares students for entering the labour market. Since human capital is an important driver for spurring growth and improving living conditions in developing countries (see, e.g., Frigotto, 2009), TVET is an important policy topic around the world (see, e.g., Figueiredo et al., 2017).

An example of a TVET project in Nepal is the Enhanced Skills for Sustainable and Rewarding Employment (ENSSURE) project, which is a bilateral project between the Government of Nepal and the Government of Switzerland represented by the Swiss Agency for Development and Cooperation (SDC). It aims to increase the skills of Nepali workers to improve labour market outcomes and support industries and businesses. The project has started in 2016 and has three training components, namely the support of a Dual VET-Apprenticeship programme as well as the introduction of short training courses and further training for employed workers.

This working paper focuses on the first component, the introduction of a **Dual VET-Apprenticeship programme**. These Dual VET-Apprenticeships last for 24 months. The first three months consist of classroom education. The following 20 months combine four to five days of workplace training per week with one day of classroom education per week. Finally, the last month of the programme consists of classroom education. The Dual VET-Apprenticeship leads to a formal certificate equivalent to the Technical School Leaving Certificate (TSLC).⁴

The implementation of the Dual VET-Apprenticeship project is a **cooperation** between the Council for Technical Education and Vocational Training (CTEVT) and HELVETAS Swiss Intercooperation Nepal (Helvetas). The main roles of the CTEVT consist of developing the curricula and conducting entry and exit examinations. Helvetas acts as technical assistance provider.

The Dual VET-Apprenticeship project aims to train 1'200 apprentices in two cohorts between 2016 and 2019. The **first cohort** of 181 of the planned 200 apprentices have started between July and September 2018. This cohort entails apprentices in two occupations, namely 129 technicians in mechanical engineering and 52 technicians in electrical engineering. These Dual VET-Apprenticeships are delivered by four schools located in states 1, 3 and 5. Hence, the first cohort focuses on a relatively narrow scope of occupations, but already spans a variety of geographic locations. The **second cohort** starts in November 2019. It is planned to educate 1000 apprentices in five occupations, namely mechanical engineering, electrical engineering, hotel management, information technology (IT), and automobile. In addition to enhancing the scope of occupations, the second cohort aims to expand the geographic coverage of the programme to state 6. Furthermore, increasing the number of apprentices fivefold requires to implement the Dual VET-Apprenticeships in substantially more schools.

Implementing a Dual VET-Apprenticeship project successfully represents a challenge because it requires coordination among several actors, including ENSSURE, the CTEVT, involved schools, industry associations and companies that provide Dual VET-Apprenticeship places. Therefore, scaling up the project while expanding the scope in terms of both, occupations and geography, is a demanding task. However, the vision of running the programme at the national level requires scaling up on an even larger scale. In order to understand the implementation drivers and barriers to this process of scaling up the programme, this working paper applies the implementation research framework of Caves and Baumann (2020).

⁴ The Technical School Leaving Certificate (TSLC) is a formal upper-secondary (ISCED level 3) TVET program. It takes two years to complete (starts in grade 9, when children aged 13-14).

2 Analytical Framework and Data

This paper uses an analytical framework that builds on the theoretical framework of Najam (1995), whose so-called 5C-model differentiates five categories of implementation drivers, namely commitment, capacity, clients, content and context. Building on this theoretical framework, the literature review of Caves and Baumann (2020) identify the key aspects of each implementation driver category. These key aspects represent the building blocks for the structure of the semi-structured interviews and the analysis of this working paper. Figure 1 visualizes the five categories and the corresponding key aspects considered in this working paper. The analysed key aspects mainly focus on the key success factors identified by Caves and Baumann (2020).

The **commitment** category captures whether involved actors are committed to the goals and methods of the policy (Najam, 1995). Caves and Baumann (2020) identify two key aspects of the commitment category, namely political will and cooperation. Political will refers to what extent actors demand or resist the changes induced by the implementation process. Similarly, the cooperation aspect captures that consensus and lack of severe conflict among actors are key to successful implementation.

The **capacity** category reflects whether actors have the administrative capacity to implement the desired changes (Najam, 1995). This broad description can be further differentiated into sufficiency of various resources (Caves and Baumann, 2020). First, actors need to have the necessary resources in terms of personnel, providing human resources and human capital. This can refer to teachers, but also includes expertise in administrative and governance bodies. Second, actors need have the financial and material resources to implement the changes. Third, reform requires sufficient resources in terms of time. Fourth, successful implementation needs a leader that feels ownership for the programme and drives the variety of activities. While time and leadership are not key success factors according to the literature review of Caves and Baumann (2020), they were included in the analysis to ensure that we capture all relevant aspects of capacity. Finally, the fifth and last aspect of capacity consists of to what extent actors possess sufficient information about the reform. One possible reason for a lack of information is that actors have not been informed well enough. Alternatively, actors might lack information because information does not exist, for example because the necessary research has not been conducted yet. Hence, we separate two aspects information and research that are summarised in Caves and Baumann (2018) as the aspect research.

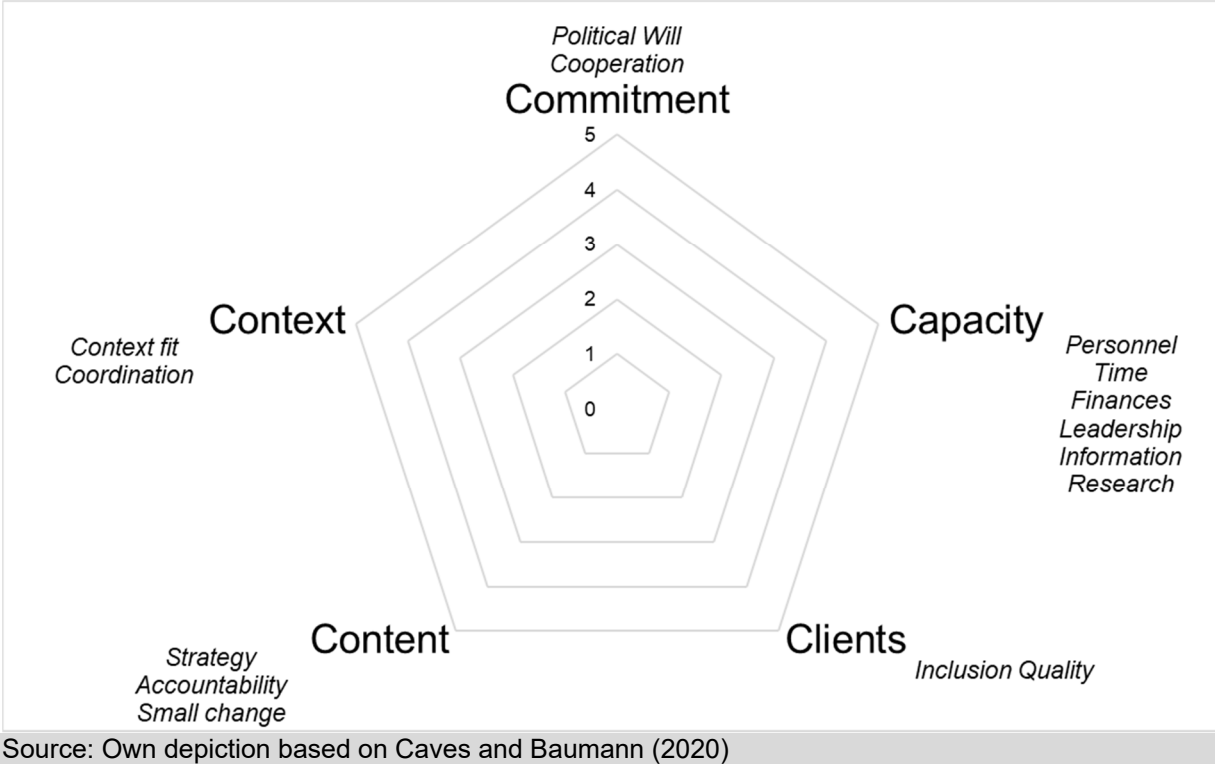
The **clients** category captures how well actors are included in the reform (Najam, 1995). Hence, while the commitment category refers to the willingness to participate and cooperate, the clients category captures whether the actors have the appropriate roles.

The **content** category describes the reform content in terms of the goals and whether the methods to achieve these goals are appropriate (Najam, 1995). Caves and Baumann (2020) highlight that quality assurance represents a key aspect of appropriate methods. Quality assurance in the context of VET can be further differentiated into quality assurance of classroom education and workplace training. Furthermore, the second key aspect of the content category refers to whether a clear long-term strategy exists. The third key aspect is whether the change is relatively small or incremental as the challenge of implementation increases in the magnitude of the change. Caves and Baumann (2020) call this aspect incremental and highlight that additional research is needed to understand this aspect fully.

Finally, the **context** category captures the institutional context of the implementation process (Najam, 1995). Caves and Baumann (2020) concretise this general description, highlighting

the key aspect whether the reform fits the context. Furthermore, the second key aspect, coordination quality, reflects whether the management of coordination is efficient or bureaucratic.

Figure 1: The 5C Framework: Implementation Driver Categories and their Key Aspects



This description shows how the literature review of Caves and Baumann (2020) differentiates the theoretical framework of (Najam, 1995). However, the final step of developing a guideline for the semi-structured interviews follows the questions developed by Renold et al. (2019a). This allows to formulate a question for each of the key aspects, thereby building an empirical framework to measure the intensity of implementation drivers and implementation barriers.

