

Chapter 5: Future Demand for Higher Education

This chapter explores future demand for higher education in the Dominican Republic which will be shaped by the interaction of several factors: (i) demographic growth in the relevant age cohorts; (ii) the scale and shape of labour market requirements and opportunities; (iii) changes in rates of educational participation among different cohorts; (iv) the attractiveness of postsecondary study relative to other options, such as direct entry to the labour market, including perceptions of private economic and social benefits relative to costs; and (v) social norms and pressures, including family circumstances and aspirations.

The following topics are discussed in greater detail: (i) scale and shape of labour market requirements and opportunities; (ii) demographically-driven demand for higher education; and (iii) increasing higher education participation rates in addition to population trends. Recommendations are provided on how to deal with increasing demand for higher education.

The future demand for higher education will be shaped by the interaction of several factors: (i) demographic growth in the relevant age cohorts; (ii) the scale and shape of labour market requirements and opportunities; (iii) changes in rates of educational participation among different cohorts; (iv) the attractiveness of postsecondary study relative to other options, such as direct entry to the labour market, including perceptions of private economic and social benefits relative to costs; and (v) social norms and pressures, including family circumstances and aspirations. This chapter explores the strength of these factors in the Dominican Republic.

The relative attractiveness of higher education

As indicated in Chapter 4, completion of higher education confers financial advantages to graduates in all labour markets, even while private rates of return to education have been declining in some markets. However, incomplete higher education does not confer demonstrable benefits, and a disproportionately large population has been unsuccessful in higher education in the Dominican Republic.

Arguably, many of them would have been better to have entered the workforce directly from secondary school, and access on-the-job training and informal training, through the National Institute for Technical and Professional Training (INFOTEP, *Instituto Nacional de Formación Técnico Profesional*) or other avenues. More pertinently, many of them would have been more likely to benefit from participation in shorter-cycle post-secondary courses of a more vocationally-oriented nature where they could develop competence in practical skills.

Social norms and pressures

However, rising levels of community aspirations for higher education reflect contemporary social valuing of a university degree. This view may be understood as an element of the legacy culture deriving from the insular economy and centralised governance of the pre-democratic era, when a degree was a passport to a government or corporate job which was relatively better paid and more secure than one in the agricultural, industrial and informal sectors.

Additionally, in many countries, short-term, technical courses tend to be seen as a type of second-class education for less achieving students, usually from poorer socio-economic backgrounds, who cannot gain admission to the better universities (OECD, 2008). Thus there can be social resistance to participation in vocational programmes and institutions, even though the practical skills formed through such participation may align better than a more theoretical education with labour market demand and job prospects. This view gives prominence to the “signalling” role of higher education qualifications – prior advantage and effort to persist – as distinct from the “human capital” role – adding productive capacity to the workforce.

If the Dominican Republic cannot raise the social status of vocational training it will find itself with the compounding dilemma of rising costs of wasteful participation in higher education of marginal utility to its workforce needs.

The scale and shape of labour market requirements and opportunities

In 2006, the World Bank reported that labour supply was not satisfying employer demand, and that training programmes were in short supply and were generally inaccessible to poor and low skilled youth. More than half of employers surveyed in 2005 had difficulty finding employees with the skills they were seeking, especially in the case of management skills, administrative skills, and language skills (World Bank, 2006).

The National Institute for Technical and Professional Training (INFOTEP) is a not-for-profit body that co-ordinates the provision of informal skills training for young adults through some 300 technical training centres across the Dominican Republic. Within the framework of the 2006-2007 Competitiveness Plan, the role of INFOTEP was envisaged to provide both initial and lifelong training designed to improve the productivity of enterprises (Mertens, 2008). By 2011, INFOTEP had expanded both its geographical coverage and the range of its labour market training courses. However, as INFOTEP functions outside the formal education and training system, informal learning is not acknowledged as prior learning or for credit transfer purposes in the formal system (OECD, 2008).

