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# **Achieving the Sustainable Development Goals through Industrialization while Realizing the Demographic Dividend**

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A Synthesis of R4D Studies



*Santosh Mehrotra (Team Lead)*

*Stephanie Allais*

*Volker Schoer*

*Jajati Keshari Parida*

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## Executive Summary

The conceptual foundation of this synthesis paper of the R4D projects is based on a dual synergy theoretical model, which draws its inspiration from Amartya Sen's Capabilities Approach, but also New Growth Theory (associated with Lucas and Roemer), but goes beyond both. We start in this Executive Summary with this dual synergies model, and place the r4d research within this model. There are two synergies in the development process, perceptible in country experiences, both of high- and lower-performing economies. The first synergy states that separate interventions in health, nutrition, water and sanitation, fertility control, and education complement each other, and thus increase the impact of any one from interventions in any other (thus creating feedback loops between them). This operates at the micro, individual or household level. But there is yet another set of synergies (of which the first micro level synergies are a sub-set). This is between the three macro-level parameters: health/education status at the societal level, income poverty-reduction and economic growth. This second synergy operates at the macro-economic level. The Dual Synergy model is both an analytical tool for understanding countries' development, but also their failures, and like any theoretical model, has predictive value, and hence helps in identifying the policy instruments governments and donors should focus on.

This synergy (between poverty reduction, economic growth and enhanced human capital) can be expressed as the enhanced impact the rate of change of an independent variable has on the rate of change of a dependent variable, given the presence of a third variable. The implication is that the impact of a policy (e.g. to promote economic growth) on another variable (say income-poverty reduction) crucially depends on the level of a third variable (e.g. human capital). In other words, economic growth will be more successful in reducing income-poverty, the more equitably distributed is human capital. Or to take another example, trade liberalisation in a context of low levels of human capital will have a very different impact on GDP growth and income poverty than trade liberalization in a situation where the citizens are healthy and highly trained.

We use this model and broad understanding to explain how different countries in the r4d research fared in terms of growth, employment and human capital formation: with examples drawn from Asian, African and Latin American studies.

To classify the 18 countries of the r4d research project we have used the World Bank classification of countries by level of per capita income: LICs (low income), LMICs (low-middle income), UMICs (upper-middle income) and HICs (high-income countries). Of the 18 countries, the majority (11) are LICs – from Sub Saharan Africa; the other LIC is Nepal. Five countries are LMICs: Bolivia, Laos (since 2020), Cambodia (2015), Bangladesh and Vietnam. Finally, there are four UMICs (South Africa, Chile, Costa Rica and Brazil).

Till just a decade ago, all five LMICs in the r4d project were LICs. The dual synergies model enables us to think about a critical question: How did they transform themselves from being LICs to LMICs? And why did the LICs that did not become LMICs, fail to do so? Bangladesh and Vietnam were both war torn countries in the 1970s, but have transformed themselves, while the African ones (often also conflict-ridden) have not. The difference lies in the investments in human development made in both Asian economies, but also the growth-oriented strategies that were adopted in both – as the Dual Synergies model would have predicted. Bolivia, on the other hand, is a slightly different case; from being an LIC it became a LMIC after a near decade of growth in the 2000s, after two decades of stagnation in 1980s and 1990s – the well-known ‘lost decades’ in Latin America. But Bolivia’s growth in the 2000s was mainly driven by trade, when its commodity exports increased raising domestic incomes, but still leaving behind structural weaknesses.

Those two decades (1980s and 1990s) of neo-liberal policies dominated the majority of externally indebted countries of Sub-saharan African (SSA) that are part of the r4d set – neo-liberal policies for which both multilateral and bilateral donors also bear responsibility. These resulted in low growth of the 1980s and 1990s. However, growth in much of SSA and Latin America (including Bolivia) revived in the 2000s, on the coattails of the rising GDP growth in China and India, accompanied by their sharp increases in primary commodity consumption, which raised demand for the primary commodity exports of both the R4D countries in SSA and Latin America. Post the Lehmann collapse, the Global Economic Crisis of 2008 pushed back growth again in both SSA and Latam economies, which had remained extractive economies (including the R4D countries), over that period – which still remains their structural weakness. What the r4d projects have captured is that this structural crisis is still facing most of the 11 countries part of our Synthesis Report: they have remained extractive economies, relying on primary commodity exports.

When in the 1980s and 1990s, much of the SSA and Latam economies were stagnating, much of Asia was growing rapidly, including the LMICs in the r4d projects – Vietnam, Laos, Cambodia and Bangladesh. They were also investing in both public health and education, reducing their population growth (unlike much of Africa). So, when their GDP growth picked up, per capita grew; it was a sustained growth, as they had managed to plug themselves into manufacturing GVCs in a way that their growth did not collapse. We find that industrial output and non-farm employment grew in much of Asia, as in Vietnam, Laos, Cambodia and Bangladesh. On the other hand, while there has been some export-oriented growth in SSA in the 2000s as well, driven by the same commodity boom till 2008, but manufactured exports from Africa have barely grown. The commodity composition of exports in Africa has remained much the same, i.e. remained resource-driven.

Turning to how employment fared (since the size & quality of employment determines poverty reduction in our Dual Synergies model), in *all the 11 countries* in our r4d Synthesis, we find the quality of employment did not improve (or improved marginally). While non-farm employment grew post Global Economic Crisis, and formal employment also grew in absolute terms, the vast majority of the workforce remained informal. That emerges from the r4d studies. (Vietnam is an exception in seeing some decline in informality due to formal manufacturing growing rapidly).

Contributing to the inability of most of SSA and much of Latam (except Brazil) to effect structural change in output and employment in the r4d research, we find two policy determinants: a. the absence of a formal Industrial Policy (or manufacturing strategy, which had characterized all Asian economies, including Vietnam and Bangladesh); and b. lower levels of educational status, compounded by poor quality TVET, not aligned to an explicit industrial policy.

The r4d studies raise a few issues that need further attention, from the perspective of both the Dual Synergies model, but also in their own terms. First, they don't answer the foremost question in economic development policy: are these 18 r4d economies transforming structurally in terms of output and employment, even though they might have demonstrated GDP growth in recent times? They don't answer it, because they don't ask that question.

Second, they don't head on address the second most important issue in development policy: are they generating non-farm jobs fast enough to absorb all their young and increasingly better educated youth, but also their poorly educated and unskilled workforce? This is the question of paramount importance for most developing countries: as the growing numbers of young start looking for work, and their surplus farm labour leave farms for non-farm work, will they find that work in industry and modern services for the better educated, and in construction for the unskilled? If they don't, will these economies realize their demographic dividend, which is a determinant of higher savings, investment and growth in the economy (as China and many Asian economies did)?

Answering these questions will require perhaps SNSF to conduct another set of studies that should address these foundational questions.

### ***Employment effects of Export-led growth strategies in the R4D project countries***

The findings of two R4D projects were used for this section. The Trade and Labour Market Outcomes in Developing Countries (TLMO) project covers four countries: Bolivia, Brazil, Ghana and Kenya (three LMICs); and Brazil (UMIC) and investigates the impact of trade integration on the creation of employment opportunities both, in the formal and informal sector to identify the policies that would moderate the negative effects of globalization and

maximize its benefits. The Employment Effects of Different Development Policy Instruments (EE) project which covers six countries: Ethiopia, Ghana, Madagascar (all LICs); Bangladesh and Vietnam (LMICs); and South Africa (UMIC) and provides insights about the nature of policies that drive supply of and demand for labour by analysing three interlinked mechanisms which are crucial for development: technological upgrading, integration into international markets, and restructuring labour markets. As such, both projects provide some insights into factors that facilitate and hinder the integration of sectors into global value chains as well as their differential impact on firms and workers.

In most LICs and LMICs, agricultural expansion is not happening to provide sufficient decent employment opportunities for young people because there is already surplus labour in agriculture. Hence, there is a need for the manufacturing sector to create jobs either by producing goods for domestic consumption, or through an export orientated growth strategy. However, integration into GVCs can be a mixed bag: on average, GVC integration has affected employment positively and exporting companies generally tend to pay higher salaries and provide less precarious employment. However, the impact of GVC integration on the distribution of decent jobs within and between sectors depend on a number of facilitating and hindering factors: the comparative advantage of the sectors, labour market frictions and the skills distribution in the economy. Without the correct alignment of these, GVC integration can have negative effects on the quantity and quality of employment.

*Sectoral share of output & employment: The role of agriculture led growth in job creation, its potential and limits*

The agricultural sector is an important driver of economic growth for LICs and LMICs, but less so for UMICs. The findings from R4D's Feminization, Agricultural Transition & Rural Employment (FATE) project in Bolivia, Laos, Nepal, and Rwanda, suggest that non-traditional export crops are usually both labour-intensive and high-value, and does raise income by potentially providing employment of the most vulnerable rural populations. However, export-led cash crop production in agriculture is not much of a route for escape from agricultural employment for men or women due to the low-skill concentration in this sector. Only better education and faster growth of non-farm jobs can create opportunities to move out of agricultural employment into manufacturing employment. However, we find from the R4D projects including South Africa and Ethiopia related to employment that the observed shift in a number of countries away from agricultural production to services rather than manufacturing has not created employment opportunities for the majority of young and poorly educated unemployed.

*Do global value chains promote employment? The effect of trade on employment and growth*

One strategy to develop a manufacturing sector in economies with relatively limited domestic markets for the initial stages of development is to rely on external markets, and

becoming part of Global Value Chains (GVCs). As the findings from Bangladesh, Ethiopia, Ghana, Madagascar, South Africa and Vietnam show, success of integration into GVCs is a function of the country's geographic proximity to key markets, as well as the alignment of employment policies and industrial policies.

Some development economists suggest that when trade is open, there is more growth and the formal employment increases due to the migration from the informal sector. However, this requires sustainable rather than volatile growth which is often experienced by resource rich countries. Volatility is determined by the extractive nature of their industries, and dependence on international commodity prices growing over time; when international commodity prices fall, growth collapses as can be seen by the experience in Bolivia. There is a limit to sustaining growth with an extractive industry based development model for any time longer than an export boom over which a developing country's policy makers have little control.

The R4D studies show that globally the *quality of employment associated with exporting is determined by the export destination*. Industries that ship products to high-income destination export higher quality goods. This is because high-income countries demand high-quality products. Second, the provision of quality is costly and requires more intensive use of higher-wage skilled labor. As a result, the production of higher quality products at the industry level creates a wage premium and conduces to higher average industry wages. Additionally, as the findings from South Africa have illustrated, exporting to trade partners that are at a comparatively lower income level is associated with lower wages.

#### *Technological change and employment/inequality*

While technological upgradation is generally good for growth, it can involve a painful adjustment process in which jobs get destroyed while new employment opportunities are created. The net-effect of this mechanism of creative destruction, which is inherent in the process of technological innovation, is a-priori unclear. However, technological change does not affect all workers the same way and tends to benefit specific skill levels.

Technologies developed in rich, industrialized countries, which are characterized by a large pool of skilled workers, are likely to complement skilled labor. For developing countries, which are often abundant in unskilled labor, the opposite is true. Yet, in developing countries foreign technologies that are developed in rich countries account for a large part of domestic productivity growth. As a result, innovation in these countries is often skill biased, creating a mismatch between the requirements of the adopted technologies and the skills of the domestic workforce. It is thus not likely to entail large beneficial effects on local labor markets, which are characterized by a huge pool of unskilled labor, and hence might imply low productivity levels in developing countries.



Especially in a developing country context educating individuals and providing them with the necessary skills to operate machines and to make use of new technologies makes it possible to bridge the skill-mismatch. Additionally, guided policy intervention aimed at creating demand for products that use technologies with higher potential for growth and job creation can counteract the negative employment effects of technological change.

#### *Employment effects due to interactions of Trade integration and labour legislation*

Companies that are part of GVCs are more likely to comply with labour legislation and provide less precarious jobs. Hence, workers that are formally employed by exporting companies also offer better jobs. However, the interaction between GVCs and labour legislation can have different effects as can be seen in Brazil and South Africa. For firms that compete internationally, labour regulation that affect hiring and firing costs can create an incentive to avoid labour-intensive investment and job creation. This is particularly problematic for smaller companies. However, this tension can be even more problematic for young job seekers who struggle to signal their productivity levels to prospective employers. Youth find it difficult to enter the job market, especially for well paid, decent jobs, in an environment where employers try to navigate through the competitive pressures of import competition and export requirements on the one hand and restrictive labour legislation on the other. Without clear ability signals of the job applicant's skill set, it becomes difficult for employers to hire new, inexperienced workers if terminating an unproductive employment relationship is costly. Therefore, experimenting with young job seekers becomes almost impossible in this environment.

Therefore, trade integration causes higher unemployment in countries with comparative advantage in sectors with strong labor market frictions, and leads to lower unemployment in countries with comparative advantage in sectors with weak labor market frictions.

#### *Skills in the R4D projects*

Getting skills provision and uptake of skills programmes right proves to be enormously complex in low- and middle-income countries. Aligning skills provision with demand, or projected demand, is very complex, as shown by the two R4D projects focused on skills:

- The *Skills for Industry* project considers the conditions in which TVET can improve companies' performance and lead to more inclusive workforces, in Bangladesh, Cambodia, Ethiopia, Laos, South Africa, and Vietnam.
- The *Linking Education and Labour Markets* (hereafter, LELAM) examines under what conditions Technical Vocational Education and Training (TVET) improves the income of the youth, in Benin, Chile, Costa Rica, and Nepal.

LELAM attempts to provide a systematic method for understanding the different institutions within and around TVET systems, and argues that a better understanding of the institutions that underpin TVET programs is vital to understanding the conditions under

which TVET can reduce unemployment, improve employment, quality of work and income of youth. Skills for Industry

Together, the findings across these two projects provide insights into the challenges of building appropriate skills systems, and some directions for policy interventions. They also highlight the complexity of employer-engagement—sometimes it seems to be working even when the formal structures are not in place, and vice versa. The two skills-focused projects also consider aspects of the provision of vocational skills development from a systemic point of view.

### ***Employer engagement***

The projects focus in different ways on the role of employers, LELAM focusing on a systemic index for measuring employer engagement in vocational education systems, and Skills for Industry on employer perception of the value of different vocational programmes as well as the relationship between their in-house training and formal vocational provision. Across the two projects, insights are provided into aspects of systemic provision of TVET in Benin, Bangladesh, Cambodia, Chile, Costa Rica, Ethiopia, Laos, Nepal, South Africa, and Vietnam. All of them remain small and rather weak provision systems.

In terms of employer-engagement in vocational education systems, LELAM developed an ‘Education–Employment Linkage Index’, which measures linkage across functions in TVET systems, and aggregates these measurements into a single index score. The project scores Benin relatively high, and Chile, Costa Rica, and Nepal relatively low. However, in Benin it was also found that social partners play a weak role in the dual apprenticeship programme that has been implemented since 2005 with donor support.

The *Skills for Industry* project also finds weak linkages between formal vocational provision systems and employers, which is both caused by and reinforces the low status of vocational education. Company case studies were conducted in all six countries; the general pattern is that there is little valuing of formal TVET for either hiring or training, except for higher occupational levels such as technician, where there are small numbers of employees. At lower levels of the workforce, companies in the main focus on informal on-the-job training. In the six countries of the *Skills for Industry* project, the development of competency standards is presented as the major mechanism for ensuring industry involvement and coordination of the system. However, actual involvement of industry is seen as more limited than the policy aspiration in all countries. The findings suggest that ensuring that on-the-job training is complementary to formal training could be a better way forward, particularly if training is embedded in industrial or sectoral policy.

A major issue for consideration in skills policy for developing countries, and an issue with implications for who accesses education and training, is the nature and role of formal versus informal provision of skills, and the extent to which access to either does or does not assist in labour market access. In terms of access to education and skills development, and its

role in supporting export-led growth and facilitating labour market mobility and economic participation, both projects provide insights into the lack of systematic provision of skills for informal work. LELAM suggests that there are large gaps between what policy makers see as desirable—such as a principle of duality in training—and how this informal skills acquisition takes place, and there is little collaboration between training providers and master craftspeople.

### ***Provision systems and access to vocational skills development***

*Skills for Industry* finds that all six countries in their study have very low enrolments in TVET relative to general senior secondary school and university enrolments; they all are primarily school- or college-based provision systems with consequent perceptions of skills mismatches and TVET provision that does not meet employers' needs; and they are all low status. They highlight the difficulties of enticing learners with good levels of achievement into vocational education in systems with very low status, particularly in the context of few formal jobs and rising levels of general education.

While not all systems have been strongly influenced by donor-agendas, the research projects do highlight the conundrum of attempts to engage systemically with policy at a national level, versus small project-based interventions which at best have no systemic benefits and at worst destabilize vocational education provision.

The policy implications are, therefore, to focus on sectoral interventions that are highly integrated into industrial policies and strategies, that don't focus on reforming national policy systems, but also which work within them or at least not against them; this may be tricky where national systems are very inflexible, and may require some negotiation for flexibility. Beyond this, the focus should be on formal general education; a focus on skills provision for the 'poorest of the poor' does not seem productive for the target groups or economies as a whole.

Finally, the projects together also suggest that the negative perceptions of research findings may be overstated. They suggest the need for a long-term perspective, because many interventions stop after one or two pilots, discouraged by initial findings, which means that long-term benefits may then be missed.

## 1. Introduction and contextual analysis

The objective of this synthesis paper is to bring together the analytical and policy relevant findings from the R4D studies of 18 countries, with a specific focus on studies of 11 of the countries.

The aim of this synthesis is to look across the research projects currently underway or completed as part of R4D, to understand the ways in which industrialization is or is not affecting the supply of and demand for labour. We want to understand both whether and how countries are industrializing, and the effect that this is having on livelihoods and prosperity. Historically countries that industrialized were the ones that prospered. However, not only is it much harder to industrialize now, but the extent that countries do manage to, it may play a more limited role in reducing poverty and inequality due to the more restrictive drivers of industrialization, including global value chains.

Over this paper we have used the World Bank classification of countries by level of per capita income: low-income countries (LICs), lower middle-income countries, (LMICs), and upper middle-income countries (UMICs) to classify the 18 countries.<sup>1</sup> Of the 18 countries, the majority (9) are LICs: Benin, Burkina Faso, Ethiopia, Ghana, Kenya, Madagascar, Rwanda, Togo – all from Sub Saharan Africa. The other LIC is Nepal (Asian). Only five countries are LMICs: Bolivia, Bangladesh and Vietnam, Laos and Cambodia. Finally, there are four UMICs: Brazil, Costa Rica, Chile and South Africa.

Until just a decade ago, all five LMICs in the r4d set of countries were LICs. How did they transform themselves from being LICs to LMICs? And why did the LICs that did not fail to do so? Bangladesh, Laos, Cambodia and Vietnam were war torn countries in the 1970s. The answer lies in the investments in human development made in both, but also the growth-oriented strategies that were adopted in both. Bolivia, on the other hand, is a slightly different case; it became a LMIC after a near decade of growth in the 2000s, after two decades of stagnation in 1980s and 1990s – the ‘lost decades’ in Latin America. These two decades of export-led growth policies also dominated the externally indebted countries of Sub-Saharan African (SSA) countries that are part of the r4d set (the exception is South Africa, on which more later). They also experienced the two lost decades of the 1980s and 1990s. Growth in much of SSA also revived in the 2000s (see Table 1 below), on the coattails of the rising GDP growth in China and India, accompanied by their sharp increases in primary commodity consumption, which raised demand for the mineral and other primary commodity exports of both the SSA and Latin American economies. Post the Lehmann moment, the Global Economic Crisis of 2008 pushed back growth again (Annex

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<sup>1</sup> For the 2019 fiscal year, low-income economies are defined as those with a GNI per capita, calculated using the [World Bank Atlas method](#), of \$995 or less in 2017; lower middle-income economies are those with a GNI per capita between \$996 and \$3,895; upper middle-income economies are those with a GNI per capita between \$3,896 and \$12,055; high-income economies are those with a GNI per capita of \$12,056 or more.

Figure 1 for time series) in both SSA and Latam economies, which had remained extractive economies, over that period. What the r4d projects have captured is the period of post Lehmann global economic crisis. However, this structural crisis is still facing most of the 11 countries that are the focus of this Synthesis Report.

When during the 1980s and 1990s, much of the SSA and Latam economies were stagnating (with per capita growth near to zero over two decades), the rising population resulted in a rise in poverty in both regions. Over the same period, much of Asia was growing rapidly, including the two countries in the r4d projects reviewed here – Vietnam and Bangladesh, while Laos and Cambodia experienced faster growth in this century.<sup>2</sup> They were also simultaneously investing in both public health services and education, with the result that they reduced their population growth. When their GDP growth picked up, it was a sustained growth, as they had managed to plug themselves into GVCs in a way that their growth did not collapse. Non-farm employment growth grew in much of Asia, as in Vietnam and Bangladesh. There has been some export-oriented growth in SSA, but manufactured exports have barely grown. The commodity composition of exports (traditional, resource-driven, not non-traditional manufacturing) has remained much the same.

**Table 1: Annual average growth rate of GDP, 2001-2020**

Name of the Region/Countries		Average Annual growth rates of GDP (%)	
		2001-2010	2010-2019
Latin America	Bolivia	3.8	4.7
	Brazil	3.7	0.8
	Chile	4.2	3.0
	Costa Rica	4.4	3.6
West Africa	Ethiopia	8.7	9.5
	Kenya	4.3	4.7
	Benin	3.9	5.1
	Burkina Faso	5.9	5.7
East Africa	Ghana	5.8	6.6
	Togo	2.3	5.7
South Africa	Madagascar	2.8	3.2
	South Africa	3.5	1.6
East Asia	Bangladesh	5.6	6.9
	Nepal	3.9	5.0
Southeast Asia	Cambodia	8.1	7.1
	Lao PDR	7.1	7.2
	Vietnam	6.6	6.3
<b>World Average</b>		<b>3.0</b>	<b>3.0</b>

Source: Compiled from World Bank's World Development Indicator (WDI) data base.

<sup>2</sup> Laos and Cambodia had a turbulent last two decades in the 20<sup>th</sup> century on account of the aftermath of the wars in Indo-China since the Vietnam war ended.

**Table 2: Share of non-farm sector employment in total employment**

Name of the Region/Countries		Employment Shares (%)								
		Industry			Services			Non-farm Sector		
		2000	2010	2019	2000	2010	2019	2000	2010	2019
Latin America	Bolivia	18.6	20.7	19.4	42.4	49.3	50.0	61.1	70.0	69.5
	Brazil	21.8	22.6	20.0	61.7	64.8	70.9	83.5	87.3	90.9
	Chile	23.4	23.0	22.3	62.2	66.4	68.8	85.6	89.4	91.0
	Costa Rica	22.4	19.6	18.8	61.3	69.0	69.2	83.8	88.6	88.0
West Africa	Benin	19.9	18.6	18.3	31.7	37.3	43.4	51.6	55.9	61.7
	Burkina Faso	6.3	20.8	25.2	13.2	31.0	48.6	19.6	51.8	73.8
	Ghana	14.0	13.9	21.0	31.0	36.0	49.2	45.0	49.9	70.3
	Togo	14.3	12.7	19.2	37.7	43.1	48.4	52.0	55.8	67.6
East Africa	Ethiopia	6.6	7.9	9.3	16.7	18.0	24.0	23.3	26.0	33.4
	Kenya	11.6	6.0	6.2	39.7	33.7	39.4	51.3	39.7	45.7
South Africa	Madagascar	8.3	6.0	8.7	14.7	20.6	27.1	23.0	26.6	35.9
	South Africa	27.3	24.4	22.3	62.8	70.8	72.4	90.1	95.1	94.7
East Asia	Nepal	10.5	13.0	15.1	14.2	17.0	20.5	24.8	30.0	35.6
	Bangladesh	10.7	17.6	21.3	24.5	35.1	40.4	35.2	52.7	61.7
Southeast Asia	Vietnam	12.4	21.7	27.4	22.3	29.6	35.3	34.7	51.3	62.8
	Lao PDR	4.6	8.3	12.9	13.6	20.2	25.6	18.1	28.5	38.6
	Cambodia	8.5	16.0	27.9	18.0	26.6	37.6	26.5	42.7	65.5

Source: Compiled from World Bank's World Development Indicators (WDI) database.