The key aspects of the content and context categories are very general and apply to all actors equally. However, the key aspects of the categories commitment, capacity and clients are actor-specific, with only leadership and research being general rather than actor-specific. A hypothetical example for actor-specificity of implementation drivers is that commitment of government actors is high but commitment of companies is low. Hence, the corresponding questions were asked regarding **four actor types**. The first actor type entails actors of the federal, provincial and local **governments**. The second actor type includes **schools and teachers**. The third actor type comprises **companies and industry associations**. The fourth actor type are the **trade unions**. Regarding commitment, we further asked respondents about **apprentices**.

The guidelines for semi-structured interviews were applied in **eight interviews** conducted in May 2019. Four of the interview partners were industry association representatives. The other four interview partners were either members of the Nepali government or government consultants. Hence, the analysis refers to differences between these two respondent groups where they differed regarding their view of implementation drivers and barriers.

The interviews were conducted by one Swiss economist and one Nepali sociologist. Seven of the eight interviews were conducted in English. One interview was conducted in English and Nepali. The language of quotes in the working paper have been edited slightly to improve

readability. The two researchers jointly coded the corresponding values of each key aspect based on the responses of interview partners. The resulting codes use a five point Likert scale ranging from 1 (Not at all) to 5 (Very much). Due to their subjective nature, these numerical codes mainly serve as a summary of the responses that should be interpreted in the light of the associated citations rather than as an accurate measure. Furthermore, these interviews help to improve the online survey which will follow during implementation phase of dual VET Apprenticeship.

3 Results

This section presents the results of the interviews following the analytical framework presented above. Thereby, the numerical codes are explained based on citations, which are shown in italic within parentheses.

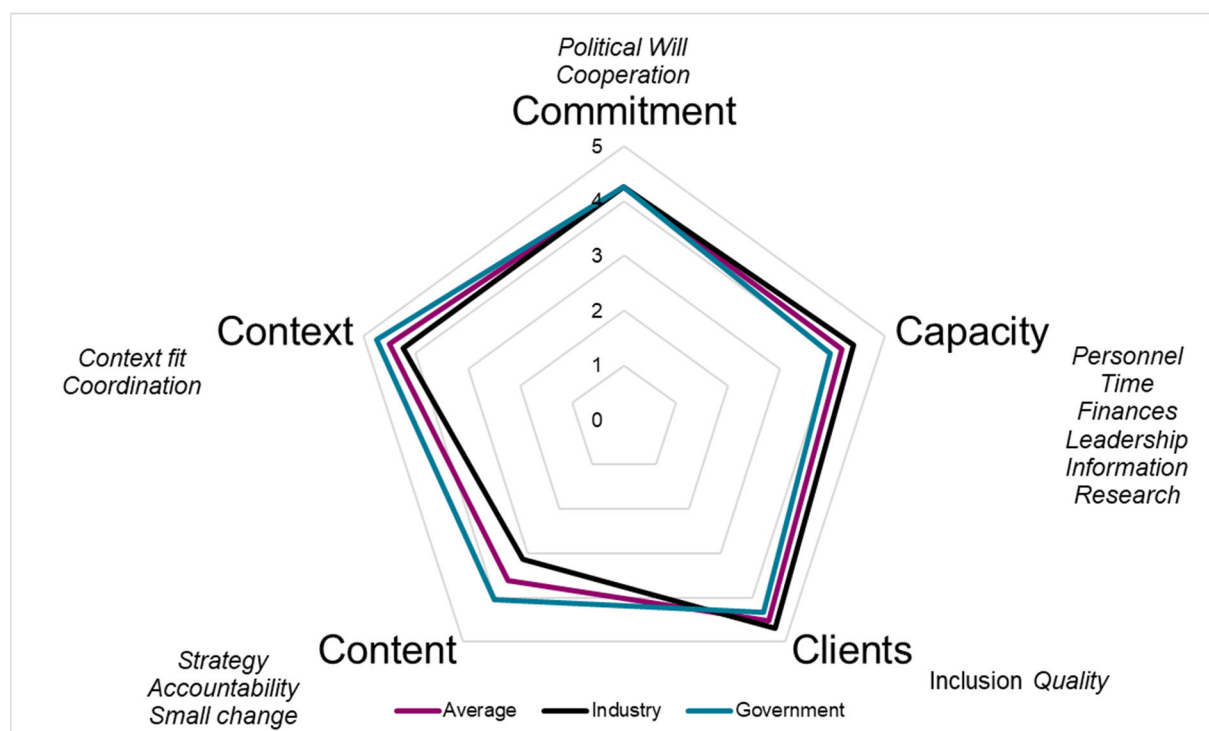
3.1 Overview

Most interview partners agree that the implementation and scaling-up of the Dual VET-Apprenticeship is **very likely to succeed**. Asked about the reasons for this, respondents pointed to two factors. The first factor is that they consider the programme a necessity to address the existing shortage of skilled workers. Relatedly, the second factor is that the intense participation of the private sector promises to improve the situation of companies and workers.

However, even though the interview partners were optimistic about the likelihood of a successful implementation and scaling-up of the Dual VET-Apprenticeship, the interviews also revealed a number of potential implementation barriers, explaining why *“This process will take time.”* and why *“Not everything will come in a package. It takes time. So it’s an evolutionary process.”*

Hence, following Najam (1995) and Caves and Baumann (2020), we sort these implementation drivers into five categories, namely commitment, capacity, clients, content and context. Figure 2 displays the results for each category, differentiating between the average across all respondents, industry representatives and government representatives. On average, **commitment** of actors is an implementation driver, not an implementation barrier. Industry and government representatives agree in this regard. Similarly, interview partners consider the actors involved in the implementation of the programme to have the **capacity** to do so. The **clients** category shows that respondents also consider the roles of actors as adequate. However, the **content** category represents the most important implementation barrier. Particularly industry representatives are sceptical in this regard. Furthermore, while government representatives consider the **context** an implementation driver, industry representatives have some concerns in this regard.

Figure 2: Assessment of Implementation Drivers



Notes: The figure displays to what extent the five dimensions represent implementation drivers on a scale from 1 (Not at all) to 5 (Very much). Italic text describes the aspects of each dimension. Data based on semi-structured interviews with government and industry representatives. N=8

For example, respondents assess the commitment of actors as an implementation driver but consider the content a potential implementation barrier.

The high values in most of the implementation driver categories are consistent with the assessment of interview partners that scaling up the Dual VET-Apprenticeship will likely succeed. However, in some cases these averages disguise concerns of interview partners about potential implementation barriers. This can arise because the category averages contain a number of aspects or because the specific concerns were only raised by a few interview partners. Hence, the following chapters discuss these implementation barriers in detail, thereby clarifying the reasoning of interview partners that explains the coded values.

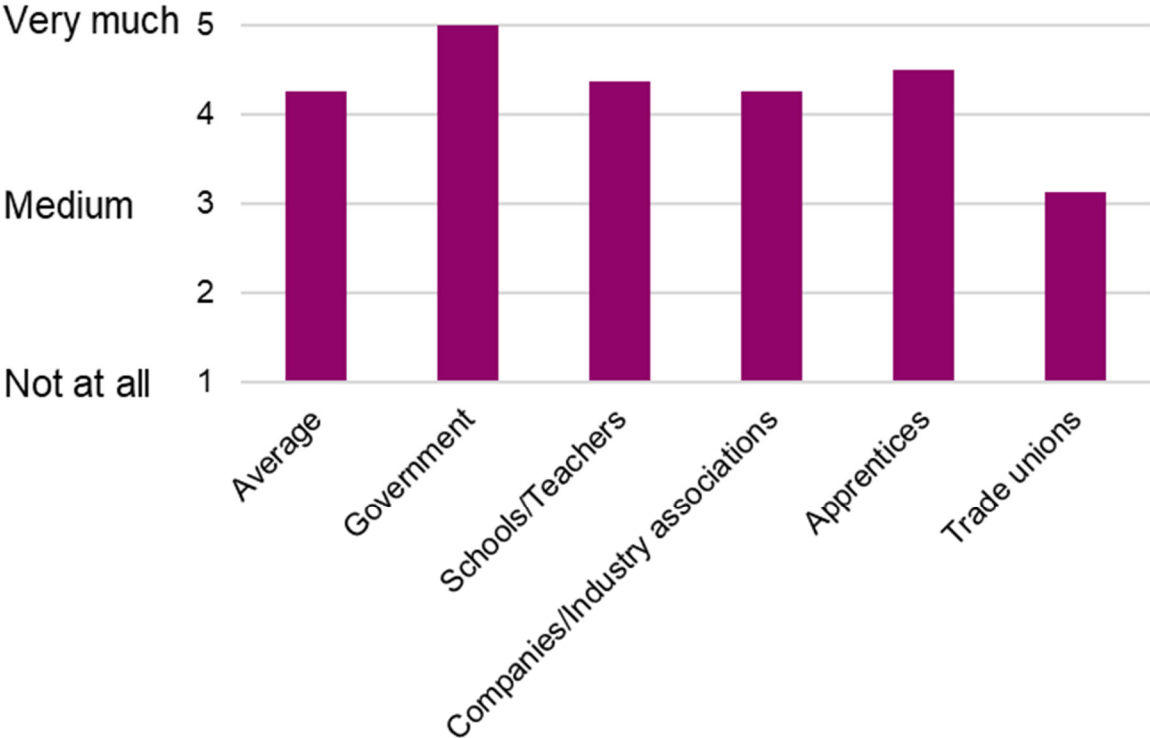
3.2 Commitment

The commitment category captures whether government actors, schools, teachers, companies, industry associations and trade unions are willing to implement the Dual VET-Apprenticeship and whether they cooperate with this goal in mind. To assess this implementation driver category, we assume that commitment increases if an actor considers the Dual VET-Apprenticeship a good thing and asked interview partners:

“Do actors think that the Dual VET-Apprenticeship programme is a good thing?”