As indicated in Chapter 4, employers are concerned about the apparent mismatch of higher education graduate supply, in quantitative and qualitative terms, to the specific requirements of the Dominican economy. In their interactions with the review team, employer groups also raised concerns about a lack of a future vision or forward plan for the employment structure of the Dominican economy. That view itself is of some concern on several grounds.

First, the continuing culture of expectations for, if not of dependence on, a government planning model of economic development, especially by the employer bodies to whom the government itself looks to be entrepreneurial, suggests that there is much yet to be done in modernising mindsets.

Second, the government has set out reasonably clear policy directions and targets in its *National Development Strategy 2010-2030* (outlined in Chapter 2). The far-reaching strategy paths out a transformation of the Dominican economy. However, it seeks to do so, not by picking industry winners or planning to supply labour to specific future workforce requirements. Rather it aims to create the framework conditions for private investment, particularly through increased institutional competence and responsiveness, and improvements in the policy coherence and effectiveness of government. This is a prudent approach.

The best policy response to structural pressures that will assume unknown forms is the encouragement of a high quality broad-based innovation system as part of a highly flexible economy, well functioning labour markets with high quality labour endowments, and excellent and adaptive institutions. In today's dynamic and competitive global environment, there is inevitably a degree of opportunism involved in national policies that seek to support innovation by supplying a diversity of talent and know-how to attract and encourage investment and to increase the prospects of the investment being successful. There are competitive advantages in having capability available to develop opportunities as they arise, whether from inwards investment, the outsourcing decisions of foreign firms, new consumer and intermediate market formations, technological developments, or initiatives of local entrepreneurs.

According to the evolutionary economics school, successful processes are discovered and then imitated through competitive processes, and firms that do not adapt fail (Nelson & Winter, 1982). The nature and speed of competition is influenced by the innovation system. The evolutionary approach places an emphasis on experimentation, variety, competitive approaches and continual change. Variety is important because it increases the likelihood that useful, novel processes will be discovered, and reduces the risk that an economy selects a poor technology pathway. Science plays a role in the innovation system as an important source of knowledge and human capital that firms can draw upon in pursuing their innovations (and in which the interactions go both ways). Higher education and university research contribute to these economy-wide capacities. Importantly too, that sector itself needs to be adaptive.

Third, forecasting labour requirements is notoriously inaccurate, and the more so when economies are competitively exposed and going through rapid phases of structural adjustment. In areas of large public sector responsibility, such as in schooling and health, it is possible to project workforce needs according to the parameters that governments set for adequacy of provision of those services. In relation to schooling, there may be parameters such as student-teacher ratios which can be factored against projections of school enrolment numbers based on births and age-progression rates. Similarly in medical services, governments may set ratios of health and medical services per head of population, with an eye to public expenditures, and seek to ensure adequacy of professional supply without inflating public costs. However, even in these fields of education and health services, where several parameters can be set with some confidence, the international experience is that projections of capacity requirements rarely turn out to be accurate.

Additionally, problems can emerge in the fit of graduates to the labour market, both on immediate entry and at later stages of job change, if education and training are highly specialised or narrowly cast. In all countries there are differences in the expectations that businesses have about the desired attributes of graduates. Typically, the major differences are not so much between industry sectors as between larger and smaller firms, with the latter preferring job-ready graduates as they do not have as much capacity as the former to train personnel in-house to firm-specific needs.

The apparently increasing misfit of higher education graduate output to labour market needs in the Dominican Republic, alongside rising community expectations of higher education participation, presents a particular challenge. As indicated in Chapter 4, the Dominican Republic has multiple labour markets, each with varying needs. There are specific industry and regional variations, alongside differences between the informal and formal sectors, and between government enterprises, large private firms and SMEs in the formal sector. Thus, concurrently, skills shortages may be experienced alongside graduate over-supply and under-utilisation. Porosity across sectors depends on the balance of specialist and generic attributes of graduates, where transfers are not blocked by sector-specific and/or occupational entry barriers.

