

Efficiency of Public Expenditures in Education and Health in Belize, 2003 - 2013

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Abstract

Fundamental to the achievement of a country's economic and social development goals is efficiency in its public spending. This study analyses the levels and trends of public spending in the education and health sectors in Belize and offers an initial approach to evaluating the efficiency of such spending, taking into consideration the performance of the main outcome indicators for both sectors. The study contributes to the existing literature by using a new database that allows a territorial approach, by documenting the disparities of spending and sectorial outcomes at a national level and among different political administrative units (districts) for the period 2003-2013. Based on the aforementioned analysis, the study also identifies areas for improvement and presents policy recommendations to be implemented at a territorial level. Owing to the limitation of data in Central American countries, this analysis is encompassed in a regional effort of systematization and standardization of public spending figures and of input and output indicators in these two sectors.

JEL classification: H11, H51, H52

Keywords: Efficiency, Public Spending, Education Spending, Health Spending, Belize

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Efficiency of Public Expenditures in Education and Health in Belize

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Consultant

I. Introduction

The objective of this study is to analyze public expenditures in education and health in Belize during the decade of 2003-2013, with the purpose of contributing to the dialogue on the efficiency of government expenditures in the education and health sectors. As such, the study identifies general areas in education and health in which efficiency gains might be achieved, by examining the available data for public spending and outcomes within Belize, and between Belize and its neighbors.

Recent analyses indicate that the rate of economic growth is likely to slow in Central America and the Caribbean during the next few years (ECLAC 2014) due to weakened commodity prices and a possible reduction in remittances. For Belize, medium term expectations are modestly optimistic due to an expected increase in tourism and foreign direct investment, resulting in a consequent reduction in unemployment (Alleyne 2014). Estimates for the next few years suggest modest average annual growth rates for Belize, of 3-2.5 percent in real terms between now and 2020 (IMF 2015). However, growth might be stymied by the government's need to make fiscal adjustments to keep public debt on a sustainable path. By the end of 2014, Belize's public debt equaled 77% of GDP², with additional contingent liabilities estimated by the IMF to amount to a further 20% of GDP (Martin 2015). These figures suggest that growth in GDP per capita will also be modest, unless the government takes quick measures to improve exports. In the context of such pressure on the fiscal accounts, the quality of provision of essential public services such as education and health will depend on the efficiency of public expenditures. To this end the analysis reviews the evolution of public expenditures on education and health during the decade 2003-2013 and the association between these expenditures and indicators of sector performance.

The analysis is organized as follows: Section II analyzes public expenditures in education, describing the organizational structure of the sector, the trends in public expenditures at the macro level, and the components of expenditures, focusing on recurrent costs, district level expenditures, and the relationships between per student and per capita expenditures and the indicators of sector performance. Section III analyzes public expenditures in health at the national and district levels. Section IV draws conclusions on the efficiency of public expenditures in these two sectors, and the types of policies that could be implemented to improve public sector performance.

¹ The author thanks Emily Morris for her substantive comments on an earlier draft, and Priscilla Gutiérrez Juárez for her technical support and coordination.

² At the end of 2015, total recorded public debt was 79%.

II. Public Expenditures in Education

II.1 Institutional organization of the education sector

The institutional structure of education in Belize follows a pattern based on the British system and adopted in many nations of the Caribbean (Table 1). Education is compulsory for the levels Infant I to Form 2, which theoretically would cover all children between the ages of 5 to 14. Students attend classes 175 days a year. Each school day includes four hours of classes for primary school and five hours for secondary school. Vocational education and upper secondary (ages 15-17) are encouraged but not obligatory. The education system is composed of the following levels:

Preschool: Also known as pre-primary. These schools provide services for up to three years and accept children between 3 and 5 years of age.

Primary: eight years of schooling for ages 5-12. Divided into two levels: Infant I and II, and six additional grades referred to as Standards I-VI. Those completing primary education must take the Primary School Exam in order to gain entry to secondary school.

Secondary: Four years of school for ages 13-17. Those wishing to continue on to a post-secondary institution must take the Caribbean Secondary Education Certificate (CSEC) exam, a standardized test administered by the Caribbean Examination Council.

Post-Secondary level. Belize relies heavily on ten Junior Colleges, also referred to as Sixth-Form institutions, where students can obtain an Associate Degree after two years of full time study before entering the labor market. The University of Belize is the public institution where students can get a Bachelors degree. Private universities are allowed to operate but they do not receive public funding.

ITVETs. The Institutes for Technical and Vocational Education and Training are designed to prepare youth for the skilled labor market and the formation of small and medium enterprises. Entrants must have a minimum of 15 years of age and a Form II education.

(Table A1 in the Annex shows the current structure of education in more detail.)

The system is for the most part publicly funded, but service delivery is shared between public schools and privately owned schools, as detailed in Part III of the Education Act of 2010. There are approximately 68,000 students in primary, of which 17 percent are enrolled in government schools, about 73 percent in denominational schools, and the remaining 10 percent in private schools (Ministry of Education 2013). Secondary enrollment is about 20,000 students, 38 percent attending government schools and the remaining 62 percent at denominational, community, private, and special schools.

Ministry of Education and Youth (MOEY). The MOEY is the main institution in the education sector. It is responsible for setting education policy goals and priorities, defining educational standards, issuing licenses to educational institutions and to teachers, providing support for education delivery, and monitoring education quality and effectiveness. Its jurisdiction covers from preschool to tertiary education. The Minister of Education governs the sector, aided by a Chief Executive Officer responsible for the overall management, and a Chief Education Officer charged with operational responsibilities.

National Council of Education: This is an advisory board on education issues with 15 members, including the chief education officer (*ex-officio*), representatives from denominational schools, the teacher's union, the five levels of education, and representatives from NGOs, parents and the business community.

National Council for Technical Education and Training. A 15-member advisory body for issues related to technical and vocational education with membership coming from TVET, NGOS, trade and professional groups, and several government institutions with interests in labor and production issues.

Belize Teaching Service Commission (TSC). This is a 12-member board in charge of enforcing MOEY standards and all regulations governing the conditions of service of teachers with respect to employment, appointment, transfer, discipline, and termination for all levels of education for government and government-aided schools. The TSC keeps the database of teachers, manages appointments, transfers, leaves of absence, and disciplinary actions. Its members include an appointed Chair, the Chief Education Officer (*ex-officio*), one representative of the Secretariat of the Commission (*ex-officio*), and representatives of grant-in-aid primary schools, grant-in-aid secondary schools, tertiary institutions, TVET institutions, the teachers' union, the council of churches, and three parent representatives (North, Center, and South).

Belize Board of Teacher Education. This 15-member board is in charge of quality assurance in teacher education. It includes four *ex-officio* MOEY members, teachers, and representatives from different education associations.

This significant number of high-level advisory bodies has a total of 57 members, for an education system of only about 100,000 students. On the positive side, a consensus arising from these organizations tends to be stable, helping to minimize conflict and give political legitimacy to education policy. Operationally, however, such a significant number of stakeholders slows down the process of reform (Arcia 2012a).

In summary, the basic institutional framework of educational policy in Belize is a mix of public interests defined by public policy in the funding and provision of education services, public/private policies developed in partnerships with religious institutions in the delivery of public education, and private policies of religious institutions that operate in parallel with public policy in areas related to personnel management. This framework has become somewhat burdensome because, over time, a gap has opened between the interest and obligations of the Government in providing a public good, and the interest of religious institutions that consider the provision of a public good as secondary to their religious interests (Arcia 2012a).

II.2 Education Planning and budgeting

Education planning is done by the MOEY policy planning office in Belize City. Sector planning is based on data on internal efficiency, where total enrollment projections at the district level are used as the base for overall projections of resource needs. However, budget projections are prepared jointly by the Ministry of Education and the Ministry of Finance. The resulting budget

proposal goes to the legislature for approval. For pre-school and primary education, budget planning is driven by teacher salaries and administrative and operational costs projected by denominational and government schools. As such, budget plans are somewhat inertial, since the resulting allocations to each school are based on salary projections presented by the schools, with an additional 30% allocation for operating costs. For secondary schools the MOEY has just begun to implement its new school funding formula based on an allotment per student (Näslund-Hadley, Alonzo and Martin 2013; IDB 2011). The per student allocation replaces funding based on teacher salaries, leading to a more rational use of financial resources, as schools readjust their teaching force and salary structure to fit into the school budgetary allotment produced by the formula.

The education budget is mostly managed through the MOEY, whose budget includes the transfers paid to the University of Belize and ITVET institutions. Total education costs, however, are borne by the Government and directly by families in about a 50/50 share (Arcia 2012b). Expenses incurred by families include uniforms, school materials, food, and transportation in government primary schools, and the same expenses plus tuition fees in all secondary schools.

II.3 Education Implementation and Supervision

Education provision in Belize is a mix of public schools funded by the government, and privately owned denominational schools that are owned by churches but have a majority of their funding paid by the government. The Education Act of 2010 clearly states that the provision of a public good—basic education—is through a system of public and private denominational providers, both of which receive public funds. The involvement of denominational providers is more prominent in primary school, where government schools serve only around 12,000 students of a total of almost 69,000; that is, less than one-fifth of all students.

	Primary				Secondary			
	Total	Gov't	Gov't aided	Other	Total	Gov't	Gov't aided	private
Total	68,812	12,083	57,132	11,680	20,539	7,956	11,733	850
Urban	30,165	2,725	24,750	5,415	14,917	4,170	10,628	119
Rural	38,647	9,358	32,382	6,265	5,622	3,786	1,105	731
District								
Corozal	8,068	838	6,715	1353	2,156	666	1,413	77
Orange Walk	10,118	3,332	8,144	1,974	2,160	986	1,136	38
Belize	17,410	1,153	13,415	3,995	6,717	2,411	4,124	182
Cayo	17,395	3,730	14,154	3,241	4,927	1,529	2,879	519
Stann Creek	9,189	2,302	8,255	934	2,733	1,460	1,266	7
Toledo	6,632	728	6,449	183	1,846	904	915	27

Source: Statistical Institute of Belize

Under current legislation, the Government gives private education providers in primary education enough funds to pay for their teacher salaries, plus an additional 30% for operational costs. Although the MOEY standards are to be complied by private schools, private providers have a large degree of operational autonomy. As a result, primary education in Belize is highly decentralized in some areas of operation and centralized in others, in large part due to the fact

that churches run their own internal bureaucracies and can operate in a decentralized fashion. For instance, while teachers in both public and denominational schools are required to be confirmed centrally by the Teaching Service Commission (TSC), public school teachers are selected at the district level, while teachers in denominational schools are selected at the school level. Teachers in public schools are managed at the district level while church authorities manage teachers in their own schools.

Some functions are centralized because of clear Government mandates, such as the basic curriculum and other school standards. Still, denominational schools have been given some leeway in adding religious components to their school curriculum. Over the years, MOEY has expressed concern at the crowding out of the time allocated to the standard curriculum by time allotted to religion classes in denominational schools (Arcia 2012). Although the Education Act has specific regulations about church schools’ (and indeed all schools’) compliance with public education rules, over the years the MOEY has been inconsistent in forcing church schools to comply with different aspects of the law.

Supervision of education service delivery is the responsibility of the MOEY. School supervision and inspections are managed by the MOEY’s District Education Offices, under the responsibility of a District Manager.