The first bar Figure 3 shows the average commitment across actor types, capturing the average extent to which actors consider the Dual VET-Apprenticeship programme is a good thing. The additional bars display commitment of each actor type, government actors, schools and teachers, companies and industry associations, apprentices and trade unions, separately. The results show that average commitment is very high. However, Figure 3 also reveals substantial differences across the five actor types.

Figure 3: Heterogeneity of Commitment across Actor Types



Notes: The figure displays to what extent different actor types are committed to the Dual VET-Apprenticeship ranging from 1 (Not at all) to 5 (Very much). Data based on semi-structured interviews with government and industry representatives. N=8

For example, respondents assess the commitment of schools and teachers as high while trade unions have very low commitment.

The results shows a very high commitment of **government** actors. None of the interview partners raised concerns in this regard.

The interviewees described **Schools and teachers** also as committed. One government representative summarized it as follows: “[schools and teachers] *think that this is a good idea because they don’t have to teach them for five or six days a week.*” However, interviewed government representatives pointed out that schools and teachers do have some reservations against the programme. One reason is that they are afraid of losing power and control. As summarized by one government representative:

“What happens in Nepal is that if you have to coordinate and you feel you are the leader, it’s fine. But in the apprenticeship, industries are actually the leader. Of course teachers and schools are facilitating the whole process, but it’s the industries demanding that they need these people in this occupation and that occupation. So that means control is not in the hand of the schools.”

Another reason - based on one interview- why schools and teachers are not perfectly committed might be that they are afraid to receive too few resources to cater the additional needs of apprentices. One government representative summarized this concern as:

“Another thing is that sometimes schools feel overwhelmed and overloaded because they also have regular programs and run apprenticeships as additional programme. So they have to do this additional work with existing teachers or managers, administrators or other human resources. Because of that they have some level of hesitation.”

The interview partners largely agree that **industry associations** are committed as shown by the following quote from an industry representative: *“This apprenticeship does 20% theory and 80% practical training. It is very good.”* However, there are some concerns regarding whether **companies** are interested in providing Dual VET-Apprenticeship places: *“First of all, we have to convince the industry.”* Hence, for some industry respondents, this uncertainty could justify introducing governmental incentives such as tax-reductions or subsidies. Even though such considerations seem to be reasonable, theoretical considerations suggest that introducing such incentives should be avoided due to several reasons. First, incentives have a tendency to remain in place since benefiting actors lobby in this direction. Hence, incentives are not a suitable instrument to facilitate the introduction of the programme. Second, some of the incentives would go to companies who would have trained in the absence of the incentives anyways. These so-called deadweight losses should be avoided if possible since they represent an important impediment against programme efficiency (see, e.g., Wolter and Ryan, 2011).

This argument is particularly relevant due the fact that rough projections of net benefits in the 24 month dual VET Apprenticeship programme suggest that the average company makes net benefits from providing an apprenticeship place (Bolli et al. 2019). As recognized by an industry representative, *“The long time of the apprenticeship is very good because every single training gives us manpower. We can use them. We also pay them, but it is little. I think we can get service from him if one apprentice is in our factory for two years. [...] So two years is good.”* However, it is important to recognize that companies do not have experience with the productive value of apprentices. Furthermore, companies are used for schools to pay for the education and training. Hence, a Dual VET-Apprenticeship approach does require a change of perspective from the actors. Therefore, the problem of companies appears more closely linked to a lack of information about this new programme. This implementation barrier is discussed in detail below.

Another barrier to commitment of companies and industry associations consists of the focus of the Dual VET-Apprenticeship on formal companies. In some sectors, this focus implies neglecting a large share of companies. Hence, companies and industry associations are less committed in sectors where informal companies play an important role. Similarly, sectors in which temporary work contracts are common, companies are less committed to the Dual VET-Apprenticeship programme, since signing a two-year contract is very uncommon.

Interview partners also have some doubts regarding the commitment of **apprentices** for several reasons. The first reason is that not all occupations are attractive for apprentices, who are often more interested in a white-collar job than in a blue-collar job. A second, related reason refers to the reluctance of potential apprentices to actually working while learning rather than learning to work in the school:

“Our Nepali workforce, our Nepali students, are not used to work. Therefore, they are complaining that they we have to clean, work like labour and are not treated as a student. The major concern is the work they are supposed to be doing because what happens is that whenever you are in school you only talk. You don’t have to work because the teacher will demonstrate and you just observe. You will only work when you finish you course. Then you go for a job and you have to work though you do not know how. But in the apprenticeship the apprentices learn all this work from the beginning and so they do not actually like it.”

A third reason is that some apprentices might be more interested in receiving short-term training and going abroad thereafter rather than investing into a formal degree that takes two years to complete. Hence, a lack of patience can lower the commitment of apprentices. Relatedly, one interview partner suggested that *“students are looking for more incentives.”*

One respondent pointed out that the desire to go abroad is fuelled by a lack of information among potential apprentices regarding employment opportunities in Nepal and abroad. This argument relates closely to the fourth reason why apprentices might lack commitment, namely that the Dual VET-Apprenticeship is a very new concept and that potential apprentices do not know enough about this new programme yet: *“Whatever they are doing as a pilot project has to be successful in terms of the outcome. If the pilot project is good, people will follow.”*

The biggest concern of six interview partners exists regarding the commitment of **trade unions**, though they differ regarding why they lack commitment. A respondent argues that trade unions want to increase wages of apprentices rather than improving skills: *“Trade unions demand a salary for them...If the apprentice is going to the industry, they replace our job. This is how they think.”* Similarly, another respondent considers them as motivated politically rather than as focused on the development of skills: *“Trade unions do not want apprenticeships to come. They only want their members, because they are very politically motivated.”* This view is particularly strong among industry representatives. Government representatives on the other hand have more often the view that trade unions are currently not opposed to the Dual VET-Apprenticeship because they *“... are not much aware of what an apprenticeship is...”*. Hence, the role and motivation of trade unions needs to be clarified.

From a legal perspective of Nepal, trade unions do not necessarily have a role in the Dual VET-Apprenticeship, *“...because apprentices are students so they cannot actually do much.”* Nevertheless, the lack of commitment of trade unions should be considered carefully since an opposing position of them might represent an important implementation barrier in a country where they are *“very politically motivated.”*

3.3 Capacity

The capacity category captures whether actors have the capacity to fulfil the roles they are assigned in the implementation of the Dual VET-Apprenticeship. Figure 2 above shows that the interview partners consider the capacity of actors to be generally sufficient (4.2). Concerns about capacity are slightly more pronounced for government representatives (4.0) than for industry representatives (4.3).

To understand this difference, the following subsections discuss the interview results in more detail. This discussion is ordered based on the separation of capacity implementation drivers into two parts. The first part refers to available resources in terms of personnel, time, finances and leadership. The second part captures whether actors have sufficient information about the programme and whether enough research exists about the Dual VET-Apprenticeship.

3.3.1 Resource Availability

Figure 4 displays the assessment of interview partners regarding the sufficiency of resources of government actors, schools, teachers, companies, industry associations and trade unions in terms of personnel, time and finances. Concretely, we asked interview partners:

“Do actors have sufficient resources in terms of personnel, time and finances?”

The results show that interview partners believe that the **government** actors have enough resources. None of the interview partners considered resources of the federal government actors an implementation barrier. Furthermore, only one respondent mentioned that actors of the state governments *“are not prepared for anything at the moment because they are very new”*.

Industry representatives have no doubts about the sufficiency of resources of **schools and teachers**. However, this might reflect their lack of familiarity with this issue as several respondents from the government questioned the available resources of schools and teachers in terms of time and financial resources. The assessed lack of resource is interesting for the following reason. Assume that each apprentice replaces a student in a mostly school-based programme such as the programme leading to a TSLC or a diploma. In this case, schools would require less resources, since each apprentice requires less school resources than each student of these mostly school-based programmes. Therefore, the concerns regarding the resources of schools and teachers suggest that respondents assume apprentices to represent additional students. From the micro-level perspective of schools, this can be understood in terms of providing classroom education to the additional apprentices of the ENSSURE programme. From a macro-level perspective, the perceived lack of resources might reflect a plan to expand the TVET sector, which is consistent with the fact that the TVET sector currently receives more political support than in the past (see, e.g., Renold, Bolli and Caves, 2018, Caves and Renold, 2019).

The quality of available human capital of schools and teachers was generally not questioned. Only one interview partner pointed out that *“Schools not only lack human resources, but even the existing human resources also should know more about what institution- and work-based in industry is, what will be the changes in the role of monitoring training and what will be the changes in the role of coordination. Hence, all these things are required for the existing human resources as well.”*

Respondents assume that **companies and industry associations** have sufficient resources for the implementation of the Dual VET-Apprenticeship. An exception is a respondent pointing out that industry associations have little experience in writing curricula, suggesting that they need to develop the human capital to participate or even lead the process of curriculum development.