Given the costs involved, particularly for smaller economies on a developmental path, some segmentation of investment in human capital is required. In particular, it is necessary to consider the grounds for the division of responsibilities between individuals, firms and government at different levels of the nation's human capital formation. The relative funding responsibilities are considered in Chapter 7. Here the underlying patterns of demand for skills are considered.

Novel or “breakthrough” innovation, usually representing a small minority of national innovation, typically involves highly talented people discovering new products or processes. Attention is often given to formal scientific research and development (R&D) for breakthrough innovations. However, some highly successful businesses have achieved breakthrough results by methodically taking small, experimental steps in order to discover and develop new ideas. Rather than believing they have to start with a big idea or plan a whole project out in advance, trying to foresee the final outcome, they make a series of little bets about what might be a good direction, learning from lots of little failures and from small but highly significant wins that allow them to happen upon unexpected avenues and arrive at extraordinary outcomes (Sims, 2010). Additionally, both breakthrough and incremental innovations can be developed by less formal

on-the-job modifications of practice, through exchange and combination of professional experience, and interactions with customers, suppliers and competitors.

It is necessary to have advanced human capital available locally to generate innovations, whether through new ideas and discoveries or adaptation of existing technology, or at least to be networked with people outside the country whose knowledge and skills can be harnessed as required to develop opportunities in the Dominican Republic. Given the increasingly knowledge-intensive nature of the economic base globally, the nation has no option but to invest in advanced human capital formation through graduate education and post-doctorate research. It makes sense to continue do so predominantly by sending Dominicans to good quality schools abroad while gradually and strategically building up domestic capacity in areas of internationally-benchmarked research strength. This matter is considered in Chapter 8.

The particular priority for the Dominican Republic of increasing SMEs in the formal economy involves serving the needs of employers for a well-trained and able-to-learn workforce enabling enterprises to take advantage of new technologies and adapt to changing market conditions. In the competitive global environment, SMEs increasingly seek to export directly, compete with imports, or integrate into global supply chains as subcontractors or service providers. Therefore they must raise quality standards, improve on-time delivery, and make innovations in products and processes. Most importantly, they must value their employees and invest directly in the development of their skills:

As Latin America becomes increasingly integrated into the global economy, the region's small and medium-sized enterprises (SMEs) face major competitive challenges in identifying, attracting and mobilising human capital. Traditionally, these companies, particularly those that are locally owned, have lacked large, professionally trained and specialised human resources departments and extensive internal training systems. Instead, they have relied heavily on low-cost, high turnover labour. To be competitive, Latin American SMEs will need to transform themselves and meet the human capital challenge head on. Firms can do so in several ways: change internal policy, seek innovative collaborations with public sector support institutions and business associations, or partner with supplier development programmes of large multinational firms. SMEs can then begin to treat human capital as a central competitive asset by rethinking and broadening traditional skill classifications into more flexibly defined sets of worker capacities known as "competencies" (Economist Intelligence Unit, 2008).

On the evidence presented to the review team it seems that most SMEs in the Dominican Republic seek a closer match of skill supply with the operational needs of their businesses. International experience shows that countries that have succeeded in linking skills to productivity and employment growth, have targeted skills development policy towards three main objectives: (i) matching supply to current demand for skills; (ii) helping workers and enterprises adjust to change; and (iii) building and sustaining competencies for future labour market needs (ILO, 2010). The first objective is about the relevance and quality of training. Matching the provision of skills with labour market demand requires labour market information systems to generate, analyse and disseminate reliable sectoral and occupational information, and institutions that connect employers and training providers (ILO, 2010).

In the public sector, and often in collaboration with business associations and international organisations, key reforms that hold promise are threefold:

- “Demand-driven” training closely tied to a firm’s needs.
- Modern skill certification systems based on broad competencies.
- Improved labour market “intermediation” services that connect jobseekers with firms seeking to fill particular needs (Economist Intelligence Unit, 2008).