At the same time, *in all the 11 focus countries*, the quality of employment did not improve. While the share of non-farm employment grew substantially (see **Table 2** above), the vast majority of the workforce remained informal (see later discussion). That emerges as a major factor in the R4D studies, and one which requires considerable further study. (Vietnam has seen some decline in informality due to formal manufacturing growing, but the remaining 10 countries would not have seen much change.

Contributing to the inability of SSA and much of Latam (except Brazil) to effect structural change in output and employment, we find in the R4D projects studied two apparent policy determinants: a. the absence of a formal Industrial Policy aligned with the push to integrated in global markets (or manufacturing strategy, which had characterized all Asian economies); and b. poor quality TVET.

### ***1.1. Overview of findings***

Our analysis of the various research outputs of 11 projects, as well as the broader literature encompassing all 18 countries of focus in the R4D research, suggests the following insights:

In most low-income countries and lower middle-income countries, agricultural expansion does not provide sufficient decent employment opportunities for young people because the sector already contains a surplus of low skilled labour. Hence, there is a need for the manufacturing sector to create jobs for young job seekers either by producing goods for domestic consumption, or when the local market is limited through an export orientated growth strategy. However, integration into global markets can be a mixed bag: on average, GVC integration has affected employment positively and exporting companies generally tend to pay higher salaries and provide less precarious employment. The impact of GVC integration on the distribution of decent jobs within and between sectors depends on a number of facilitating and hindering factors: the comparative advantage of the sectors, labour market frictions and the skills distribution in the economy. As it stands, jobs that have been created as part of an export led growth strategy are more likely to benefit the skilled portion of the workforce. This implies that the majority of youth in developing countries will remain excluded from these job opportunities as long as the distribution of their skills is misaligned with the required skill set of jobs in trading sectors. Without the correct alignment of trade policies with industrial and skills development policies, GVC integration can have negative effects on the quantity and quality of employment.

However, getting skills provision and uptake of skills programmes right proves to be enormously complex. The projects that consider skills and vocational education focus in different ways on the role of employers, one focusing on a systemic index for measuring employer engagement in vocational education systems, and the other on employer perception of the value of different vocational programmes as well as the relationship between their in-house training and formal vocational provision.

The research highlights the complexity of employer-engagement—sometimes it seems to be working even when the formal structures are not in place, and vice versa. Across the two projects, insights are provided into aspects of systemic provision of TVET in Benin, Bangladesh, Cambodia, Chile, Costa Rica, Ethiopia, Laos, Nepal, South Africa, and Vietnam. All of them have small and rather weak provision systems for vocational education, and all have rather weak linkages with employers.

While not all systems have been strongly influenced by donor-agendas, the research projects do highlight the conundrum of attempts to engage systemically with policy at a national level, versus small project-based interventions which at best have no systemic benefits and at worst destabilize vocational education provision. What makes this more complex is the difficulties of enticing learners with good levels of achievement into vocational education in systems with very low status, particularly in the context of few formal jobs and rising levels of general education.

The policy implications are, therefore, to focus on sectoral interventions that are highly integrated into industrial policies and strategies, that don't focus on reforming national policy systems, but also which work within them or at least not against them; this may be

tricky where national systems are very inflexible, and may require some negotiation for flexibility. Beyond this, the focus should be on formal general education; a focus on skills provision for the ‘poorest of the poor’ does not seem productive for the target groups or economies as a whole.

## ***1.2. Approach to synthesis***

The R4D projects were characterised by two types of studies (within each project): those which are focused on individual countries or a group of countries; or cross-country analysis based on large data sets, including data about countries that go beyond the 18 countries in the R4D project. We will rely in this synthesis upon both types of studies.

For the purpose of this synthesis report, the research team focuses on specific growth policy instruments that promote 1) the integration into Global Value Chains, 2) growth of particular types of firms (SMME); 3) improvements in productivity through R&D and innovation, and how all of these are interlinked with 4) skills development.

We developed a set of guiding questions along the impact of trade integration on sector development, employment outcomes and skills development that allowed us to extract key findings from the various R4D project reports. The synthesis therefore focusses predominantly on the research reports produced under the following four R4D projects:

- Employment Effects of Different Development Policy Instruments (EE)
- Trade and Labour Market Outcomes in Developing Countries (TLMO)
- Skills for Industry (SKI)
- Linking Education and Labour Markets (LELAM)

In order to complement and provide some additional support for the findings, the research team also drew upon the following:

- Feminisation, agricultural transition and rural employment (FATE)
- Decent work

Finally, following the synergies model, the research team draws on the findings of the individual projects to develop an overarching narrative of how industrialization, skills and economic growth might or might not impact poverty and inequality, with a specific focus on the integration of youth in the economy.

## ***1.3. Structure of synthesis report***

This report is organized as follows. In section 1 we spell out a conceptual framework for understanding processes of development, and the determinants of their success in achieving both economic growth and human development (including income poverty reduction). It spells out what we call a dual synergies model of growth and development. We discuss how patterns of development since the middle of the 20<sup>th</sup> century have evolved in the



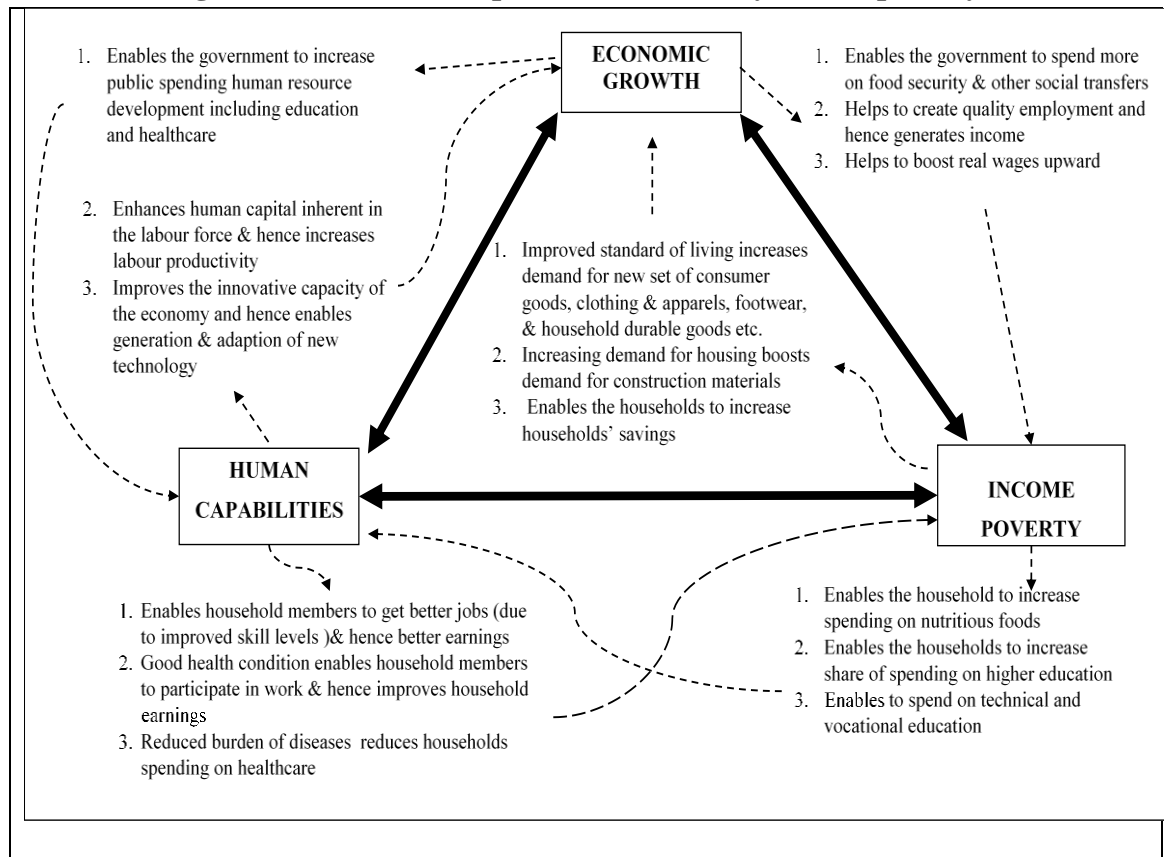
regions of the global south. This conceptual discussion sets the stage for section 2, where we analyse how the model applies in Asia, Africa and Latin America, and give examples from the majority of R4D countries.

Section 3 then turns to synthesising the results of the R4D studies. These research findings are placed within the conceptual framework of the dual synergies model. Section 4 concludes.

## 2. Conceptual Framework: The Dual Synergies Model

The conceptual foundation of this paper is based on a dual synergy model. This model is meant to be both an analytical tool for understanding countries' development, but also their failures, and hence identifying the policy instruments to focus on. Turning to the first synergy, operating at the household/individual or micro-economic level, it has long been known that separate interventions in health, nutrition, water and sanitation, fertility control, and education complement each other, and thus increase the impact of any one from interventions in any other (or feedback loops). But there is another set of synergies (of which the first set is a sub-set): this operates at the macro-economic level. This was between health/education status of the population, income poverty-reduction and economic growth of the country (see Figure 1).

**Figure 1: Feedback Loops: Growth, Poverty and Capability**



Source: Adapted from Mehrotra and Parida (2021)

The poor should not have to wait for the benefits of economic growth. We do not downplay economic growth, but as economic growth is such a predominant part of the orthodox paradigm, the pace at which social outcomes improve appears to be at a discount. A synergy exists between poverty-reduction, enhancement of functionings and economic growth, which does not put increasing the growth rate on a pedestal higher in the policy objectives hierarchy than the other two variables (i.e. enhancement of functionings and direct poverty reduction). Instead, it calls for the integration of social and economic policy – with the main instruments in the hands of the state being consistent fiscal and macro-economic policies, which promote all three desired objectives or ends simultaneously.

In recent years there has been a spate of literature showing the links from lower inequality to higher growth. This synergy focuses on income-poverty reduction, rather than income inequality reduction, since the latter may or may not always lead to the former, and in fact has not in one of our r4d countries: South Africa. South Africa had made progress in reducing poverty since 1994, but the trajectory of poverty reduction was reversed between 2011 and 2015, threatening to erode some of the gains made since 1994.<sup>3</sup> South Africa is one of the most unequal countries in the world with Gini index at 63 in 2014/15. Inequality is high, persistent, and has increased since 1994. Post Covid, it is estimated that extreme poverty will increase in South Africa by 9% in 2020. Evidence from previous crises, of even far smaller scale suggest that these negative effects could last across generations and further exacerbate already South Africa's high inequality.

This macro-economic level synergy (between poverty reduction, economic growth and enhanced human capacity) can be succinctly expressed as the enhanced impact the rate of change of an independent variable has on the rate of change of a dependent variable, given the presence of a third variable. This led to two inter-related implications. First, the impact of a policy (e.g. to promote economic growth) on another one (say income-poverty reduction) crucially depends on the level of a third variable (e.g. expansion of functionings or human capital). In other words, economic growth will be more successful in reducing income-poverty, i.e. the elasticity of poverty-reduction will be higher, the more equitably distributed is human capacity. Second, standard tools of marginal analysis, rates of return or linear regressions are inadequate to establish the importance, relative weight or priority of these interventions because the presence of these synergies (or feedback loops) creates non-linearities. For instance, trade liberalisation in a context of low levels of human capacity will have a very different impact than the same policy (other elements being equal) in a situation where the citizens are healthy and highly trained (as shown in Figure 1 above).

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<sup>3</sup> Poverty measured at the international poverty lines of \$1.90 and \$3.20 per person per day (2011 PPP) is estimated at 18.9% and 37.6% in 2014/15, up from 16.6% and 35.9% in 2010/11, respectively.

The analytical model (of synergies) discussed above shows that there is a mutually interactive relationship in place, between Economic Growth and Income Poverty Reduction; between Income Poverty Reduction and Human Capabilities; and between Human Capabilities and Economic Growth. The enhancement (or deterioration) of one leads to the improvement in outcomes in the other variable. We now try and use this analytical model to understand the Latin American, Asian and Sub-saharan economies, through a series of stylized facts.

### **3. Latin America, Sub-Saharan Africa and Asia - An Application of the Analytical Model**

We discuss in three sub-sections how the dual synergy model applies in the three main regions of the global South, and show (through boxes) how the application is relevant to the R4D studies we discuss in this synthesis.

#### ***3.1 The Growth-Poverty Relationship.***

Latin American and SSA economies' pattern of growth has long been characterized by what could be called an 'extractive industry based' model. The economies of many countries, especially in South America and SSA were already exporting primary commodities significantly in 1990. Since 2000 Latin American economies saw an increased inflow of FDI, especially a growing trend towards investments in natural resources. This pattern has deepened this 'structure' in the 2000s. In 1990, according to ECLAC (5), exports of primary products as a percentage of total exports in Latin America decreased from 66.9% in 1990 to 40.9% in 2000, but with rising FDI in the noughties increased to 61% in 2011 (Veltmeyer, 2016). What is remarkable is that undeterred by the global economic crisis post-2008, FDI flows towards Latin America peaked in 2008 (US\$ 128.3 billion), a trend quite opposite to the FDI flows worldwide at the time shrinking by at least 15 percent. This surge in investment continued until 2012.

From 2008 to 2009 exports of primary commodities accounted for 38.8% of total exports in Latin America. It is for these reasons that we began by calling Latin America's pattern of growth driven by an extraction-based model.

The sub-Saharan model, in most cases, has not been different, and continues to be so well in the second decade of this century. Raw materials still make up the bulk of exports among African countries—52% of the total in 2017 (Usman and Landry, 2021). In terms of natural resource endowments, 20 of the 51 African countries that have available data are considered resource-rich (with resource rents accounting for 10% or more of GDP). That a slightly higher number are considered resource-poor (31) is not helpful either, given that resource poor economies face structural constraints.

A significant share of total exports from most Latin American and SSA economies consist of primary commodities or natural resource-based (see Boxes 2 and 3 and Figure 2).

### Box 1: GDP growth 2001-2020 in countries studies

The annual GDP growth (2001-2020) of GDP for the 11 countries selected among the 18 R4D country studies shows that how vulnerable growth was to the global economic crisis after 2008. What the Latam cases illustrate is the impact of the global economic crises (GEC) on GDP growth in our countries, demonstrating how vulnerable extractive and export dependent economies are on international markets – which, by their nature, are volatile. Starting from low growth rates at the turn of the century, these economies rode the wave of the rising global growth in the next seven years, until the 2008 hit them. For most of them, growth rate slowed down thereafter. It collapsed completely when the Covid pandemic hit them in 2020 (See Annexure 1).

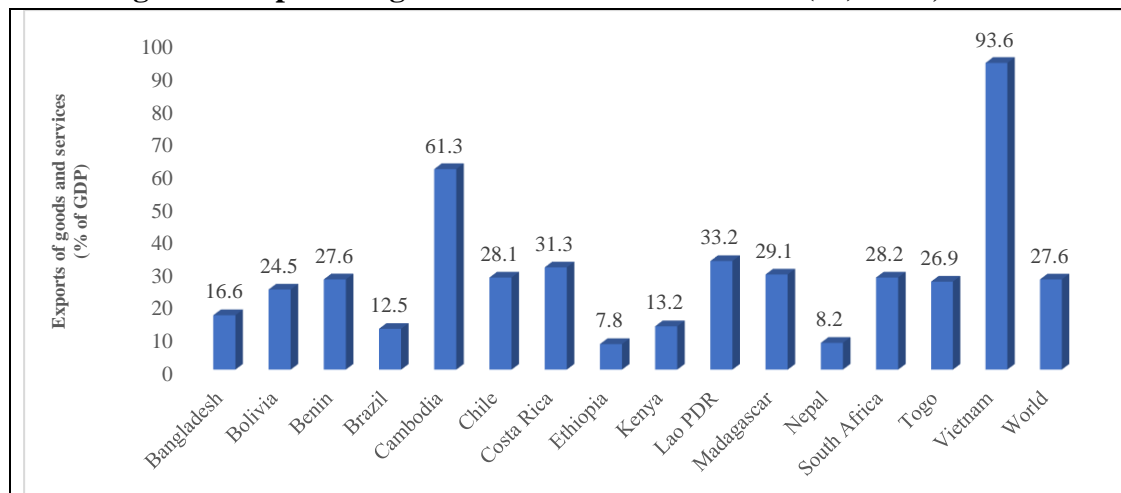
What is also notable is that the Asian LMICs (Vietnam, Cambodia, Lao PDR, and Bangladesh) all resumed growth quickly, and sustained growth. This had the knock on benefit of sustaining job creation and poverty reduction (Annex Graph for trend growth rates 2000-2020).

### Box 2: Contribution of Exports to GDP

The exports of goods and services as a share of GDP shows that the majority of countries studied in R4D had relatively high exports to GDP ratios (Figure 2). However, what differentiates the three Asian economies that became LMICs from being LICs during this century all not only had strong export sectors, but also the composition of their exports was quite different from that of the rest. Their exports were less concentrated in a small number of commodities.

The countries which succeeded to diversify their exports from traditional to manufacturing goods, were able to achieve a higher level of economic growth, increased investment in human capabilities and reduction of income poverty to a low level. But many African countries remain vulnerable to external shocks, as their exports are generally concentrated in a few primary products and limited to only few regional trading partners.

**Figure 2: Exports of goods and services as share of (%) GDP, 2016**



Source: Compiled and plotted using United Nation (UN) data

**Box 3: Composition of Exports**

It is noted that the countries in which the share of manufacturing goods is relatively higher, they have sustained a relatively higher rate of economic growth during last two decades (Table 3), for example, Viet Nam (87 percent) and Bangladesh (95 percent). On the contrary, the export basket of most of the Latam and SSA countries have a relatively higher share of primary goods in their exports (Table 3). This could be one of the major reasons for the Latam economies to be trapped in the upper-middle income group for decades; meanwhile, the SSA economies are likely to remain slow growth countries, with a very share of agriculture in GDP and employment.

The primary goods export mainly consists of food items, agricultural raw materials and ores and metals (Table 4). Predominance of agriculture, poor human capital base and lack of structured industrial policies in those countries could have resulted this. While the countries like Ghana and Togo in Africa, Bolivia in Latam and Lao PDR in East Asia, in which the fuel products hold a major share in their primary goods exports, they have managed sound economic growth during 2010s, or they have sustained above 5 percent growth of GDP.

There is much evidence that demonstrates that resource-rich countries tend to be less diversified economically than their resource-poor counterparts. Economic diversification entails clear and substantial long-term benefits—economic growth and poverty reduction, protection against volatility, and governance improvements, just to name a few. But governments might be reluctant to reduce dependence on those extractive resources industries in which they have a strong national comparative advantage. The result in resource-rich countries is they are afflicted by the Dutch Disease (in other words, uncompetitive economies resulting from overvalued currencies, which constrain their exports). Investments aimed at catalyzing the development of non-resource sectors take time, often decades, to yield results.

**Table 3: Composition of export (%) in the study countries, 2020**

Name of the Region/Countries		Share (%) out of total exports		
		Primary Goods	Manufactured Goods	Others
Latin America	Bolivia	73	6	21
	Brazil	73	25	2
	Chile	87	11	2
	Costa Rica	40	56	4
Western Africa	Benin	73	10	17
	Burkina Faso	23	NA	77
	Ghana	56	7	37
	Togo	70	24	6
Eastern Africa	Ethiopia	67	27	6
	Kenya	70	26	4
Southern Africa	Madagascar	60	30	10
	South Africa	51	37	12
East Asia	Bangladesh	NA	95	5
	Nepal	28	70	2
Southeast Asia	Cambodia	6	82	12
	Lao PDR	72	23	5
	Viet Nam	9	87	4

Source: Compiled from United Nations Conference on Trade and Development (UNCTAD) data.

Though African manufacturing grew in the immediate post-independence period, largely shaped by state-led and protectionist policies, by the mid-1980s, a series of external shocks—including oil price increases, commodity price decreases, real interest rate rises, withering public coffers, and the limitations of domestic markets—were major factors in industrial decline in the region. Increased competition from foreign products (from China) and new pressures on African currencies, such as devaluations, made these gains short-lived. By 2006 the share of manufacturing in GDP had declined to roughly 10 percent—the same as it had been in the mid-1960s. Since the late-1990s economic growth rates in Africa reached impressively high levels (even during the 2008-2009 global financial crisis). Yet, until recently, growth in manufacturing has lagged behind that growth except in just a few exceptional markets. In 2017, manufacturing’s share of sub-Saharan Africa’s total GDP was just under 10 percent. South Africa is unusual with a nearly 21% share of manufacturing, and Nigeria’s 15% is due to oil refining. But for the rest of SSA, it is much lower: under 3% in Kenya, Cot d’Ivoire, Cameroon and Ethiopia (Signe, 2018).

**Table 4: Composition of primary goods export (%) in the study countries, 2020**

Name of the Region/Countries		Export share of Primary goods (%)			
		<i>All Food Items</i>	<i>Agricultural Raw Materials</i>	<i>Ores and Metal</i>	<i>Fuels</i>
Latin America	Bolivia	27.4	NA	31.5	41.1
	Brazil	53.4	8.2	21.9	16.4
	Chile	27.6	8.0	64.4	NA
	Costa Rica	100	NA	NA	NA
Western Africa	Benin	35.6	47.9	5.5	11.0
	Burkina Faso	43.5	30.4	26.1	NA
	Ghana	46.4	NA	7.1	46.4
	Togo	25.7	7.1	10.0	57.1
Eastern Africa	Ethiopia	92.5	7.5	NA	NA
	Kenya	65.7	18.6	7.1	8.6
Southern Africa	Madagascar	66.7	NA	72.5	NA
	South Africa	23.5	NA	60.8	15.7
East Asia	Bangladesh	NA	NA	NA	NA
	Nepal	85.7	14.3	NA	NA
Southeast Asia	Cambodia	100	NA	NA	NA
	Lao PDR	18.1	18.1	27.8	36.1
	Viet Nam	100	NA	NA	NA

Source: Compiled from United Nations Conference on Trade and Development (UNCTAD) data.

#### Box 4: Manufacturing contribution to GDP

The share of manufacturing sector in total GDP indicates the study countries are undergoing some degree of structural change, away from being agriculture dependent. A few observations can be made. First, like we have noted earlier, the share of manufacturing in GDP has consistently fallen in much of Latin America: in Costa Rica from 17.4% in 2001, to 11.8% in 2019 (before Covid). The downward trend is steeper in Chile and Brazil as well as Bolivia (Figure 3: Panel A).

In West Africa (Burkina Faso, Benin, Ghana, Togo) the situation diverges: while Ghana and Togo see stagnation till 2011, they also show a sharp uptick in manufacturing share of GDP in the recent past. Meanwhile, Benin and Burkina saw a consistent fall in the share of manufacturing in GDP, especially in Togo (Figure 3: Panel B). Togo is an extremely open economy, with exports and imports accounting for 105% of GDP. The rise in manufacturing share of GDP in Togo could be due to expansion of agro based labour intensive manufacturing sectors like food processing, extraction of palm oil, textiles, footwear, confectionery, tires, and salt industries etc.

In the two East African countries in R4 D (Kenya, Ethiopia), Kenya saw a rise from 9.8% to 12.8% in 2007, which then has shown a downward trend for most of the period since then to 2020, and is now below the 2001 level. Meanwhile, Ethiopia had started at a very low level of 5.8% of GDP in 2001, which fell consistently to 2012; it has, however, risen since then to 6.2% in 2017 before trending downward again to a level below that prevailing at the beginning of the century (Figure 3: Panel C).