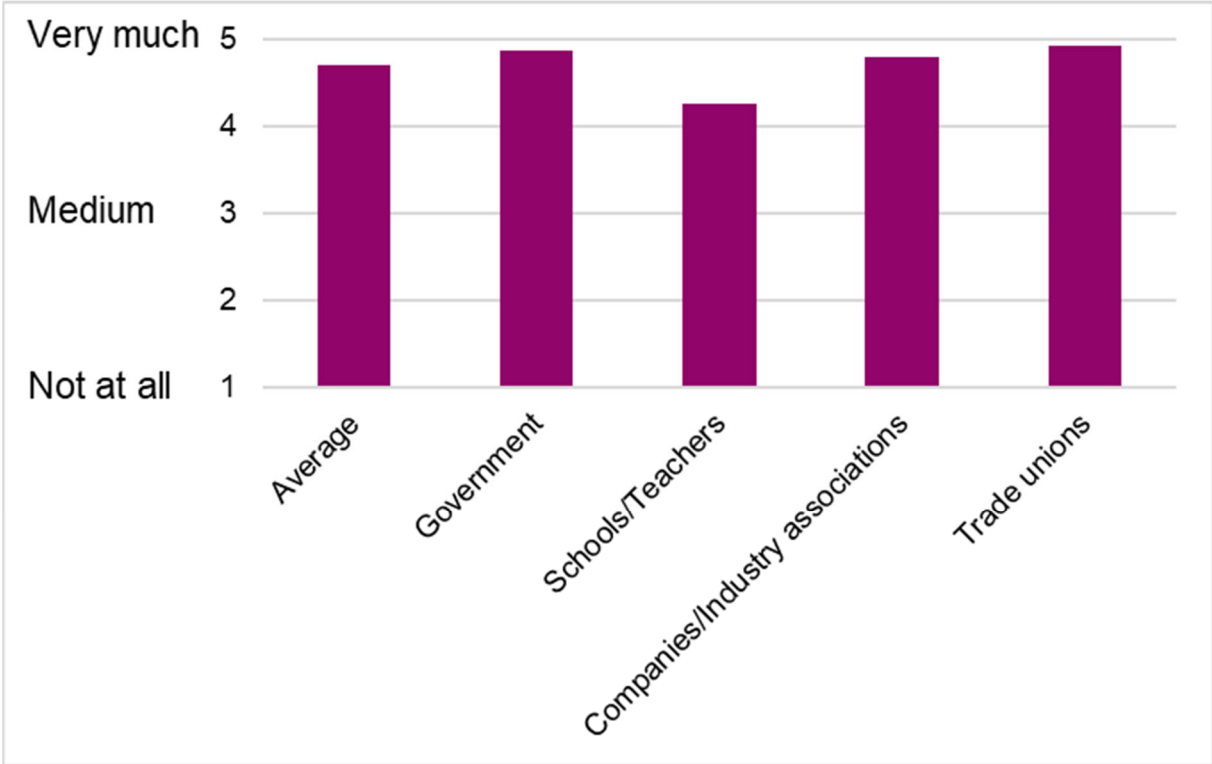
Since **trade unions** currently do not have a role in the implementation of the Dual VET-Apprenticeship, it is not surprising that none of the interview partners raised a lack of resources by trade unions as a potential implementation barrier.

One respondent further raised the potential implementation barrier that the low wages of **apprentices** during the apprenticeship period suggests that they need financial resources to live during this period of low income: *“They want to learn, they want to train, but they can’t because they come from very far. They can’t afford to train, to pay room charge, food. So it would be better to provide some funds from government.”*

In the current setup, each apprentice receives a scholarship of 1’000 NPR per month. This makes sense in the context of the pilot project. However, whether such scholarships are helpful in the long-run needs to be considered very carefully. The main concern is that some apprentices might require additional funding, while others do not. Hence, providing scholarships to all apprentices might be inefficient and targeting scholarships to apprentices who need it most might be more appropriate. The discussion about scholarships should also take into consideration the long-term strategy that is analysed in more detail below.

An additional concern in the context of the Dual VET-Apprenticeship arises because companies have substantial leeway in setting wages of apprentices. In a setting where companies are completely free to define wages of apprentices, companies may reduce wages because of the scholarships.

Figure 4: Heterogeneity of Resource Availability across Actor Types



Notes: The figure displays to what extent different actor types have the resources to implement the Dual VET-Apprenticeship ranging from 1 (Not at all) to 5 (Very much). Data based on semi-structured interviews with government and industry representatives. N=8

For example, respondents assess the resources of most actors as sufficient with the exception of schools and teachers.

An additional important resource is **leadership**. This resource is closely related to the categories “political will” and “coordination” discussed above in the context of commitment. However, while the commitment category captures the willingness of various actors to contribute productively to scaling up the programme, leadership captures the necessity of an actor who drives the program’s progress, maintains and shares the overall vision and represents the project to outsiders. Hence, the actor is willing and able to drive and coordinate the variety of activities. Hsiao et al. (2008) discuss leadership in the context of the various roles of school principals. Similarly, Bartlett (2013) highlights the relevance of “champions” within the administration for reform implementation.

The topic of leadership was not explicitly discussed in the interviews but has also not been brought up by the interview partners. This suggests that leadership resources are currently not a problem. According to the current regulations the implementation leadership is a cooperation between the ENSSURE team of Helvetas and the CTEVT

An additional consideration regarding leadership resources is the possibility that industry associations taking a more active role in terms of leadership. Bolli et al. (2019) discuss that industry associations currently play a relatively minor role and that this might represent a challenge in terms of scaling up the programme due to challenges faced by schools. Hence, the discussion of the leadership resources reinforces the relevance of the ongoing process to include industry associations more intensively in the programme. Shifting an increasing amount of responsibilities on the industry associations will allow them to develop the personnel and organizational resources to step into the role of leading the programme in cooperation with the government actors.

3.3.2 Information Availability

The capacity of various actors to fulfil their role in the process of scaling up the Dual VET apprenticeship depends on their resources, but also requires them to have sufficient information. Hence, we wanted to know whether government actors, schools, teachers, companies, industry associations and trade unions know enough about the Dual VET-Apprenticeship to facilitate scaling up the programme. Concretely, we asked interview partners to what extent

“Do actors have sufficient information about the dual VET apprenticeship program?”

The results show that the average assessment of available knowledge of involved actors about the programme is substantially lower than the implementation drivers discussed so far. In particular, the information aspect has a much lower average value than the resources aspect. While industry representatives rate this aspect a little bit lower than government representatives, they agree in that the lack of information about the programme might represent an important implementation barrier.

To understand which actors lack information, Figure 5 shows to what extent interview partners consider different actor types to be sufficiently informed about the Dual VET-Apprenticeship to facilitate scaling up the programme.

Differentiating across actor types suggests that the **government** actors are sufficiently informed about the Dual VET-Apprenticeship, though two respondents argue that they *“do not really understand what an apprenticeship is.”* Hence, though the government actors are generally well-informed, there is some remaining lack of clarity.

Schools and teachers on the other hand need to be informed better since they *“... are not well aware of what Dual VET-Apprenticeship is.”*

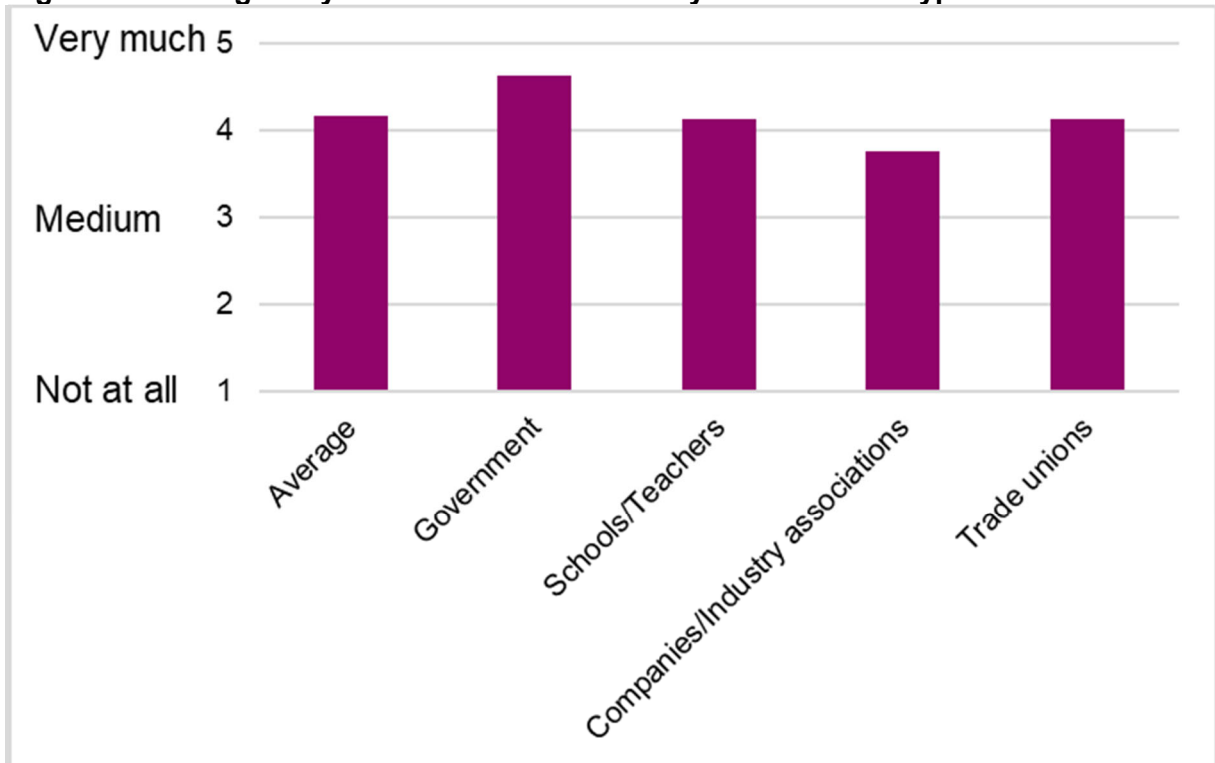
While **industry associations** have sufficient information, **companies** are not familiar with the concept of a Dual VET-Apprenticeship. Several respondents pointed this out. Interestingly, industry representatives consider the level of information of companies lower than government representatives.