In the informal sector, small enterprises and the self-employed, including those in rural areas and in the informal economy, may be assisted to lift their competencies through improvements in incentives and information:

Vocational guidance and employment services may often be improved to match people with training opportunities and to get trained people into jobs. Specific and targeted policies are required to assist small enterprises invest in the skills required. Ways to recognise skills acquired through informal training and on-job experience may help workers secure better jobs. Upgrading the technical quality of informal apprenticeships, paying attention to how this kind of training can open opportunities for girls in non-traditional occupations, and improving working conditions and good health and safety practices can help young people not only acquire skills but ease their way into the formal economy. (ILO, 2010)

Building capacity for effective and credentialed training, particularly in secondary school and post-secondary vocational education and training, is a major priority in the Dominican Republic. It is imperative to lift the skills

base of the workforce for realising the nation's economic development goals, and especially for expanding the formal sector and raising its productivity. Indeed, at this stage of the country's development, it must be a higher priority than enlarging higher education.

Demographically-driven demand for higher education

In 2006, the population of the Dominican Republic was projected to increase by 29% to 2025, from 9 million in 2005 to 11.6 million, and to grow to 14.2 million by 2050 (Population Reference Bureau, 2006). The rate of population growth has slowed from 2.3% per year in the early 1990s and is estimated to average 1.4% per year over the next 20 years.

The Dominican Republic has had a net migration loss of 3 persons per 1 000 population over the past decade. Generally throughout the Caribbean, persons with tertiary education are more likely to migrate, and in many cases substantially so, than those without secondary education; with the notable exception of the Dominican Republic (Nurse & Jones, 2009).

The population aged 15-29 is projected to increase on average by 0.6% per year over the next decade (see Table 5.1).

Table 5.1 **Projected population of university age, 2015 and 2020**

Age	Projected population of university age		
	(thousands)		
	2010	2015	2020
15-19	979	975	1009
20-24	903	943	940
25-29	820	865	906

Source: National Statistics Office (*Oficina Nacional de Estadística*), Dominican Republic, available at www.one.gob.do/index.php?module=articles&func=view&catid=76

Assuming the population aged 18 to 24 years grows at the same rate on average as the 15-29 years population (0.6% per annum) over the next 10 years to 2021, an additional 95 100 students would need to be accommodated in order for the current higher education participation rate to be maintained. That would require expansion of higher education enrolments by some 9 500 per year.

Higher education participation rate increases on top of population trends

As indicated in Table 5.2, if the participation rate were to be raised above the Caribbean average, to around 35% of the age cohort (the base level marking a shift from "elite" to "mass" higher education) then enrolments would need to expand by 115 000 or 30% over the next 10 years, at an average of 11 500 or 3% per year up to 2019. It is not an unreasonable aspiration for the Dominican Republic to have at least made the initial transition from "elite" to "mass" within a decade in order to have the capacity to be internationally competitive in human capital formation in the future – so long as the increased volume of enrolments translates into an increased output of graduates and quality is not diminished in the expansion.

Table 5.2 Estimated population aged 18-24 years, and enrolment expansion scenarios, 2009-2021

Year	Population aged 18-24 years	Enrolments at 2009 participation rate of 29.1%	Enrolments with participation rates rising to 35% by 2019	Assumed participation rates
2009	1 277 827	372 433	372 433	29.1
2010	1 285 494	374 079	380 506	29.6
2011	1 293 207	376 323	390 548	30.2
2012	1 300 966	378 581	399 396	30.7
2013	1 308 772	380 853	408 337	31.2
2014	1 316 625	383 138	418 687	31.8
2015	1 324 524	385 436	427 821	32.3
2016	1 332 472	387 749	438 383	32.9
2017	1 340 466	390 076	447 716	33.4
2018	1 348 509	392 416	457 145	33.9
2019	1 356 600	394 771	468 027	34.5
2020	1 364 740	397 139	474 930	34.8
2021	1 372 928	399 522	480 525	35.0

Sources: Estimates made by the review team; MESCyT, Statistics Department (2010) for base 2009 data; and Population Reference Bureau (2006) for population projections.