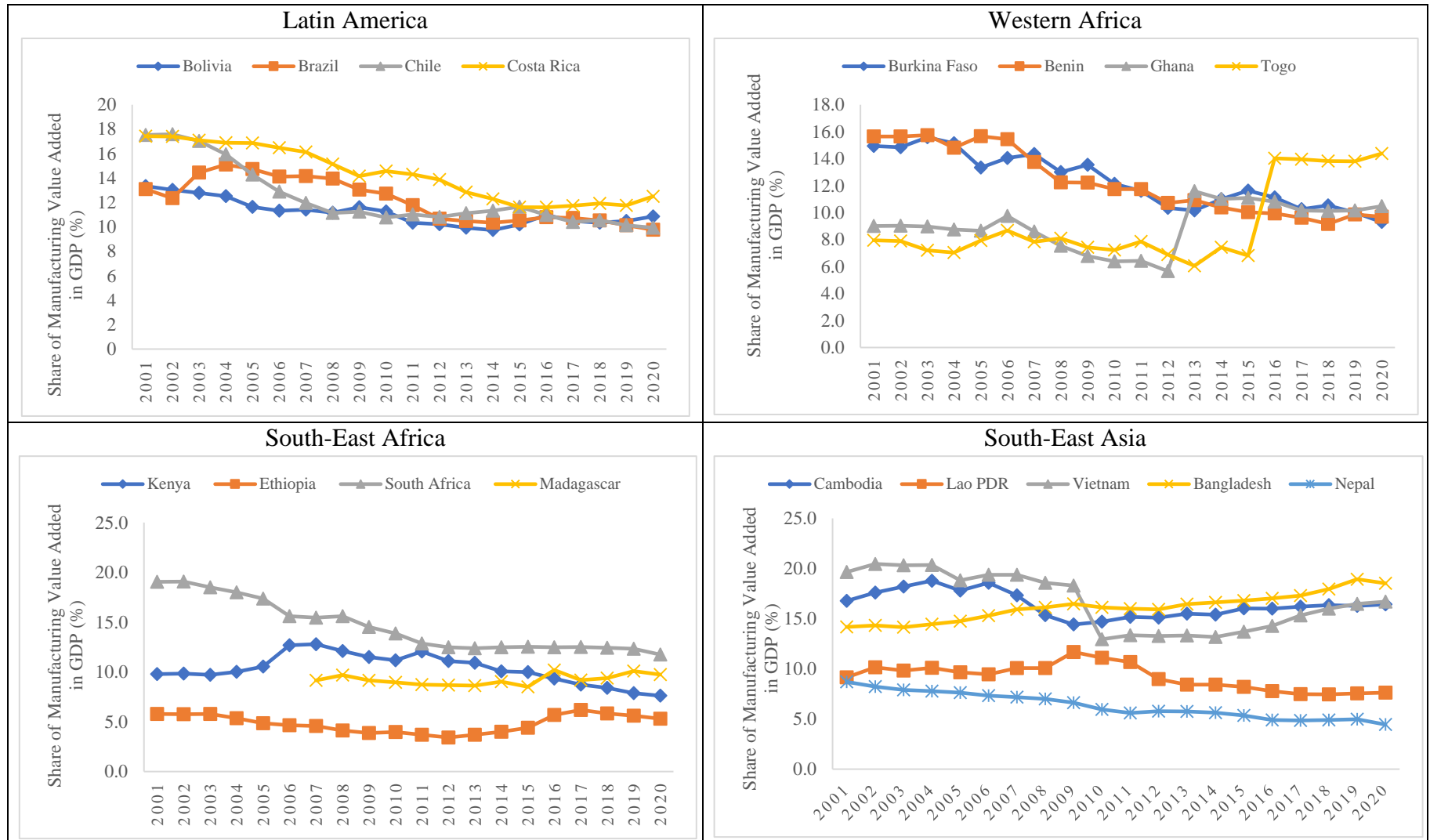
In Southern Africa (South Africa, Madagascar), the most developed economy of SSA, South Africa, which is an UMIC, has also seen manufacturing share of GDP fall consistently for two decades, from 2001 to 2020: from 19% to 11.7%.

In Asia, the country – Bangladesh – that graduated from being a LIC to a LMIC this century, has performed impressively in manufacturing (with its contribution rising from 14.2 to 18.5% this century. However, Nepal has seen deindustrialization, despite having begun from an extremely small manufacturing base (8.7% of GDP, which halved to 4.4% by 2020).<sup>4</sup> Meanwhile, the South-east Asian nations in the R4D set (Cambodia, Vietnam and Lao PDR) have seen significant manufacturing capacity being developed over this century, which is evident from Figure 3 (Panel D). Lao PDR has a smaller manufacturing sector compared to its neighbours, though it is still higher than found in most SSA countries.

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<sup>4</sup> Many countries in the world have experienced rapid growth but modest poverty reduction, as income has increasingly concentrated in the hands of the wealthy. Nepal, however, has the opposite problem—modest growth but brisk poverty reduction. The country has halved the poverty rate in just seven years and witnessed an equally significant decline in income inequality. Yet, Nepal remains one of the poorest and slowest-growing economies in Asia, with its per capita income rapidly falling behind its regional peers and unable to achieve its long-standing ambition to graduate from low-income status. Damir Cosic, "Climbing Higher: Toward a Middle-Income Nepal" <https://www.worldbank.org/en/region/sar/publication/climbing-higher-toward-a-middle-income-country>.

**Figure 3: Share of Manufacturing Sector Value Added in GDP (%)**



Source: Compiled and plotted using World Bank data (WDI data base).



The second problem undermining the link from growth to poverty reduction is that fewer non-farm jobs are created in an extractive model of development. From the perspective of our analytical model of synergies in development, a main problem of the resource extraction model is that, unlike with manufacturing, it cannot be established by design to take locational advantage of existing infrastructure, markets and labor supply. Development based on natural resource extraction are necessarily localized in enclaves with linkages to the global market but with very few to the local and national economy, with limited multiplier effects, since backward and forward linkages are fewer. And since the technology that such production is using tends to be relatively capital-intensive, labour receives less. Thus labour receives less than 10% of the world market value of exported minerals, 6 % in the case of Argentina and Chile and as little as 1.2% in the case of Mexico. Veltmeyer and Petras (2014) report that after four years of booming exports (from 2002 to 2006) the index of the value of real wages in the extractive sector had grown by less than 0.5 percent. This is in contrast with the well-established pattern of cumulative wage increases in the era of post-war state-led development based on ‘labor-seeking’ FDI, human resource development, and industrialization – as was quite common in much of East and South east Asia (and increasingly in South Asia since the middle of the noughties). In this context, the share of labor (wages and salaries) in the social product (i.e. in the income derived from the production process) settled at a much higher rate—as much as 60 percent—with undeniably positive development outcomes and implications. Naturally, the elasticity of poverty-reduction to growth is greater in Asia (See Annexure 3).

**Table 5: Incidence of poverty (1.9\$ per day as per 2011) in the study countries**

Name of the Region/Countries		Incidence of Poverty (%)			
		<i>During late 1990s and 2000</i>	<i>Mid-noughties</i>	<i>During 2010</i>	<i>Mid or late Twenty Tens</i>
Latin America	Bolivia	28.6	19.2	7.2	3.2
	Brazil	13.3	9.7	4.7	4.6
	Chile	3.4	1.5	0.6	0.3
	Costa Rica	4.9	3.2	1.6	1.0
Western Africa	Benin	57.8	38.5	35.6	30.8
	Burkina Faso	32.2	43.9	NA	37.1
	Ghana	NA	51.4	53.2	49.6
	Togo	81.6	57.4	55.4	43.8
Eastern Africa	Ethiopia	34.2	23.4	11.2	12.7
	Kenya	NA	56.5	55	51.1
Southern Africa	Madagascar	68.4	71.7	78.2	NA
	South Africa	36.3	25.7	16.2	18.7
East Asia	Bangladesh	34.2	25.1	19.2	14.3
	Nepal	NA	49.9	15	NA
Southeast Asia	Cambodia	NA	NA	NA	NA
	Lao PDR	50.7	25.7	14.5	10
	Viet Nam	37	18.8	4	1.8

Source: Compiled and plotted using World Bank data (WDI data base)

The third problem of the SSA and Latin American model, which again vitiates a positive interaction between growth and poverty-reduction is that due to an extractive-model of growth, with heavy dependence upon exports of those primary commodities, is vulnerable to exogenous shocks. Thus, as global GDP growth rose in the noughties of this century, with China and India, as well as Europe and North America increasing their imports of primary commodities, the economies of SSA and Latin America boomed. But this surge began to collapse after the outbreak of the global crisis in 2008. An additional result was that the poverty reduction that Latin America saw in the noughties also came to an end. The global boom was good for poverty in Latin America, just as the global recession became a bane for it. South Africa has experienced a similar trend: poverty was falling between 1994 and 2010, but has increased since

A final reason for the poverty-elasticity of growth in both SSA and Latin America being relatively low is the very high share of informality of the workforce (See Table 6), despite the high per capita income level in the region (South Africa, Chile and Costa Rica are exceptions).

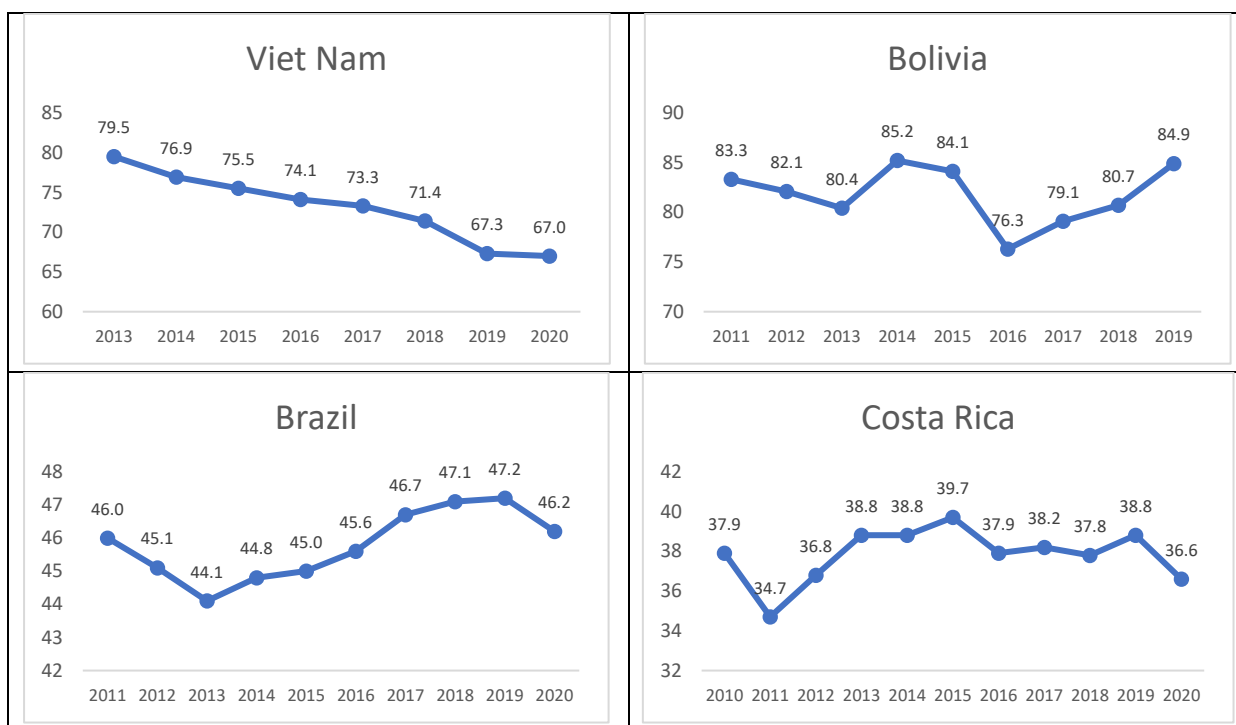
In SSA the informality is highest for any region of the world, and weakens further the poverty-elasticity of growth. Since earnings from labour are the major source of incomes, slow and volatile growth impacted employment. For Latin America where most countries are upper-middle income, the rate of informality is high, estimated at 53%. In SSA it is even higher at over 80%. The incidence of Informal employment in total employment is roughly speaking a function of the level of per capita income. This is clearly evident from Table 6 and Figure 4. Yet it is also true that there is much variation between countries in informality even at similar levels of per capita income. Second, Figure 4 also shows that some countries in Latin America as well as South-East Asia have shown significant fall in informality in this century (Vietnam, Chile, South Africa).

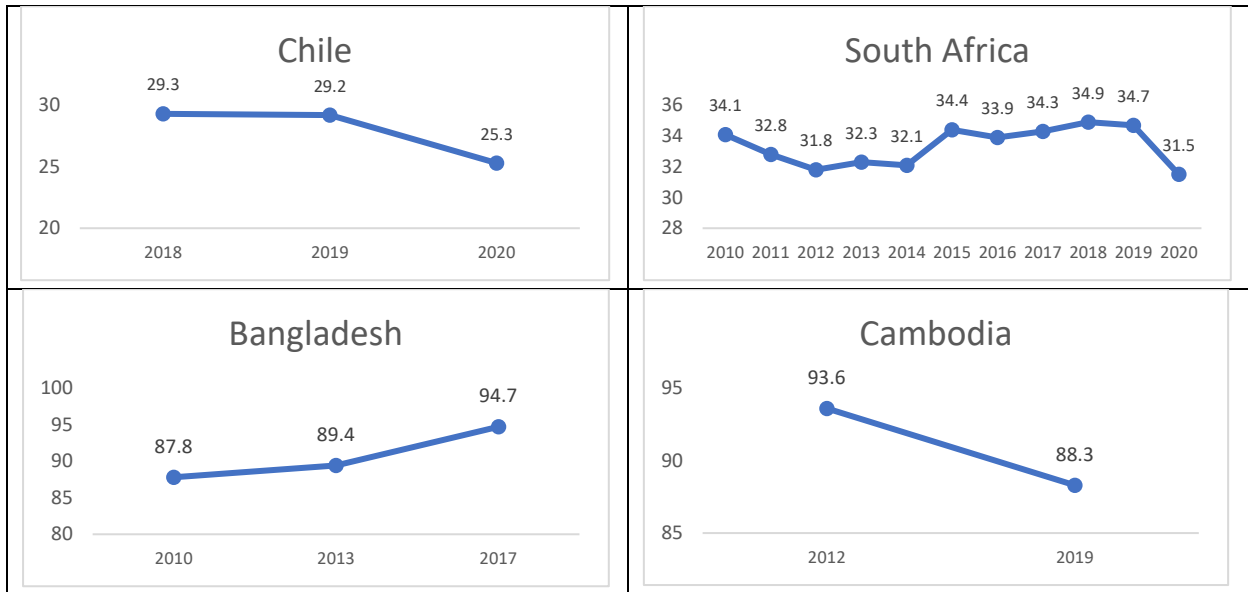
**Table 6: Incidence of Informal Employment (%) in agriculture, non-agriculture and in total workforce in the study countries**

Name of the Region/Countries		Informal Employment (%)			
		Total	Agriculture	Non-agriculture	Latest Year data available
Latin America	Bolivia	85	100	79	2019
	Brazil	46	75	43	2020
	Chile	25	37	24	2020
	Costa Rica	37	49	35	2020
West Africa	Benin	97	100	96	2018
	Burkina Faso	95	99	94	2018
	Ghana	78	98	68	2015
	Togo	90	99	85	2017
Southern Africa	Madagascar	95	99	84	2015
	South Africa	32	34	31	2020
East Asia	Bangladesh	95	100	91	2017
	Nepal	81	93	78	2017
Southeast Asia	Cambodia	88	99	83	2019
	Lao PDR	83	99	75	2017
	Viet Nam	67	99	55	2020

Source: Compiled from ILO Stat, International Labour Organization

**Figure 4: Informal Employment trends (%) in the study countries**





Source: Compiled and plotted using International Labour Organization (ILO) data.

### 3.2 The Growth-Education/Skills Relationship: Why Weak in Latin America and SSA

Skill formation is critically dependent upon state investments. The private sector in health and education has always catered to the well-off, not to the majority of the population. But the state's capacity to invest in health or education or economic infrastructure is critically dependent on the fiscal capacity of the state. However, fiscal capacity is crucially dependent upon sustained GDP growth.

The per capita GDP growth in SSA was actually stagnant over the two lost decades of 1980s and 1990s. Per capita income is directly impacted by population growth: a total fertility rate of 2.1 is required for populations to stabilize. However, population growth in much of SSA remains staggeringly high.

The volatility of GDP growth that has been the bane of SSA and Latin American societies. With volatile growth, the capacity of state to spend is limited, due to a relatively low tax to GDP ratio, given per capita incomes. The Latin American unweighted average for tax to GDP ratio had risen from 13.9% in 1990 to 22.8% (2017), though lower in Central America and Mexico at 21% (CEPAL, Social Panorama, 2019). The fact that it is rising is itself a sign of hope for the potential for the state to make the social investments needed to realize the dual synergies that drive inclusive growth.

Usman and Landry (2018) show, drawing on available data for SSA, a positive correlation between tax revenue as a percentage of GDP, government spending as a percentage of GDP, and government subsidies as a share of government spending and export diversification. The average for the 30 African countries for tax to GDP ratio stands at

6.5% in 2018; these taxes are largely relying upon the natural resources, rather than a broad tax payer base. This limits their ability to spend on basic social services.

By contrast, most East and South east Asian states invested early in their development process in school education and basic health care. The sustained growth that they experienced over the 1980s and 1990s, and even since then, becoming the Factory of the World, enabled them to sustain skill formation, which supported their growth strategy.

On all of these fronts, Latin America does relatively poorly: gross public savings are only a bit more than one-third those of emergent Asian economies, while private savings are 69% those of advanced economies and only 57% of emergent Asian economies.

Given low gross savings rates in Latin America and SSA (around 20% of GDP), which are 10-15 percentage points of GDP lower than that in Asian economies (including a low middle income country like India), it is not surprising that investment rates are lower relative to GDP, hence growth is lower (IADB, 2016; World Bank, WDI for SSA). Low national saving limits the financing available for building and maintaining productive infrastructure. Poor infrastructure, in turn, results in the inadequate provision of services such as potable water, sanitation, health, and education.

In other words, the nature of financial development and the accompanying low savings rate keeps growth low, undermining the state's capacity further to generate tax revenues. Thus, the state's investments in social or physical infrastructure is constrained, as well as its investments in health and education. Herein lies the nub of the relationship between growth and skill formation in Latin America and SSA.

### ***3.3 The relationship between Education/Skill Formation and Poverty in Latin America and SSA***

Central to a positive synergy emerging between Economic Growth, Education/Skills, and Poverty is the notion of a demographic dividend. The demographic dividend—or extra boost to the economy—focuses on the labor supply effects of changes in age structure. It can be captured if three things happen (Bloom, Canning, and Malaney 2000; Bloom and Williamson 1998). First, improvements in health status, especially child health, increase child survival and contribute to a decline in the number of children born to each family as the total number of children that families want to have decreases. The combination of higher child survival rates in one cohort and fewer children in the following cohorts produces a population bulge—a large cohort that works its way through the age structure—with large macroeconomic effects. Second, investments in health and education are higher in cohorts following the bulge. As families have fewer children, they and the government have more resources per child to invest in the education and health of the surviving

children, increasing human capital (Kalemli-Ozcan, Ryder, and Weil 2000; Schultz 2005). And the labor supply gets an additional boost, as low fertility allows more women to enter the labor force (Bloom et al. 2009). Third, an economic environment has to be fostered so that this bulge cohort can find well-paying jobs, rather than simply be unemployed or forced into low productivity work. If all three steps are successful and well timed, an economic dividend is produced as the large cohort moves into highly productive jobs, boosting family and national income. In the case of Latin America the window of opportunity to benefit from this demographic dividend is closing. According to the latest demographic projections of the United Nations (UN), the speed of ageing projected for this region over the next three decades is greater (See Figure 5)

While African demographic transitions exhibit significant differences, in part reflecting past episodes of famine and war, the continent's transition has important economic ramifications that can help define its economic potential and contribute to its emergence as a global player. However, such a demographic transition has translated into an army of unemployed youth (Table 7) and discouraged labour force.

East Asia closely parallels its economic takeoff with the demographic dividend: about one-third of the increased growth during the East Asian "economic miracle" can be attributed to the demographic dividend (Bloom, Canning, and Malaney 2000; Bloom and Williamson 1998).

In Latin America, with relatively low fertility and higher formal workforce share than in SSA, the open unemployment is naturally higher. With a high share of the working age population having secondary/higher secondary education (See Annexure 3) the open unemployment is relatively high at over 15% in every country in the R4D studies (see Table 7).

Meanwhile, Latin America is already over the period of its demographic dividend, when the share of working age population in total population is rising. At the same time, Latin American countries are well known to have among the highest income inequality for any developing region of the world. The high levels of inequality and poverty, on account of the reasons discussed above, keeps household private spending on health and education low, which prevents poor households from pulling themselves up by investing their own or their children's health and educational well-being.

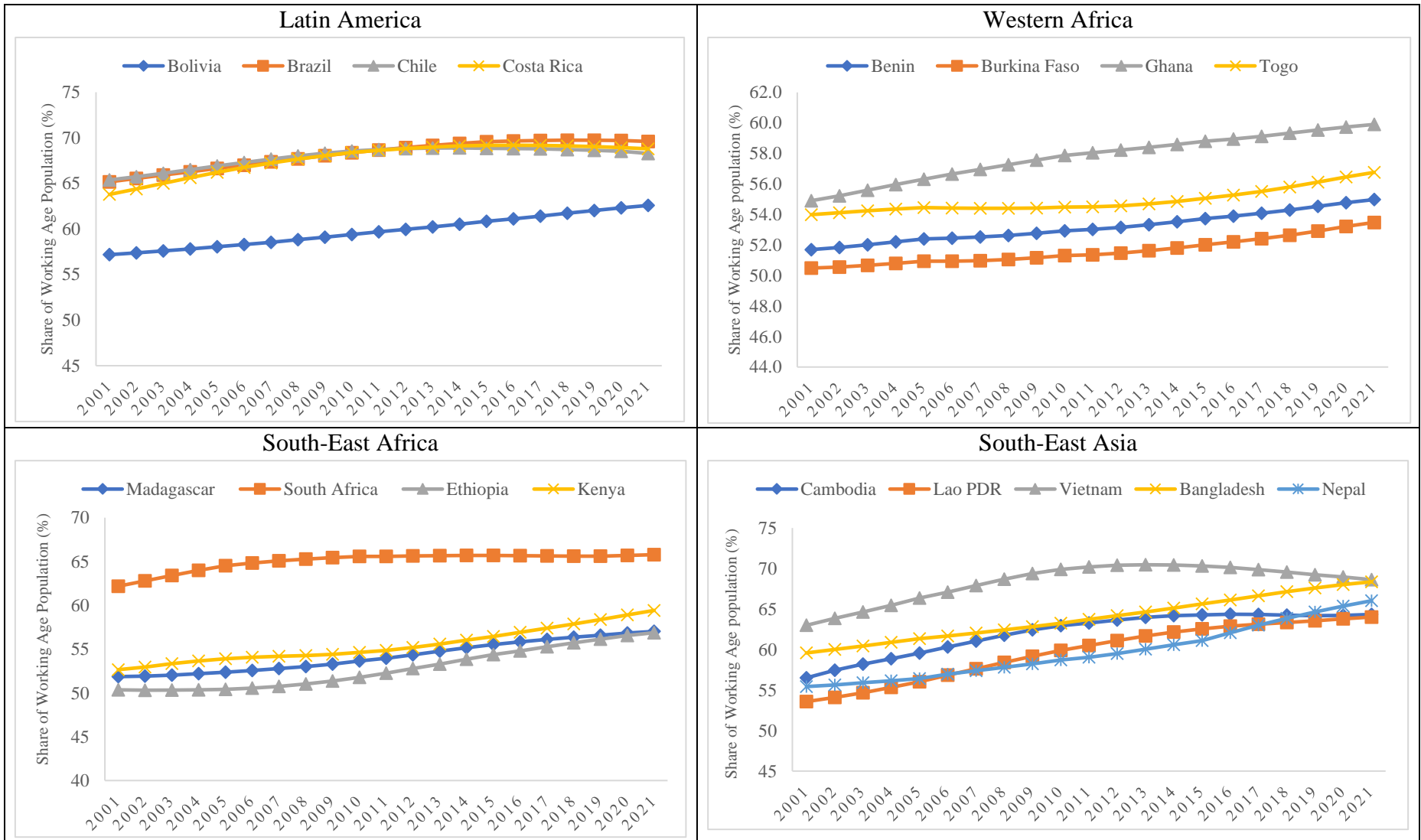
**Table 7: Scenario of youth unemployment in the study countries, 1991-2020**

Name of the Region/Countries		Youth (15 to 24 years) Unemployment Rate (%)				
		1991	2000	2010	2015	2020
Latin America	Bolivia	5.3	4.2	5.3	6.9	15.7
	Brazil	11.6	17.9	15.9	19.5	30.5
	Chile	11.9	24.6	19.1	16.1	24.9
	Costa Rica	11.2	11.3	17.3	22.6	40.9
Western Africa	Benin	1.7	1.0	2.1	4.5	3.9
	Burkina Faso	4.4	4.3	6.0	7.2	8.0
	Ghana	5.5	16.4	11.0	14.0	9.5
	Togo	7.0	7.2	4.0	4.3	9.6
Eastern Africa	Ethiopia	4.7	5.1	3.5	3.5	4.9
	Kenya	6.7	6.8	7.1	7.3	13.6
Southern Africa	Madagascar	7.8	8.5	4.9	3.3	4.5
	South Africa	48.3	52.3	50.8	50.4	59.6
East Asia	Bangladesh	5.5	9.7	6.4	10.8	14.8
	Nepal	3.2	2.9	3.2	5.7	8.1
Southeast Asia	Cambodia	1.9	2.0	1.0	0.7	0.8
	Lao PDR	5.9	4.8	1.6	2.0	2.6
	Viet Nam	4.3	5.0	3.4	6.3	7.3

Source: Compiled from World Bank's WDI data base.