Trade unions also lack information about the programme:

“So, another round of deliberation, debate, and enlightenment should be conducted in presence of trade unions. Because they must feel that this is something good and that it comes as a harbinger of good industrial relations.”

“I do not know whether they like it or not. [...] They are not much aware of what an apprenticeship is and how this will impact the unions. However, since apprentices are students, they cannot do much actually because they are not the employee yet.”

Figure 5: Heterogeneity of Information Availability across Actor Types



Notes: The figure displays to what extent different actor types have sufficient information ranging from 1 (Not at all) to 5 (Very much). Data based on semi-structured interviews with government and industry representatives. N=8

For example, respondents assess the information of government sufficient, while companies and industry association lack information.

While this analysis focuses on whether different actor types possess the necessary information for the implementation of the Dual VET-Apprenticeship, it remains unclear to what extent a lack of information arises because the information does not exist yet or whether the distribution of existing information needs to be improved. Hence, we asked respondents

“Do you think more research should be done about the dual VET-apprenticeship program?”

While all respondents consider research important, the answers reveal substantial differences across actor types. Some respondents from the industry pointed out that some unnecessary research has been done in the past: *“Research is important, but in Nepal, [...] lots of money is spent on research and paperwork.”* This reveals that a few industry representatives do not consider research without knowledge transfer as necessary. However, they mentioned that the research should be focused on questions that are relevant for the programme. For example, an industry respondent pointed out that information about the costs and benefits of companies would be useful to convince companies to participate.

In contrast, governmental respondents consider more research desirable, for example in terms of cost-benefit analysis from the perspective of companies. The need for additional research is also reflected in considerations regarding the lack of a history to develop a system:

“I think in cases such as Germany, there is a long history of developing such a system. In our case we don’t have a long history. I am thinking that sometimes we lack the adequate evidence as a resource.”

3.4 Clients

The clients category captures whether the roles of the government actors, schools, teachers, companies, industry associations and trade unions are appropriate or whether the roles represent implementation barriers. Hence, we asked interview respondents

“How well are these actors included in the dual VET apprenticeship program? Do they have the right roles?”

On average, the roles of included actors are assigned well. This is particularly true for industry representatives. Government representatives also consider the roles mostly appropriate but assess the assigned roles less positively than industry representatives.

Furthermore, while the roles are generally considered to be well assigned by interviewees, they find that there are substantial differences across actors. Figure 5 shows this by displaying the average assessment in addition to the actor-type specific appropriateness of roles. Most interview partners consider the role of the **government** actors in that particular programme appropriate.

None of the interview partners had doubts about the role of **schools and teachers**. However, the inclusion of companies and industry associations receives a substantially lower value than the role of other actors. Differentiating these two actors shows that respondents consider the role of **companies** appropriate. However, a number of interviews suggested that the relatively minor role of **industry associations** should be enhanced in the future: *“The interaction between the programme and the private sector industry should be increased...”*

The interview partners mentioned three main roles that industry associations might play a bigger part in. First, some industry representatives have doubts about the quality of TVET curricula. Hence, industry associations could take a more prominent role in the process of developing curricula: *“...apprenticeships curricula until now are developed by the CTEVT, but role of the CTEVT should be facilitation. The demand of changing curricula and of new technology that has to be in the curricula should come from industries. Since the provider cannot reach to every industry, this should come from one entry, one door and that can be the industry association.”*

Second, industry associations could play a role in motivating companies to provide Dual VET-Apprenticeship places *“because they trust us”*: *“The role of industry associations for me is to communicate that apprenticeships works for companies, that the whole apprenticeship makes sense and that the approach is very, very useful for them. That communication is important...”*

Finally, interview partners suggested that industry associations could play a role in the assessment and evaluation of apprentices: *“Another thing is that industry association can play a role in assessment and evaluation.”*

However, adjusting these roles in this way can be difficult because it means a shift in the distribution of power between the government actors and the private sector: *“There is a bureaucratic norm and the bureaucrats think they are the best and they don’t want to share their power with the private sector.”*

This shift is also not easy because companies and industry associations are not used to fill these roles, suggesting that they need to build the capacity to do so. Developing these competencies matters particularly in the light of the reluctance of the government actors to share power, since redistribution of roles will be easier if the industry association can demonstrate their ability to take over the suggested roles.

Trade unions currently play essentially no role in the Dual VET-Apprenticeship. However, interview respondents generally consider this appropriate and do not see a substantial role of trade unions in the programme. Therefore, they consider trade unions to be well included in the programme and do not think that they represent an implementation barrier.

“If we make it a policy, a strategy, then it won’t be a problem for trade unions, because trade unions are active in the workplace only. There is no trade union during our course. So, if that is the rule, then, definitely they follow it because it is already endorsed by government and it has already been enacted. So it will be the rule.”

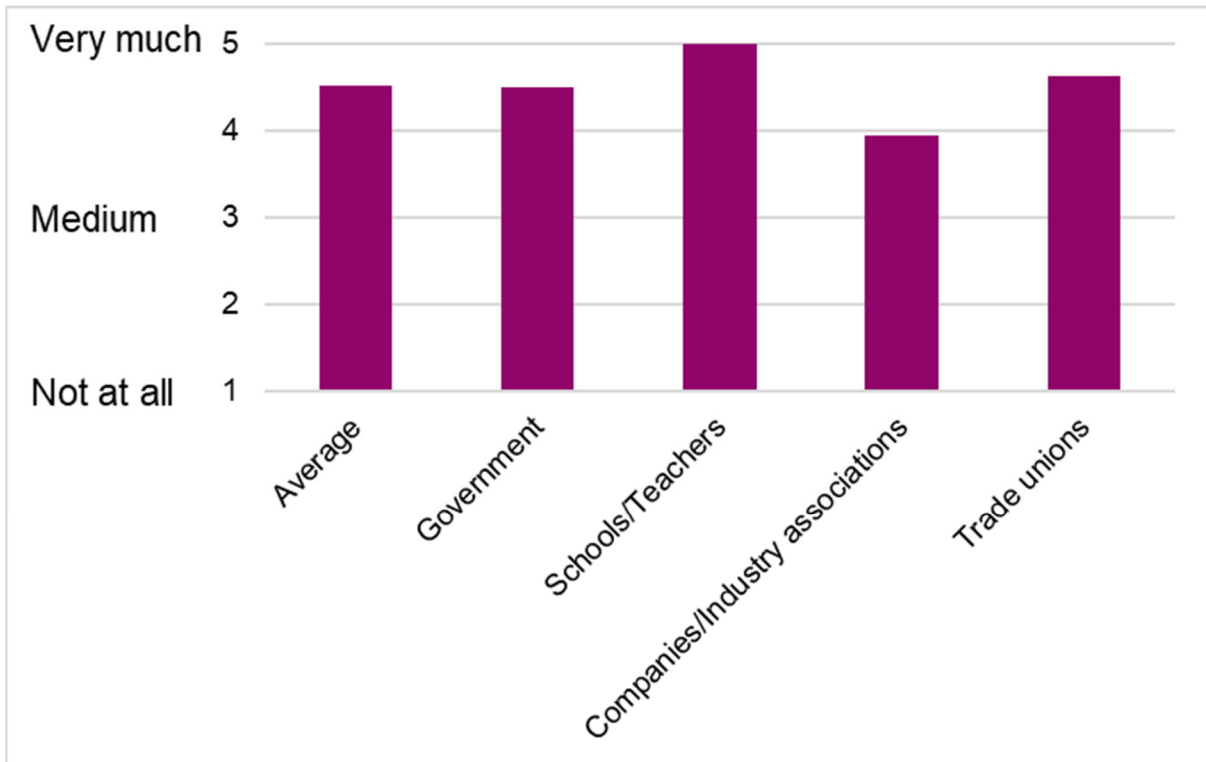
Another respondent argues similarly, raising the relevance of a legal document to clarify the roles and responsibilities of different actors: *“Once the TVET act or TVET law is there in our country, all the stakeholders, all the actors will be spelled out. The role of these actors will be spelled out clearly in that act.”*

An exception is a respondent who pointed out that trade unions could play a role in negotiating between government actors, apprentices and companies. This statement mirrors the view of some literature (see, e.g., Toner, 2008, Kis and Field, 2009) and is reflected in the relevance of unions in the implementation of VET in Norway (Payne, 2002) and their embeddedness in many European apprenticeships with a strong union density (Ryan, 2000):

“But unions are very, very important to see whether these apprentices are treated as full-time employees of whom companies expect too much or whether they are treated as apprentices and students. That they have keep an eye on, actually. Do you think they could play a role in quality assurance? That is what I am trying to say. Whether there is a minimal level of facilities provided to students, actually.”

The interviews further show that respondents from industry consider the inclusion of trade unions more negatively than government representatives. Hence, they consider the current absence of trade unions as adequate. This negative view reflects the fact that the interests of unions regarding the Dual VET-Apprenticeship are not clear-cut and potentially diametrical to that of industry (see, e.g., Kis and Field, 2009). On the one hand, they are interested to assure the quality of training and the transferability of skills. On the other hand, they are also interested to limit access to occupations, increase wages and strengthen their bargaining power. As a result of these different interests, trade unions have played different roles in terms of apprenticeships. While they mainly focus on quality assurance in for example Germany (DGB, 2008), English trade unions were more focused on increasing wages (Ryan, 2004). In Switzerland, unions also focus on quality assurance but play a much smaller role than in Germany (Ryan, 2000)

Figure 6: Heterogeneity of Inclusion Quality across Actor Types



Notes: The figure displays whether actor types are integrated well in the Dual VET-Apprenticeship ranging from 1 (Not at all) to 5 (Very much). Data based on semi-structured interviews with government and industry representatives. N=8

For example, respondents assess the integration of most actor types good with the exception of industry associations that should receive more weight.