These figures are indicative only. Variations in the participation rates of different age cohorts beyond the indicative parameters would change the forward estimates. For instance, increased demand for higher education will flow from the higher levels of secondary school throughput as a consequence of the government's reforms. Nevertheless, the indicative planning range of average annual growth of between 9 500 to 11 500 (2.5-3.0%) enrolments does not suggest that there will be major medium-term pressures on supply capacity, although there will need to be greater diversification of supply, as discussed in Chapter 6, and a more balanced sharing of costs, as discussed in Chapter 7.

However, the *Ten-Year Plan for Higher Education 2008-2018* (SEESCyT, 2008) sets three specific targets of relevance; the first is to increase enrolments by 2018 to 50% of the population aged 18-24; the second is to double the number of graduates to 73 900 by 2018; and the third is to reduce overall attrition by 20%.

Table 5.3 shows estimates of the enrolment growth involved in raising the higher education participation rate to 50% by 2018. An additional 301 822 enrolments would need to be accommodated at an average rate of growth of 33 536 per year. That annual growth rate is 3.5 times higher than would be necessary to maintain the current participation rate of 29.1% and 2.9 times higher than would be required to lift the participation rate to 35%.

Table 5.3 Estimated increases in enrolments required to meet the 50% attainment target for the population aged 18-24 years of the Ten-Year Plan 2008-2018

Year	Population aged 18-24 years	Enrolments at 2009 participation rate of 29.1%	Enrolments with participation rates rising to 50% by 2018	Assumed participation rates
2009	1 277 827	372 433	372 433	29.1
2010	1 285 494	374 079	403 645	31.4
2011	1 293 207	376 323	435 811	33.7
2012	1 300 966	378 581	469 649	36.1
2013	1 308 772	380 853	515 656	39.4
2014	1 316 625	383 138	549 033	41.7
2015	1 324 524	385 436	582 791	44.0
2016	1 332 472	387 749	616 935	46.3
2017	1 340 466	390 076	652 807	48.7
2018	1 348 509	392 416	674 255	50.0

Sources: Estimates made by the review team; MESCyT, Statistics Department (2010) for base 2009 data; and Population Reference Bureau (2006) for population projections.

As indicated in Chapter 3, the apparent graduation rate is estimated to be 50% of the commencing cohort on average across the Dominican Republic, with a much lower rate for Autonomous University of Santo Domingo (UASD). Thus producing a greater number of graduates under current practices would require a much higher annual intake of commencing students. For instance, to graduate 500 students after four years would mean starting 1 000 in the first year. Dropout is not equal each year over a four year course of a Bachelor's degree. On the basis of advice given by representatives of different HEIs, the review team estimates that on average 60% of dropout occurs in the first year. Hence, of the starting cohort of 1 000 only 700 would progress to second year. Assuming attrition at the same rate over years two and three, but at a higher rate in the final year when degree attainment eligibility is validated, there would be 650 students surviving to the third year and 600 surviving to fourth year, with 500 completing the degree. Thus indicative year-on-year attrition rates can be derived as follows: year 1: 0.3; year 2: 0.071; year 3: 0.077; year 4: 0.167.

Achieving the Ten-Year Plan's target of doubling current graduate output would involve producing an additional 36 950 graduates per year by 2018. At current rates of attrition that would require increasing in 2015 annual commencing enrolments by 73 500 on top of the then current enrolments (projected at 582 791 for a system expanding to cover 50% of the age cohort 18-24). As a consequence, the system would be further enlarged by 12.6% with enrolments in 2015 totalling 656 291. That would be to bring forward an enrolment volume that would over-stretch the nation's capacity to absorb without further eroding quality.