To sum up, the dual synergy model in the R4D countries is not working in the interest of structural transformation in most of the countries examined. We now turn in the following section to a more detailed examination of the findings of the individual country studies.

**Figure 5: Share of working age (15 to 64 years) population (%) in study countries**



Source: Compiled and plotted using World Bank data (WDI data base).



## 4. The r4d projects: A Synthesis of findings

### 4.1. *Employment effects of Export-led growth strategies in the R4D project countries*

The findings of two R4D projects were used for this section. The *Trade and Labour Market Outcomes in Developing Countries (TLMO)* project covers four countries: Bolivia, Brazil, Ghana and Kenya (all LMICs); and Brazil (UMIC) and investigates the impact of trade integration on the creation of employment opportunities both, in the formal and informal sector to identify the policies that would moderate the negative effects of globalization and maximize its benefits. The *Employment Effects of Different Development Policy Instruments (EE)* project which covers six countries: Ethiopia, Ghana, Madagascar (all LICs); Bangladesh and Vietnam (LMICs); and South Africa (UMIC) and provides insights about the nature of policies that drive supply of and demand for labour by analysing three interlinked mechanisms which are crucial for development: technological upgrading, integration into international markets, and restructuring labour markets. As such, both projects provide some insights into factors that facilitate and hinder the integration of sectors into global value chains as well as their differential impact on firms and workers.

#### 4.1.1 *Sectoral share of output & employment: The role of agriculture led growth in job creation, its potential and limits*

A long-standing truism of development economics has been that developing countries have the highest share of the workforce in agriculture, hence kick-starting the development process requires that agriculture is dynamic. This is especially the case for LICs and LMICs, all of which have a high share in agriculture of GDP or employment (usually around 50% of GDP and even more for employment). Reducing the sectoral share of both output and employment in agriculture is a sine qua non of the structural transformation that is almost synonymous with the dual synergy model (see section 1). This is a clear empirical lesson of the East Asian economic success story (e.g. South Korea, Taiwan, China, Malaysia). If agriculture generates rising incomes, there will be a sustained source of demand for goods for the non-farm sector, which will set in motion a virtuous cycle. However, none of the UMICs have a high share of agriculture in total GDP or employment, and hence the proposition about agriculture being an important driver of economic growth holds much less importance for them (and hence productivity in industry and services, driven by innovation, acquires greater importance in driving growth, rather than new investment per se). Hence, the sectoral importance of agricultural growth in the economy is confined mainly to LICs and LMICs, and r4d offers interesting findings in respect of them.

The cultivation of cash crops (as opposed to food crops), not grown earlier, is seen as one way of raising incomes for peasants; another is that the productivity of food crop agriculture is enhanced through the use of non-farm inputs. The Nepal study (Matthys, M. L., Acharya, S., & Khatri, S. (2021) reinforces this finding. Nepal is still a LIC, and Matthys et al clearly show how transformative for incomes in rural areas has growing cardamom become in rising rural incomes in Nepal.

Commercialization was evaluated positively predominantly because it reduced physical and financial hardship, in addition to tangible improvements in other domains. However, respondents in Nepal also pointed to the limitations of commercialization in contributing to better living standards: the ultimate reduction of hardship was associated with the prospect of non-agricultural employment.

R4D's Feminization, Agricultural Transition & Rural Employment (FATE) project focuses on the production of export-led crops in four developing countries (Bolivia, Laos, Nepal, Rwanda). The production of non-traditional agricultural exports (NTAE) such as delicate spices (ginger in Laos and Rwanda, cardamom in Nepal) or nutritious grains (Quinoa in Bolivia) can generate wage employment and stimulate female employment in developing countries. These non-traditional export crops are usually both labour-intensive and high-value and often emerged as the ideal pathway out of poverty, by potentially providing employment of the most vulnerable rural populations (Douangphachanh, M., Idrus, R., Phommavong, S. & Jaquet, S. (2021); Illien, P., Pérez Niño, H., & Bieri, S. (2021).

In the case of Bolivia's quinoa, a 7000-year staple grain for Andeans in Peru and Bolivia, growing quinoa for newly emerging international markets like China has been a boon. Starting in 2018, exports of Royal organic quinoa sent to China grew by 14 times to over 590 tonnes, with the goal to reach 2000 tonnes. Growing Chinese demand meant producers expect price rises and hope to attain reasonable profit margins, especially for Royal organic quinoa, a variety that occurs only in the Andean highlands. Many producers see the "golden grain" as a way to earn living in a challenging rural economy while others worry about price fluctuations and climate change affecting the production of an ancient staple (Tschopp, M., Binggeli, B., Jimenez, E., Bieri, S., 2019).

What is, however, also clear from these studies is that export-led cash crop production in agriculture is not much of a route for escape from agricultural employment for men or women. The vast majority of women, with low levels of education and skills, have traditionally been employed in agriculture, accounting for their high labour force participation rate (LFPR) of women, with women being concentrated in agriculture in LICs and LMICs. However, women are already heavily engaged in agriculture in LICs (and LMICs). Thus, what emerges from the research is that cash crop production for exports is a means of crop diversification, inevitably not a means of ensuring greater non-farm employment for women (or for that matter men). In fact, women's heavy participation in

farm work in LICs is one important reason why majority of LICs have a high female LFPR, with little potential for escape from that kind of low-skilled work, without two conditions being fulfilled: one, better education for them; and two, faster growth of non-farm jobs that can absorb such women.

#### *4.1.2 Sectoral pattern of growth and employment: the potential of industry and services*

In the last analysis, the hope for alternative job creation for LICs and LMICs, lies in structural transformation, involving growing manufacturing and services output/employment, as Kuznets had pointed out. Ferede and Kebede (2015) demonstrate this argument effectively as part of the R4D EE project.

We illustrate the challenge in respect of utilizing the potential of industry and services that many Sub-Saharan economies with a brief case study of Ethiopia. The year 1992 witnessed a more liberalized policy regime in Ethiopia. A variety of market-based reforms were introduced to reverse the past policies. The new government adopted an overall development strategy known as Agricultural Development-Led Development Industrialization (ADLI) strategy in order to stimulate farm output and rural incomes, thereby generating broad-based growth and reduce poverty. The socioeconomic reforms and interventions have positively influenced growth and investment as growth has taken off, with double-digit growth rates recorded since 2003/04. The growth is driven by improvements in all sectors but mainly by fast growing services and agricultural sectors; the contribution of manufacturing has been limited.

The near double-digit GDP growth over the past decade came on the back of largescale infrastructural development since early 2000s; this is good from a jobs perspective, since construction is highly labour intensive in developing countries. Average annual GDP growth increased from 2.3% during the 1980s to over 10% in the period from 2003/04 to 2012/13, and even higher in more recent years. The country registered an average annual growth rate of 9.5% between 2000/01 and 2012/13, well above the population growth rate of 2.6% implying real GDP per capita increased by about 6.9%. Despite strong policy emphasis on agriculture, its contribution to overall growth has been not only limited but also declining: declined from 70.1% in 2000/1 to 33.2% in 2012/13.

The main problem is that the growth contribution of the manufacturing has remained minimal. The service sector continued to be the main engine of growth. Decomposition of aggregate demand reveals that private consumption expenditure accounted for a large share of overall demand growth between 2000/01 and 2012/13. The share of investment in GDP improved from 9.4% to 34.6% in 2012/13, due to massive investment in infrastructure by the government. The share of public sector investment increased substantially from 45.2% of total investment in 2000/01 to 96.2% in 2010/11, while the share of private investment declined over the same period.

The sectoral share of employment in agriculture has declined from 80.3% in 2005 to 72.7% in 2013, barely by 7.6 percentage points. Such a high share of agriculture in employment is not found in any country in South or East Asia. The services sector employment share increased from 13.1% in 2005 to 19.9% in 2013. The contribution of the manufacturing to total employment has remained low. It appears that Ethiopia has become a services-led economy without going through an industrial revolution and agricultural modernization.

There are a number of issues with the pattern of growth. First, this growth pattern leads in the labour market to significant problems. About 1.5 million persons are added to the labour force annually. Labour force participation rate remained high. In 2013 about 80% of working age population participated in the labour market. High labour force participation rate is common in developing economies, owing to absence of social security systems, low wages and income (ILO, 2011; Broussard et al., 2013). Male labour force participation rate has shrunk by two percentage points in 2013. One possible explanation for the decline of the labour force participation rate might be due to improved access to education, especially young female age group as they postpone entry into the labour market to pursue studies on account of the government's massive push in education.

The second issue with the pattern of growth is the predominance in the non-farm sector of large firms. Private manufacturing firms in the large and medium-sized group expanded their share of gross value of output (GVO) and value added between 2000/01 and 2010/11. The share of public firms in GVO and MVA declined and this might be due to increased participation of private sector and privatization of some of public manufacturing enterprises. The number of public establishments declined from 143 in 2000/01 to 129 in 2010/11, while the number of private establishments grew by 12% over the same period.

In 2010/11, there were actually more large private firms (over 50 employees) than medium-sized private firms (20-49 employees). The share of private establishments that employ 50 and more workers increased from 25% of total private establishments in 2000/01 to 31% in 2010/11. On the other hand, the number of smaller private firms (10-19 employees) declined from 42.3% of total private establishments in 2000/01 to 39.4% in 2010/11. Public firms were all large. Such large firms are known not to generate much employment, as the technologies they adopt are relative capital-intensive (and often import-intensive). In other words, the drop in share of smaller firms spells lower present and future job creation in the non-farm sector.

A third issue with this pattern of growth is that it barely begins to respond to labour market demands from Ethiopia's population, which is very young and predominantly rural. The proportion of the population in the 10-64 age group has increased, which led to a falling dependency ratio. The large youth population (between the age of 10 and 29 years) in urban areas and broad-based rural population pyramid indicate a challenge for job creation. The

working age population has also increased by 3.9% per year, which led to an increase of the labour force (See Figure 5)

At the same time, with the exception of some non-agro-processing manufacturing industries (e.g. chemicals, basic iron and steel, machinery and equipment and vehicles, trailers and semi-trailers), the majority of manufacturing subsectors show a declining employment per firm (Ferede and Kebede, 2015). Despite some product diversification, the country lags behind its global competitors in diversifying its manufacturing products. Overall, the Ethiopian employment problem is about the quantity as well as quality of jobs (see Table 1 for share of manufacturing in employment). The types of jobs that have been generated lack decent quality.

The shift away from agricultural employment is a basic result of increased productivity in Other sectors, especially in manufacturing. Hence, the primary focus should be to trigger investment in the manufacturing sector that can generate employment opportunities for the rapidly growing skilled work force. Key drivers of Ethiopia's recent growth include the surge in exports, public investment injection, improved productivity, and increased consumer spending. But the question is: is this strategy sustainable? There is an absence of an Industrial Policy; not surprising, therefore, that there is very little manufacturing growth.

South Africa as an upper middle-income country, experienced similar dynamics as its economy restructured away from agriculture and mining. As Edwards et al. (2015) argue, the post-Apartheid labour market has benefitted those at the top of the income and skills distribution the most and jobs and wages for those in high-skilled occupations have increased substantially relative to low-skilled occupations. Part of this is explained by between sector changes in the South African economy. Sectors which have traditionally employed large numbers of low-skilled workers – agriculture, mining and manufacturing, have been contracting and services and government employment have been rising.

#### *4.1.3 Do global value chains promote employment?*

One strategy to develop a manufacturing sector in small economies with relatively limited domestic markets in the initial stages of development is to rely on external markets, and becoming part of Global Value Chains (GVCs). Tomberger (2016) analyses Labour Income and Employment embodied in Internationally Fragmented Production Chains based on a large data set, which includes the six countries (of the R4D project): Bangladesh, Ethiopia, Ghana, Madagascar, South Africa and Vietnam. However, the vertical

fragmentation of the production chains of final goods causes new challenges for governments with respect to employment policies.<sup>5</sup>

The first important proposition about engaging in GVCs is that success in accessing international production is a function of geography. Thus, distance to the large supply-chain hubs, identified by Baldwin (2006 and 2014) as "Factory North America", "Factory Europe" and "Factory Asia", may be a decisive factor in whether a country integrates into global supply chains or not. The fragmentation of tasks along different countries still requires close contacts between head-quarter firms in high income countries and outsourced production in developing countries (see Baldwin, 2014). Bangladesh and Vietnam are close to "Factory Asia".

But the other countries of the r4d project are far away from each of the three global "factory hubs". Of the six countries only South Africa experienced an increase of foreign value added in its production. This means also that policies needed for a successful integration into global supply chains differ for these countries. Also the great recession, first after the Global Economic Crisis of 2008 and now after the Covid pandemic, may played a role in reversing the trend of increasing fragmentation of manufacturing production in developing economies. If global integration of these countries resumes again has to be seen.

Tomberger (2015) sheds light on the question how this process has affected factor incomes and employment of skilled and unskilled labour. He uses large data from a very large number of developing countries, though for R4D he focused especially on the r4d partner countries: Bangladesh, Ethiopia, Ghana, Madagascar, South Africa and Vietnam. Manufacturing production became more fragmented 1997 – 2011, though the great recession reversed this trend at least temporarily in many developing countries. Among the partner countries of the r4d project Madagascar followed this trend closely. Bangladesh, Vietnam and South Africa, however, increased the vertical fragmentation of their production over the whole period. For Bangladesh and Vietnam this can be explained by their proximity to one of the most important global hubs of value chains, East Asia.

Ethiopia, Madagascar and Ghana are far away from these hubs, which may explain to some degree their non-integration to global value chains between 2004 and 2011.

This era of international fragmentation of production was accompanied by higher demand for skilled and a decrease of demand for unskilled labour. Tomberger found this to be the

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<sup>5</sup> Data on this fragmentation processes remains limited. Tomberger (2015) contributes to the literature with the construction of a database on labour value added and employment embodied in the production of final goods and exports, accounting for globally fragmented supply chains. It is based on Global Trade Analysis Project (GTAP) input-output data and covers 25 sectors and up to 64 countries for the years 1997, 2001, 2004, 2007 and 2011 and extends comparable databases with respect to the coverage of developing countries

case whether countries became integrated to global value chains or not. On the flip side, factor income and relative employment of skilled labour has increased in high income and developing economies. These results are consistent with the predictions of Rodrik (1997) where the liberalization of capital flows decreased the bargaining power of unskilled labour.

This suggests that in a world of geographically fragmented production processes employment policies have to go beyond the manufacturing sectors. Recent literature shows that a competitive manufacturing sector is increasingly reliant on intermediates and services produced outside the manufacturing sector (see Francois et al., 2015 and Johnson and Noguera, 2012). One has just to think of the importance of communication technology which makes outsourcing of tasks possible to begin with. This has important implications for employment. For high income countries there is evidence in the literature that the loss of employment in the manufacturing sectors was more than offset by job creation in the services sector (see Baldwin and Evenett, 2012, Los et al., 2015 and Timmer et al, 2014).

#### ***4.2 Sectoral trade patterns affect quantity and quality of labour demand***

Klotz (2016) discusses the issue of structural change from a slightly different angle, by investigating the technological complexity of exports from the same six countries: Bangladesh, Ethiopia, Ghana, Madagascar, South Africa and Viet Nam.

South Africa and Vietnam are found to be the most diversified exporters in terms of both, export destinations and export products. The two countries are also found to be best integrated in international value chains. As it happens these are also the two countries in this R4D project (EE) which have developed over time higher shares of manufacturing in output and employment – which underlines the point about having an industrial policy. Technological complexity in production structures are the result of industrial complexity in domestic production structures; technological complexity cannot simply be based on participating in GVCs.

South Africa continues to be the most technologically complex exporter within this group of countries. This is also made possible by the presence by large corporate firms across the sectors, with the result that formal employment as a share of total employment is actually as high as 70%. However, the country's exports grew slowest both in terms of absolute export volumes as well as share in world exports. South Africa is also the only country which registered a stagnation, if not a decline, in the complexity of its exports over the past years. The shift-share analysis (Klotz, 2015) further suggests that the country's export competitiveness is rather low compared to the group as well as world average.

In contrast, this century Vietnam has not only quadrupled its share in world exports but also upgraded the technological complexity of its exports, particularly in the high-tech sector which is now the main driver of the country's export competitiveness. These exports

are, like in South Africa, mainly driven by large firms, where formal employment has been growing. At the same time, what we know from independent studies (see Mehrotra (2021) Vietnam paper) is that Vietnam has expanded the share of manufacturing employment significantly over time. Very significantly, at the same time, it has succeeded in reducing informality in the non-farm sector since 2011. Informality in Vietnam has fallen in the last decade because of the rapid growth of formal manufacturing, which is integrated into GVCs. However, even in Vietnam informality has not fallen in the informal sector; it has fallen overall only because formal sector manufacturing has grown.

Exports from Bangladesh, Ethiopia, Ghana and Madagascar show a slight upward trend in the technological complexity of exports but their export products continue to be predominantly labour and raw material intensive. While labour intensive manufactured products (e.g. garments) continue to be the main driver of Bangladesh's export competitiveness, the reliance on this product group made the country sensitive to relatively slowly growing world demand between 2009 and 2013. Yet, a focused industrial policy in Bangladesh has meant that the share of manufacturing in total employment in Bangladesh has risen gradually to 16%, a higher level than that found in India (11-12%), even though India has a much power diversified manufacturing sector.

Practically all the sub-Saharan economies, meanwhile, are still largely agrarian, and almost without exception are resource or agrarian-driven (Angola and Nigeria have oil; Zambia has copper; gold is produced in South Africa, Zimbabwe and Zaire; and so on). The populations are largely rural, agriculture accounts for a very high share of output and employment; and exports have a very high commodity concentration, which leads to them being highly vulnerable swings in international commodity prices (see Table 3 and 4) In both minerals-driven as well as agrarian economies employment is predominantly informal, while formality is confined to a small number of large firms.

Thus, Ethiopia, with its focus on raw products and commodities benefited from a strong world demand for these product groups. Ghana's export competitiveness continues to be driven by raw products; semi-processed and low-tech products do contribute to the performance though. Madagascar increased the technological complexity of its exports between 2001 and 2007. However, this trend reversed thereafter.

What the R4D studies suggest is that while there has been growth in the early 2000s in Africa in the run up to the global economic crisis, as commodity prices boomed, that growth soon petered out. Along with the decline in growth rates in the past decade, employment growth also stagnated. Meanwhile, the GDP growth did not last long enough to finance a structural transformation, given the education/skills related weaknesses and the human capital backlog.



#### *4.2.1 The effect of trade on employment and growth*

Can expanding trade stimulate a growth path that is sustainable both in terms of GDP and employment expansion? This question is also explored by some studies in the r4d projects. They find, as seen in the case of the six countries above, the same structural problem besets a LMIC like Bolivia (Morales and Gomez, 2015).

How does growing trade impact on employment and growth in Bolivia in a context where the informal sector weighs heavily on employment? The last years were characterized by a significant rise in export prices (2005-2014) followed by a strong drop. The main question is what happened with employment during the boom, particularly with the informal sector.

Some development economists suggest that when trade is open, there is more growth and the formal employment increases due to the migration from the informal sector. This certainly did happen in Vietnam and Bangladesh, as we noted above. However, we also noted above the pre-conditions that make such openness work in the interest of both economic growth and job expansion. In Bolivia, the increase in exports and imports increased the trade index from 46 per cent the year 2000 to 67 per cent in 2013. The literature suggests that this should imply the growth of total productivity factor (TFP). However it does not seem to have occurred because Bolivia mainly exports raw materials and imports mostly consumer goods.

The three major exports of Bolivia are gas, minerals and soya (again, note the predominance of extractive sectors or agricultural products, as seen in SSA economies). Bolivia sells gas to Argentina and Brazil in a scheme where the price is subject to international prices of a basket of hydrocarbons. In 2014 the current price was three times higher than the year 2000 and the increase of production and trading increased the value of exports about 24 times (Morales and Gomez, 2015). Between the years 2000 and 2012, minerals price grew by two times and the value of exports increased 5.3 times. Soybeans, meanwhile, contributed to the export boom with prices increasing by more than 150 per cent. Local currency appreciated by 20% between 2002 and 2014. Clearly a process of structural transformation was not working, regardless of GDP growth, nor could it transform the labour demand.

The relationship between employment, trade and other macroeconomic variables show that the trade boom boosted the formal economy, moving upwards the employment demand function resulting in decreasing unemployment even in the context of increasing wages. The real wage increases amplified the demand for consumer goods and opened new opportunities to informal retail trade sector. The informal retail trade sector was facilitated by a significant increase of imports and by the low prices of goods imported from China. This explains partially the negative correlation between the unemployment rate and the rate of growth of GDP. During the boom period, the rate of informality showed a increasing

trend, even though the GDP growth rate was increasing. Labor informality didn't decline during the period of economic boom. The currency appreciation contributes to import increase, especially of consumer goods opening new opportunities for informal workers in the retail trade sector. It is worthy to observe the positive correlation of the informality rate with trade indicators.

Unemployment recorded a significant decline from a level of 12 per cent at the beginning of this century to slightly more than 3 per cent in 2014. Besides that real labor earnings increased. All this was possible due to the increased demand for employment subsequent to the boom.

Five variables, closely related, explain the behavior of employment during this period (Morales and Gomez, 2015): exports, imports, wage policy, exchange rate and inflation rate. The boom in exports generated a significant increase in income, which was partially distributed by means of the wage policy (which resulted in formal sector wages increasing). Inflation was controlled by means of greater flow of imports, favored by a fixed nominal exchange rate and the consequent money appreciation. However, the country shows symptoms of the Dutch disease which may imply that this success story of unemployment decreasing accompanied by wage increases carry the seeds of its own destruction.

This clearly shows the dual synergy in operation: except that it is working not to keep growth and human development on a sustainable growth path, but leading to a spurt of growth that did not sustain. As we argued in Section 1 (Dual synergies for sustainable growth and human development), there are pre-conditions to countries developing a virtuous dynamic of the dual synergies. However, absent those pre-conditions, the virtuous dynamic could stall, or it could even go back in reverse into a vicious cycle. What Bolivia's case demonstrates is a case of stalling of the dynamic (rather than going into vicious spiral). What happened, by contrast, in the high-achieving East Asian economies was sustained growth over at least 15 years, combined with job generation in labour-intensive export-oriented manufacturing, which led to a virtuous cycle of human development and economic growth. Most Latin American economies, on the other hand, demonstrate a pattern of volatile growth, which fails to sustain. This volatility is determined by the extractive nature of industry, and dependence on international commodity prices growing over time; when international commodity prices fall, growth collapses.

Here too, we would remind readers of the phenomenon of dual synergies demonstrated again. There is a limit to sustaining growth with extractive industry based development model for any time longer than an export boom over which a developing country's policy makers have little control.

#### *4.2.2 The effect of trade on the quality of employment*

An additional consideration of the effect of trade integration on employment pattern is the quality of employment associated with exporting.