3.5 Content

The following subsections discuss the results regarding the content category that entails three aspects, namely quality assurance, long-term strategy and change magnitude capturing whether it is a radical or incremental change.

3.5.1 Quality Assurance

The first aspect of the content category captures how well the process of quality assurance works. In the context of a Dual VET-Apprenticeship, quality assurance refers to both workplace training and to classroom education. Therefore, we asked for both aspects:

“How good is quality assurance for workplace training?”

“How good is quality assurance for classroom education?”

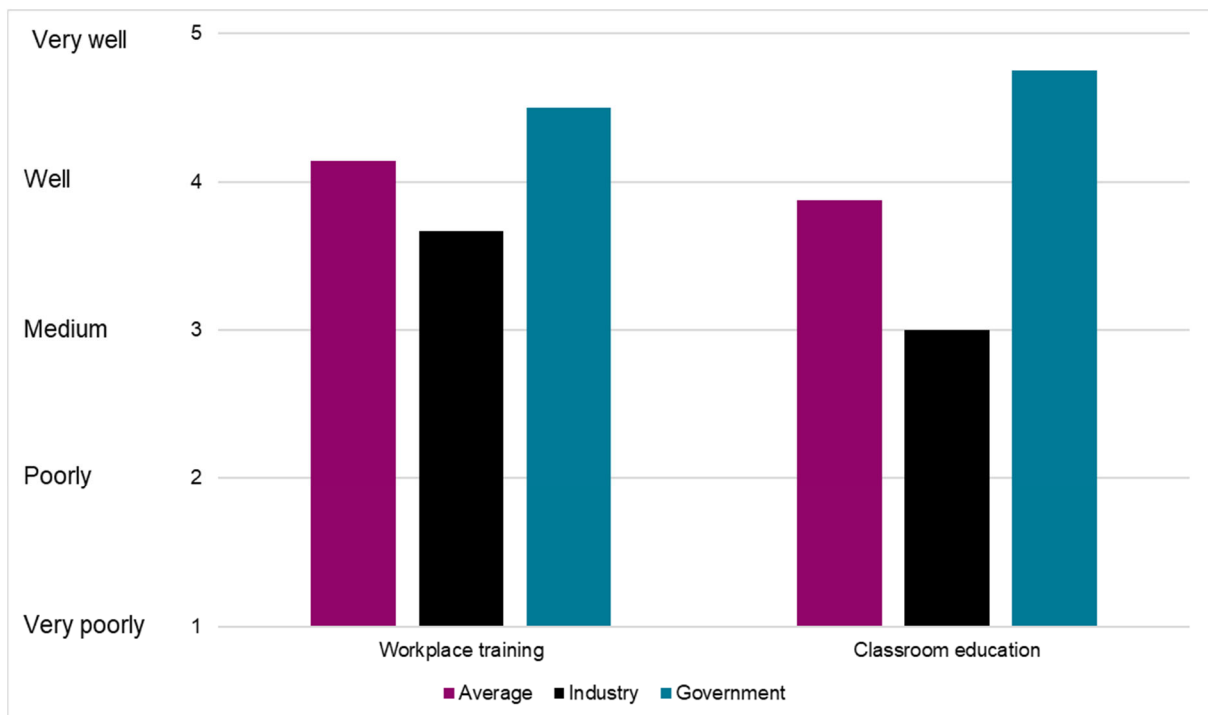
The results shown in Figure 7 suggests that a lacking quality assurance of **workplace training** represents a potential implementation barrier. However, differentiating between the view of industry and government respondents reveals some interesting differences. For government respondents, quality assurance of workplace training is relatively good, while industry respondents do have some doubts in this regard as exemplified by the following quote: *“The quality of the [workplace] will not be as good as mine [...] He doesn’t know how to run my equipment.*

[...] The quality of the training institute, the workplace, practical things and equipment are very old and sometimes outdated as well.

One potential solution suggested by a government representative consists of giving industry associations a more pronounced role in assuring the quality of workplace training across companies:

“Companies should have a uniform practice. [...] One company plays one role, another company does another thing, so it will be all mixed up. Hence, one shared strategy, one uniform strategy that can be provided by the industry association.”

Figure 7: Quality Assurance of Workplace Training and Classroom Education



Notes: The figure displays how well quality of workplace training and classroom education is assured on a Likert scale ranging from 1 (Not at all) to 5 (Very much). N=4 for government (black) and industry representatives (blue), respectively.

For example, respondents assess the quality assurance of both workplace training and classroom education an existing but small implementation barrier. Industry respondents assess these implementation barriers more negatively.

Similar to workplace training, the average assessment of the quality assurance of **classroom education** represents a potential implementation barrier that is relatively minor. However, differentiating between the assessment of industry respondents and government respondents reveals a substantial difference in views between these two respondent groups. Government respondents do not consider quality assurance of classroom education a relevant implementation barrier. In contrast, industry respondents consider this a relatively serious barrier.

Considering their responses shows that this assessment stems from their negative experiences with the quality of graduates in the past: *“There is a lack of trust between the company and the skills of the graduates.”* Some respondents associate this with a *“lack of effective monitoring.”* or a lack of motivation: *“Most are really motivated but some are only training for the sake of training.”* Other respondents explain the gap with the quality of existing curricula, suggesting that *“Private sector and companies should be in the driving seat to prepare curricula.”*

This could help to develop the trust.” However, another industry representative highlighted the positive developments in the recent past: “They started to listen to our demand.”

This lack of trust in the quality of current TVET graduates can create an implementation barrier for motivating companies and industry associations to support the Dual VET-Apprenticeship and provide apprenticeship places. However, depending on the viewpoint of companies and industry associations, it might also foster the readiness to provide apprenticeship places since the lack of qualified personnel forces companies to take more responsibility in this regard.

3.5.2 Long-Term Strategy

In order to understand how interview partners assess the long-term strategy of the programme, we asked them

“How good is the long-term strategy of the dual VET-apprenticeship program?”

The responses show that the interview partners generally consider this aspect an implementation driver because *“this is needed”*. Relatedly, a minor concern was raised that *“the relevance of the Dual VET-Apprenticeship in the long-run depends on whether it **meets market demand**”*. While this represents an important consideration, it is important to recognize that a Dual VET-Apprenticeship is more likely to meet market demand than a school-based TVET programme. The reason is that schools do not necessarily know how many graduates are required in which occupation. Companies on the other hand do have this information. Hence, companies tend to provide apprenticeship places in occupations where graduates are needed. Therefore, this concern about the long-term strategy represents only a minor concern.

Another concern raised by two industry representative was the long-term strategy in terms of funding and the commitment of the government to the Dual VET-Apprenticeship:

“Is it (the apprenticeship) sustainable upon completion? [...] Government is going to draft and endorse a kind of act. So once that is endorsed, then the future will be more secure for employees. [...] Once government adopts this policy and institutionalization is taken ahead, the future is good.”

“The thing is there is a donor agency behind like Helvetas or the Swiss government and when it is coming from a donor association, the government has very little investment in that. So my question is what happens when the project ends in 2019. Will our government continue? That is a big question. And in most of the cases, once the donor phase out, the project collapse. That has happened many, many times and I am not sure what happens here.”

These questions show that the commitment of the government and the availability of funding are an important component of a long-term strategy. The concerns about the commitment of the government further highlight the relevance of creating a TVET act that clarifies the roles of the different actors. Thereby, the act provides the basis to develop the social institutions governing the complex relationship among the various actors (see, e.g. Renold et al. 2019b) and is a necessary regulation for allocating conditional grant to the three tiers. This also matters for the motivation of industry associations to develop the capabilities necessary for a more intense involvement in the programme.

In terms of the funding dimension, the SDC plans to extend their support to at least 2025 (SDC, 2019). However, scaling-up the project beyond the scope of the SDC funding requires additional resources, particularly as the discussion in section 3.3.1 shows that schools might lack

resources to implement and scale up the Dual VET-Apprenticeship Another potential strategy in terms of funding consists of switching the programme funding from international donors to the Nepali government. However, the question if funding the Dual VET-Apprenticeship by the government will be feasible depends on whether the high policy priority of the current government for VET continues in the future (see, e.g., Renold, Bolli and Caves, 2018, Caves and Renold, 2019, Parajuli et al., 2020). This could create an environment that provides sufficient funding for the Dual VET-Apprenticeship by the government. However, the need for additional funding depends on whether the Dual VET-Apprenticeship represents additional VET spaces or whether it replaces other programme spaces such as on-the-job training (OJT) programmes or the Diploma. In the latter case, the Dual VET-Apprenticeship might actually ease the burden of funding, since each student spends less time in the classroom, earns while learning and hence requires less funding.

The existence for various programmes that resemble the Dual VET-Apprenticeship also points to the fact that the long-term strategy needs to take into account the social status and valuation of the Dual VET-Apprenticeship by all stakeholders and particularly students, parents and companies. This consideration raises the relevance of considering **branding** carefully in the long-term strategy. This also matters because the Dual VET-Apprenticeship represents a new concept and it is important to change the fact that *“they do not really understand what an apprenticeship is.”* Hence, it is important to recognize that there are programmes that are similar to the Dual VET-Apprenticeship (KOF, 2015). The most important example for this is the Butwal Technical Institute (BTI). This private school has offered an apprenticeship programme that resembles the Dual VET-Apprenticeship closely for many years. This programme is well-known in Butwal. Another example is the OJT programmes that lead to a TSLC. These OJT programmes consist of one year of classroom education followed by four to six months of workplace training. Bolli et al. (2019) discuss that the presence of similar programmes eases implementation in the short-run since companies are familiar with the concept of providing workplace training. However, the long-term perspective of a nation-wide Dual VET-Apprenticeship system requires more in-depth coordination. Otherwise, developing the Dual VET-Apprenticeship programme and its specific branding will become a challenge.