A 20% reduction in attrition would mean that for a commencing cohort of 1 000 students there would be 600 who graduate after four years (compared with 500 under the current rate of attrition). Assuming that the reduced attrition applied entirely to first year, when interventions to raise retention can be most effectively targeted, and that the survival rate in subsequent years reflects improved learning standards, then 800 would survive to second year, 725 to third year and 650 to fourth year, with 600 completing a degree. Thus revised year-on-year attrition rates may be derived as follows: year 1: 0.20; year 2: 0.0938; year 3: 0.103; year 4: 0.077.

Table 5.4 indicates that even to double graduate output while achieving a 20% reduction in attrition, without any targets for raising participation rates, would involve a 34% expansion of the system, from 372 433 in 2009 to 500 175, at average annual growth of 14 194.

Table 5.4 Estimated annual student enrolments by year of study at steady (2009) participation rates for the 18-24 Dominican population by 2021, with a 20% reduction in current rates of attrition by 2018, and the resulting graduate output per year

Calendar year	Commencing student intake academic year 1	First year attrition rate (%)	Academic year 2	Academic year 3	Academic year 4	Graduates
2009	148 973	30.0	104 281	74 487	44 692	34 412
2010	149 631	28.8	106 537	78 900	53 423	50 635
2011	150 529	27.7	108 832	83 300	63 154	52 607
2012	151 432	26.6	111 151	100 996	70 019	58 325
2013	152 341	25.5	113 494	103 148	76 886	64 046
2014	153 255	24.4	115 860	105 322	95 206	79 307
2015	154 177	23.3	118 254	107 518	97 212	80 978
2016	155 100	22.2	120 668	109 740	99 239	82 666
2017	156 076	21.1	123 144	111 980	101 290	84 375
2018	156 966	20.0	125 573	114 278	103 358	86 097

Source: Estimates made by the review team based on the following assumptions: For 2009 enrolments of 372 433 have been apportioned on the following basis: year 1 = 40%; year 2 = 28%; year 3 = 20%; year 4 = 12%. For subsequent years the enrolment growth resulting from population increase has been applied to the commencing cohort only, with the student numbers for other years of study derived from the year-on-year attrition rates.

The 20% reduction has been applied on a *pro rata* basis annually only to the commencing cohort (academic year 1). Thus first year attrition is reduced from 30% of the intake in 2009 to 28.8% in 2010, 27.7% in 2011 through to 20% in 2018. The attrition rates for the other years are: year 2: 0.071; year 3: 0.077; year 4: 0.167. These rates are applied to the pipeline of enrolments in subsequent academic years.

Table 5.5 indicates that the combination of a 20% reduction in attrition with a rise in the participation rate to 35%, both phased in over a decade, would result in graduate output rising above 100 000 per year. On this basis, the graduation rate in 2018 would represent 59% of the commencing cohort in 2015.

This appears to be a positive pay-off option, combining expansion of opportunity, reduction of wastage, quality improvement and growth in graduate output at possibly manageable throughput costs. In the medium-term social and economic environment of the Dominican Republic it has particular attraction. Nevertheless, it involves enlarging the system by 52% or 21 470 students per year. It would necessarily involve admitting a larger proportion of the school leaving cohort, many of whom are inadequately prepared to succeed in higher education.

Table 5.5 Estimated annual student enrolments by year of study required to meet an increased participation rate of 35% for the 18-24 Dominican population by 2021, with a 20% reduction in current rates of attrition by 2018, and the resulting graduate output per year

Calendar year	Commencing student intake academic year 1	First year attrition rate (%)	Academic year 2	Academic year 3	Academic year 3	Graduates
2009	148 973	30.0	104 281	74 487	44 692	34 412
2010	152 204	28.8	108 369	93 540	54 860	50 635
2011	156 219	27.7	112 946	94 449	67 028	61 867
2012	159 758	26.6	117 262	97 207	79 196	73 098
2013	163 335	25.5	121 685	105 184	87 195	80 480
2014	167 479	24.4	126 614	109 151	94 350	87 085
2015	171 128	23.3	131 255	113 572	97 908	90 370
2016	175 353	22.2	136 425	117 736	101 874	94 029
2017	179 086	21.1	141 299	122 373	195 609	97 477
2018	182 858	20.0	146 286	126 745	109 769	101 316