II.4 Public Expenditures in Education

II.4.a Public Expenditures as Percentage of GDP

All public expenditures in education are channeled through the Ministry of Education and Youth. In 2013 Government expenditures in education accounted for 21.2% of the Government’s budget and about 6.5% of estimated GDP (Table 2)³. Education funding declined from a high of 24% of the budget in 2003 to 16% in 2006 (Fig. 1). Since then, budgetary support to education has increased once more, to above 20% of the budget. As a proportion of GDP, this has resulted in a modest but steady increase, from less than 5% of GDP in 2004 to 6.5% of GDP in 2013. The maintenance of education expenditures at around 6% of GDP since 2008 reflects a strong Government commitment to education during a period of tight fiscal restraint (with an average deficit of less than 1% of GDP).⁴

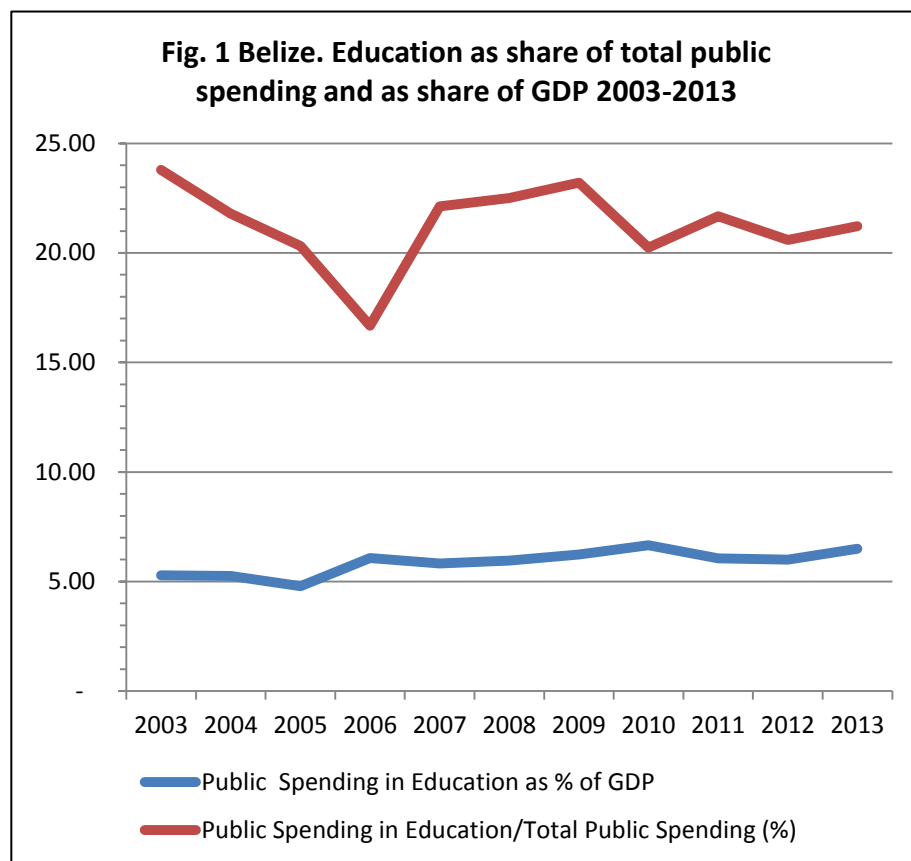
Item	FY 2013
GDP at market prices BZ\$	3,230,687,610
Total public spending BZ\$	889,987,180
Ministry of Education (BZ\$)	209,860,966
Public spending in education as % of total public spending	21.23

³ For simplicity 2013 is used as a reference for the fiscal year 2012/13 (April 2012-March 2013). Also, 2013 allows for comparisons with the results of other studies in the Central American region covering education and health expenditures for the same decade, as stated in the introduction.

⁴ Budget Speech by the Prime Minister, 2013/14. See: Government of Belize, 2014. “Approved Estimate of Revenue and Expenditure for Fiscal Year 2013/2014.” Belmopan.

Item	FY 2013
Public spending in education as % of GDP	6.50

Source: Ministry of Finance and Central Bank of Belize



Source: Ministry of Finance and Central Bank of Belize

At the macro level Belize's *education expenditures per student as share of per capita GDP* have been kept more or less constant among the pre-school, primary and secondary levels. As Table 3 shows, since 2006 public spending on primary education per student has been kept around 14% of per capita GDP, and for secondary around 27% of per capita GDP. In principle, this should not be surprising since most public expenditures in education go to pay for teacher salaries, the cost of which tends to grow in line with GDP per capita. Within overall expenditures, however, there seems to be a decline of capital expenditures relative to recurrent spending, which tends to be dominated by salaries. Between 2003 and 2006, Belize spent around 20% of its education budget on capital investments, but since then the share of capital investment has declined to around 4% of the total. Since educational expenditures have increase as shares of GDP and GDP per capita, the decline in capital investment means that recurrent funding has increased at a greater rate than capital spending. This trend will be examined in the next section.

Category of Public Spending in Education	2003	2006	2009	2012	2013
Public Spending per student as % of GDP per capita: Preschool	1.5	1.9	5.1	3.7	3.6
Public Spending per student as % of GDP per capita: Primary	11.2	12.6	14.2	14.5	14.6

Category of Public Spending in Education	2003	2006	2009	2012	2013
Public Spending per student as % of GDP per capita: Secondary	17.2	23.0	27.60	26.6	27.1
Capital Spending in Education as % of GDP	1.0	1.5	0.3	0.3	0.3
Capital Spending in Education as % of education spending	19.5	23.4	5.2	4.7	4.2

Source: Ministry of Finance and Central Bank of Belize.

For data on the entire 2003-2013 period see Table A2 in the Annex.

Belize's education expenditures as share of GDP place it among the top countries in Central America: within the region, only Costa Rica has a higher percentage of GDP allocated to education (Table 4), and the percentages of the other countries are significantly lower. This begs the question of efficiency: given the high level of expenditures relative to GDP, Belize should be asking if its educational performance is also significantly better than in the rest of the region.

Country	% of GDP
Belize, 2013	6.5
Costa Rica, 2013	6.9
El Salvador, 2012	3.7
Guatemala, 2013	2.8
Honduras, 2013	5.6
Nicaragua 2010	5.3
Panama 2011	3.5
Dominican Republic 2012	3.8

Sources: see footnote⁵

A review of public expenditures in education in several countries in Central America and the Caribbean reveals that Belize also has one of the highest current public expenditures in primary and secondary education relative to its *per capita* GDP (Table 5). Given this level of commitment in the midst of fiscal restraint, the government has an interest in closely reviewing expenditure efficiency and effectiveness.

Country (year)	% of per capita GDP	
	Primary	Secondary
Belize (2013)	14.6	27.1
Costa Rica (2009)	14.6	14.4
El Salvador (2013)	8.5	9.1
Honduras (2013)	17.9	26.1
Guatemala (2008)	10.4	6.2
Nicaragua (2010)	21.8	10.4
Panamá (2007)	12.4	15.1

Source: Estimated by the author. For Belize: Source: Ministry of Finance and Central Bank of Belize.

⁵ Costa Rica, Dominican Republic, French Guiana, Guatemala, and Panama: World Bank Data (<http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>); El Salvador: FUSADES 2015; Honduras: Arcia 2013; Nicaragua: Näslund-Headley et al 2012.

II.4.b Breakdown of Recurrent and Capital Expenditures in Education

Table 6 presents recurrent and capital expenditures in education. Because Belize is a small country, the national education budget is highly detailed. Prior to the 2013-2014 Financial Year the budget showed the amounts allotted to each of the government high schools and junior colleges.

Program	2012/13 (Revised)	Percentage
Central Administration	2,826	1.3
Quality Assurance & Dev. Ser.	1,134	0.5
Teaching Services Commission Secretariat	434	0.2
Education Support Services	560	0.3
Supplies Store	1,832	0.8
Examination Unit	1,864	0.8
Planning And School Resourcing	3,287	1.5
Teacher Development Unit	233	0.1
National Library Service	2,172	1.0
Scholarship	8,847	4.0
Secondary School Tuition	5,695	2.6
Truancy Management	1,187	0.5
National Sports Council	1,102	0.5
<i>Grant-aided Community Colleges and Secondary Schools</i>	53,295	24.2
<i>District Education centers</i>	608	0.3
<i>Centers for Employment Training</i>	4,067	1.8
<i>MOEY-managed schools</i>	1,985	0.9
<i>District Education Administration Offices</i>	772	0.4
<i>Youth Education Development Programs</i>	2,553	1.2
Pre-School	2,393	1.1
Primary Education Government Schools	18,088	8.2
Primary Education Grant-Aided Schools	78,681	35.7
Tertiary & Post Secondary	158	0.1
Sixth Form Institutions	7,080	3.2
University Of Belize	10,000	4.5
Total Recurrent Budget	210,855	95.6
Capital II account--Local funds	3,733	1.7
Capital III account--External funds	5,876	2.7
Grand Total	220,465	100.0

Note: Items in *italics* are itemized in Table A3 in the Annex

Source: Government of Belize, 2014., pp. 203-291.

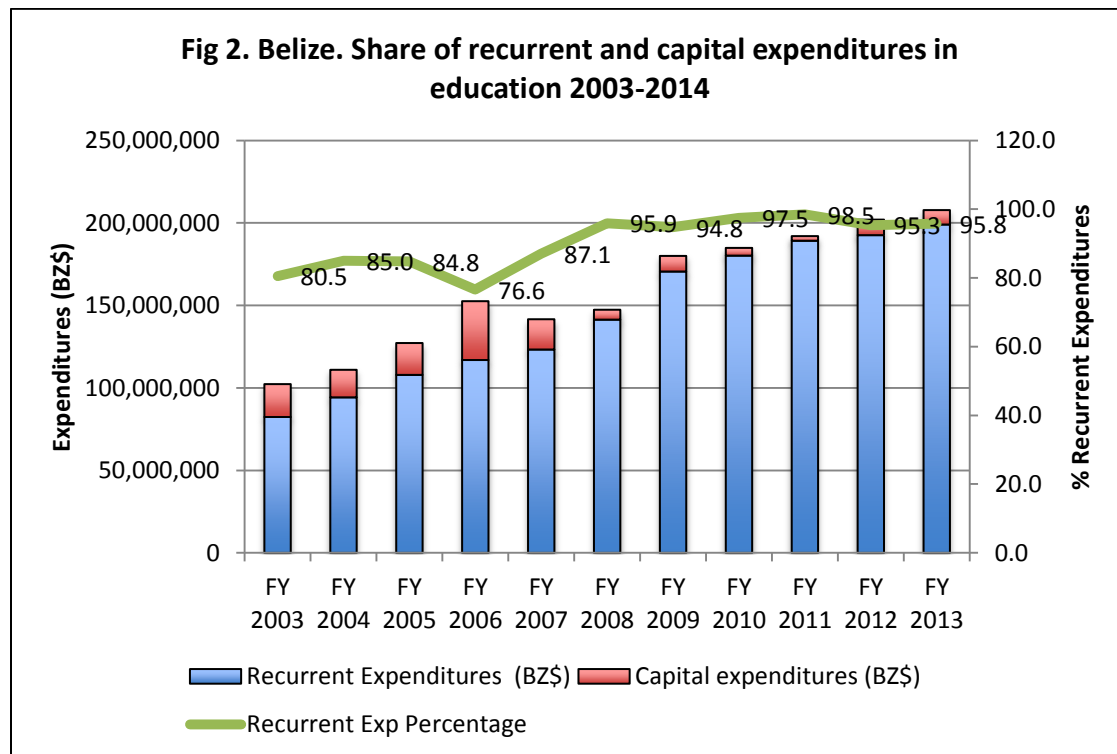
Some line items in the education budget merit a more detailed description. First, the District-level expenditures are of two kinds: the amount allotted to District Offices, and the amount allotted to schools located in the districts. Funds assigned to District Offices pay for MOEY staff in charge of overseeing school compliance with education policies, including monitoring and evaluation of performance among the schools located in their district, coordinating district council meetings, preparing District annual reports, and coordinating student transportation. The

Supplies Store is the book purchasing agent for the MOEY, which sells and rents textbooks at a subsidized rate to cover the cost of books and school materials.

The program ‘Primary Education Government Schools’ refers to the amount assigned to pay for the administration, staffing, and operation of the 54 primary schools run by the Government. The program ‘Primary Education Grant-Aided Schools’ shows the amount allocated to the 214 primary schools that are managed by 20 churches and denominations, and one community school, for a total of 215 schools under the program. Government funding for primary provides for the following:

- Purchase of materials and equipment for primary schools, including text books, stationery and minor equipment, and weekly payments to providers of school transportation services
- A treat to school children for Independence Day and Garifuna Day Celebrations;
- A supplementary grant of \$2.00 per student paid to the school;
- An office grant of \$2.00 per student paid to the school;
- Building, furniture and equipment grants based on enrolment figures of schools;
- Salary grants to be paid to General and Local Managers of schools
- Grants to be paid to other NGO’s working in education

Because of its system of denominational schools serving about three-quarters of the student population, government spending on capital investment in education has consistently been low compared with other countries. Fig. 2 shows that before 2008 recurrent expenditures were lower than 85% of total spending, but this proportion has risen steadily since then.