3.5.3 Small change

Caves and Baumann (2020) suggest that incremental reforms tend to be more likely to be implemented than radical reforms because smaller changes are easier to implement. Furthermore, radical reforms can be overambitious (e.g. Hummelsheim and Baur, 2014, Comyn and Barnaart (2010). However, smaller changes might also be inefficient because they fail to address the key challenges that need to be addressed and hence cannot improve the programme. To capture the radicalness of introducing the Dual-VET apprenticeship in Nepal, we asked interview partners

“How much of a change is the dual VET-Apprenticeship to the existing system?”

The results show that half of the interview partners consider the reform a medium-sized change and the other half of respondents consider it even a substantial change. This suggests that the implementation requires substantial adaptations from the involved actors. Furthermore, since the programme involves companies and industry association, the reform requires coordination among more stakeholders than a conventional education reform. This complexity makes scaling up the programme more challenging. Industry and government respondents consider the change similarly large. Hence, change magnitude represents a potential implementation barrier, since the programme requires a change in the goals, values and institutions of TVET actors (Abraham and Tzannatos, 2000).

Bolli et al. (2019) suggest that the change magnitude is somewhat lower for regions and schools in which programs exist that resemble the Dual VET-Apprenticeship (KOF, 2015). Concretely as discussed above, the OJT programme resembles the Dual VET-Apprenticeship programme to some extent. Furthermore, the Butwal Technical Institute (BTI) offers an apprenticeship programme that resembles the Dual VET-Apprenticeship closely since many years. The presence of these programs eases the implementation barrier of change magnitude to some extent.

3.6 Context

Context represents the last category of implementation barriers. This dimension captures the nature of the institutional context that limits the process of implementation. The two main aspects refer to context fit and coordination. Since Nepal is currently undergoing a major change in terms of the institutional context, we further discuss the implications of the federalisation process for the implementation and scaling-up of the Dual VET-Apprenticeship.

3.6.1 Context Fit

The category “context fit” is a relatively broad category that captures whether the Dual VET-Apprenticeship is related to the concepts of policy learning as opposed to policy borrowing or policy copying. Policy learning arises if the programme reflects the local social, cultural and economic conditions, policies and objectives (see, e.g. Hoppe et al. 2011, ETF, 2012, Hummelsheim and Baur, 2014). In order to capture the perspective of interview partners in this respect, we asked them

“Do you think the Dual VET-Apprenticeship programme fits the Nepali context?”

The results suggest that context fit represents an implementation driver. This is particularly true from the perspective of government respondents. However, some of them mention that the Dual VET-Apprenticeship requires a substantial change. Therefore, they see this as a pilot project that still needs to prove that it fits the Nepali context: *“This is just a pilot and what we learn from other countries suggests that it will be appropriate in Nepal as well.”*

Industry respondents differ substantially regarding their evaluation of the context fit. On the one hand, some interview partners consider the programme as a very good fit because of the lack of trained people. This highlights the relevance of how much need for the programme exists, which can be relatively low as well: *“There is no shortage of manpower in our industry.”*

Another industry respondent on the other hand considered the duration of two years problematic. The reason is that temporary contracts or even informal work arrangements are very common in this industry. Furthermore, many companies are informal. This represents an additional barrier, since the Dual VET-Apprenticeship focuses on formal companies. Hence, these responses reveal that the fit of the programme with the Nepali context might be sector-specific. Sectors with a large skills shortage are a better fit. Conversely, sectors with a large share of temporary contracts, informal work arrangements or informal companies are a worse fit.

3.6.2 Coordination

The coordination aspect captures whether coordination processes between all involved stakeholders is organized well (Cedefop, 2017) and works smoothly, as opposed to high bureaucracy of these processes representing an implementation barrier (Castel-Branco, 2008; Cedefop, 1997; Anaele et al., 2014).

Bolli et al. (2019) interview companies regarding whether *“The cooperation with the technical school/polytechnic is complicated.”* The results suggest that this coordination runs smoothly and efficiently, at least at this early stage of the interview timings in November 2018. However, phone surveys in April 2019 suggest that companies are moderately happy with the coordination (Bolli et al. 2020). However, very few companies are unhappy or completely unhappy about the coordination either. Hence, we conclude that the coordination aspect is an implementation driver rather than an implementation barrier.

Furthermore, even though coordination appears to represent a minor concern in the pilot project, it might become a more prominent challenge with the scaling-up of the programme, requiring coordination among a larger number of actors. Hence, the development of acts, rules, regulations, allocation of finances and attitudes needs to be followed carefully.

3.6.3 Federalisation

The context of the implementation and scaling-up of the Dual VET-Apprenticeship is undergoing a substantial change due to the federalisation (Renold and Caves, 2017, Renold, Bolli and Caves, 2018). In order to understand the relationship between these two processes, we asked interview partners

“How will the federalisation process affect the dual VET-Apprenticeship?”

A first insight stemming from the responses is that there is a difference between the short-run and the long-run regarding the effect of the federalisation process. All interview partners agree that regarding the short-run effect of the federalisation process: *“In the short-run it will not affect [the Dual VET-Apprenticeship].”*

However, respondents differed more regarding the long-run effect of the federalisation process, reflecting the uncertainty that exists in this regard. Several respondents highlighted that the lack of a law governing TVET creates a power vacuum and that this uncertainty raises concerns about provincial and municipal actors taking action that might be incompatible with the common understanding that will arise in the future:

“We are in a transition phase... If things are not clearly written in a law or a document, then it is very easy to define because everybody will define it in their own way.”

“The constitution says that all the secondary education will be the responsibility of the local government. But what does that responsibility mean? Is it really running those schools? Or is it monitoring only? Is it developing curricula? There is lots of confusion. That is why many municipalities started to develop their own curricula, started to develop their own TVET plan.”

However, other respondents suggested that local governments are looking for opportunities to increase the skill of their workforce. Since the Dual VET-Apprenticeship presents such an opportunity, the federalisation process might represent an implementation driver.

“I see this positively. Provincial practices are motivated at this present time because they are learning something. [...] Now every province has prioritized these things and it has also created kind of competitiveness among their setups. Hence, every province welcomes new tendencies, new practices and new systems.”

Hence, no clear picture regarding the long-run impact of the federalisation process on the Dual VET-Apprenticeship can emerge from the interviews, reflecting the substantial amount of uncertainty surrounding this process.

4 Summary and Conclusions

This working paper analyses challenges of scaling up the Dual VET-Apprenticeship of the ENSSURE project based on semi-structured interviews with eight government and industry representatives conducted in May 2019. The analytical framework follows Caves and Baumann (2020), who identify various aspects of five implementation barrier dimensions. These five dimensions are commitment, capacity, clients, content and context. Hence, this working paper takes a long-term perspective, providing insights regarding potential challenges and **implementation barriers to scaling up** the programme in the future.

Commitment of actors involved in the Dual VET-Apprenticeship is generally high and represents an implementation driver. There are two main exceptions to this finding. First, schools and teachers might lack commitment to the new programme because they lack the resources to implement it. Second, trade unions are not involved in the programme so far, raising the question if and how they affect the programme as it scales up.

Capacity in terms of personnel, finances and time also represents an implementation driver. As mentioned above, resources of schools and teachers are an exception in this regard. Furthermore, capacity in terms of available information represents a potential implementation barrier. This lack of information exists for several types of actors and is particularly high for schools, teachers and companies. However, this is common within first and second cohorts of pilot projects because many people need to understand the innovations.

The **clients** dimension captures to what extent actors have the appropriate roles in the programme. Generally, the interview partners assess this as an implementation driver. The main exception is that industry associations could play a more pronounced role in the future.

The **content** dimension represents the most critically evaluated implementation driver dimension. The assessment of long-term strategy is generally positive, though interview partners raised questions about the sustainability of the programme due to unclear future legal framework as Nepal currently face a huge change due to the new Constitution of 2015 (Renold and Caves, 2017, Renold, Bolli and Caves, 2018). Furthermore, the interviews further revealed some concerns about quality assurance of both classroom education and workplace training. However, the most relevant implementation barrier is that half of the interview partners consider the reform a medium-sized change and half of the respondents even consider it a substantial change. This suggests that the implementation requires substantial adaptations from the involved actors. Furthermore, since the programme involves companies and industry association, the reform requires coordination among more stakeholders than a conventional education reform. This complexity makes scaling up the programme more challenging. Nevertheless, the interview partners believe that the implementation can succeed.

Finally, the **context** dimension is an implementation driver as the interview partners believe that the Dual VET-Apprenticeship fits the Nepali context well. However, they underline that such a success depends heavily on the new TVET Act which will be developed in 2020.

The major themes that cut across all programme implementation discussions concern quality, programme ownership, and the long-term structure of TVET including the Dual VET-Apprenticeship. All actors are concerned with quality, whether that be ensuring that the programme itself has high-quality classroom and workplace training, high-quality graduates, high-quality curricula, or a brand of high quality that reflects well on all involved. Programme ownership is a matter of who will take the lead, how roles and responsibilities will be distributed, and where the authority over the programme will lie—this is especially relevant for the role of industry associations. Finally, and related to the issue of ownership, is general uncertainty about how

the TVET sector will be organized in the future. In the context of federalisation and an upcoming new TVET Act, questions about funding, authority, and institutional roles loom large.