Source: Estimates made by the review team based on the following assumptions: For 2009 enrolments of 372 433 have been apportioned on the following basis: year 1 = 40%; year 2 = 28%; year 3 = 20%; year 4 = 12%. For subsequent years the enrolment growth resulting from population increase and rising participation has been applied to the commencing cohort only, with the student numbers for other years of study derived from the year-on-year attrition rates.

The 20% reduction has been applied on a *pro rata* basis annually only to the commencing cohort (academic year 1). Thus first year attrition is reduced from 30% of the intake in 2009 to 28.8% in 2010, 27.7% in 2011 through to 20% in 2018. The attrition rates for the other years are: year 2: 9.38%; year 3: 10.3%; year 4: 7.7%. These rates are applied to the pipeline of enrolments in subsequent academic years.

In the view of the review team, the clear priority should be to reduce attrition and let graduate output rise as a consequence. To enable reduced rates of attrition to be achieved, increases in participation should be deferred or at least constrained until better prepared cohorts flow through the schooling system, qualitative improvements and structural reforms are introduced in higher education, and higher expectations of higher education standards are embedded. A realistic upper limit of participation increase over the next fifteen years is around 35% of the age cohort. The 50% participation target for 2018 is unrealistic given the low preparedness of learners, insufficient structural capacity and flexibility, and the need to improve the cost-effectiveness of the current system.

The fundamental policy questions to be addressed in this context are: what would be the appropriate sharing of costs between general taxpayers and private beneficiaries; what should be the balance between public and private providers; and what would be the most cost-effective mix of provider types in the future provision of higher education services. These matters are discussed in the following chapters on supply diversification and sustainable financing.

Summary

The changing Dominican labour market requires higher levels of skills formation across the workforce. Having available a small cadre of highly skilled people is important for the development of leading-edge innovations. However, the main requirement is for qualified technical and professional personnel to underpin expansion and productivity improvement in the formal sector, particularly in small and medium-sized enterprises.

Building capacity for effective and credentialed training, particularly in secondary school and post-secondary vocational education and training, is a major priority in the Dominican Republic. Indeed, at this stage in the country's development, it must be a higher priority than enlarging traditional higher education.

However, such a strategy will require the social status of vocational education and training to be raised in Dominican Republic. Otherwise the community will find itself with the compounding dilemma of rising costs of wasteful participation in higher education of marginal utility to its workforce needs.

Demographically-driven student demand alone would add around 9 500 enrolments per year on average to the higher education system over the next decade. Raising the participation rate to 35% would add 11 500 enrolments per year. Raising the participation rate to 50% of the 18-24 age cohort by 2018, as proposed in the *Ten-Year Plan for Higher Education 2008-2018* would expand the system by 33 536 per year. Doubling graduate output as well by 2018, another goal of the Ten-Year Plan, would add 36 950 enrolments per year. Reducing attrition by 20% progressively over the decade, at the current rate of participation, would increase graduate output from 34 412 in 2009 to 86 097.

In the view of the review team, the clear priority should be to reduce attrition and let graduate output rise as a consequence. To enable reduced rates of attrition to be achieved, increases in participation should be deferred or at least constrained until better prepared cohorts flow through the schooling system, qualitative improvements and structural reforms are

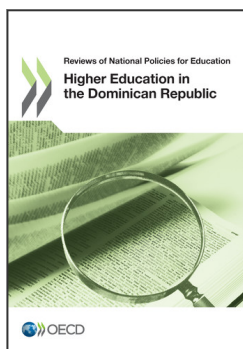
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