Source: Ministry of Finance

After 2007 the share of recurrent costs increased drastically, reaching 95.8% of total spending in 2013, leaving capital investments at below 5% of the total. This low share of investment in total education spending may reflect the fact that most schools in the country are owned by churches and denominations, which provide the school infrastructure. As a result, it appears that capital investment may be limited to government run schools and other facilities, such as vocational education and employment training centers.

For capital investment, the MOEY manages two accounts: Capital II, which relies entirely on local funds, and Capital III, which is financed by loans and grants from external donors (table 7). The capital account is flexible, since it allows the Government to make significant adjustments in its implementation depending on the pace of project implementation and on the incorporation of new projects to the implementation pipeline. A good example is the use of the Capital account in the Financial Year 2012-2013, where the initial amount approved by the legislature was adjusted significantly. Capital II expenditures (local funds) were adjusted downward—perhaps due to cash flow issues in the Ministry of Finance or implementation issues by the MOEY or perhaps because the amount of external funds was greater than anticipated, as FY 2012/13 was the year when substantial funds under the renewed *Petrocaribe* agreement started to flow. In any event, the Capital III expenditures (external funds) were adjusted upward.

Capital Account	Approved Estimate 2012/13	Revised Estimate 2012/13
Capital II-Local funds	4,042,000	3,733,138
Capital III—External funds	4,701,000	5,876,017

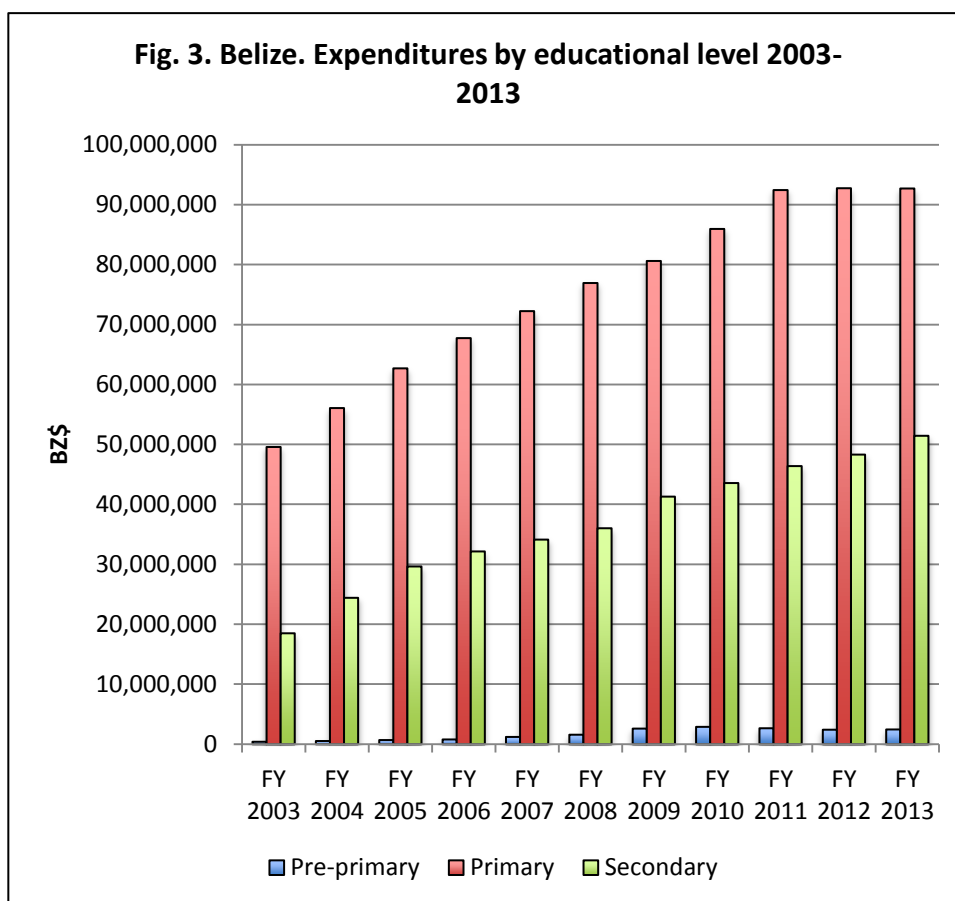
Source: Ministry of Finance

II.4.c Expenditures by educational level

Most public expenditures in basic education are assigned to the primary level (Fig.3). Primary school expenditures peaked in 2011, perhaps reflecting a plateau in enrollment due to a slow down in population growth.⁶ Because Belize is still in the upward trend for secondary education enrolment, expenditures for this education level continue to grow. In the case of preschool education, expenditures are very low, reflecting the low level of enrolment in this education level. The detailed figures on the expenditures by educational level and per student for the 2003-2013 period are shown in Table A4 in the Annex.

Over the past decade, primary education has accounted for about 65% of expenditures in basic education and secondary about 33%, with less than 2% being allotted to preschool education.

⁶ Although there are no public population projections by 1-year intervals, the number of children between 0 and 1 years of age declined by 3.2% between 2000 and 2010, suggesting a reduction in the preschool-age population by 2015. The population of other age groups increased between these years. Source: Statistical Institute of Belize Total Population and Change by Five Year Age Group, Belize 2000 and 2010.



Source: Ministry of Finance. For details see Table A4 in the Annex

As a percentage of total public expenditure in the sector, spending on basic education—preschool, primary, and secondary—represents about 70% (Table 8). The relatively large variations in this share reflect year to year changes in the allocation to other educational programs, such as TVET, employment training, and other education services listed in the budget.

Level	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pre-primary	0.4	0.5	0.5	0.5	0.9	1.1	1.4	1.6	1.4	1.2	1.2
Primary	48.5	50.5	49.3	44.4	51.0	52.2	44.8	46.5	48.1	45.9	44.6
Secondary	18.1	22.0	23.3	21.1	24.1	24.4	22.9	23.6	24.2	23.9	24.8
Total	66.9	73.0	73.1	66.0	76.0	77.7	69.2	71.6	73.7	71.0	70.6

Source: Ministry of Finance

Overall, primary education represents about 45% of total public expenditures in education, while secondary accounts for approximately 25% of the total.

II.4.d Per Student Expenditures

In 2013 Belize spent BZ\$1,347 (US\$674) per primary school student and BZ\$2,506 (US\$1,253) per secondary school student, or almost double the amount for primary students (Table 9). It is interesting to note that nominal per primary student spending has increased by 63% between

2003 and 2013, and for secondary students by 98% during the same period. This difference in the growth of per student spending shows that for the past decade Belize invested relatively more in secondary education. Such a pattern may reflect an education policy that tried to improve the quality of secondary education, student retention and the number of years of schooling of the population.⁷

Level	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Preschool	109	142	158	163	244	273	432	439	395	340	333
Primary	828	906	991	1,050	1,104	1,166	1,208	1,283	1,378	1,338	1,347
Secondary	1,265	1,590	1,836	1,926	2,015	2,106	2,345	2,365	2,457	2,457	2,506

Source: Calculated by the author. Exchange Rate: 1 BZ\$= 0.5US\$

II.5 The relationship between internal efficiency, learning outcomes and expenditures

Between 2003 and 2013 Belize students taking the Primary School Examination (PSE) had to get a score of at least 51% in the exam. The percentage of students with a combined score above 51% is shown in Table 10, along with some indicators of performance associated with education quality or learning. The first two rows of Table 10 show the percentage of students taking the standardized Primary School Examination that obtained a combined math, language and science score above 51% (passing grade) and 75% (approximately a B grade). These two score levels are compared with other factors that are ordinarily associated with education quality: the student/teacher ratio, the drop out ratio, the percentage of certified teachers, per student expenditures, and the rate of repetition.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Pct. w PSE Test Score >75%	6.40	13.23	6.40	5.59	8.75	15.74	8.87	20.00	10.58	25.30	34.52
Pct. w PSE Test Score >51%	55.3	71.5	55.3	54.0	65.3	77.2	64.8	78.1	67.7	80.1	73.7
Student Teacher Ratio	24.2	23.4	23.6	22.8	22.8	22.5	22.6	22.2	21.8	21.5	20.8
Drop Out Rate	0.9	0.9	0.9	0.8	0.8	0.9	0.8	0.8	0.6	0.7	0.7
Percent Certified Teachers	43.3	42.6	43.1	38.5	37.8	36.3	38.5	41.7	44.1	51.4	56.4
Per Student Expenditure	828	906	991	1,050	1,104	1,166	1,208	1,283	1,378	1,338	1,347
Repetition Rate	9.5	9.7	9.5	8.7	7.4	7.2	6.5	7.1	6.8	6.2	6.0

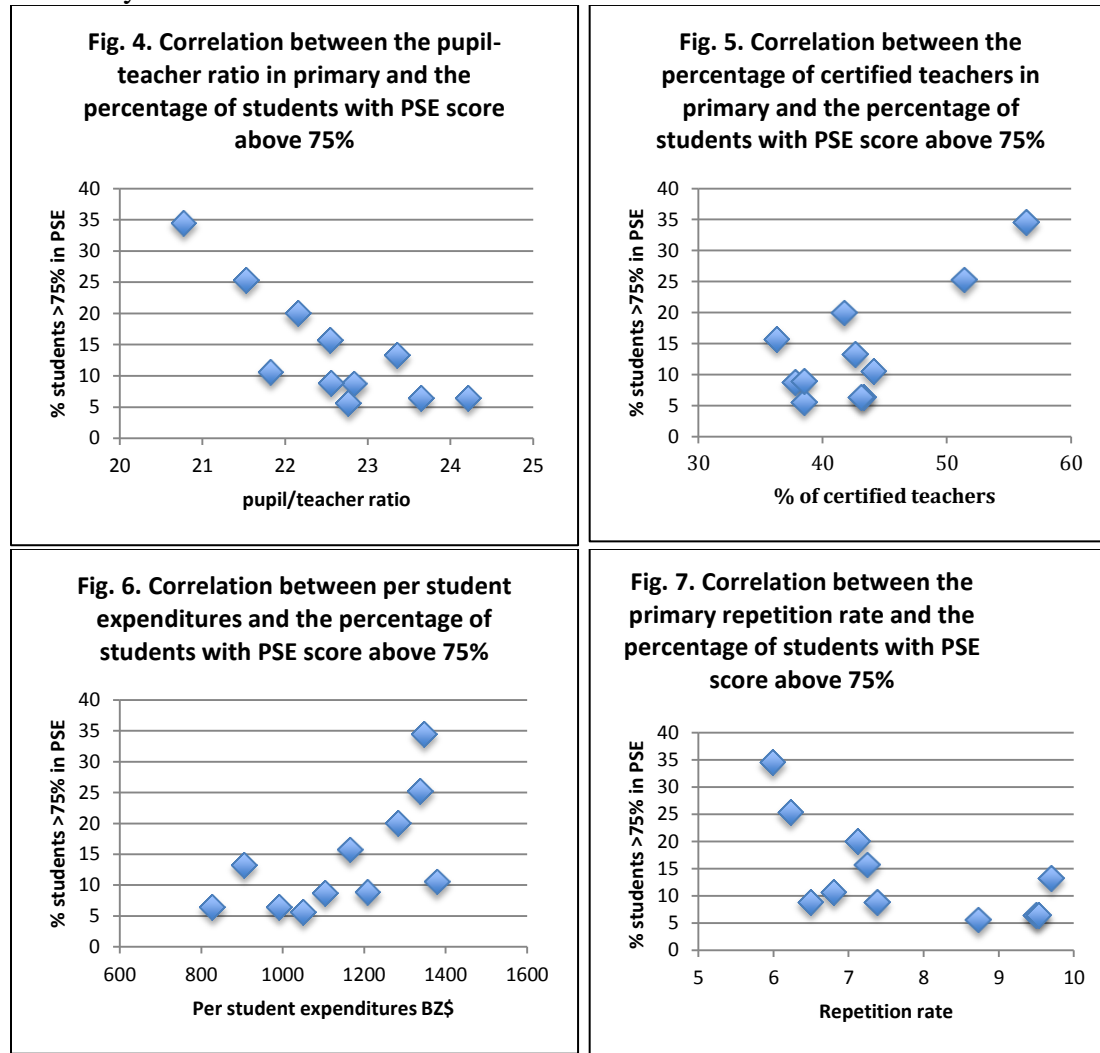
Source: Statistical Institute of Belize, and Ministry of Education and Youth

It is obvious that to estimate the impact of these variables on PSE scores through linear regression would require substantially more data points and more covariates. Given this limitation the only inferences that can be made would be based on simple correlations to evaluate

⁷ The increase in secondary expenditures may help explain the 3 percent points reduction in the dropout rates for Forms 1 to 4 between 2008 and 2013 (MOEY 2013).

if the available data shows some association between PSE test scores and the factors listed in Table 10.