Brambilla and Porto (2014) find that globally, industries that ship products to high-income destinations do pay higher average wages. First, industries that ship products to high-income destination export higher quality goods (as measured by the average unit value of exports within industries). This is because high-income countries demand high-quality products. Second, the provision of quality is costly and requires more intensive use of higher-wage skilled labor. As a result, the production of higher quality products at the industry level creates a wage premium and conduces to higher average industry wages. The authors find that these relationships are stronger in rich-income countries than in less-developed countries because poor countries may lack the firm capabilities and workers skills needed to produce higher quality products. Moreover, these links are stronger in industries with a higher scope for product differentiation and quality upgrades.

In the case of South Africa, Rankin and Schöer (2013) find that, after controlling for worker and firm level characteristics, there is no significant wage premium among those that work in exporting firms. However, when differentiating between firms that export more than one third of their output (significant exporters) and others, workers in firms that export a significant amount of their output earn almost 16% more than those in firms that export less. These results are similar to Schank et al. (2007), Munch and Skaksen (2008) and Fafchamps (2009) who all find a relationship between export intensity and wages. Firms that export regionally (to the SADC) earn 13.5% less than those working for international-only exporters or firms that produce only for the South African domestic market.

These results for South African firms indicate that there is a hierarchy in wages by export destination. Even after controlling for worker and firm level characteristics, regional exporters pay less than domestic firms which pay less than international exporters. This is supportive of the quality hypothesis of Verhoogen where firms that export to markets with higher per capita incomes pay their workers more. Observing this further with similar data from other SADC countries, the results are supportive of the relationship between product quality and wages. Workers in firms exporting both within SADC and outside of SADC earn significantly more than those working in firms that focus only on the domestic market, in three of the four countries.

#### *4.2.3 Technological change and employment/inequality*

What do the R4D studies tell us about technological progress? Oberdabernig (2016) explores the employment effects of innovation in developing countries. Does innovation cause inequality and unemployment in developing countries? What does the literature tell

us about the effects of innovation and technological change on employment, demand for skills, and wages? We first examine the theoretical arguments of the effects of innovation on labor market outcomes such as employment, skill premiums, and the life span of jobs, and summarize the findings of empirical studies. Next we pay special attention to the empirical literature for developing countries. We also visit some arguments concerning the role of policy in this context.

Technological upgradation is good for growth. However, especially in the short run a country might face a painful adjustment process as its economy adapts to new production structures. This process is usually characterized by what Schumpeter (1942) calls creative destruction (see also Aghion and Howitt, 1992, 1998; Mortensen and Pissarides, 1998), in which jobs get destroyed but at the same time new employment opportunities are created. The net-effect of this mechanism of creative destruction, which is inherent in the process of technological innovation, is *a priori* unclear (Vivarelli, 2012)

From the theoretical side, economic models claim that there are counterbalancing effects of technological change on employment. On the one hand labor can be substituted by capital, which leads to a decrease in employment (substitution effect). On the other hand, due to increased productivity of labor firms can expand their production, which generates income, new demand and thus also promotes employment opportunities (scale effect). If this scale effect outweighs the substitution effect, labor-saving technological change can have employment enhancing effects, while otherwise the opposite is true.

Furthermore, technological change does not affect all workers the same way. The same reasoning from above can be expanded to different skill levels of employment. Many scholars argue that most technologies that are invented nowadays are biased in favor of skilled labor, making this type of labor more productive, while replacing less skilled labor. This stems from the observation that most technologies are developed in rich, industrialized countries, in which skilled labor is the abundant factor of production. Through technology diffusion to developing economies also these countries potentially adopt skill-biased technologies, rather than technologies that are more suitable for their factor endowments. The effect of technological change that is skill enhancing is an increase in the demand for skilled labor relative to unskilled labor, which is likely to manifest itself either in terms of higher relative wages of skilled workers, in lower unemployment rates among them, or a combination of both.

The experience of South Africa is perfect example of these dynamics. Since its reintegration into the global economy, most of the observed change in labour demand in South Africa has been driven by within sector changes. Within sectors the labour-intensity of production has been decreasing and the skills-intensity increasing. The dominant source is a substitution towards skilled workers and capital within sectors pointing to the contributing role of skill-biased technological change (Bhorat and Hodge 1999; Edwards

2002; Rodrik 2008). These structural changes have reduced the capacity of the South African economy to absorb labour, which in turn has contributed towards sustained high levels of unemployment in the post 1994 (Rodrik, 2008).

To sum up, economic theory does not provide a clear-cut answer to the question of whether either type of innovation creates or destroys employment opportunities.

Ultimately, the answer to the question of whether innovation contributes to job creation or job destruction is likely to depend on the economy of investigation, the time period analyzed and the type of labor market institutions that are in place. So what is the empirical evidence?

#### *4.2.4 Effects on skilled and unskilled labour and thus inequality*

Technologies developed in rich, industrialized countries, which are characterized by a large pool of skilled workers, are likely to complement skilled labor. For developing countries, which are often abundant in unskilled labor, the opposite is true. Yet, in developing countries foreign technologies that are developed in rich countries account for a large part of domestic productivity growth (Acemoglu and Zilibotti, 2001; Acemoglu, 2002, 2003; Keller, 2004). As a result, innovation in these countries is often skill biased, potentially creating a mismatch between the requirements of the adopted technologies and the skills of the domestic workforce. It is thus not likely to entail large beneficial effects on local labor markets, which are characterized by a huge pool of unskilled labor, and hence might imply low productivity levels in developing countries (Acemoglu and Zilibotti, 2001). In these countries “the scarcity of skilled labor can easily generate unemployment among the unskilled workers” (Vivarelli, 2012)

Indeed, a large empirical literature explains the increase in income inequality in developing countries after they opened up for international trade—a phenomenon that contradicts the predictions of the Stolper-Samuelson theorem in the Heckscher-Ohlin model of international trade—to trade-induced skill-based technological change or SBTC (see e.g. Wood, 1995; Acemoglu, 2003; Thoenig and Verdier, 2003; Zeira, 2007, for theoretical models and e.g. Meschi and Vivarelli, 2009, and Görg and Strobl, 2002, for empirical studies).

What else do we know about innovation and employment in developing countries? It is possible to distinguish between different sources of innovation—product innovation, which aims at improving existing products or introducing new products in the market, and process innovation, which aims at improving production processes. While the direct effect of product innovation is to increase employment through the creation of new employment opportunities, the indirect effect is a decrease of employment through the potential destruction of older, more labor intensive products or through the generation of market power of innovative firms, which might have adverse effects on employment.

Process innovation, on the other hand, is characterized through a direct effect in which labor is substituted by machines (substitution effect), and indirect effects that have the potential to counterbalance the decrease in employment. The indirect effects arise from a potential increase in the scale of production (scale effect), either through the generation of new employment opportunities in the capital goods sector, through a stimulation of demand arising from lower product prices and/or higher wages, or through an increase of investment by entrepreneurs that yield higher profits. Whether the direct or the indirect effects are stronger is unclear from a theoretical point of view.

In developing countries product innovation is likely to play a less important role than in Western economies because technological upgrading in the former often takes the form of embodied technological change through the import of capital goods from the latter.

Because of the same reason it is unlikely that the capital goods sector that produces machines is going to expand in developing countries as a result of technological upgrading, thus limiting the employment friendly indirect effects of process innovation.<sup>6</sup> Furthermore, in many developing countries differences in institutions, like a lower degree of competition and the weaker influence of trade unions and workers representations, might enhance demand constraints that limit these indirect effects. The importation of capital goods from industrialized countries also has important implications for employment outcomes of workers of different skill levels.

Most of the scarce studies on the effect of product and process innovation on employment in developing countries focus on Latin America and are limited to firm-level data. The picture that emerges from a survey of these studies is that product innovation, like for industrialized economies, is connected to an increase in employment (see Oberdanig 2015), while the effect of process innovation is not so clear cut. Also the overall effect of innovation on employment seems to be ambiguous in developing countries.

Finally the results of the cross-country studies by Meschi and Vivarelli (2009) and Conte and Vivarelli (2011) can be interpreted as evidence for SBTC. Meschi and Vivarelli (2009) investigate the effects of trade openness on income inequality in 65 developing countries and find that inequality is rising as a result of trade openness in middle-income countries which trade with high-income countries, while the same is not true for low-income countries. The authors attribute the finding to SBTC, which is present in middle-income countries but not in low-income countries, due to the higher absorptive capacities in the former. Applying a more direct proxy for technology diffusion, Conte and Vivarelli (2011)

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<sup>6</sup> Note that this statement holds for small economies but not for large economies with significant domestic markets (e.g. China, India, Brazil). Even for small economies, beyond the initial stages of economic growth, there remains potential for growth of the capital goods sector, which supplies both domestic firms but also export markets, as has been demonstrated by South Korea and Taiwan in the last 40 years of growth.

find that SBTC through imports of embodied technology leads to an increase in the demand for skilled labor on a sectoral level in their sample of 23 low- and middle-income countries.

Finally, the policy implication the studies draw is important. Especially in a developing country context educating individuals and providing them with the necessary skills to operate machines and to make use of new technologies makes it possible to bridge the skill-mismatch that arises by the implementation of skill-biased technologies and increases the potential to realize the positive scale effects of technological innovation. Also guided policy intervention aimed at creating demand for products that use technologies with higher potential for growth and job creation can counteract the negative employment effects of technological change (Pianta, 2000). Finally, employment generating product innovation (potentially complementing process innovation) should be actively encouraged.

#### *42.5 Employment effects due to interactions of Trade integration and labour legislation*

What is the relationship between GVC integration and labour legislation? As mentioned above, companies that are part of GVCs are more likely to comply with labour legislation and provide less precarious jobs. While this is to some extent a function of the production processes and product quality that are required to be integrated in the GVC and therefore requires more skilled workforce, GVCs also impose labour and employment standards that force exporting companies to be compliant with labour legislation (Haeberli, 2017). Hence, workers that are formally employed by exporting companies also offer better jobs. However, the interaction between GVCs and labour legislation can have different effects.

Carrere et al (2014) use trade and unemployment data for 107 countries for the period 1995-2009 and confirm that trade liberalization causes higher unemployment in countries with comparative advantage in sectors with strong labor market frictions, and leads to lower unemployment in countries with comparative advantage in sectors with weak labor market frictions.

Carrere et al's model and empirical findings help explain the apparent lack of consensus in the empirical literature regarding the impact of trade liberalization on unemployment. Autor, Dorn and Hanson (2013), Ebeinstein et al. (2009) and Pierce and Schott (2013) find that trade increased unemployment in the United States. Revenga (1997) find a similar result for Mexico, and Menezes-Filho and Muendler (2011) and Mesquita and Najberg (2000) do so for Brazil. These are all countries for which their empirical model predicts a positive and statistically significant impact of trade liberalization on unemployment, because estimates of the correlation between labor market frictions and comparative advantage in these countries are large and positive. Currie and Harrison (1997) and Hasan et al. (2012) find no impact of trade liberalization on unemployment in Morocco and India, respectively. This is again consistent with the authors' empirical results, since the correlation between comparative advantage and sector level labor market frictions is in the

statistical insignificant range for these countries. Finally, Kpodar (2007), Nicita (2008) and Balat, Brambilla and Porto (2007) find that trade liberalization led to a reduction in unemployment in Algeria, Madagascar and Zambia, respectively. This is once again consistent with their empirical results because of the large and negative correlation between labor market frictions and comparative advantage in these countries.

At the micro level, the potential conflict of creating an environment through trade liberalization or integration into GVCs that forces domestic firms to compete internationally while protecting workers is best shown in the case of South Africa. Edwards et al (2015) reflect on the trade off South Africa had to make, with progressive labour legislations and global competitiveness. South Africa introduced a suite of progressive labour market regulations in the late 1990s and early 2000s. Descriptive evidence by Rankin (2006) suggests that the costs of these laws fell disproportionately on smaller firms and the unskilled workers. Cross-country comparisons of labour regulations, such as the Global Competitiveness Report (World Economic Forum, 2014), suggest that South Africa's labour regulations are amongst the most rigid in the world which, in the light of Carrere et al (2014) findings would explain the loss of employment in various sectors that faced import competition (as described above). In Benjamin's (2016) assessment of South African Labour Law, the contention around the Employment Equity Act is discussed. On the one hand, the legacy of inequality in the workplace on race, gender and other grounds made it imperative that an Act be passed to eradicate such inequality. However, Business South Africa (BSA (subsequently BUSA)) argued that it would impact adversely on South Africa's already poor record in competitiveness, and discourage labour intensive investment and job creation. Regulations may reduce competitiveness but favour wages for skilled workers in South Africa. Edwards et al (2015) find that outcomes for smaller firms changed relative to bigger firms. Output per worker increased by relatively more for these smaller sized firms but capital-intensity did not increase as much. Instead, real average wages have risen, as has overall productivity. This suggests that the increase in Total Factor Productivity in Revenue terms (TFP-R) observed for these smaller firms may be driven by a relative increase in the share of skilled workers (and thus average wages) within these firms.

A similar contradictory condition was found in Brazil. Ponczek et al (2015) find that asymmetric information about the productivity and the history of workers can have an impact on wages and on the choice of labour contract. This impact is particularly relevant in an environment where workers are able to resort to the legal system and successfully punish a firm who chooses an informal contract and does not pay labour benefits mandated by law. They find a negative relation is found between the wage gap (difference between the wage under a formal contract and the wage under an informal contract) and the productivity of the worker. Socially constrained contracts and, in particular, laws that regulate labour contracts are supported and considered desirable in order to potentially



correct for inefficiencies caused by the excess of asymmetric information between workers and firms. The presence of active labour courts could be a less expensive way to monitor and assure that firms comply with the law. Ponczed's model has an important contribution to this debate: it suggests that this argument might not be true. This is so because in equilibrium firms react to the interference of the legal system and the surplus is reduced whenever labour contracts are disputed. This effect is particularly damaging for unskilled workers.

The implications are important. The problem is that young job seekers find it particularly difficult to signal their productivity levels to prospective employers. Finding the first job is important for the work-life trajectory of workers. But youth find it difficult to enter the job market, especially for well paid, decent jobs, in an environment where employers try to navigate through the competitive pressures of import competition and export requirements on the one hand and restrictive labour legislation on the other. Without clear ability signals of the job applicant's skill set, it becomes difficult for employers to hire new, inexperienced workers if they cannot terminate an unproductive employment relationship as described for Brazil and South Africa. Experimenting with young job seekers becomes almost impossible in this environment (Edwards et al. 2015)

In summary, the key findings of the various R4D projects with regards to the impact of export led growth on employment outcomes seem to suggest the following:

Agricultural expansion is not providing sufficient employment opportunities inevitably because there is already surplus labour in it, in most LICs and LMICs (as we have known since the work of Arthur Lewis (1954)). Hence, there is a need for the manufacturing sector to create jobs by producing goods for domestic consumption, and to support jobs through an export orientated growth strategy. However, integration into GVCs is a mixed bag: on average, GVC integration has affected employment positively and exporting companies generally tend to pay higher salaries and provide less precarious employment. At the same time, the impact of GVC integration on the distribution of decent jobs within and between sectors are not equally distributed among the workforce: dependent on the comparative advantage and the labour market frictions, GVC integration can have negative effects on employment and job security; in other words, it can, and has been known to, generate more informality to get around labour legislation.

This is generally driven by the requirements and standards that are imposed by the global players of the GVCs on producers: product innovation, product quality and labour standards. However, the overall employment effects, i.e. the general equilibrium effects of increased integration on the workforce in the country depends on a number of factors: export destination, labour market rigidity and skills distribution.

All in all, the findings suggest that successful integration into global markets with the aim to have a positive effect on employment quantity and quality requires a careful alignment of trade policy, industrial policy, labour legislation and skills development.

In the following discussion, we will examine what the two R4D projects on skills suggest.

### ***4.3 The complexities of solving skills provision***

The impact of the analysis above is that skills policy and skills provision is really important: jobs that have been created as part of an export led growth strategy are more likely to benefit the skilled portion of the workforce. The majority of youth in developing countries will remain excluded from these job opportunities as long as the distribution of their skills is misaligned with the required skill set of jobs in trading sectors. Without the correct alignment of trade policies with industrial and skills development policies, GVC integration can have negative effects on the quantity and quality of employment. But aligning skills provision with demand, or projected demand, is very complex, as shown by the two R4D projects focused on skills:

- The *Skills for Industry* project considers the conditions in which TVET can improve companies' performance and lead to more inclusive workforces.
- The *Linking Education and Labour Markets* (hereafter, LELAM) examines under what conditions Technical Vocational Education and Training (TVET) improves the income of the youth.

Together, the findings across these two projects provide insights into the challenges of building appropriate skills systems, and some directions for policy interventions.

Skills are often framed as a bottleneck problem in achieving structural transformation, although some research sees them as the result of, and not ingredient of structural transformation. Research from developed countries, as well as normative research in poor countries, suggests that they could be an ingredient in virtuous cycles. Clearly, education in its broadest sense is a crucial component of the dual synergies model, and, our analysis across the projects suggests that human development in its broadest form is neglected in policy systems in many countries.

Nonetheless, the research findings of the two skills-focused projects show how difficult achieving the appropriate skills models is. They also highlight the complexity of employer-engagement—sometimes it seems to be working even when the formal structures are not in place, and vice versa. The two skills-focused projects also consider aspects of the provision of vocational skills development from a systemic point of view. Reading across the various outputs of the two projects, insights can be gained into provision, and consequently, how access is organized. Across the two projects, insights are provided into aspects of systemic provision of TVET in Benin, Bangladesh, Cambodia, Chile, Costa

Rica, Ethiopia, Laos, Nepal, South Africa, and Vietnam. All of them remain small and rather weak provision systems.

In the discussion below, we start with considerations of employer-engagement in TVET systems. We then consider insights into access to education and skills development, and its role in supporting export-led growth and facilitating labour market mobility and economic participation.

#### *4.3.1 Employer and stakeholder engagement*

LELAM attempts to provide a systematic method for understanding the different institutions within and around TVET systems, and argues that a better understanding of the institutions that underpin TVET programs is vital to understanding the conditions under which TVET can reduce unemployment, improve employment, quality of work and income of youth. Various working papers and reports demonstrate that the extent to which TVET actors and institutions are linked, and the level of formality of these links, vary between countries, as does the level of involvement in curriculum value chain (CVC), oversight, and other quality-control related tasks.

The project developed an ‘Education–Employment Linkage Index’, which measures linkage across functions in TVET systems, and aggregates these measurements into a single index score (Caves et al. 2019; 2021). The project scores Benin relatively high, and Chile, Costa Rica, and Nepal relatively low. Benin is argued to be unique because its TVET program is said to be moving from employer-led to linked, rather than the typical employer integration into an education-based program. This could provide insights that are useful for countries with large informal economies, low formal education and training rates, and existing non-formal employer-led training. However, Bankole, Nouatin, and Essaie (2020) argue that social partners play a weak role in the dual apprenticeship programme that has been implemented since 2005 with donor support.

The Skills for Industry project also finds weak linkages between formal TVET systems and employers, which is both caused by and reinforces the low status of vocational education (Allais, Berhe, Dang, Hossain, Khammounty, Ven, and Maurer 2020; Allais, Berhe, Dang, Hossain, Khammounty, Ven, and Teutoburg-Weiss 2020). All six countries in the study have some kind of qualifications framework or map of qualifications which officially indicates that VET qualifications are equivalent to or an acknowledged alternative to academic schooling (Adamu 2015; Allais 2011a; Breitschwerdt and Sen 2017; Mia 2010; UNESCO 2018; 2020). But perceptions are not changed through policy decree—something corroborated by LELAM research as well.

This low status of VET in all six countries of the Skills for Industry research is argued to date from the colonial era, when colonial and missionary administrators advocated vocational rather than academic education to politically subject peoples (Palmer et al.

2007). In both Ethiopia and Vietnam, upper secondary education is particularly selective and prestigious, and the school curriculum is regarded as challenging and very academic. In Bangladesh, Mahmood and Akhter (2011) argue that the highly selective educational system reproduces social stratification, which is aggravated by selective higher education opportunities and a poorly resourced vocational education system. In the terminology of the LELAM project (Caves et al. 2021), these systems are all strongly education-led. Competence-based training is also explored in LELAM (Silvia 2020), but in Spanish only, so the paper was not considered in this review.

#### *4.3.2 The development of competency standards in research countries and their impact*

In the six countries of the Skills for Industry project, the development of competency standards is presented as the major mechanism for ensuring industry involvement and coordination of the system. However, actual involvement of industry is seen as more limited than the policy aspiration in all countries (Allais 2011b; Chea Sathya, Sopheak, and Seyhakunthy 2020; Comyn 2009; Geleto 2017; Viet 2017). In other words, drawing on the LELAM project, competency-standards are an insufficient or incorrect mechanism for attempting to build employer involvement in an education-led system. For example, in Bangladesh, despite extensive donor involvement in occupational standards and a qualifications framework, the ADB (2015) suggests that industry is not sufficiently involved in setting standards, development of instructional materials or testing or certification, and that courses are not designed in consultation with employers and do not reflect the standards and needs of the labour market.<sup>7</sup>

Instead, the competency-based standards approach seems to add further complexity to already complex institutional arrangements with a large number of ministries, labour organizations, employer organizations, and other structures playing some role; totally out of kilter with the small sizes of provision systems. Bangladesh appears particularly complex, with 19 ministries and 18 organizations involved in different kinds of VET provision. Similarly, in Laos and Cambodia there are many ministries involved, and this is argued to make it hard to develop a comprehensive system of governance and administration (Sam, Zain, and Jamil 2012; Un and Sok 2018). VET in Ethiopia is similarly described as uncoordinated, fragmented and unregulated (Baraki & van Kemenade, 2013). South Africa also has a complex set of regulatory institutions and labour market intermediaries, and a number of coordinating bodies (Allais, Marock, and Ngcwangu 2017). A limitation found in Benin was overlapping roles within public institutions, and

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<sup>7</sup> Mehrotra (2019) reports the same finding after analysing the Bangladesh TVET eco-system in an analysis of the country's National Skill Development Policy, 2011.

links between government and education providers were also argued to be weak—with the consequence of weak oversight.

However, collaboration between government and donor organizations, and donor organizations and education providers is seen as generally good. Chile is also described as suffering from poor links between institutional actors, but in this case, the quality of institutional linkage was argued to be due to the business sector being officially represented in formal bodies in advisory roles made up of employer and trade-union representatives, with little curriculum input. Further, the Chilean TVET curriculum is described as almost entirely controlled by the central Ministry of Education, and, despite the fact that programmes are short and change often, they are described as not meeting employers' requirements. Costa Rica and Nepal were also characterized by weak links between government and business institutional actors, and with little input into the curriculum from employers. Nepal also is argued to suffer from weak coordination at a government level.

#### *4.3.3 Organization of provision systems in terms of access*

We then consider new insights from the projects about how access to education and skills development is organized.

The Skills for Industry project considers six countries (South Africa, Ethiopia, Lao PDR, Cambodia, Bangladesh, Vietnam), and analyzes the formal systems for provision of vocational skills development (VSD), using the dimensions of variation along which Technical and Vocational Education and Training (TVET) systems differ in wealthy countries (Allais, Berhe, Dang, Hossain, Khammounty, Ven, and Teutoburg-Weiss 2020; Allais, Kgalema, et al. 2020; Allais, Berhe, Dang, Hossain, Khammounty, Ven, and Maurer 2020; Hossain 2017; Ven and Sry 2017; Berhe, Gebresas, and Atsebha 2018; Allais et al. 2017; Khammounty et al. 2017; Dang and Nguyen 2017).

The six countries are found to be extremely similar: they all have very low enrolments in TVET relative to general senior secondary school and university enrolments; they all are primarily school- or college-based provision systems with consequent perceptions of skills mismatches and TVET provision that does not meet employers' needs; and they are all low status. Primary enrollments are close to universal in all six countries, while lower secondary enrollments had, in 2017, reached 100% in South Africa and Vietnam, just under 90% in Bangladesh, just under 79% in Laos, just over 69% in Cambodia, and only just over 43% in Ethiopia (see Table 8) These further decline for upper secondary enrollments, with only South Africa reflecting universal enrollments, and Ethiopia only at around 18% of the appropriate age group enrolled.