In **summary**, the interviews present a positive view about the presence of implementation drivers to scaling up the programme. However, the working paper also reveals a number of implementation barriers that need to be considered carefully.

References

- Abrahart, A., & Tzannatos, Z. (2000). Australia. In I. S. Gill, F. Fluitman and A. Dar (Eds.), *Vocational education and training reform: matching skills to markets and budgets*. Washington, DC: The World Bank.
- Anaele, E. O., Adelakun, O. A., Dem Isaiah, I. M., & Barfa, G. I. (2014). Strategies for revitalizing the implementation of entrepreneurship education in Technical, Vocational Education and Training (TVET) to enhance self-employment in Nigeria. *British Journal of Education*, 2(4), 50-62
- Bartlett, W. (2013). International assistance programmes and the reform of vocational education in the Western Balkans: sources of policy failure. *Southeastern Europe*, 37(3), 330-348.
- Bolli, T., Kemper, J., Parajuli, M.N., Renold, U., & Thapa, B.K. (2019). Dual Vet-Apprenticeship Programme in Nepal: Formative Assessment of the First Cohort, *LELAM Working Papers*, 5, <https://r4d.tvet4income.ethz.ch/publications/working-paper-series.html> (accessed 9.12.2019).
- Bolli, T., Kemper, J., Parajuli, M.N., Renold, U., & Thapa, B.K. (2020). Projection of Net Benefits for Companies in the Dual Vet-Apprenticeship Programme in Nepal, *LELAM Working Papers*, 12, <https://r4d.tvet4income.ethz.ch/publications/working-paper-series.html> (accessed 9.12.2019).
- Castel-Branco, E. (2008). *Vocational Education and Training challenges and opportunities in the Southern Caucasus*, Cross-Country Report, Armenia-Azerbaijan-Georgia. Turin, Italy: European Training Foundation.
- Caves, K.M., Baumann, S., & Renold, U. (2019). Getting there from here: A literature review of VET reform implementation, *Journal of Vocational Education and Training*, <https://www.tandfonline.com/doi/full/10.1080/13636820.2019.1698643> (accessed 4.12.2019).
- Caves, K. M., & Renold, U. (2019). External Evaluation: National Vocational Qualifications System Project. *KOF Studies*, 126.
- Cedefop (1997). Innovation and reform: training in Central and Eastern European countries. *Vocational Training - European Journal* (No. 11).
- Cedefop (2017). Global inventory of regional and national qualifications frameworks 2017. Volume I: Thematic chapters. Luxembourg: Publications Office of the European Union.
- Comyn, P., & Barnaart, A. (2010). TVET reform in Chongqing: big steps on a long march. *Research in Post-compulsory Education*, 15(1), 49-65.
- Corradini, M., Sarajlic, A., Ziga, B., & Karic, M. (2012). *Bosnia and Herzegovina - Impact Assessment of Vocational Education and Training Reform (Working Paper)*. Turin, Italy: European Training Foundation.
- CTEVT (2019). Entrance Exam Result of Apprenticeship – 2076, Council for Technical Education and Training, <http://ctevt.org.np/files/Apprenticeship%20Result-net%20published.pdf> (accessed 4.12.2019)
- ETF (2012). *ETF Yearbook 2012: Evaluation And Monitoring Of Vocational Education And Training Systems And The Role Of Evidence-Based Policy In Their Reforms*. Luxembourg: Publications Office of the European Union.
- DGB (2008), “*Mit guter Bildung in die Zukunft*“– *Gewerkschaftliche Anforderungen an den Bildungsgipfel*“, Beschluss des DGB-Bundesvorstandes vom 7. Oktober 2008, Deutsche Gewerkschaftsbund, Berlin.
- Figueiredo, H., Biscaia, R., Rocha, V., & Teixeira, P. (2017). Should we start worrying? Mass higher education, skill demand and the increasingly complex landscape of young graduates' employment. *Studies in Higher Education*, 42(8), 1401-1420.

- Frigotto, G., Ciavatta, M., & Ramos, M. N. (2009). Vocational education and development. In *International Handbook of Education for the Changing World of Work* (pp. 1307-1318). Springer, Dordrecht.
- Hoppe, M., Burmester, J., & Ebben, J. (2011). The Development of a Strategy for Vocational Education and Training: experiences from Montenegro. *Research in Comparative and International Education*, 6(3), 273-284.
- Hummelsheim, S., & Baur, M. (2014). The German dual system of initial vocational education and training and its potential for transfer to Asia. *Prospects*, 44(2), 279-296.
- Hsiao, H. C., Chen, M. N., & Yang, H. S. (2008). Leadership of vocational high school principals in curriculum reform: A case study in Taiwan. *International Journal of Educational Development*, 28(6), 669-686.
- Kis, V. & Field, S. (2009). *Learning for Jobs - OECD Reviews of Vocational Education and Training. Chile: A First Report*. Paris, France: Organization for Economic Cooperation and Development (OECD).
- KOF (2015). KOF Factbook Education System Nepal, KOF Education System Factbooks, https://www.ethz.ch/content/dam/ethz/special-interest/dual/kof-dam/documents/KOF_Factbook/kof_factbook_education_system_nepal.pdf (accessed 5.2.2019)
- Najam, A. (1995). Learning from the literature on policy implementation: a synthesis perspective, *IASA Working Paper*, WP-95-061, Luxembourg, Austria: International Institute for Applied Systems Analysis.
- Parajuli, M.N., Renold, U., Bhandari, U., & Lamsal, H.P. (2020). Financial Flow in TVET in Nepal: Transiting from the Old to the New Constitution, *LELAM Working Paper*, 10, forthcoming.
- Payne, J. (2002), "Reconstructing Apprenticeship for the Twenty-first Century: Lessons from Norway and the UK", *Research Papers in Education*, Vol. 17, No. 3, pp. 261-292.
- Renold, U., & Caves, K.M. (2017). Constitutional Reform and its Impact on TVET Governance in Nepal. A report in support of developing understanding and finding the way forward for federalizing the TVET sector in Nepal. *KOF Studies*, 89, <https://www.research-collection.ethz.ch/handle/20.500.11850/128901> (accessed 9.12.2019).
- Renold, U., Bolli, T., & Caves, K.M. (2018). Constitutional Reform and its Impact on TVET Governance in Nepal, *KOF Studies*, 114, <https://www.research-collection.ethz.ch/handle/20.500.11850/275454>.
- Renold, U., Caves, K.M., Maldonado-Mariscal, K., Oswald-Egg, M.E., Markovic, J., Veselinovic, Z., Stankovic, D., Ceneric, I., & Todorovic, M., (2019a). Implementation of the Serbian Law on Dual Education First Report on Drivers and Barriers in the Pre-Implementation Phase, *Kof Studies*, 129, https://www.research-collection.ethz.ch/bitstream/handle/20.500.11850/337794/No_129_Implementation_Serbian_Law.pdf?sequence=1&isAllowed=y (accessed 27.5.2019).
- Renold, U., Rageth, L., Caves, K.M., & Buergi, J. (2019b). Theoretical and Methodological Framework for Measuring the Robustness of Social Institutions in Education and Training, *LELAM Working Paper*, No. 2. https://ethz.ch/content/dam/ethz/special-interest/dual/r4d-tvet4income-dam/documents/WP_2_Renold,Rageth,Caves&Buergi2019_SI-VET-Programs.pdf (accessed 4.12.2019).
- Ryan, P. (2000), "The Institutional Requirements of Apprenticeship: Evidence from Smaller EU Countries", *International Journal of Training and Development*, Vol. 4, No. 1, pp. 42-65.
- Ryan, P. (2004). Apprentice strikes in the Twentieth-Century UK engineering and shipbuilding industries. *Historical Studies in Industrial Relations*, (18), 1-63.

- SDC (2019). Enhanced Skills for Sustainable and Reliable Employment (ENSSURE): Planned Project, <https://www.eda.admin.ch/deza/en/home/countries/nepal.html/content/dezaprojects/SDC/en/2014/7F09104/phase99?oldPagePath=/content/deza/en/home/laender/nepal.html> (accessed 4.12.2019).
- Toner, P. (2008). Survival and decline of the apprenticeship system in the Australian and UK construction industries. *British Journal of Industrial Relations*, 46(3), 431-438.
- Wolter, S.C., & P. Ryan (2011): Apprenticeship, in: Hanushek, E.A., Machin, S. and Wössmann, L. (Eds.): *Handbook of Economics of Education*, Volume 3, Elsevier, S. 521-576.
- World Bank (2017): Enhanced Vocational Education and Training Project II, available at <http://projects.worldbank.org/P163018?lang=en> (accessed 12.12.2018)

Information about the Authors

Thomas Bolli, Dr.
KOF Swiss Economic Institute, ETH Zurich
Leonhardstrasse 21
8092 Zurich, Switzerland
bolli@kof.ethz.ch
+41 44 632 61 08

Johanna Kemper, Dr.
KOF Swiss Economic Institute, ETH Zurich
Leonhardstrasse 21
8092 Zurich, Switzerland
kemper@kof.ethz.ch
+41 44 632 67 56

Mahesh Nath Parajuli, Prof. Dr.
School of Education, Kathmandu University,
Kathmandu, Nepal
mahesh@kusoed.edu.np
+977-1-5549764

Ursula Renold, Dr.
KOF Swiss Economic Institute, ETH Zurich
Leonhardstrasse 21
8092 Zurich, Switzerland
ursula.renold@kof.ethz.ch
+41 44 632 53 29

Binayak Krishna Thapa, Dr.
School of Arts, Kathmandu University
Kathmandu, Nepal
binayak.thapa@ku.edu.np
+9841022881