The correlations between the above factors are shown in Figures 4-7. They show that PSE scores are: negatively correlated with pupil per teacher ratios (which means that they are positively correlated with smaller class sizes); positively correlated with the percentage of certified teachers; positively correlated with per student expenditures; and negatively correlated with student repetition rates. These results are in line with the expectations of performance of education production functions and can be used as a base for discussion of effectiveness and efficiency in the education sector in Belize.



Source: Estimated by the author. Table A5 in the annex shows the numerical results.

The correlations in Figs. 4-7 suggest that an increase in recurrent expenditures per student to employ more teachers or raise teachers’ salaries might contribute to better PSE scores, but do not provide insight into the level of efficiency of spending, or how it might be improved. That is, a positive correlation between per student expenditures and test scores leaves open the question: are Belize’s per student expenditures too high for the results obtained? Based on their analysis of indicators of internal efficiency, Näslund-Hadley, Alonzo, and Martin (2013) argue that Belize’s

educational performance is disappointing, especially in light of increased and sustained levels of public funding for education as a share of the national budget and as a share of GDP. They point out that the Government of Belize, in the speech given by the Minister of Education introducing the National Education Strategy for 2011-2016, recognized a disconnect between the level of budgetary resources assigned to education and the modest results obtained.

Comparing some of Belize's key indicators of educational performance with Central America and with some of the better performing countries in Latin America (Table 11)⁸ the above assertions seem to hold, but with significant caveats. In terms of public expenditures as a percentage of GDP per capita, Belize is above some countries and below others; there is no clear pattern in comparison with the region. However, in terms of net enrolment for pre-primary, net intake rate to 1st grade, and the graduation rate from lower secondary—all of which are good indicators of enrolment growth—the pattern shows that Belize compares well with its neighbors in Central America, but underperforms relative to other countries in Latin America, such as Argentina, Chile, and Mexico, even though these countries have similar levels of educational expenditures as a share of GDP per capita.

A comparison within the Central American region to determine if Belize is being less cost-efficient than the other Central American countries yields mixed results, but if the comparison includes the better performing countries in Latin America, it becomes fairly clear that, given its level of per student expenditures relative to GDP per capita, Belize could do better, especially in the use of trained teachers—among the lowest of all comparison countries—and in pre-primary enrolment.

	Expenditures per student in primary as % of GDP Per Capita	Net Enrolment rate pre-primary	Net intake rate to 1 st grade	Graduation rate from lower secondary	Percent teachers trained
Belize	14.7	46.4	65.5	60.8	48.8
Costa Rica	23.3	75.2	85.0	63.3	97.1
El Salvador	9.8 ^d	53.5	58.4	73.3	95.6 ^b
Guatemala	9.3	45.4	53.6	47.7	...
Honduras	19.7	38.3	67.1	57.7	87.2 ^g
Nicaragua	11.0 ^d	54.9 ^d	64.6 ^d	64.4 ^f	41.9 ^d
Panama	6.6 ^b	65.1	...	77.3 ^b	48.7
Argentina	13.8 ^a	75.2	96.6 ^c	72.2 ^a	...
Chile	16.9 ^a	88.9	...	...	...
Colombia	17.4	44.5 ^b	62.0 ^d	89.2	97.3
Mexico	14.6 ^b	83.4	73.0 ^d	89.3 ^a	...

Source: UNESCO Institute of Statistics. (<http://data.uis.unesco.org/Index.aspx?queryid=120>)

^a 2012; ^b 2011; ^c 2008; ^d 2010; ^e 2009; ^f 2007; ^g 2004

⁸ There are many indicators of educational internal efficiency that could be used for comparison. The indicators in table 11 can be considered as bellwether indicators for countries with high enrolment rates for primary, where the main education issues relate to preschool enrolment, educational attainment, teacher quality, and student learning (see Vegas 2013). There are no data on student learning that can be used to compare with the learning outcomes of the other countries in the table.

II.6 The Private Cost of Education

A key issue for poor families is the cost of sending a child to school. The cost may include fees, uniforms, shoes, food and materials. The combined cost of these items can be significant, especially for families with several children attending school. For Belize, the most recent evidence on private expenditures in education is from the 2009 Living Standards Measurement Survey (LSMS), where some patterns of education expenditures by poverty level are presented in the official report (Halcrow Group Limited 2010). Although there is no information on the actual expenditures on education by households, there is information about the incidence of expenditures by poverty level. Among households in extreme poverty about 56% incurred educational expenditures. Among non poor households 64% had educational expenditures. These two figures need to be interpreted cautiously: not having educational expenditures could well be due to the absence of students in the household. Among households with educational expenditures, about 2.9% of those categorized as ‘extremely poor’ spent more than 10% of their non-food expenditures on education, compared with 10.2% of ‘non-poor’ households (Halcrow Group Limited 2010, Table 4.24). The available LSMS data for 2009 does not specify educational expenditures in detail, except for school fees. Transportation and book purchases are assigned to the entire household and cannot be separated from educational expenditures.

The only other data on private expenditures are in a study by Arcia (2012), which estimates private expenditures in education for 2009 using the structure of expenditures observed in households in the LSMS of 2002. The results of this approximation show great disparities between the districts, with Cayo households’ spending more than double that of households in the Belize District (Table 12).

District	School fees	School Bus	Books, paper,	Uniforms	Lunch	Other expenses	Total per household
Belize	308	60	33	123	148	193	866
Cayo	661	58	26	264	317	767	2,093
Corozal	201	29	21	81	97	73	502
Orange Walk	366	43	24	147	117	440	1,137
Stann Creek	158	32	15	63	76	240	585
Toledo	144	24	16	57	98	138	477
Total	339	48	26	136	163	257	967

Source: Constructed by the author using the structure of expenditures from 2002, the school fees paid by households in 2009 (estimated by the author using the 2009 LSMS), and the consumer price index from 2006 to 2011.

The above results are important to keep in mind when targeting education subsidies for poor families, as they show that the greatest costs of sending a child to school are in Cayo and Orange Walk. Poor families in these two districts could face significant difficulties in sending their children to school.

II.7 Public Educational Expenditures at the District Level

To determine the amount of public expenditures at the district level it is necessary to *multiply student enrolment by district by the amount spent per student at each educational level*. Table 13 shows the approximate amounts spent by MOEY at the district level in 2013. Obviously, since the data are driven by enrolment, this is an approximation. Within each district, students at different schools may accrue different amounts depending on the subsidy received by *each* school. In the case of denominational schools at the primary level the Government pays for salaries, and those schools with the more experienced, more expensive teachers receive a higher amount per student. Still, under current rules the figures in Table 13 are a good approximation of public education expenditures at the district level.

District	Preschool			Primary			Secondary		
	Enrolment	% of Enrolment	Expenditure per District	Enrolment	% of Enrolment	Expenditure per District	Enrolment	% of Enrolment	Expenditure per District
Belize	2,639	35.7	878,121	17,410	25.3	23,458,876	6,717	32.7	16,829,924
Cayo	1,259	17.0	418,929	17,395	25.3	23,438,665	4,927	24.0	12,344,951
Corozal	925	12.5	307,792	8,068	11.7	10,871,121	2,156	10.5	5,402,012
Or. Walk	817	11.0	271,855	10,118	14.7	13,633,367	2,160	10.5	5,412,035
Stann Creek	1,128	15.2	375,339	9,189	13.4	12,381,598	2,733	13.3	6,847,727
Toledo	632	8.5	210,297	6,632	9.6	8,936,202	1,846	9.0	4,625,285
Total Exp.	7,400	100.0	2,462,333	68,812	100.0	92,719,828	20,539	100.0	51,461,934

Source: Estimated by the author

II.8 Per student spending

Table 14 shows that Belize spends about BZ\$1,347 (US\$673) per primary school student. This amount covers the direct transfers to schools plus the cost of District education offices. It does not include the pro-rata cost of centralized administration at the MOEY.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Exp. '000 BZ\$	49,592	56,085	62,710	67,758	72,259	76,950	80,628	85,972	92,461	92,766	92,720
Primary Enrollment	59,930	61,938	63,282	64,516	65,430	66,007	66,735	67,008	67,088	69,331	68,812
Per Student Exp. BZ\$	828	906	991	1,050	1,104	1,166	1,208	1,283	1,378	1,338	1,347

Source: Ministry of Finance

Currently the MOEY pays directly for the costs of government-run secondary schools. Grants to denominational secondary schools are calculated on the basis of a funding formula that started during the 2013-14 school year. The funding formula is intended to foster parity in per student finance between schools receiving above average subsidies per student and schools receiving below average subsidies per students. Its goal is to give schools more incentives to increase student enrolment and to retain students in school. To attain this goal the new funding formula ensures that schools are reimbursed for the implementation of the basic curriculum, and also

given incentives for providing services in poor areas and to students with special needs. Under the new formula tuition fees charged by grant-aided schools would be eliminated and the financial shortfall incorporated into the new funding formula. This provision would substantially reduce the private costs of secondary education to poor families—a factor that has been cited as a significant constraint to secondary enrolment (Naslund-Headley, 2010).

The funding formula has three components: (i) per student funding for the core curriculum, (ii) compensation for serving students in poverty or with special needs, and (iii) a performance bonus. Of these three components only the first two are being implemented while the third one is still under development. Core funding would pay for the cost of teachers, school administration, and school operations; the compensation component gives the school additional funds in proportion to the poverty rate in the district⁹, and the Performance Grant, which is not yet operational, will give schools additional funds related to past performance.

II.9 Overall findings for public spending in education

The main conclusion that can be drawn from analyzing public educational expenditures is that Belize has been consistent in providing adequate funding to basic education, but the data suggest that there is scope for improving the effectiveness of expenditure. In terms of its share of the budget the education sector has received a steady level of support, even during periods of tight fiscal constraint. In terms of expenditures per student—especially as a share of GDP per capita—the sector also did better than other sectors in the national budget.

The results obtained from these efforts, however, seem to be mixed at best. Relative to the results obtained by other countries in the region, and by countries considered as good performers in Latin America, Belize could do better. Clear areas for improvement can be found in the supply of trained teachers—an area where the country is making progress since the creation of the Teaching Service Commission. Also, as discussed in the section on the institutional structure of the education sector, more accountability is needed from private providers of education that receive public funding.

In terms of resource efficiency it is clear that education quality—relative to the allocation of financial resources—needs improvement. The current budget seems to be proportionate to the country's means, but there is a need to improve system management to take advantage of current system financing.

⁹ The Compensation Grant estimates the theoretical number of poor students served by the school. For example, if a school with 350 students is in a district with a poverty rate of 48%, then it would be given additional funds to serve the needs of $350 \times 0.48 = 168$ students.

III. Public Expenditures in Health

III.1. Institutional context.

The Ministry of Health (MOH) is the entity responsible for setting policies and standards, proposing legislation, and for regulating procedures for policy implementation and service delivery. Government-funded health services are provided through a network of primary-level health posts, secondary-level health centers, and tertiary level regional hospitals. The current emphasis of health services is on primary and preventive care.

The health sector's legal framework rests on the Public Health Act and the Health Services and Institutions Act, both of which give the Director of Health Services at the MOH regulatory authority. Sanitary Health Standards for public and private establishments are monitored by the MOH and the Department of the Environment. Public health oversight is the responsibility of the MOH, working in collaboration with other governmental institutions at the ground level. The licensing of medical professional is regulated and managed by the Belize Medical Council, the Nurses and Midwives Council of Belize, and the Pharmacy Board. Guidelines for the standardization of health care are outlined in the National Health Plan (MOH/PAHO 2014; PAHO 2009).