Vocational enrolments are considerably lower than enrolments in general education in all six countries—from around 12% in Bangladesh to about 2% in Cambodia. It is clear that in all six countries, academic schooling is by far the preferred choice for both junior and

senior secondary education, despite serious weaknesses in the school systems of all countries. The vast majority of TVET enrolments are offered through education provider-based systems—schools, colleges, or institutes—with apprenticeships forming a tiny percentage of formal vocational offerings.

Employers are minimally involved in offering TVET. Consequently, in all six countries vocational education is seen as having weak linkages with industry with low investment and support; inadequate work-placement for students (Ethiopia is to some extent different here); a mismatch between what TVET institutions produce and what labour markets seem to demand; and inadequate industry experience of lecturing staff. All countries have official documents suggesting that there is demand for skilled workers, but that TVET institutions are not producing these—whether of sufficient quality or quantity (Government of Bangladesh 2013; Mia 2010; Allais 2011a; Yok, Chrea, and Pak 2019; Phoumilay 2019; Tuan and Cuong 2019).

A major issue for consideration in skills policy for developing countries, and an issue with implications for who accesses education and training, is the nature and role of formal versus informal provision of skills, and the extent to which access to either does or does not assist in labour market access. Both projects start from an existing research base that argues for skills as a mechanism to support learners to access labour markets, although, there is little evidence that lack of skills is the major obstacle to access to informal work. Both projects provide some insights into this conundrum, although in the main, they highlight the importance of the issues, and the difficulty of resolving them, more than offering substantive policy directions.

They both provide insights into the lack of systematic provision of skills for informal work. For example, Baral (2020a), a publication from LELAM, shows that in the Nepali TVET system there is little focus on informal skills provision, and argues that the system does not value the contribution of local communities and institutions, industries, and enterprises in the development of skills. Another publication estimates that 80% of Nepalese workers acquire their occupational skills during their work (Baral 2020b). In Benin most people work in the informal sector, and are trained in the informal sector (Bankolé 2020).

However, there are large gaps between what policy makers see as desirable—such as a principle of duality in training—and how this informal skills acquisition takes place, and there is little collaboration between training providers and master craftspeople. Further, the training assessments that have been introduced are perceived as undermining the skills achieved under the masters’ supervision. Emerging findings from the Skills for Industry project confirm a very strong role for informal on-the-job learning, and a small role for formal provision of TVET in terms of how the workforce obtains its skills; this is despite ‘formal provision’ of ‘non-formal’ skills in many of the countries across the two projects

(Allais, Berhe, Dang, Hossain, Khammounty, Ven, and Maurer 2020; Bankolé, Nouatin, and Esaïe 2020; Bankolé 2020).

**Table 8: Upper secondary education completion rate (%) in the study countries**

Name of the Region/Countries		Upper secondary education completion rate (%)			
		<i>During 2000</i>	<i>Mid-noughties</i>	<i>During 2010</i>	<i>Mid or late Twenty Tens</i>
Latin America	Bolivia	47	59	67	76
	Brazil	47	55	66	67
	Chile	36	38	46	58
	Costa Rica	67	80	86	NA
Western Africa	Benin	4.1	9.2	14.7	8.4
	Burkina Faso	4.8	2.7	3.9	NA
	Ghana	4.5	6.6	27.6	35.7
	Togo	0.8	9.4	9.7	21.3
Eastern Africa	Ethiopia	4.9	8.6	12.2	13.1
	Kenya	24.7	24.7	26.5	42.3
Southern Africa	Madagascar	NA	11.8	5.5	15.3
	South Africa	NA	NA	49.2	48.5
East Asia	Bangladesh	10.5	12.7	13.4	29.4
	Nepal	5.4	6.9	NA	NA
Southeast Asia	Cambodia	4.4	10.4	17.0	21.2
	Lao PDR	11.9	19.3	24.6	31.1
	Viet Nam	16.4	35.6	48.4	55.1

Source: Compiled from World Bank's Education Statistics -All Indicators, database

## 5. Policy implications

The studies certainly don't provide silver bullet policy solutions. However, they do start to give directions for policy. For example, Bolli, Parajuli, and Renold (2019) argue that financing arrangements in Nepal could improve with more clarity about the distinction between formal programs and non-formal courses, and a better analysis of the institutional framework for formal and non-formal offerings; the main point is that incentive systems would also have to be designed differently. Allais et al (2021) make a similar argument about financial incentive structures in South Africa, arguing that there needs to be much better coordination with industrial policy, and alignment in incentives across skills and industrial policy.

Ghisletta, Kemper, and Stoeterau (2020) emphasize that on their own, both in-classroom and workplace-based training are less effective than a combination. Allais et al (2021) similarly emphasize the importance of funding and policy mechanisms that are more cognisant of the full range of different ways in which workers are trained, and the ways in which they support each other, as opposed to seeing different types of training as stand-

alone interventions. Both projects reveal the importance of looking at ways in which labour markets shape provision systems and ways in which TVET is valued.

For example, Ghisletta, Kemper, and Stoeterau (2020) emphasize that training has a stronger effect on human capital accumulation in wealthy countries, but in poor countries it is more likely to act as a signalling and screening device, while Allais, Berhe, Dang, Hossain, Khammounty, Ven, and Maurer 2020 similarly show that labour markets with small formal sectors lead to screening and signalling dominating educational provision. They show that the six countries in the study are within a similar range of human development indicators, and they have very high levels of vulnerable employment (five of the countries), or unemployment (South Africa).

The most important point seems to be that five of the countries (again with South Africa as the exception) have very low unemployment, and extremely high levels of informal/casual survivalist work. The shares of informal employment, according to the ILO<sup>8</sup> is 94.7% in Bangladesh, 93.57% in Cambodia, 82.88% in Laos, and 82.88% in Vietnam (see Figure 4 on informality). It is lower in South Africa (35.32%); instead, what is visible in South Africa is exceptionally high levels of unemployment, even before the devastation of the COVID 19 pandemic. They argue that formal TVET systems seem to be shaped by one dominant aspect of labour markets in the six countries of their study—small formal sectors—and consequently look very similar to each other, when compared against the dimensions in which TVET systems in wealthy industrialized countries look very different to each other. They further argue that the failure of TVET to attract students, and of TVET graduates to be attractive to employers, despite numerous policy interventions to involve employers and improve coordination, suggests that the context of labour markets with small numbers of stable well-paying jobs, and dramatic educational expansion, makes building strong large TVET systems very difficult.

LELAM findings (Bolli, Parajuli, and Renold 2019) show that while formal education has increased substantially, formal sector employment has remained relatively stable. Individuals with tertiary qualifications are twice as likely to be employed in the formal sector than without completed primary education; 22% more likely than those with completed secondary education. Further, about 50% of this formal sector employment is government and government-related work. This relationship has been stable for some time, except that primary and secondary education have become less likely to lead to formal sector employment over time, in line with research findings in many other countries (Carnoy 2019).

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<sup>8</sup> Accessed 3<sup>rd</sup> March 2020.



The Skills for Industry researchers draw on research which argues that labour markets with very limited numbers of rewarding jobs can increase intense positional competition for credentials, particularly in the context of mass expansion of schooling (Carnoy 2019; Collins 1971; Bills 2003). Positional competition for credentials tends to have negative effects on TVET as employers tend to hire potential workers with secondary education, seeing them as having more potential as they have been more successful to-date; professional and higher-level jobs are filled with graduates (Allais 2020b; 2020a). This can reinforce low labour market prospects for TVET graduates, even when they do find employment of some kind—as do most people in five of the six countries in our study. A massive gulf between winners and losers in labour markets, with a tiny pool of winners, also reinforces positional competition.

Such a gulf is certainly visible in Ethiopia, where wages for graduates are dramatically higher than for non-graduates (Zinabu 2019) and in South Africa where inequality is very high (Bhorat, Cassim, and Tseng 2016). By contrast in Laos and Vietnam wages are dramatically more compressed (NIVT 2017). However, in Cambodia, Laos, and Vietnam, jobs have not expanded for technicians, and in Vietnam, wages for technicians have not grown in recent years, and wage inequality has grown. In all three countries Morlok et al (2020) find growth at the lowest and highest occupational levels, suggesting a lack of labour market rewards for graduates of VET programmes in three industrial sectors over a recent five-year period.

Graduate unemployment corroborates a picture of positional competition for credentials. Unemployment in Vietnam is very low, but, according to an official report (NIVT 2017), 39.52% of unemployed people had elementary and higher qualifications, and of these, the highest number of unemployed were those with university degrees. Ethiopia also experiences graduate unemployment (Zinabu 2019).

The Skills for Industry research points out limitations in previous donor and development partner agendas. This is particularly argued in relation to the emphasis on competency-based training reforms and stakeholder-based governance structures, as the set of policies particularly amenable to policy borrowing, despite lack of evidence in its favour (Allais 2016; 2017; Evans 2020; Gessler and Peters 2020; McGrath 2012). They cite Gessler and Peters (2020) who argue that donors and development agencies favour competency-based training reform because of the apparent simplicity of this approach, which they further argue is actually over-simplification, and this same logic may explain its appeal to governments even in the absence of donor pressure.

Nonetheless, Maurer (2012) argues that donors have not been the dominant force in TVET in Bangladesh. Further, Ethiopia and Vietnam are two countries that maintain policy autonomy and keep donors at an arm's length. And while this policy convergence explains the prevalence of a particular approach to TVET reform, it does not explain other aspects

of the similarities between countries—more specifically, why TVET remains so small and low status, given the difference in the composition of economies as well as industrialization trajectories, which should be leading to different skills requirements and different labour market rewards for TVET graduates.

Of course there are many differences in labour market dynamics across the countries. For example, in Cambodia, in general labour demand exceeds supply, and TVET graduates do find employment (Yok, Chrea, and Pak 2019). Similarly, Vietnam has a high rate—80%—of job placements of TVET graduates according to official sources (NIVT 2017). In Laos similarly TVET graduates do find employment, but Phoumilay (2019) argues that most of them are employed in the public sector. And there are many differences in terms of hiring practices, regulation, collective bargaining, and so on—all factors that the comparative literature on VET suggests are important in understanding differences in formal VET provision.

But what is common across the six countries is small formal sector employment and high numbers of informal, casual, employment or unemployment. What is also consistent across the countries is that the education profile of those employed in formal sectors is substantially higher than those working in informal work or who are unemployed. For example, in Vietnam, among the segment of the labour force with professional qualifications (21% of the total labour force), 44.7% had university degrees and 15.8% college degrees, 24% intermediate degrees, 15.6% elementary certificates, and this is the bulk of formal sector employment (NIVT 2017).

Given that VET systems in wealthy industrialized countries are a product of political and economic arrangements it seems more likely that VET in developing countries might start to be more successful, even if at a small scale, if industrial and sectoral economic development strategies incorporated focused and customised aspects of VET. Instead, current systems seem to aim at diverting the increasing number of secondary school completers from university education, while maintaining state legitimacy by offering educational options for them. Certainly, individuals and families appear to perceive VET in this way—as a second-rate educational alternative, as opposed to as preparation for skilled and rewarding work, reinforcing vicious cycles of low quality and low status.

Nonetheless, the projects together also suggest that the negative perceptions of research findings may be overstated. For example, Ghisletta, Kemper, and Stoeterau (2020) argue that because training interventions can to some extent be regarded as "second-chance" investments for young people from disadvantaged backgrounds, and therefore, arguments for the ineffectiveness of training interventions in poor countries may not hold. They argue for the need for a long-term perspective, because many interventions stop after one or two pilots, discouraged by initial findings, but that the long term benefits may then be missed. This is an important message for donors and development partners. Similarly, de Amesti,

Bordòn, and Bolli (2021) find that dual training is a net cost for companies in Chile, and yet they are satisfied—which, they argue, could imply that the trainees become more productive, off-setting costs.

All of the findings above are intertwined with issues of labour demand, skills development, access to skills development programmes, and the subsequent impact on poverty and inequality (our priority SDGs). However, causal relationships and simple solutions do not jump out of the research findings to-date. Equally unclear are linkages to export-led growth, and neither project has yet provided extensive insight into labour market mobility and the facilitation of economic participation.

One of the substantial contributions of the LELAM project has been the development of a theoretical framework to measure the social institutions of TVET, indices that capture the extent and quality of institutional linkages and youth labor market situations, and assessments of system linkages and effectiveness of new reforms and programs in the partner countries. But neither project can isolate ways in which skills interventions have really been able to support export-led structural economic transformation; if anything, preliminary findings from the Skills for Industry project suggest that it is sectors with strong linkages that require skills, and therefore, are more active in training. Here, the research seems to suggest that product and process innovation affect demand for skilled workers, which leads to more training, but not that isolated skills interventions themselves supported companies or sectors to upgrade. Both projects suggest that a focus on integration with economic actors and economic and industrial development strategies is important.

## **6. Open questions requiring further research**

We close this synthesis of the research findings of the R4D projects examined, by suggesting a series of open questions that require further research. These open questions emerge from the preceding analysis.

- Are these 18 r4d economies transforming structurally in terms of output and employment, even though they might have demonstrated GDP growth in recent times? This question remains unanswered by the studies. They don't answer it, because they don't ask that question.
- Second, the studies do not address the second most important issue: are they generating non-farm jobs fast enough to absorb all their young and increasingly better educated youth, but also their poorly educated and unskilled workforce?
- What are the social and cultural factors that could support building industrial capabilities?
- How can skills development best be provided for young people to participate in export-oriented manufacturing sectors?

- How can skills interventions be better integrated into agricultural economic development plans, especially agricultural processing and value-adding activities?
- To what extent and which types of skills and knowledge are gaps for informal work, if any? How best can they be provided?
- What education frameworks/ skills development structures need to be in place for sectors and companies to engage with export led growth strategy? What are the obstacles?
- How can companies support better integration of education provision within industrial strategies and planning?
- How can countries and companies be supported to do better analysis of current and emerging skills needs as well as medium to long term skills needs, and plan better on meeting these needs?
- What is the correct sequence of policies to ensure a proper alignment of trade, industrial and skills development policies? Does a successful trade and industrial policy framework rely on an existing skill set or can they be implemented concurrently?

## References

- Acemoglu, D. (2002). Technical change, inequality, and the labor market. *Journal of economic literature*, 40(1), 7-72.
- Acemoglu, D. (2003). Labor-and capital-augmenting technical change. *Journal of the European Economic Association*, 1(1), 1-37.
- Acemoglu, D., & Zilibotti, F. (2001). Productivity differences. *The Quarterly Journal of Economics*, 116(2), 563-606.
- Adamu, A. Y. (2015). The contribution of credit accumulation and transfer system: Lessons to the Ethiopian National Qualifications Framework. *Bahir Dar Journal of Education*, 15(1).
- Allais, S. (2016). Occupational standards in the English-speaking world: A dysfunctional product for export. *Education policy. Mapping the landscape and scope*, 435-459. edited by Sandra Bohlinger, T Dang, and M Klatt. Frankfurt: Peter Lang.
- Allais, S. (2017). Labour market outcomes of national qualifications frameworks in six countries. *Journal of education and work*, 30(5), 457-470.
- Allais, S. (2020). Skills for industrialisation in sub-Saharan African countries: why is systemic reform of technical and vocational systems so persistently unsuccessful?. *Journal of Vocational Education & Training*, 1-19. <https://doi.org/10.1080/13636820.2020.1782455>.
- Allais, S. (2020). Vocational education and inequalities in transitions from education to work in three African countries. In *Inequality studies from the Global South* (pp. 141-160). edited by David Francis, Imraan Valodia, and Edward Webster. London and New York: Routledge.
- Allais, S. M. (2011). The changing faces of the South African national qualifications framework. *Journal of education and work*, 24(3-4), 343-358.
- Allais, S. M. (2011). The impact and implementation of national qualifications frameworks: a comparison of 16 countries. *Journal of education and work*, 24(3-4), 233-258.
- Allais, S., Berhe, H., Dang, V.H., Hossain, A., Khammounty, B., Ven, S., and Maurer, M. (2020). *Contextual Factors Which May Affect Skill Formation in Six Developing Countries: Economy and Industrial Trajectory: The Surprising Similarity of TVET Systems in 6 Very Different Countries*. Skills for Industry Working Paper G2. Zurich: Zurich University of Teacher Education.
- Allais, S., Berhe, H., Dang, V.H., Hossain, A., Khammounty, B., Ven, S., and Teutoburg-Weiss, H. (2020). *Contextual Factors Which May Affect Skill Formation in Six Developing Countries: Economy and Industrial Trajectory*. Skills for Industry Working Paper G3. Zurich: Zurich University of Teacher Education.
- Allais, S., Kgalema, V., Marock, C., Ramulongo, N. and Sibiya, T. (2017). *Country Study: South Africa. Overview of the Recent Political History, Economic Development and VSD Initiatives*. Background paper for the Skills for Industry project. Zurich and

- Johannesburg: Zurich University of Teacher Education and Centre for Researching Education and Labour, University of the Witwatersrand.
- Allais, S., Kgalema, V., Marock, C., Schöer, V., Sibiyi, T., and Ramulongo, N. (2020). *TVET, Skills, and Company Transformation and Growth Insights from a Company Survey in Three Manufacturing Sectors in South Africa*. Skills for Industry Working Paper No R2. Johannesburg and Zurich: The Centre for Researching Education and Labour and Zurich University of Teacher Education.
- Allais, S., Marock, C., & Ngcwangu, S. (2017). Planning, plumbing, or posturing? Explaining the weakness of human resource development structures and policies in South Africa. *Journal of Education and Work*, 30(1), 13-25.
- Allais, S., Schoer, V., Marock, C., Kgalema, V., Ramulongo, N., & Sibiyi, T. (2021). Rethinking 'supply and demand' of technical and vocational education and training: insights from a company survey in three manufacturing sectors in South Africa. *Journal of Education and Work*, 34(5-6), 649-662.
- Amesti, J., Bordòn, P., and Bolli, T. (2021). *Dual TEVT Education in Chile: Why Do Companies Train Students?* LELAM-TVET4INCOME Working Paper Series, No. 22. Zurich and Santiago: Swiss Federal Institute of Technology and Universidad Alberto Hurtado.
- Araujo, L., Ponczek, V., & Souza, A. P. (2016). Informality in an economy with active labour courts. *Applied Economics*, 48(30), 2868-2882.
- Arthur, L. W. (1954). Economic development with unlimited supplies of labour. *The Manchester School*, 22(2), 139-191.
- Baldwin, R. (2014). WTO 2.0: Governance of 21st century trade. *The Review of International Organizations*, 9(2), 261-283.
- Baldwin, R. E. (2006). Multilateralising regionalism: spaghetti bowls as building blocs on the path to global free trade. *World Economy*, 29(11), 1451-1518.
- Baldwin, R. E., & Evenett, S. J. (2012). Value creation and trade in 21st century manufacturing: What policies for UK manufacturing?. *The UK in a Global World*, 4, 71-128.
- Bankolé, R. A., & Nouatin, G. S. (2020). Dual Apprenticeship in Benin: Between Theory and Practice. *African Educational Research Journal*, 8(1), 46-56.
- Bankolé, R., Nouatin, G.S., and Esaïe, G. (2020). *The Dual Apprenticeship in Benin: Strategic Actors and Roles*. LELAM Working Papers, No. 18, January 2020. Zurich and Abomey-Calavi: ETF and Université Abomey-Calavi.
- Baraki, A. H., & van Kemenade, E. (2013). Effectiveness of technical and vocational education and training (TVET): Insights from Ethiopia's reform. *The TQM Journal*. 25 (5), 492-506. <https://doi.org/10.1108/TQM-11-2012-0099>
- Baral, D. P. (2020). Developing a Typology of Informal Skills Learning Places in Nepal. *Journal of Training and Development*, 5, 3-15.

- Baral, D. P. (2020). Positioning Informal Skills Learners in TVET System of Nepal. *Journal of Education and Research*, 10(1), 32-57.
- Benjamin, P. (2016). *South African Labour Law: A Twenty-Year Assessment*. r4d Working Paper 2016/06, Bern: World Trade Institute, University of Bern.
- Berhe, H., Gebresas, A., and Atsebha, M. (2018). *Country Study: Ethiopia. Overview of the Recent Political History, Economic Development and Vocational Skills Development Programmes*. Report prepared for the Skills for Industry project. Zurich: Zurich University of Teacher Education.
- Bhorat, H., & Hodge, J. (1999). Decomposing shifts in labour demand in South Africa. *South African Journal of Economics*, 67(3), 155-168.
- Bhorat, H., Cassim, A., & Tseng, D. (2016). Higher education, employment and economic growth: Exploring the interactions. *Development Southern Africa*, 33(3), 312-327.
- Bills, D. B. (2003). Credentials, signals, and screens: Explaining the relationship between schooling and job assignment. *Review of educational research*, 73(4), 441-469.
- Bloom, D. E., & Williamson, J. G. (1998). Demographic transitions and economic miracles in emerging Asia. *The World Bank Economic Review*, 12(3), 419-455.
- Bloom, D. E., Canning, D., & Malaney, P. N. (2000). Population dynamics and economic growth in Asia. *Population and development review*, 26, 257-290.
- Bloom, D. E., Canning, D., Fink, G., & Finlay, J. E. (2009). Fertility, female labor force participation, and the demographic dividend. *Journal of Economic growth*, 14(2), 79-101.
- Bolli, T., Parajuli, M. N., & Renold, U. (2019). Changes in the Relationship Between Formal Education and Formal Employment Sector in Nepal Between 1995 and 2014. *Journal of Education and Research*, 9(2), 49-73.
- Brambilla, I, Chauvin, N.D., and Porto, G.G. (2014). *Wage and Employment Gains From Exports Evidence from Developing Countries*. R4D working paper WP-2014-10, Trade and Labour Market Outcomes in Developing Countries.
- Brambilla, I., & Porto, G. G. (2016). High-income export destinations, quality and wages. *Journal of International Economics*, 98, 21-35.
- Breitschwerdt, L., & Sen, V. (2017) Implementing National Qualifications Frameworks: Difficulties in Cambodia and Germany. *Adult Education and Work Contexts: International Perspectives and Challenges*, 101. <https://doi.org/10.3726/b12114>.
- Camacho Calvo, S. (2020). Notions and evaluation practices based on the approach for competences implemented in the Professional Technical Colleges of Costa Rica. *Actualidades Investigativas en Educación*, 20(2), 201-239.
- Canning, D., Raja, S., and Yazbeck, A.S. (2015). *Africa's Demographic Transition : Dividend or Disaster?*. Africa Development Forum;. Washington, DC: World Bank and Agence Française de Développement. World Bank. <https://openknowledge.worldbank.org/handle/10986/22036>

- Carnoy, M. (2019). *Transforming comparative education: Fifty years of theory building at Stanford*. Stanford University Press.
- Carrere, C., Fugazza, M., Olarreaga, M., and Robert-Nicoud, F. (2014). *Trade in Unemployment*. R4D working paper WP-2014-5, Trade and Labour Market Outcomes in Developing Countries.
- Caves, K. M., Ghisletta, A., Kemper, J. M., McDonald, P., & Renold, U. (2021). Meeting in the middle: TVET programs' education–Employment linkage at different stages of development. *Social Sciences*, 10(6), 220.
- Caves, K. M., Ghisletta, A., Kemper, J.M., and Renold, U. (2019). *Meeting in the Middle: TVET Programs' Education-Employment Linkage in Developing Contexts*. LELAM Working Papers, vol. 3. Zurich: ETH.
- Chea, S., Sopheak, S., and Seyhakunthy, H. (2020). *Competency-Based TVET in Cambodia: Promise and Reality*. Working Paper Series No. 124. Phnom Penh: CDRI. <http://rgdoi.net/10.13140/RG.2.2.36509.13289>.
- Collins, R. (1971). Functional and conflict theories of educational stratification. *American sociological review*, 1002-1019.
- Comyn, P. (2009). Vocational qualification frameworks in Asia-Pacific: a cresting wave of educational reform?. *Research in Post-Compulsory Education*, 14(3), 251-268.
- Conte, A., & Vivarelli, M. (2011). Imported skill-biased technological change in developing countries. *The Developing Economies*, 49(1), 36-65.
- Currie, J., & Harrison, A. (1997). Sharing the costs: the impact of trade reform on capital and labor in Morocco. *Journal of Labor Economics*, 15(S3), S44-S71.
- Dang, V.H., and Nguyen, L. (2017). *Country Study: Vietnam. Overview of the Recent Political History, Economic Development and VSD Initiatives*. Background paper for the Skills for Industry project. Zurich and Ho Chi Minh City: Zurich University of Teacher Education and Ho Chi Minh University of Technology and Education.
- Dávalos, J. (2015). *Trade openness effects through price channels on firms's informal employment: The case of Peru*. R4D working paper WP-2015-4, Trade and Labour Market Outcomes in Developing Countries.
- Douangphachanh, M., Idrus, R. B., Phommavong, S., & Jaquet, S. (2021). Agriculture transition and women's decision-making power in coffee-farming households in Lao PDR. *Journal of Southeast Asian Studies*, 26(1), 49-71.
- Edwards, L., Flowerday, W., Rankin, N., Roberts, G., and Schöer, V. (2015). *South Africa Country Report*. r4d Working Paper 2015/4, Bern: World Trade Institute, University of Bern.
- Edwards, R. (2002). *Changing places?: Flexibility, lifelong learning and a learning society*. Routledge. <https://doi.org/10.4324/9780203132029>
- Evans, K. (2020). Comparative vocational education and training research: What purposes does it serve?. In *Comparative vocational education research* (pp. 3-19). Springer VS, Wiesbaden.