The Chemist and Druggist Act regulates the use and distribution of pharmaceuticals. There is also a National Drug Policy that lists essential and necessary medicines available to the population. The list, shown in the National Drug Formulary, is updated every five years by the Pharmaceuticals and Therapeutics Committee. Purchasing and distribution is regulated by the Maximum Price Contract Committee. A Drug Inspectorate is charged with the responsibility to monitor and enforce compliance with the National Formulary. Drugs listed in the formulary are subsidized to make them accessible to all Belizeans using the public health system (MOH/PAHO 2014).

In 2004 the Government began a health sector reform which established Regional Management Teams to decentralize planning and decision making in the country's four health regions – Northern, Central, Western, and Southern. Under this new administrative structure the MOH invested in the Belize Health Information System (BHIS), which allows for the use of electronic health records nationwide. The BHIS makes it possible to do follow up care to patients in their respective districts by transferring their medical records electronically. Since 2009 the BHIS has been operating in the four regional hospitals and all MOH health facilities.

The Northern Health Region serves almost 80,000 people in the districts of Corozal and Orange Walk. This region has two hospitals: the Northern Regional Hospital and Corozal Community Hospital, and 11 health centers and 16 health posts. Aside from primary care the hospitals provide surgical and internal medicine services.

The Central Health Region is the biggest of the four health regions, covering almost one-third of the population. The Region has three administrative areas: Belize City, Belize Rural and the Cayes. Its main hospital is the Karl Heusner Memorial Hospital, which is the only public

Referral Hospital offering secondary and tertiary care. The Central Health Region administers 10 health centers, two mental institutions, and services for environmental health and HIV.

The Western Health Region has two public hospitals: the Western Regional Hospital and the San Ignacio Community Hospital. The region also has five health centers and five health posts, serving about 62,000 people. Both hospitals offer primary and secondary care, as well as specialized services in gynecology, surgery, pediatrics, and internal medicine.

The Southern Health Region has two public hospitals—the Southern Regional Hospital in Dangriga, and the Punta Gorda Community Hospital—14 health centers, and 12 health posts, serving about 62,000 people. The Southern Regional Hospital provides both primary and secondary care, and specialize services in gynecology, surgery, pediatrics and internal medicine. It has also a mental health unit.

Health service provision operates under a referral process where people examined at the level of health posts can be referred to a health center for further treatment, diagnosis and screening. If the patient needs a higher level of care he/she is referred to a community hospital or a regional hospital depending on need.

III.2 Health Planning and Budgeting

Planning and budgeting is the responsibility of the MOH, but funding comes from three sources: budget allocations from the central government to the MOH, income from health insurance premiums paid by members of the National Health Insurance system, and income from the Social Security Board. About one-third of the population has health insurance, which provides coverage for all health problems of its members, with the exception of work-related injuries, which are covered by the Social Security Board.

MOH oversight focuses on service delivery and on the provision of a list of free services by public hospitals, health centers and health posts. However, any medical care not included in the list of free services provided by the system has to be paid by users, either through private insurance schemes or out-of-pocket. Current statistics indicate that about 65% of the population rely entirely on public health services, and 15% on private health services, with the remaining 20% using both systems.

Planning and budgeting for health can be cumbersome because the hiring of health staff is subject to approval by the MOH, the Ministry of Public Service (regulating the civil service) and the Ministry of Finance. As a result, inefficient personnel management can lead to lags between health planning and implementation. As in the case of education, the budget requests from the hospitals and the budget projections of the MOH for the health posts and health centers, are negotiated with the Ministry of Finance, which prepares the overall budget bill for approval by the legislature.

III.3 Health Implementation and Supervision

Health services are provided by public and private providers. There are private hospitals and clinics serving about 15% of the population, and public hospitals, policlinics, health centers, and health posts, providing services to the rest of the population. Users are charged a nominal fee for services to deter unnecessary visits, but nominal payments can be voided if the patient cannot afford them. However, the screening of patients is discretionary, which may lead to issues of lower health access to the poor, who may not know how to prove their low level of income. Implementation of universal health care is aided by the National Health Insurance (NHI) system, which facilitates primary care to users through a network of public and private Primary Care providers. The stated objectives of the NIH are to improve equity and efficiency by reducing out of pocket expenditures by households, and by improving access to private providers of health services. According to the MOH, about 28% of *total* health expenditures come out of pocket of health patients, which can be a severe burden to poor households. Hence, an increase in the number of people making contributions to the NHI could reduce out of pocket expenditures by dispersing the cost among all insured; make health expenditures more predictable to households, and rationalize health costs by using health gatekeepers in the approval of service provision (MOH/PAHO 2014).

Although the NIH was created in 2001 and piloted in 2003, its expansion has been slow. The current MOH strategy calls for the expansion of NHI to 50% of the population by 2016, and a reduction of out of pocket expenditures to 20% of total health expenditures by 2024 (MOH/PAHO 2014, p.41).

Seven of the 15 hospitals in the country are public, and eight are private. There are about 11 hospital beds per 10,000 people, and their distribution is fairly balanced among the geographical districts; distances in Belize are short enough to allow for patient travel between the different districts if needed. There is a government network of 40 health posts staffed by nurses and 45 staffed by nurses and doctors (Table 15). In 2011 there were 7.5 physicians and 14.5 nurses per 10,000 people.

District	Hospitals public + private	Health posts	Health Centers	Hospital beds per 10K people
Corozal	2	5	7	8.50
Orange Walk	3	5	9	12.38
Belize	3	14	4	12.54
Cayo	5	5	6	8.23
Stann Creek	1	7	7	15.09
Toledo	1	4	12	11.01
Total	15	40	45	11.12

Source: Health Abstract of Belize and Statistical Institute of Belize

System supervision applies only to public facilities and is the responsibility of three institutions: the MOH through its Chief Executive Officer and Director of Health Services, and Regional Managers in charge of the four health regions, with assistance from the Hospital Administrators and the Primary Care coordinators (MOH/PAHO 2014). System supervision is implemented by

the MOH at the levels of health post and health centers, as hospitals have their own supervisory system. Private practices—doctor’s offices and small clinics—are not supervised by the MOH.

III.4 Public expenditures in health relative to GDP

All public expenditures in health are channeled through the MOH, including the block grants assigned to the Karl Heusner Memorial Hospital. In 2013 public expenditures in health amounted to BZ\$890 million. This level of expenditure represented 11.7% of the national budget and 3.2% of GDP (Table 16).

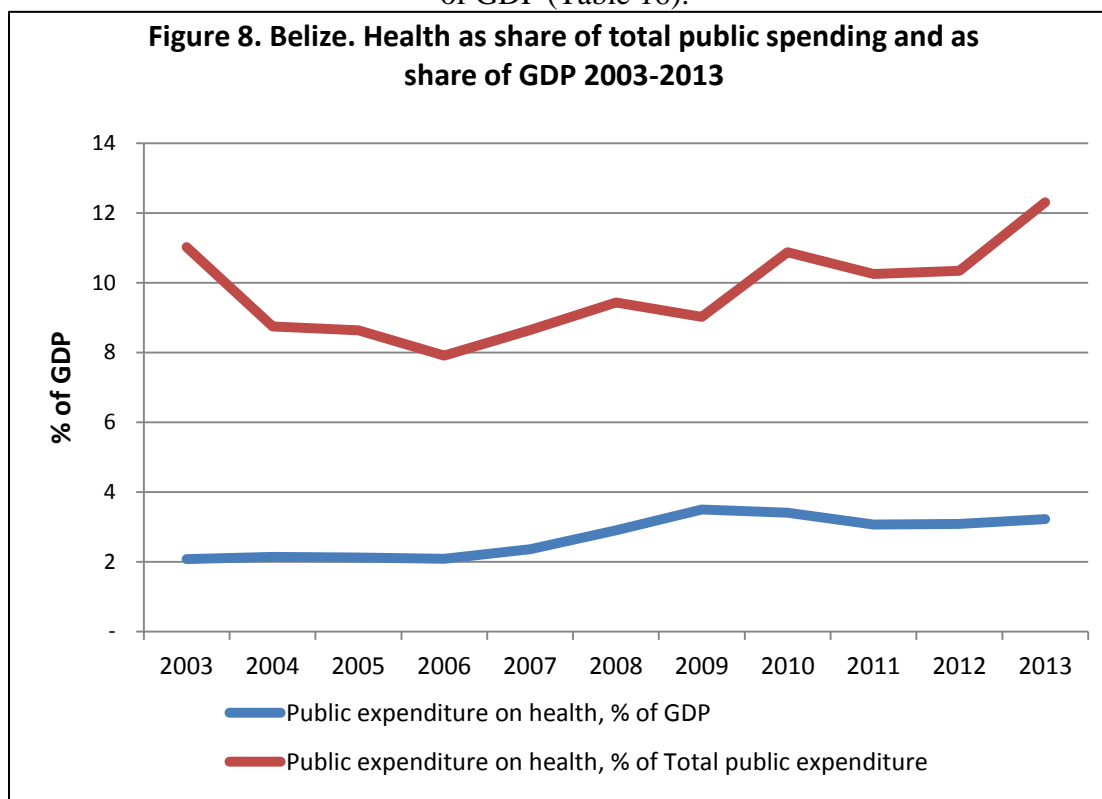


Table 16. Belize. Public Expenditures on Health as Shares of the National Budget and GDP	
Item	2013
GDP at market prices BZ\$	3,230,687,610
Total public spending BZ\$	889,987,180
Ministry of Health (BZ\$)	103,956,413
Public spending in health as % of total public spending	11.68
Public spending in health as % of GDP	3.22

Source: Ministry of Finance and Central Bank of Belize

Since 2003, government expenditures in health have averaged between 2% to 3.5% of GDP, with a slight upward trend in the past six years (Fig 8). The overall trend in health financing indicators for Belize shows that prior to 2006 government expenditures decreased, reflecting a general contraction in fiscal spending as the government sought to reduce its deficit (Table 17). Once the

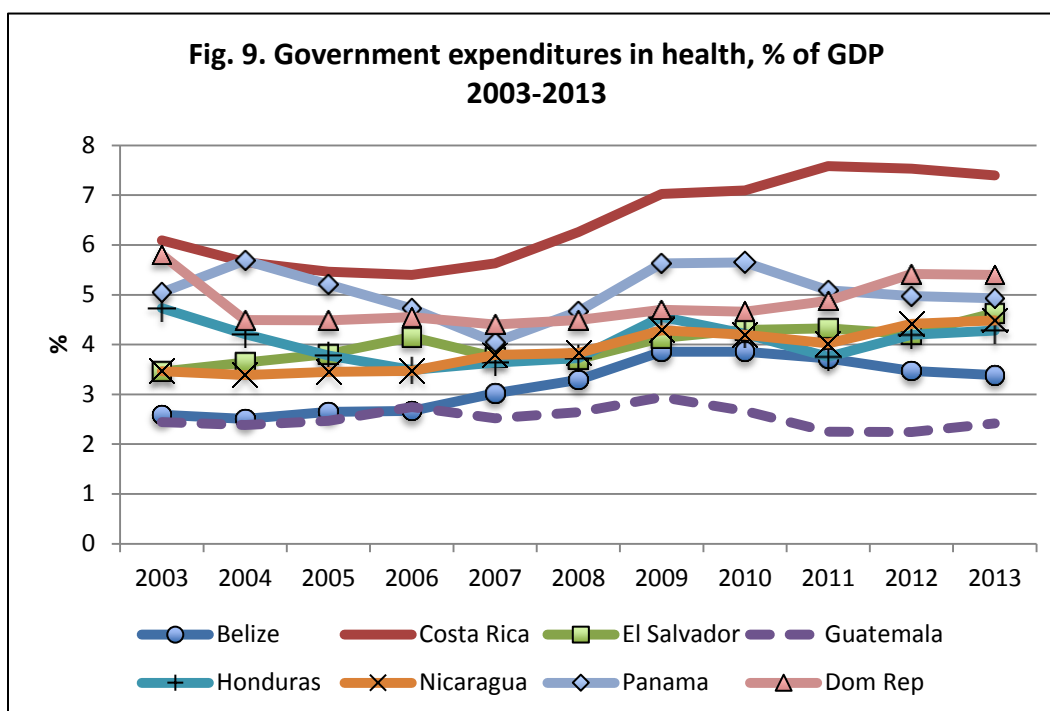
economy began to grow again, government expenditures for health grew slightly but reached a plateau as a percentage of GDP.