- Fafchamps, M. (2009). Human capital, exports, and earnings. *Economic Development and Cultural Change*, 58(1), 111-141.
- Ferede, T., & Kebede, S. (2015). Economic growth and employment patterns, dominant sector, and firm profiles in Ethiopia: Opportunities, challenges and Prospects. *Bern: Swiss Programme for Research on Global Issues for Development*. R4D Working Paper 2015/2, World Trade Institute.
- Francois, J., Manchin, M., & Tomberger, P. (2015). Services linkages and the value added content of trade. *The World Economy*, 38(11), 1631-1649.
- Geleto, L. (2017). Technical vocational education training institute curriculum development in Ethiopia. *Journal of Education and Vocational Research*, 8(3), 16-28.
- Gessler, M., & Peters, S. (2020). Competency-based education and training in Namibia: Educational transfer as imitation. In *Comparative Vocational Education Research* (pp. 113-130). Springer VS, Wiesbaden.
- Ghisletta, A., Kemper, J., & Stoeterau, J. (2021). *The Impact of Vocationally Oriented Training on Youth Labor Market Outcomes in Low-Middle- and High-Income Countries. A Meta-Analysis*. LELAM Working Papers, vol. 20. Zurich: ETH.
- Görg, H., & Strobl, E. (2002). Relative wages, openness and skill-biased technological change. *Openness and Skill-Biased Technological Change (October 2002)*.
- Government of Bangladesh. 2013. *Implementation Manual: National Training and Vocational Qualifications Framework*. Dhaka: Government of Bangladesh/International Labour Organization/European Union.
- Gyeke-Dako, A., Oduro, A. D., Turkson, F. E., Baffour, P. T., & Abbey, E. N. (2017). Ghana's Participation in Global Value Chains: The Employment Effects. *Zurich: Swiss National Science Foundation*.
- Häberli, C. (2017). Labour Standard Enforcement through Economic Treaties. *Available at SSRN 3090402*.
- Hasan, R., Mitra, D., Ranjan, P., & Ahsan, R. N. (2012). Trade liberalization and unemployment: Theory and evidence from India. *Journal of Development Economics*, 97(2), 269-280.
- Hossain, A. (2017). *Country Study: Bangladesh. Overview of the Recent Political History, Economic Development and VSD Initiatives*. Background paper for the Skills for Industry project. Zurich and Daka: Zurich University of Teacher Education and BRAC Institute of Educational Development-BRAC University.
- Illien, P., Pérez Niño, H., & Bieri, S. (2021). Agrarian class relations in Rwanda: a labour-centred perspective. *The journal of peasant studies*, 1-26.
- International Labour Office. (2011). *Global employment trends 2011: The challenge of a jobs recovery*. Geneva: International Labour Office.  
<http://hdl.voced.edu.au/10707/6945>

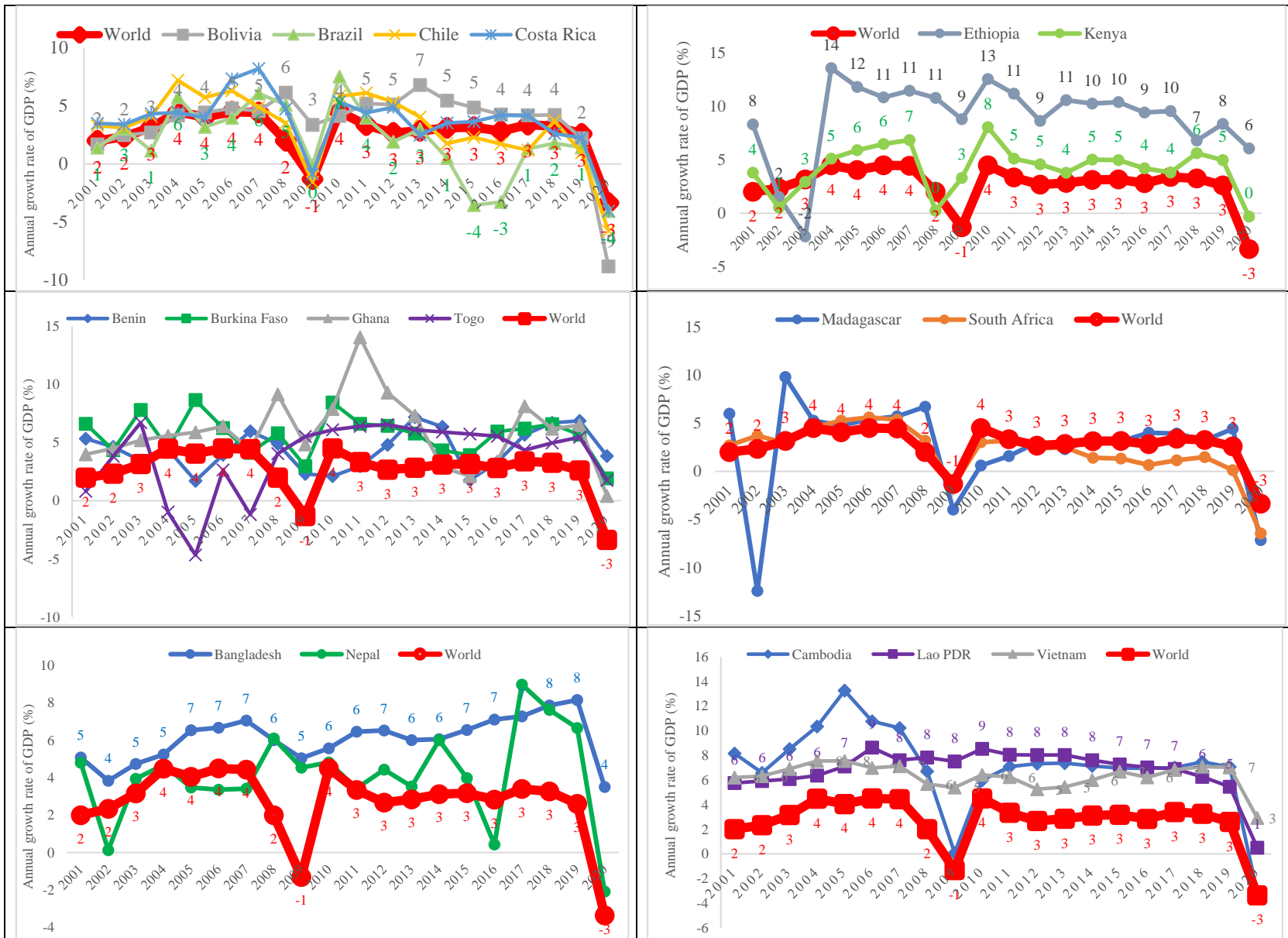
- Johnson, R. C., & Noguera, G. (2012). Accounting for intermediates: Production sharing and trade in value added. *Journal of international Economics*, 86(2), 224-236.
- Kalemli-Ozcan, S., Ryder, H. E., & Weil, D. N. (2000). Mortality decline, human capital investment, and economic growth. *Journal of development economics*, 62(1), 1-23.
- Keller, W. (2004). International technology diffusion. *Journal of economic literature*, 42(3), 752-782.
- Khammouny, B, Phrakonkham, S., Muenmany, S., Khounvilay, K., and Phatthana, N. (2017). *Country Study: Laos. Overview of the Recent Political History, Economic Development and VSD Initiatives*. Background paper for the Skills for Industry project. Zurich and Vientiane: Zurich University of Teacher Education and Vocational Education Development Institute.
- Kpodar, K. (2007). Why has unemployment in Algeria been higher than in MENA and transition countries. Available at SSRN 1012993.
- Los, B., Timmer, M. P., & de Vries, G. J. (2015). How important are exports for job growth in China? A demand side analysis. *Journal of Comparative Economics*, 43(1), 19-32.
- Mahmood, M., & Akhter, S. (2011). International briefing 24: training and development in Bangladesh. *International Journal of Training and Development*, 15(4), 306-321.
- Matthys, M. L., Acharya, S., & Khatri, S. (2021). “Before cardamom, we used to face hardship”: Analyzing agricultural commercialization effects in Nepal through a local concept of the Good Life. *World development*, 141, 105410.
- Maurer, M. (2012). Structural elaboration of technical and vocational education and training systems in developing countries: the cases of Sri Lanka and Bangladesh. *Comparative education*, 48(4), 487-503.
- McGrath, S. (2012). Vocational education and training for development: A policy in need of a theory?. *International Journal of Educational Development*, 32(5), 623-631.
- Mehrotra, S., & Parida, J. K. (2021). Why Human Development Should Precede Economic Growth in the States. *Economic & Political Weekly*, LVI (38), 54-61.
- Menezes-Filho, N. A., & Muendler, M. A. (2011). *Labor reallocation in response to trade reform* (No. w17372). National Bureau of Economic Research.
- Meschi, E., & Vivarelli, M. (2009). Trade and income inequality in developing countries. *World development*, 37(2), 287-302.
- Mia, A. (2010). *Background Case Study on Bangladesh*. Skills and Employability Department, ILO.
- Morales, R., & Gómez, E. (2015). The impact of the Trade Boom on Labor Informality The Bolivian case. *Ciess-Econométrica (Bolivia)*1 Universidad Mayor de San Andrés (Bolivia) December.
- Moreira, M. M., & Najberg, S. (2000). Trade liberalisation in Brazil: creating or exporting jobs?. *The Journal of Development Studies*, 36(3), 78-99.

- Mortensen, D. T., & Pissarides, C. A. (1998). Technological progress, job creation, and job destruction. *Review of Economic dynamics*, 1(4), 733-753.
- Munch, J. R., & Skaksen, J. R. (2008). Human capital and wages in exporting firms. *Journal of International Economics*, 75(2), 363-372.
- NIVT. (2017). *Viet Nam Vocational Education and Training Report 2017*. Directorate of Vocational Education and Training National Institute for Vocational Education and Training.
- Oberdabernig, D. A. (2016). *Employment effects of innovation in developing countries: A summary*. R4D Working Paper 2016/2, Swiss Programme for Research on Global Issues for Development.
- Palmer, R., Wedgwood, R., Hayman, R., King, K., and Thin, N. (2007). *Educating out of Poverty? A Synthesis Report on Ghana, India, Kenya, Rwanda, Tanzania and South Africa*. Report for DFID. Edinburgh: Centre of African Studies, University of Edinburgh.
- Petras, J., & Veltmeyer, H. (2014). *The new extractivism: A post-neoliberal development model or imperialism of the twenty-first century?*. Bloomsbury Publishing.
- Phoumilay, P. (2019). *Vocational Education and Training in Lao PDR*. In *Vocational Education and Training in ASEAN Member States: Current Status and Future Development*, edited by Bin Bai and Paryono, 81–108. Perspectives on Rethinking and Reforming Education. Singapore: Springer Singapore. <https://doi.org/10.1007/978-981-13-6617-8>.
- Pianta, M. (2000). The employment impact of product and process innovations. *The employment impact of innovation: Evidence and policy*, 77-95.
- Ponczek V., Araujo L. and A. Portela (2015). *Informality in an Economy with Active Labor Courts*, R4D working paper WP-2015-7, Trade and Labour Market Outcomes in Developing Countries
- Rankin, N. (2006). *The Regulatory Environment and Smmes-Evidence from South African Firm Level Data*. DPRU Working Paper No. 06/113. <https://dx.doi.org/10.2139/ssrn.943950>
- Rankin, N., & Schöer, V. (2013). Export Destination, Product Quality and Wages in a Middle-Income Country. The Case of S outh A frica. *Review of Development Economics*, 17(1), 64-73.
- Rany, S., Zain, A. N. M., & Jamil, H. (2012). Cambodia’s higher education development in historical perspectives (1863-2012). *International Journal of Learning and Development*, 2(2), 224-241.
- Rekiso, Z. S. (2019). Education and economic development in Ethiopia, 1991–2017. In *The Oxford Handbook of the Ethiopian Economy*, edited by Fantu Cheru, Christopher Cramer, and Arkebe Oqubay, 428–46. Oxford, United Kingdom: Oxford University Press.
- Revenga, A. (1997). Employment and wage effects of trade liberalization: the case of Mexican manufacturing. *Journal of labor Economics*, 15(S3), S20-S43.

- Rodrik, D. (1997). Sense and nonsense in the globalization debate. *Foreign Policy*, 19-37.
- Rodrik, D. (2008). Understanding South Africa's economic puzzles. *Economics of Transition*, 16(4), 769-797.
- Sam, R., Nurulazam, A., Md Zain, and Jamil, H. (2012). Cambodia's Higher Education Development in Historical Perspectives (1863-2012). *International Journal of Learning and Development* 2 (2), 224–41. <https://doi.org/10.5296/ijld.v2i2.1670>.
- Schank, T., Schnabel, C., & Wagner, J. (2007). Do exporters really pay higher wages? First evidence from German linked employer–employee data. *Journal of international Economics*, 72(1), 52-74.
- Schultz, T. W. (2005). Adam Smith and human capital. In *Adam Smith's Legacy* (pp. 147-158). Routledge.
- Schumpeter, J. (1942). Creative destruction. *Capitalism, socialism and democracy*, 825, 82-85.
- Shingal, A. (2015). *Labour market effects of integration into GVCs: Review of literature*. r4d Working Paper 2015/10, Bern: World Trade Institute, University of Bern.
- Signe, L. (2018). *The potential of manufacturing and industrialization in Africa Trends, opportunities, and strategies*. <https://www.brookings.edu/wp-content/uploads/2018/09/Manufacturing-and-Industrialization-in-Africa-Signe-20180921.pdf>.
- Tellería, G. L., & Paz, L. (2016). *International Trade and Employment in the Bolivian Context*. R4D working paper WP-2016-06, Trade and Labour Market Outcomes in Developing Countries.
- Thoenig, M., & Verdier, T. (2003). A theory of defensive skill-biased innovation and globalization. *American Economic Review*, 93(3), 709-728.
- Timmer, M. P., Erumban, A. A., Los, B., Stehrer, R., & De Vries, G. J. (2014). Slicing up global value chains. *Journal of economic perspectives*, 28(2), 99-118.
- Tomberger, P. (2016). *Labour Income and Employment embodied in Internationally Fragmented Production Chains* (No. 1114). r4d Working Paper 2016/4, Bern: World Trade Institute, University of Bern.
- Tschopp, M. N., Binggeli, B., Jimenez, E., & Bieri, S. (2019). In-and outmigration in the context of the quinoa boom. In: Bachmann, F., Maharjan, A., Thieme, S., Fleiner, R., & Wymann von Dach, S., eds. 2019. *Migration and Sustainable Mountain Development: Turning Challenges into Opportunities*. Bern, Switzerland, Centre for Development and Environment (CDE), University of Bern, with Bern Open Publishing (BOP).
- Tuan, N. D., & Cuong, N. H. (2019). Technical and vocational education and training (TVET) in Vietnam. In *Vocational Education and Training in ASEAN Member States* (pp. 229-256). Springer, Singapore.

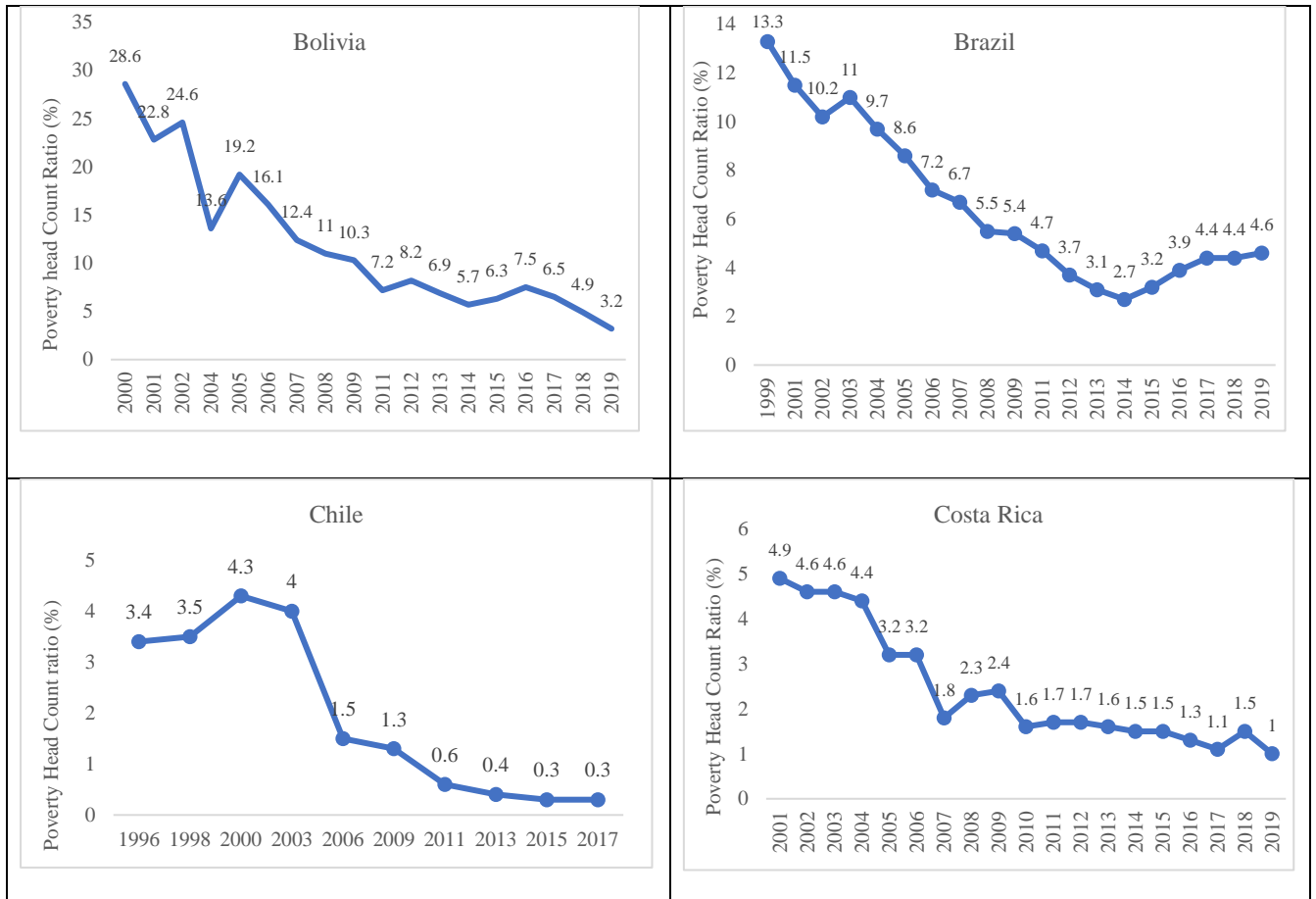
- Un, L., & Sok, S. (2018). Higher education systems and institutions, Cambodia. *Encyclopedia of International Higher Education Systems and Institutions*, 1–10. [https://doi.org/10.1007/978-94-017-9553-1\\_500-1](https://doi.org/10.1007/978-94-017-9553-1_500-1).
- UNESCO. (2018). *TVET Country Profile Vietnam*. Paris: UNESCO International Centre for Technical and Vocational Education and Training.
- UNESCO. (2020). *TVET Country Profile Lao PDR*. Paris: UNESCO International Centre for Technical and Vocational Education and Training.
- Usman, Z., & Landry, D. (2021). Economic Diversification in Africa: How and Why It Matters. Available at SSRN 3842228. <https://carnegieendowment.org/2021/04/30/economic-diversification-in-africa-how-and-why-it-matters-pub-84429>
- Veltmeyer, H. (2016). Extractive capital, the state and the resistance in Latin America. *Sociology and Anthropology*, 4(8), 774-784.
- Ven, S., and Sry, B. (2017). *Country Study: Cambodia. Overview of the Recent Political History, Economic Development and VSD Initiatives*. Background paper for the Skills for Industry project. Zurich and Phnom Penh: Zurich University of Teacher Education and Cambodia Development Resource Institute.
- Viet, N. Q. (2017). Competence-based vocational education and training in Viet Nam: Input and process towards learning outcomes. *Competence-based vocational and professional education*, 469-485. [https://doi.org/10.1007/978-3-319-41713-4\\_22](https://doi.org/10.1007/978-3-319-41713-4_22).
- Vivarelli, M. (2012). Innovation, employment and skills in advanced and developing countries: A survey of the literature. *Employment and Skills in Advanced and Developing Countries: A Survey of the Literature*.
- Wood, A. (1995). How trade hurt unskilled workers. *Journal of Economic perspectives*, 9(3), 57-80.
- Yok, S., Chrea, S., & Pak, R. (2019). Technical and vocational education and training in cambodia: current status and future development. In *Vocational Education and Training in ASEAN Member States* (pp. 25-43). Springer, Singapore. <https://doi.org/10.1007/978-981-13-6617-8>.
- Zeira, J. (2007). Wage inequality, technology, and trade. *Journal of Economic Theory*, 137(1), 79-103.
- Zinabu, Samaro Rekiso. (2019). Education and Economic Development in Ethiopia, 1991 - 2017'. In *The Oxford Handbook of the Ethiopian Economy*, edited by Fantu Cheru, Christopher Cramer, and Arkebe Oqubay, 428–46. Oxford, United Kingdom: Oxford University Press.

### Annexure 1: Annual Growth rate of GDP, 2001-2019



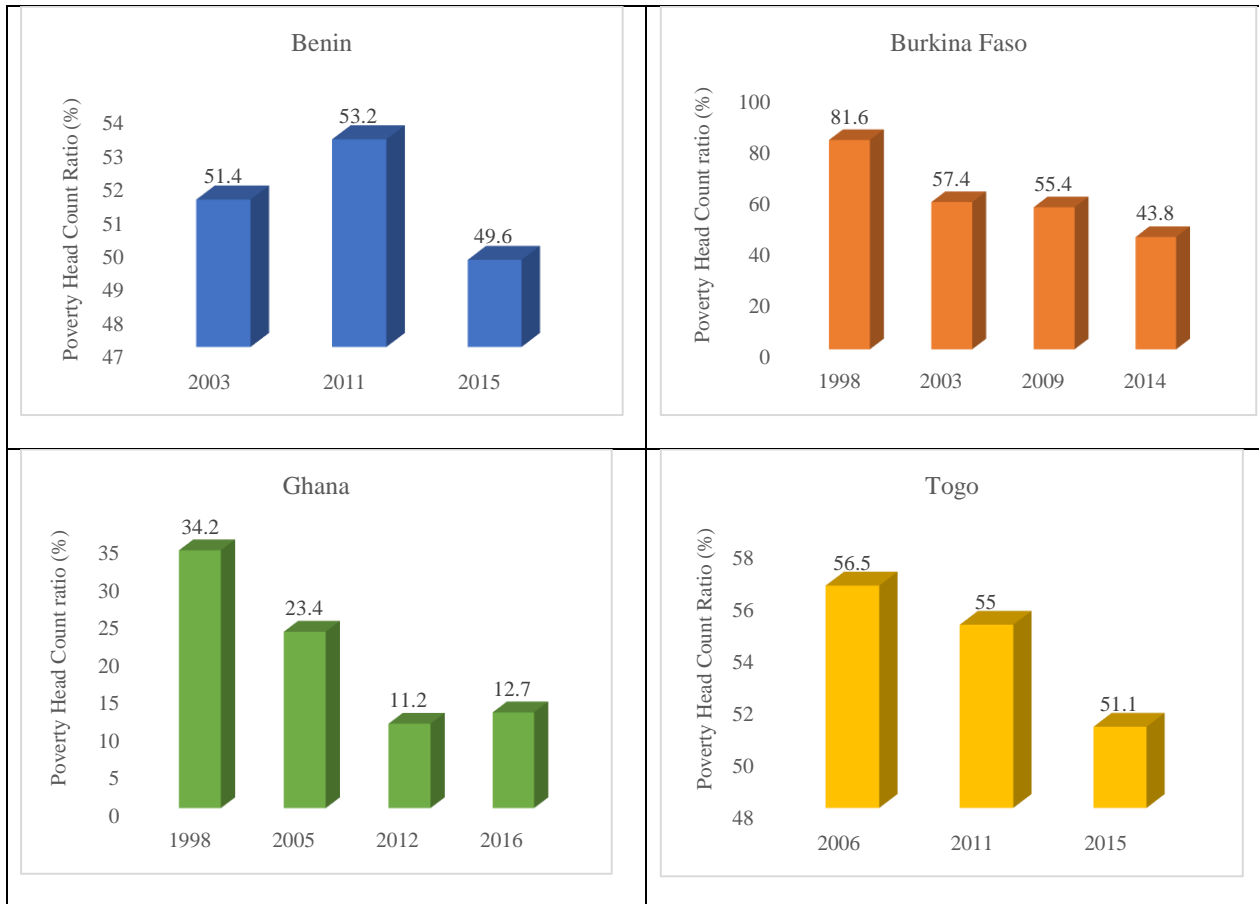
Source: Compiled and plotted using of the World Bank data (WDI data base).