Given the IMF projections of *real* GDP growth of 3% or lower for the next few years, this plateau is expected to continue (IMF 2015, p. 175).

Indicator	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total health expenditure (THE), % Gross Domestic Product (GDP)	5	4	4	4	5	5	6	6	6	5	5
General government expenditure on health (GGHE), % of THE (US\$)	57	57	59	61	63	65	67	66	66	65	62
Private expenditure on health (PvtHE), % of THE	43	43	41	39	37	35	33	34	34	35	38
GGHE, % of General government expenditure	9	8	9	9	11	11	13	13	13	12	12
External resources on health, % of THE	3	3	1	3	5	4	1	5	4	1	4
Out of pocket expenditure, % of PvtHE	79	79	79	75	75	73	73	70	70	70	70
Total expenditure on health per capita, US\$	174	175	182	192	215	237	258	265	264	259	262
General government expenditure on health per cap, US\$	99	100	109	116	136	153	172	175	175	168	164
General government expenditure on health, % of GDP	3	3	3	3	3	3	4	4	4	3	3

Source: National Health Account Indicators, World Health Organization
<http://apps.who.int/nha/database/Select/Indicators/en>

Public expenditures on health in Belize are on the low side when compared to the level in other countries in the region (Fig. 9). Compared with its Central American neighbors (the Dominican Republic is included in the graphic to show a comparison with a Caribbean country), Belize is below all the other countries except Guatemala. From 2006-10 Belize came closer to the Central American average in health expenditures, but in 2011-13 slipped back once more.



Source: National Health Account Indicators, World Health Organization
<http://apps.who.int/nha/database/Select/Indicators/en>

Total expenditures in health relative to per capita income are lower than expenditures in other countries in the region (Table 18).

Table 18. Belize. Health Expenditures in Relation to Per Capita Income and Per Capita GDP¹⁰ in 2013

Country	Total Health Expenditure Per Capita (US\$)	Public expenditures as % of total health exp.	Per Capita GDP (US\$)	Total health exp. as % of Per Cap GDP	Out of pocket expend*
Belize	262	62.4	4,894	5.35	69.8
Costa Rica	1,005	75.0	10,185	9.87	93.2
El Salvador	266	66.7	3,826	6.95	85.3
Guatemala	227	37.8	3,478	6.53	83.3
Honduras	193	49.1	2,291	8.42	88.7
Nicaragua	155	53.7	1,851	8.37	86.5
Panama	796	68.4	11,037	7.21	78.7
Argentina	1,074	67.7	12,922	8.31	65.2
Brazil	1,085	48.2	11,612	9.34	57.7
Chile	1,204	47.5	14,520	8.29	60.3
Colombia	533	76.0	7,720	6.90	58.1
Mexico	664	51.7	10,361	6.41	91.4

Source: Ministry of Finance and Central Bank of Belize
 * as % of private expenditures on health. Source: World bank
<http://data.worldbank.org/indicator/SH.XPD.OOPC.ZS>

¹⁰ Total health expenditures per capita is the sum of public and private health expenditures divided by the total population. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid. It does not include water and sanitation.

In absolute terms Belize spends more on health than most of its Central American neighbors, but much less than other middle income countries of Latin America. And of those total expenditures the government's share represent about 62% of the total, placing Belize about the same level as some countries with higher GDP per capita. It should be noted that among comparison countries in Table 18, the government's share of total health expenditures seems to be unrelated to per capita income.¹¹

In terms of per capita GDP Belize, with a per capita income of US\$4,894 in 2013, spends 5.35% of this income in health services—the lowest among the comparison countries. On the other hand, Belize shows one of the lowest levels of out-of-pocket expenditures. This indicator merits a brief discussion. Patients visiting any type of health facility—public or private—usually have to incur in out-of-pocket expenditures to pay for medicines, consultancy fees, medical tests, and other health cares costs.¹² According to a World Health Organization study on out-of-pocket expenditures (Saksena et al 2010), if government expenditures in health are low, the shortfall is bound to be covered by private spending, of which about 85% is out-of-pocket in low income countries. A high percentage for out-of-pocket expenditures is not desirable, since it poses a barrier to health access among the poor. As Table 18 shows, Belize's percent of out-of-pocket expenditures is in the middle of the range among the comparison countries; lower than in other countries in Central America but higher than in other middle-income countries in Latin America.

The result is a mixed picture for Belize: total expenditures are low but the government's share is comparable to countries with higher per capita incomes, and allows people to spend less from out-of-pocket than other comparison countries. This finding is relatively positive for health access equity, as will be discussed later in this section. However, it should be kept in mind that government spending in health in Central American countries is particularly low, and that comparisons with Caribbean countries might cast Belize in a different light.

III.5 Health Expenditures at the National Level

During the decade 2003-2013 the health sector budget had small fluctuations that were due to corresponding fluctuations in capital investment. However, since 2010 the health budget's share of government expenses has kept above 10%, with a 2 percentage point increase in 2013.

Year	Health Expenditures '000 BZ\$	Total Public Expenditures '000 BZ\$	% of Total Public Exp.
2003	40,996	371,991	11.0
2004	45,287	518,037	8.7
2005	47,224	547,112	8.6
2006	50,623	640,245	7.9
2007	60,762	703,236	8.6

¹¹ The correlation between the government's share of total health expenditures and per capita GDP is 0.18.

¹² It should be noted that not all private providers of health services require out-of-pocket fees for their services, as some of those private expenditures may be covered by insurance or by government payments to private providers.

Year	Health Expenditures '000 BZ\$	Total Public Expenditures '000 BZ\$	% of Total Public Exp.
2008	79,483	842,775	9.4
2009	93,502	1,036,201	9.0
2010	95,267	876,325	10.9
2011	91,261	889,987	10.3
2012	97,029	937,857	10.3
2013	103,956	844,881	12.3

Source: Ministry of Finance and the Central Bank of Belize.

The government's health budget for 2013 is divided into three main areas: (i) central administration and oversight, under the responsibility of the Ministry of Health; (ii) service provision of primary health by the health posts and health centers; and (iii) the provision of specialized health services, specialized care for mental health, vector control, and other services. Table 20 shows these details in the 2013 budget (Table 20).¹³ Of the BZ\$ 103.9 million budgeted for 2013, BZ\$95.8 million are for recurrent costs and the remaining BZ\$8.1 million for capital expenditures.

General Administration	37,930
Director Of Health Services	2,184
Belize Dist. Health Services	4,806
Epidemiology Surveillance	343
Belize School Of Nursing	...
Karl Heusner Memorial Hospital	...
Cayo District Health Service	3,503
Orange Walk District Health Service	7,201
Corozal District Health Service	3,829
Stann Creek District Health Service	5,128
Toledo District Health Service	2,771
Medical Supplies	12,552
Medical Laboratory Services	1,053
Nat'l Engineering Center	661
Planning And Policy Unit	292
Belmopan Hospital	5,890
HIV/Aids	1,201
Maternal Child Health	1,650
Environmental Health	213
Licensing And Accreditation	...
Regulatory Unit	76
Belize Health Information System	365
Vector Control	668
Mental Health	181
Health Promotions (Hecopab)	143

¹³ There are several institutions that provide health care indirectly (the Red Cross is one example) and whose budgets are listed outside of the MOH. The budgeted amount for these institutions is relatively small, about BZ\$1 million in 2013.

National Drug Abuse Control Council	550
Palm View Center	742
Pharmacy	19
Nutrition	30
Dental	19
San Pedro Health Service	155
Ministry Of Health 5000	1,396
Ministry Of Health 6000	250
Capital II Expenditures	5,841
Capital III Expenditures	2,312
TOTAL Recurrent	95,804
Grand Total	103,956

Source: Ministry of Finance

About 37% of recurrent expenditures are classified as salaries and benefits, but an additional 17.6% is assigned to consulting contracts, to pay for medical services provided by independent medical specialists (Table 21), yielding a total of 54.6% for personnel expenses. It should be noted that the budget for Karl Heusner Memorial Hospital is listed under General Administration. For the 2012-2013 Fiscal Year 2013 the approved budget for this hospital was BZ\$19 million, or 21% of the recurrent budgeted expenditures. If the proportion of this part that is spent on personnel is similar to that of the rest of the budget, total spending on personnel would be around 65% of total recurrent health expenditures.

Function	'000 BZ\$	%
Salary and benefits	35,192.4	36.9
Travel & per diem	1,426.7	1.5
Materials and supplies	15,190.3	15.9
Operating costs	2,702.9	2.8
Maintenance	1,538.0	1.6
Training	1,438.5	1.5
Public Utilities (electricity, water)	1,050.8	1.1
Contract Consultancies	16,832.3	17.6
Grants (KMHM & others)	20,092.5	21.0
Total	95,464.4	100.0

Source: Ministry of Finance

III.5.a Health expenditures at the District level

Belize's health system is divided into four regions and six geographical districts, served by five health district offices and one special district office in San Pedro. The regional division is made to accommodate the system of regional hospitals, while the districts serve the network of health posts and health centers. Table 22 shows the allocation of expenditures by health district. The total amount spent at the district level—including the free medications given to all patients of primary care—is about BZ\$40 million, representing almost 42% of total recurrent expenditures.

District	Expenditures (BZ\$)	Population	Exp. Per Capita (BZ\$)
Cayo District Health Service	3,503,072	82,677	42.4
Orange Walk District Health Service	7,201,256	48,040	149.9
Corozal District Health Service	3,829,368	43,719	87.6
Stann Creek District Health Service	5,128,263	37,619	136.3
Toledo District Health Service	2,771,115	33,249	83.3
San Pedro Health Service	155,419	14,549	10.7
Belize Dist. Health Services	4,806,264	89,875	53.5
Total all Districts	27,394,757	349,728	78.3
Medical supplies	12,551,594		
Total expenditures for primary health	39,946,351	349,728	114.2
% of total recurrent expenditures	41.7		

Note: Belize District population excludes San Pedro

Source: Ministry of Finance

The reported expenditures for the District Health Services show significant differences on a per capita basis, but the available data does not explain those differences, since different health centers provide different health services, such as visits by specialists and access to the regional hospitals. For example, Orange Walk and Stann Creek include the cost of the regional hospitals in the budget, while in Belize the cost of KMH services is accounted for separately.

III.5.b Private expenditures in health at the national and District levels

There is a growing demand for private health care. The results of the 2009 survey on living standards (Halcrow Group Limited 2010) unsurprisingly shows that private health expenditures are directly correlated to income. That is, poorer households have less access to private health care.

In terms of detailed expenditures the only available evidence is from 2002 (Government of Belize, National Human Development Advisory Committee, 2004). Table 23 shows the average private expenditures in health care undertaken by a sick person in 2002. Sample data show that, on average, a sick person made about two visits to a health care practitioner within a 30-day period. This pattern of visits varied little across income, ethnicity, geographical region, or age group. However, there were large differences in private expenditures if the person went to a public or a private facility. Also, there were large differences between Districts in the cost of private care and cost of medicines. Predictably, people with higher levels of income tended to visit private providers.

Selected Characteristics	Avg. number of visits, last 30 days	Total expenses, all visits, last 30 days		Avg. cost of drugs	
		Public care	Private care	Public care	Private care
District					
Corozal	2.5	30.33	103.23	26.47	42.07

Selected Characteristics	Avg. number of visits, last 30 days	Total expenses, all visits, last 30 days		Avg. cost of drugs	
		Public care	Private care	Public care	Private care
Orange Walk	1.7	11.38	219.06	29.34	25.77
Belize	2.0	20.33	211.59	46.62	60.74
Cayo	1.8	14.89	103.42	25.1	44.48
Stann Creek	1.9	7.94	63.23	7.88	49.03
Toledo	2.1	8.91	93.27	17.90	41.84
Location					
Urban	1.9	18.85	146.13	30.69	47.38
Rural	2.1	12.48	112.97	29.00	40.19

Source: 2002 Poverty Assessment Report

In the 2009 LSMS the only information about private expenditures is about affordability. When asked if they could afford to pay for health care during the previous year, 77% of households indicated that they could, with the remaining 23% indicating that they had difficulty in affording health care at some point during the previous year (Halcrow Group Limited 2010, Table A3.5.3).