**Annexure 2A: Incidence of poverty (1.9\$ per day as per 2011) in Latin America**



Source: Compiled and plotted using World Bank data (WDI data base)

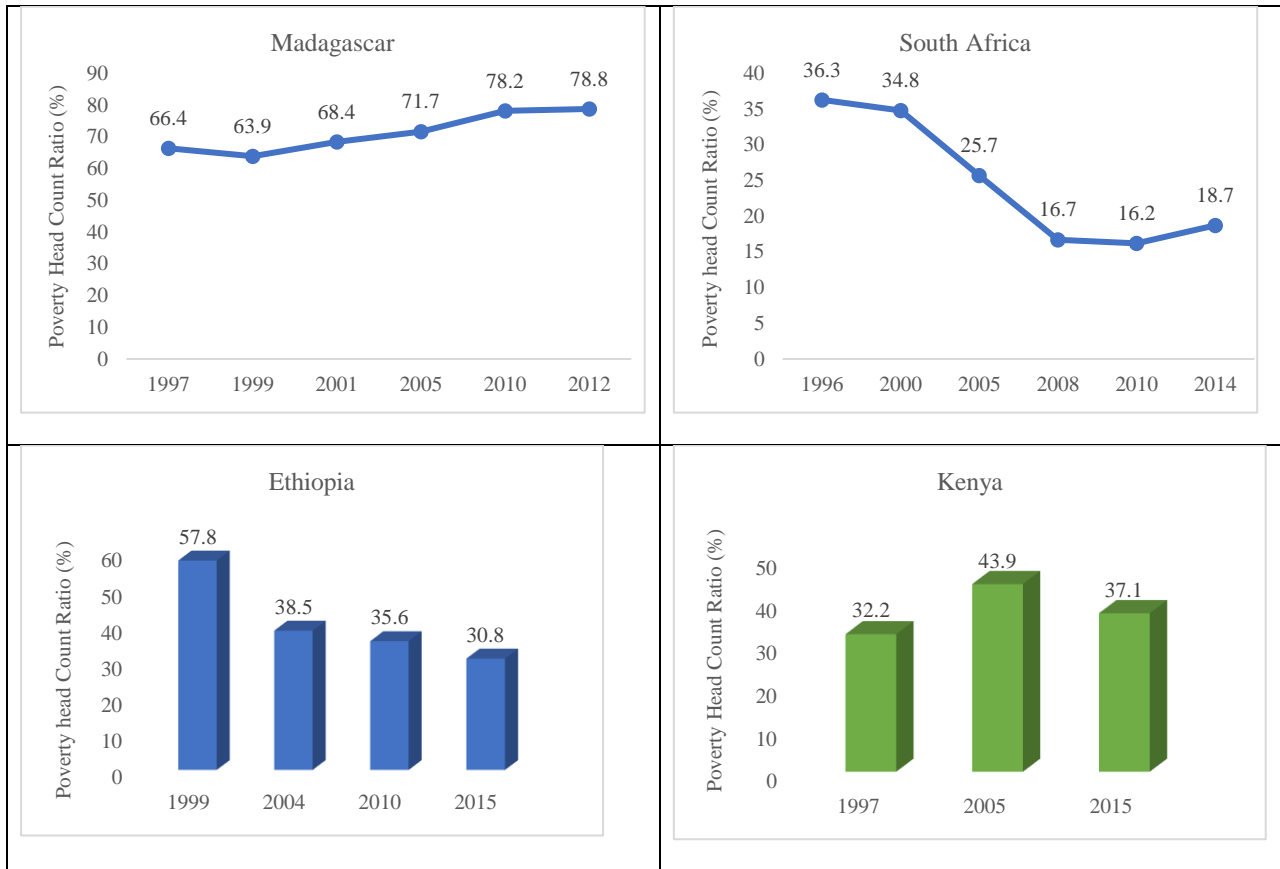
**Annexure 2B: Incidence of poverty (1.9\$ per day as per 2011) in West Africa**



Source: Compiled and plotted using World Bank data (WDI data base)

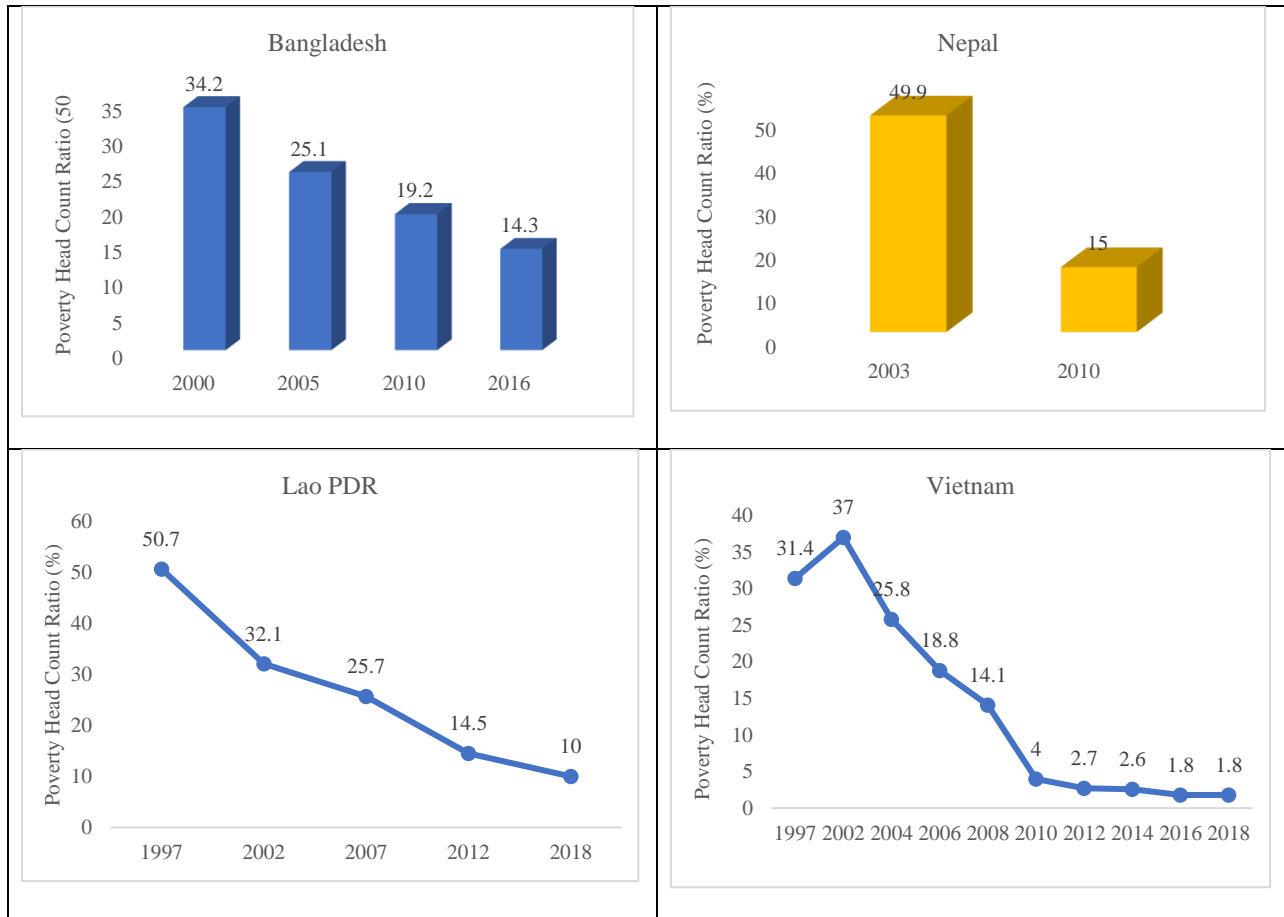


**Annexure 2C: Incidence of poverty (1.9\$ per day as per 2011) in South-East Africa**



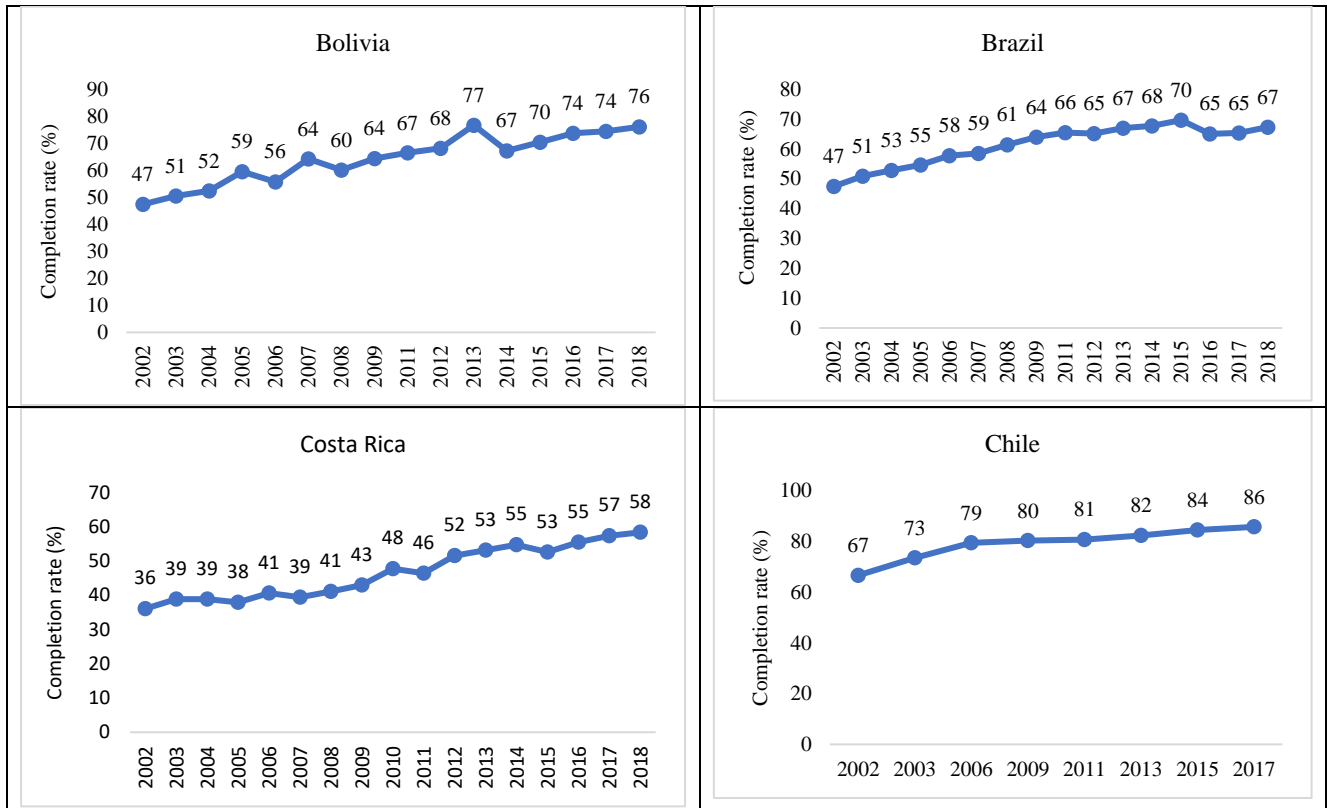
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**Annexure 2D: Incidence of poverty (1.9\$ per day as per 2011) in South-East Asia**



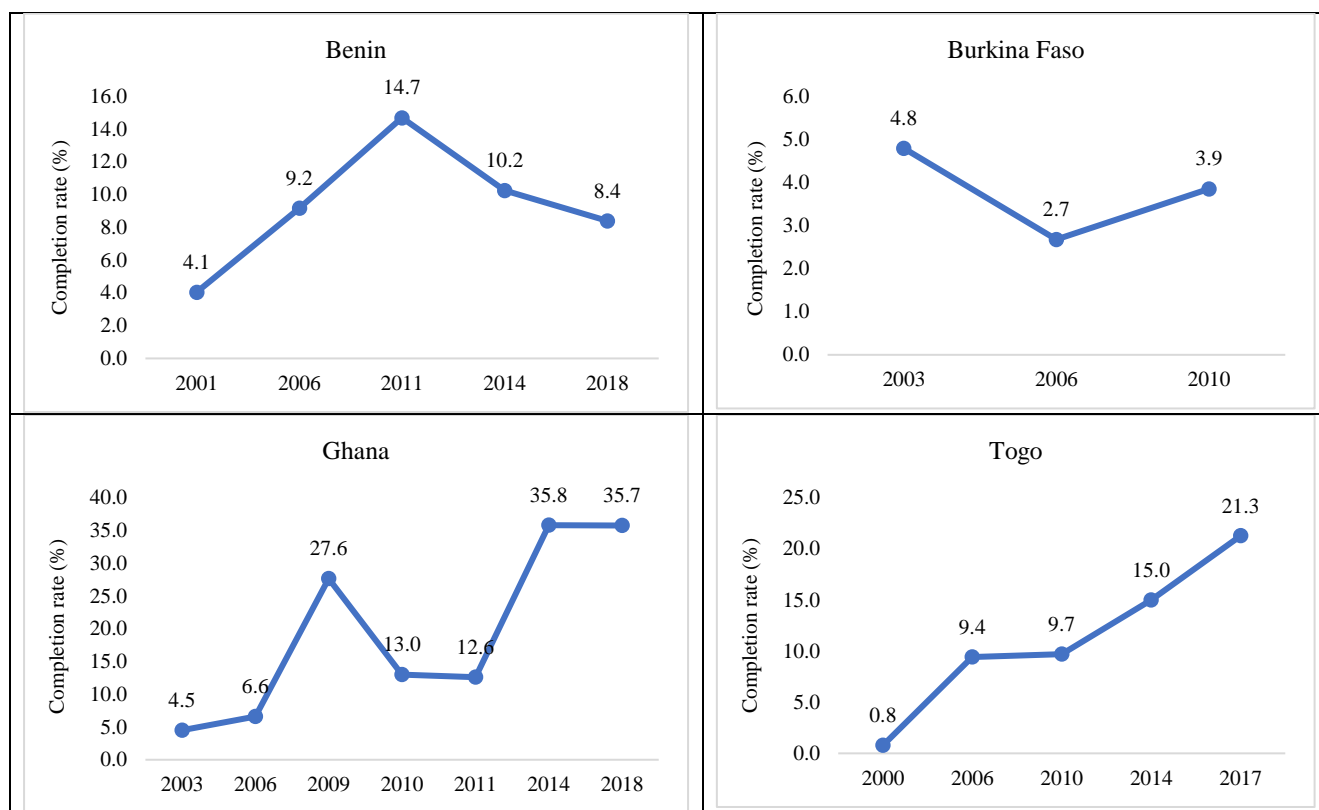
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**Annexure 3A: Trends of upper secondary education completion rate (%) in Latin America**



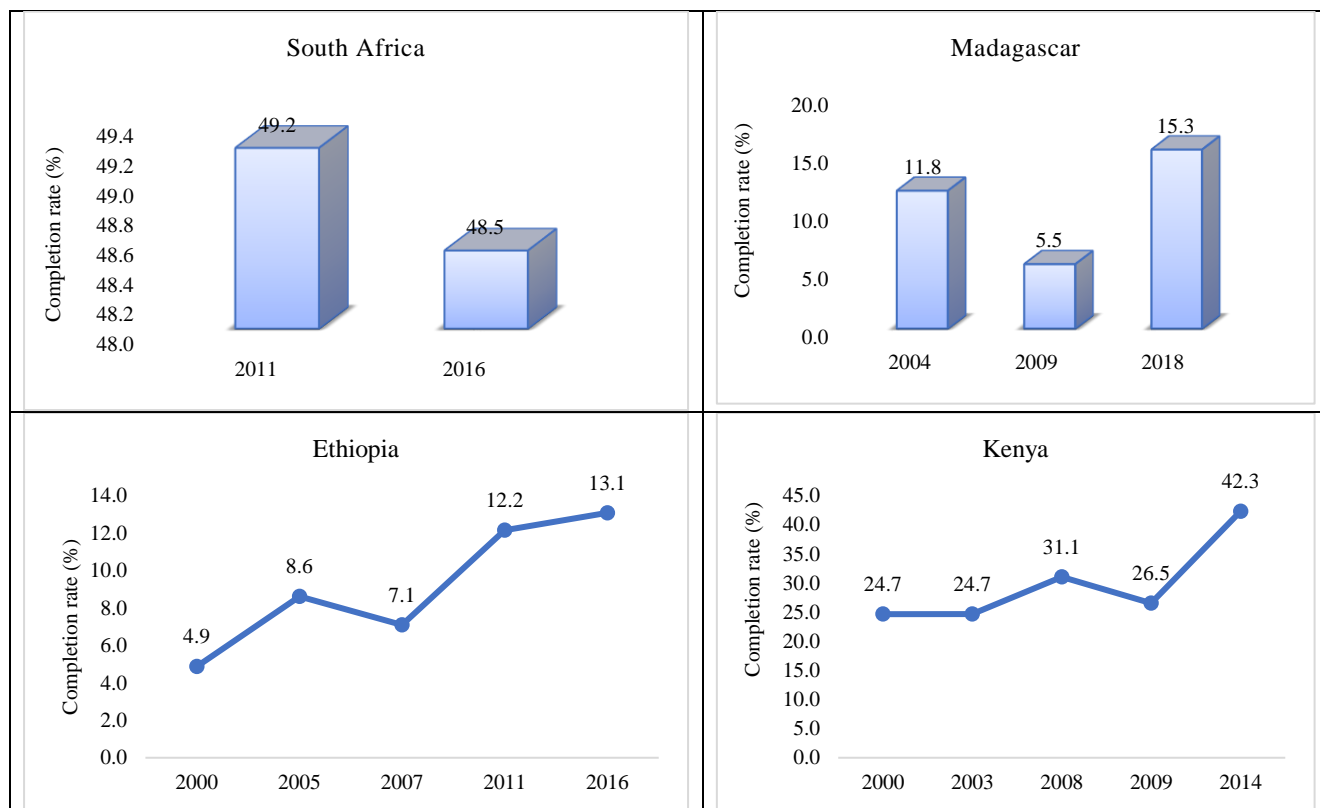
Source: Compiled and plotted using World Bank's Education Statistics -All Indicators, database

### Annexure 3B: Trends of upper secondary education completion rate (%) in West Africa



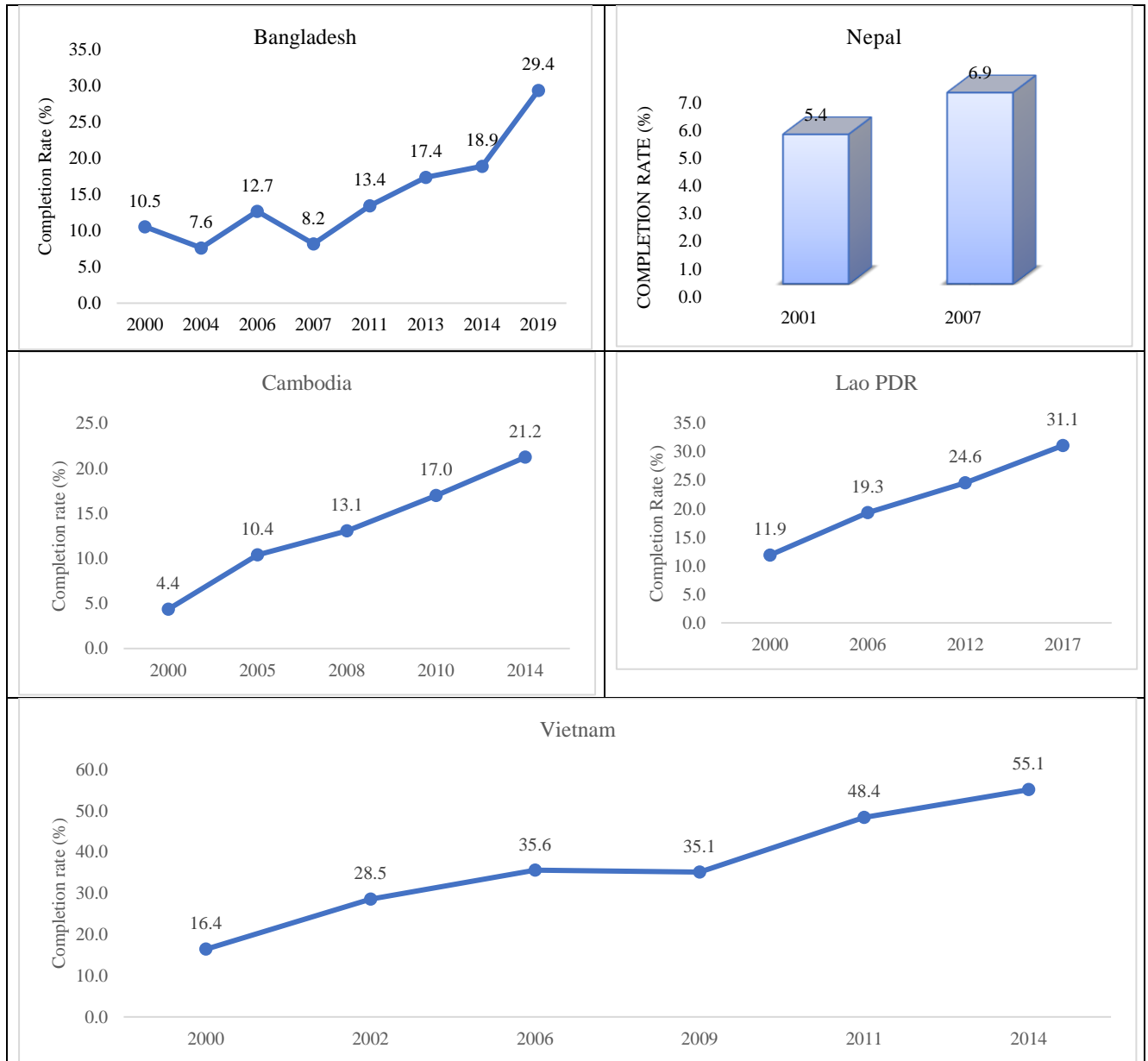
Source: Compiled and plotted using World Bank's Education Statistics -All Indicators, database

**Annexure 3C: Trends of upper secondary education completion rate (%) in South-East Africa**



Source: Compiled and plotted using World Bank's Education Statistics -All Indicators, database

### Annexure 3D: Trends of upper secondary education completion rate (%) in East Asia



Source: Compiled and plotted using World Bank's Education Statistics -All Indicators, database