III.5.c Efficiency of health expenditures

Health coverage is measured indirectly. There is no statistical information on the percentage of the population living within 5 km of a health facility, which is the standard indicator of access. For coverage the indicators available are: the number of health facilities for every 10,000 people, the number of medical personnel per 10,000 people, and the percentage of births attended by a trained skilled health staff. These indicators are shown in Table 24 show that the number of physicians and nurses available for every 10,000 people have not changed much during the past decade. However, there was a significant increase in the number of private clinics from three in 2003 to eight in 2013. It is encouraging to find that 96% of births in 2013 were attended by skilled health staff, a full increase of 18 percentage points over the same indicator in 2003.

Coverage of Primary Care	2003	2004	2006	2008	2010	2012	2013
Public expenditure on health per capita BZ\$	152.19	163.86	173.92	259.06	294.40	284.71	297.25
Public hospitals	7	7	7	7	7	7	7
Private hospitals and clinics	3	4	4	4	8	8	8
Hospitals/clinics per 10,000 people	0.37	0.40	0.38	0.36	0.46	0.44	0.43
Health centers	40	40	40	42	40	40	40
Health posts	44	44	60	51	47	45	45
Health centers and health posts per 10,000 people	3.12	3.04	3.44	3.03	2.69	2.49	2.43
Hospital beds per 10,000 people	12.77	12.66	12.23	11.57	11.12	...	...
Physicians per 10,000 people	7.7	7.8	8.7	8.1	7.5	...	...
Nurses per 10,000 people	17.5	15.9	14.7	15.5	14.5	...	...
Percent of all births attended by skilled health staff	76.5	76.1	77.0	88.1	94.3	...	94.2

Source: Ministry of Health

In comparison with other countries in the region, Belize shows a lower number of physicians , but a higher number of nurses (Table 25). In addition, Belize shows a good performance in regards to births attended by skilled personnel. This combination may be more cost effective for the provision of primary care, but the real impact on health outcomes needs to be studied more closely.

	Physicians	Nurses	% with professional care at birth
Central America	12.6	9.7	74.8
Belize	7.5	14.5	94.2
Costa Rica	25.1	18.2	100.0
El Salvador	23	17.2	...
Guatemala	7.6	5.0	58.7
Honduras	8.4	4.0	83.0
Nicaragua	8.4	11.8	93.8
Panama	15.9	13.6	94.3
Dom. Republic	15.3	3.3	98.6

Source: PAHO/WHO 2014

This section ends with the presentation of selected indicators of sector performance (Table 26), in terms of health outcomes for 2003-13. Life expectancy increased by two years over the period, to 74 years. Infant mortality has hovered around 14 infant deaths for every 1,000 live births. Maternal mortality has averaged around 50 per 100,000, or around 2-3 women per year.¹⁴

The data suggest that rates of malnutrition deteriorated between 2006 and 2011. The MICS results for 2011 shows that 19.3% of children under 5 years of age are too short for their age, 6.2% are too thin for their age, and 3.3% are underweight for their height.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Life expectancy at birth	...	...	72.2	69.3	72.5	74.9	77.2	73	73	74	74
Infant mortality rate (per 1000 live births)	14.8	14.7	18.4	19.6	17.2	12	17.9	13.3	15	15	14
Maternal mortality rate (per 100.000 live births)	40.4	63.9	134.1	41.8	85.3	42.5	53.9	55.3	...	...	45
Malnutrition prevalence, height for age (% of children under 5)	...	...	...	17.6	...	...	...	...	19.3	...	...
Malnutrition prevalence, weight for age (% of children under 5)	...	...	...	6.1	...	...	...	...	6.2	...	...
Malnutrition prevalence weight for height (% of children under 5)	...	...	...	1.4	...	...	...	...	3.3	...	...

¹⁴ Maternal mortality per 100,000 live births is a volatile indicator because, in a population of only 350,000, the number of births would be—according to health statistics—around 7,000 a year. So every mother that dies in childbirth represents something like 15 deaths per 100,000. So the figures in Table 26 suggest that between zero and seven women have died per year.

Source: PAHO/WHO 2014

On the basis of these indicators and taking into account the expenditures per district, the health expenditures per capita and other key indicators for health can be explored. Table 27 lists the per capita health expenditures per District and the corresponding indicators for infant and child mortality, contraception prevalence, HIV incidence and adolescent birth rates. These indicators summarize some of the main problems facing Belize, and also some of the key areas that can be positively affected by health care and changes in health behavior induced by access to a good health system.

	District Expenditures*	Population served	Per capita (BZ\$)	Infant mortality rate	Under 5 mortality rate	Contraception **	HIV •	Adolescent birth rate ••
Cayo District Health Service	3,503,072	82,677	42.4	9.0	12.4	61.8	0.26	56
Orange Walk District Health Service	7,201,256	48,040	149.9	7.7	7.7	58.9	0.32	79
Corozal District Health Service	3,829,368	43,719	87.6	18.4	22.4	56.4	1.5	61
Stann Creek District Health Service	5,128,263	37,619	136.3	11.9	14.2	56.9	0.73	84
Toledo District Health Service	2,771,115	33,249	83.3	8.9	14.4	56.7	0.74	81
Belize Dist. Health Services	4,806,264	104,424	46.0	22.3	31.9	28.3	0.26	51
Total	27,239,338	349,728	77.9	13.3	16.9	...	0.89	64

*Excluding medicines

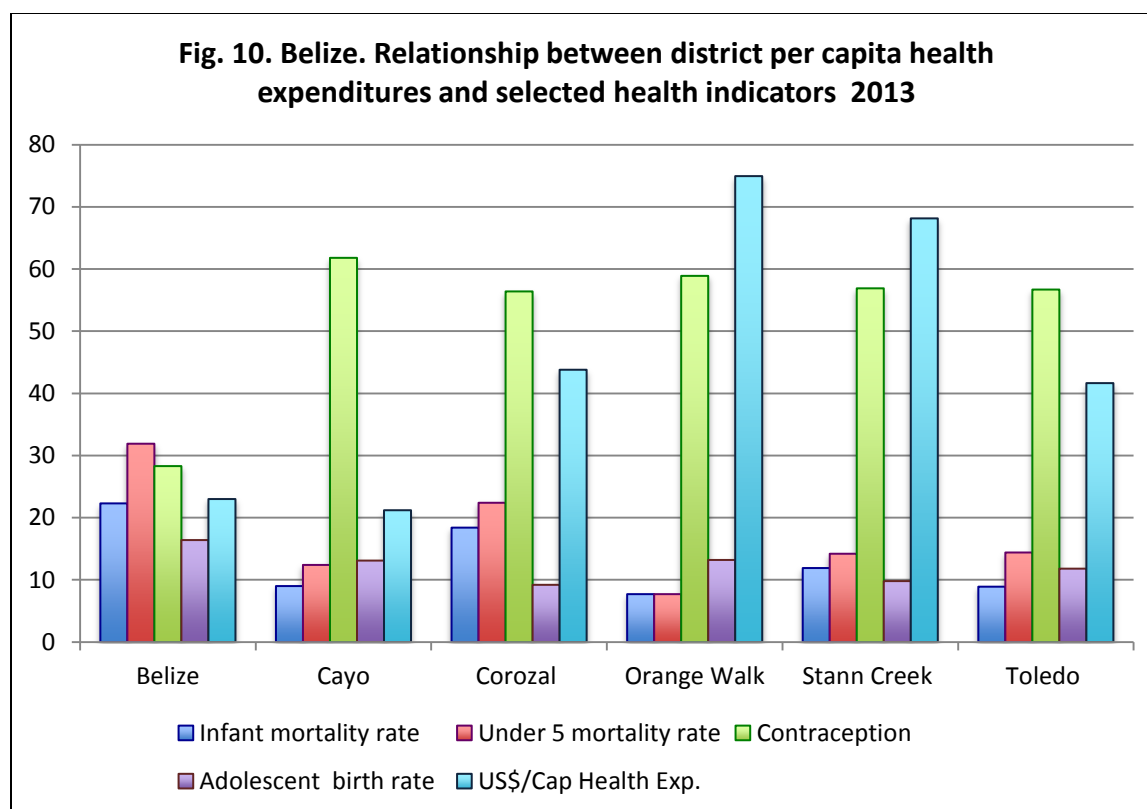
**% of women 18-49 using contraception

•Number of HIV cases per 10,000 people

•• Number of births per 1,000 women aged 15-19, 2011

Source: Ministry of Finance and MOH

Fig. 10 shows the same table graphically, revealing no discernible patterns. Again, the issue here is the different content in the packages of health care offered in each district, and the different items accounted for in each District. As a result, very little can be said at a glance about the relationship between District level expenditures and its efficiency.



Note: Indicator definitions are the same as in Table 27

Source: Data from Table 27

The performance of Belize appears positive relative to its Central American neighbors for infant and child mortality (Table 28), although the scope for improvement is apparent when broader international comparisons are made. In the case of contraceptive prevalence, Belize shows the lowest rate among comparison countries in Latin America, and its HIV prevalence is much higher than in the rest of the region.

Country	Infant Mortality	Child Mortality	Contraception ^a	HIV	Adolescent Fertility
Belize	14	17	55.1	1.5	64
Costa Rica	8	10	82.2	0.2	60
El Salvador	14	16	72.3	0.5	75
Guatemala	26	31	54.1	0.6	95
Honduras	19	22	73.2	0.5	82
Nicaragua	20	24	72.4	0.2	99
Panama	15	18	52.2	0.7	77
Argentina	12	13	78.9	...	54
Brazil	12	14	80.3	0.6	70
Chile	7	8	60.7	0.3	55
Colombia	15	17	79.1	0.5	68
Mexico	13	15	70.9	0.2	62

Note: Definition of indicators is the same as in Table 28. Contraception rates are for 2011 in Belize and Costa Rica and for 2012 in Honduras and Nicaragua. ^a Pop. Reference Bureau 2013;

Source: <http://data.worldbank.org/indicator> except for Belize, Ministry of Health.

IV. Conclusions and Recommendations

As in the case of most developing countries, Belize could improve its performance in education and health. Given current fiscal constraints, improving policies to boost efficiency may be more feasible means of improving performance than increasing funding.

IV.1 Education

Institutionally, the education sector receives financing that is aligned with Belize's fiscal capacity—both as share of GDP and in terms of per student expenditures as share of GDP per capita. Most students are served by private providers receiving government subsidies, which reduces the need for capital investment in infrastructure but also limits the government's capacity to improve its oversight over education quality. On this front, the relatively recent implementation of a funding formula for secondary school—in which there are built-in incentives for access equity and for improving learning outcomes—is a step in the right direction. The funding formula will induce private providers to rationalize their salary expenditures, and once the full formula is implemented it is likely to produce better learning outcomes because of the associated incentives included as one of its components (Cercone and Zambrana 2008).¹⁵ This approach to education funding needs to be monitored closely to see if it may be applied to primary school later on.

The Government is concerned that the education system has not produced the level of learning befitting the level of public expenditures, citing the low levels of internal efficiency as evidence. Analysis by the IDB seems to back up the Government's claims, leading to key recommendations on teacher quality and access equity in rural areas (Näslund-Headley, Alonzo, and Martin 2013). On this vein there is room for hope, as the data for the past ten years show positive correlations between PSE test scores and smaller class sizes, the proportion of certified teachers, and per student expenditures.

Currently there is little oversight on teacher selection (although the Teaching Service Commission is now enforcing teacher certification) and on teacher accountability at the classroom level. This suggests that, to improve economic efficiency, the Belizean authorities need to start a more serious dialogue with denominational schools and start measuring and reporting results to foster accountability.

Using net enrolment for pre-primary, net intake rate to 1st grade, and the graduation rate from lower secondary as indicators of system performance, Belize compares well with its neighbors in Central America, but underperforms relative to other countries in Latin America, such as Argentina, Chile, and Mexico, even though these countries have similar levels of educational expenditures as a share of GDP per capita. However, these indicators are not as powerful as test scores in international student assessments. The lack of such data for Belize means that there is no conclusive evidence that could be used to compare Belize with the better performing countries in Latin America, thus limiting the analysis of education sector efficiency.

¹⁵ It must be noted that the incentives in the funding formula associated with learning outcomes are yet to be implemented.

Currently there are significant disparities in per student funding among the different Districts, with Cayo and Belize, where the more experienced, better trained, and better paid teachers are located (Arcia 2012c), receiving more per student than other regions. Schools located in rural isolated areas tend to be staffed by younger and less experienced teachers, who receive lower salaries, yielding lower per student expenditures. Since higher per student expenditures are correlated with higher PSE test scores, and since higher expenditures seem to be proxy for more experienced teachers, the results suggest that Belize needs to improve teacher quality to get better learning outcomes. That would entail attracting better entrants to the teaching profession and implementing better policies that would foster school and teacher accountability.

IV.2 Health

Institutionally, Belize's health sector is on track to improve its long term performance, provided it improves its sector financing in line with GDP. The potential expansion of the NHI as a means to rationalize health expenditures, and the upward trend in the government's expenditures in health, bode well for increased access to health care for poor families. If the NHI is able to extend cover for poor families, then the Government could improve access equity while keeping costs in check through the use of medical personnel screening patient expenditures through the health insurance system.

Belize needs to keep track of out-of-pocket expenditures by patients because of the increasing use of private health providers. Reductions in out-of-pocket expenditures are a good indicator for tracking health access equity. Currently Belize has lower out-of-pocket expenditures than some of its neighbors, but it can do better, as in the case of Chile and Colombia. Again, expanding the NHI could be a good way to contain out-of-pocket expenditures while rationalizing the public cost of health care.

In terms of public expenditure equity at the District level, the evidence is inconclusive, since the reported expenditures per District are affected by the location of regional hospitals and clinics. A more detailed analysis of the costs per patient would be needed to make appropriate recommendations.

When compared to its Central American neighbors, Belize's performance in health appears relatively good for infant and child mortality, with low rates compared to other countries of Latin America and the Caribbean. However, its rates of contraceptive prevalence are the lowest in the region, and HIV prevalence is much higher than in the rest of the region, suggesting room for improvement in these two areas.

Finally, the analysis of Belize's performance in both education and public health would benefit if it produced more data, with more frequency, and of wider scope than it is currently producing. In education, some key indicators, including repetition rates, net intake rates, and many other indicators regularly collected by UNESCO and other agencies, need to be generated and reported with more regularity, to allow education policy makers to make evidence-based decisions. The functioning of the Teaching Service Commission is a good start to address the information needs about teachers, teacher salaries, training, and ratios. Also, the implementation of a funding

formula for secondary schools is also a very good step in containing costs and in improving operational efficiency. However, to address teacher quality there is a need for better information on primary and secondary standardized test results to be able to make useful analyses that could point top areas for pedagogical improvement. In health, as in the case of education, Belize needs to address its information output. Belize already has made substantial progress in this area by implementing BHIS, the Belize Health Information System. But there is further work to do to narrow the gaps in information about performance indicators—especially at the district level—that is needed to inform managerial decisions.

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Annex

Table A1. Structure of Belize's education system (School Year reference: 2008)											
National						International Standard Classification of Education (ISCED)					
Name of the education program	Minimum entrance requirements	Main diplomas, qualifications or certificates awarded at end of program	Theoretical entrance age	Theoretical duration (in years)	Compulsory?	ISCED97 level		Program Orientation	Theoretical entrance age	Theoretical duration	Notes
Pre-school education	None	Pre-school certificate	3	2	N	Pre-primary education	0	N/A	3	2	Does not include daycare center kids. Includes Beginners program offered at primary schools
Primary education (Infant 1-2 and Standards I-IV)	None	No certificate (only after completion of Standard VI)	5	6	Y	Primary education	1	N/A	5	6	Certificate only after completion of Standard VI.
Special education (Primary)	None	Primary education certificate	5	6	Y						Special education is not organized by grades. It is a comprehensive program.
Primary education (Standards V-VI)	Completion of Standard IV	Primary education certificate	11	2	Y	Lower secondary education	2	General	11	4	Also includes Preparatory level (repeaters) equivalent to Standard VI of primary education.
Secondary education (Forms 1-2)	Primary education certificate	No certificate (only after completion of Form 4)	13	2	Y						
Vocational technical education	Primary education certificate	Technical certificate	15	1	N						

Table A1. Structure of Belize's education system (School Year reference: 2008)											
National						International Standard Classification of Education (ISCED)					
											for employment and training (CET).
Secondary education - general (Forms 3-4)	Completion of Form 2 of secondary education	High school diploma	15	2	N	Upper secondary education	3	General	15	2	
Secondary education - technical vocational (Forms 3-4)	Completion of Form 2 of secondary education	High school diploma	15	2	N			Vocational			
Post-secondary certificate program	High school diploma	Technical certificate	17	1	N	Post-secondary non-tertiary education	4	Vocational	17	1	Offered at Junior colleges and the University of Belize.
Associate degree program	High school diploma	Associate degree	17	2	N	First stage of tertiary education	5	Intermediate degree	17	2	Includes general, arts and sciences programs. Offered at Junior colleges and the University of Belize.
Bachelor program	High school diploma	Bachelor	17	3	N			First degree		3	Offered at Galen University and the University of Belize.
Associate degree program	High school diploma	Associate degree	17	2	N			First qualification		2	Includes only professional programs. Offered at Junior colleges and the University of Belize.

Source: UNESCO Institute of Statistics. Information adapted from download on October 30 from: <http://www.uis.unesco.org/Education/ISCEDMappings/Pages/default.aspx>

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Public Spending per student/GDP per capita: Pre-primary	1.48	1.85	2.01	1.95	2.82	3.06	5.08	5.08	4.41	3.69	3.60
Public Spending per student/GDP per capita: Primary	11.25	11.83	12.61	12.55	12.78	13.07	14.22	14.85	15.37	14.50	14.59
Public Spending per student/GDP per capita: Secondary	17.21	20.78	23.37	23.03	23.33	23.61	27.60	27.37	27.40	26.63	27.12
Public Capital Spending in Education (% of GDP)	1.01	0.79	0.87	1.46	0.71	0.22	0.35	0.17	0.09	0.30	0.27
Public Capital Spending in Education (% of education sector spending)	19.48	15.04	15.18	23.37	12.95	4.07	5.25	2.53	1.46	4.66	4.21

Source: Estimated with data from the Ministry of Finance

Grant-aided Community Colleges and Secondary Schools	53,295,349	
Direct allocation (not specified)	7,046,525	
Stann Creek Ecumenical College	1,506,335	-
Toledo Community College	2,436,895	-
Wesley College	1,581,264	-
Alvin Young (Western Nazarene)	242,349	-
Cornerstone Christian Academy	64,054	-
Friend's Boys School	31,642	-
Ocean Academy	35,345	-
St. Peters College (San Pedro)	40,000	-
Tubal Trade School	120,000	-
Tumal Kin	240,000	-
Valley Of Peace SDA	43,410	-
Replacement Teacher	981,918	-
Edward P. Yorke High School	1,371,758	-
Gwen Lizarraga High School	1,661,953	-
Belmopan Comprehensive School	2,220,364	-
Belize High School Of Agric.	601,008	-
Orange Walk Technical High Sch.	1,805,848	-
Mopan Technical High School	1,351,649	-
Escuela Mexico (Corozal)	1,489,115	-
Belize Rural High School	419,313	-
Independence High School	1,708,112	-
Ladyville Technical High	1,052,000	-
Saint Michael's College	900,977	-

Table A3. Components of the Belize Education Budget by Selected Line Item, 2013		
Agriculture & Natural Resource Instit	365,456	-
Toledo Technical High School	1,772,384	-
Excelsior Junior High School	474,707	-
Sadie Vernon Technical High School	962,908	-
Georgetown High School	1,045,510	-
Corazon Creek Technical High School	369,316	-
Anglican Cathedral College	957,702	-
Belize Adventist College	582,014	-
Belmopan Baptist High School	489,686	-
Bishop Martin Academy High School	624,322	-
Caanan SDA High School	772,013	-
Chunnox St. Viator Vocational	301,444	-
Cornerstone Presbyterian High School	124,840	-
Corozal Community College	1,272,399	-
Delille Academy	1,232,715	-
Eden SDA High School	944,285	-
Kings College	164,895	-
Mt. Carmel High School	995,590	-
Muffles College	1,252,796	-
Nazarene High School	826,956	-
New Hope High School	536,433	-
Our Lady Of Guadalupe High School	812,683	-
Palloti High School	978,907	-
Providence San Antonio SDA	107,647	-
San Pedro High School (San Pedro)	943,373	-
Sacred Heart College	1,641,901	-
St. Catherine's Academy	1,247,227	-
St. Ignatius High School	932,220	-
St. Johns College	1,611,186	-
District Education centers	608,134	647,834
Cayo District Education Center	277,896	289,899
District Education Centre, B/City	330,238	357,935
Centers for Employment Training	4,067,465	4,222,017
Centre For Employment Training - Belize	868,435	858,230
CET Corozal	470,883	513,220
CET Cayo	495,228	561,228
CET Orange Walk	862,476	825,365

Table A3. Components of the Belize Education Budget by Selected Line Item, 2013		
CET Stann Creek	510,145	534,748
CET Toledo	524,235	575,375
Employment Training & Education Servi	336,063	353,851
MOEY-managed schools	1,985,353	2,117,111
Stella Maris School	1,076,949	1,093,664
Independence Junior College	387,714	457,629
Escuela Mexico Junior College	520,690	565,818
District Education Administration Offices	772,362	970,044
Education Admin Corozal District	227,568	276,390
Education Admin Toledo District	181,334	203,470
Education Admin Stann Creek District	163,828	233,879
Education Admin Orange Walk District	199,632	256,305
Youth Education Development Programs	2,553,482	2,652,381
Department of Youth Development	505,796	555,986
Belize Development Centre	536,850	484,792
Youth For The Future Secretariat	689,374	698,559
National Youth Cadet Corp	731,228	722,898
New Skills Training Centre	90,234	190,146

Source: Ministry of Finance

Table A4. Belize Public Expenditures by Educational Level and by Student, 2003-2013											
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Public Spending in Pre-primary	410	534	696	795	1,216	1,586	2,607	2,897	2,664	2,421	2,462
Public Spending in Primary	49,592	56,086	62,711	67,758	72,259	76,950	80,628	85,973	92,462	92,767	92,720
Public Spending in Secondary	18,509	24,426	29,656	32,164	34,140	36,034	41,311	43,576	46,406	48,323	51,462
Public Spending per student: Pre-primary	109	142	158	163	244	273	432	439	395	340	333
Public Spending per student: Primary	828	906	991	1,050	1,104	1,166	1,208	1,283	1,378	1,338	1,347
Public Spending per student: Secondary	1,265	1,590	1,836	1,926	2,015	2,106	2,345	2,365	2,457	2,457	2,506

Note: Expenditures are approved estimates for the respective year

Source: Estimated by the author with data from MOEY and Ministry of Finance

Table A5. Belize. Pearson Correlation between Factors Affecting PSE Test Scores							
	Pct. w PSE Test Score >75%	Pct. w PSE Test Score >51%	Student Teacher Ratio	Drop Out Rate	Percent Certified Teachers	Per Student Expenditure	Repetition Rate
Pct. w PSE Test Score >75%	1						
Pct. w PSE Test Score >51%	0.767**	1					
Student Teacher Ratio	-0.808**	-0.665*	1				
Drop Out Rate	-0.428	-0.312	.799**	1			
Percent Certified Teachers	0.78**	0.325	-0.588	-0.508	1		
Per Student Expenditure	0.635*	0.638*	-.934**	-.831**	0.408	1	
Repetition Rate	-0.646*	-.646*	.889**	.722*	-0.353	-.928**	1

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Source: Estimated by the author