

Technical note prepared for the  
Education for All Global Monitoring Report  
2013/4

*Teaching and learning: achieving quality  
for all*

## **National education accounts in seven low and middle income countries**

Education for All Global Monitoring Report (UNESCO)

2014

## National education accounts in seven low and middle income countries

Technical note for the 2013/4 EFA Global Monitoring Report

The 2013/4 GMR (pp. 136-139) presents an analysis of total education expenditure in seven low and middle income countries from the period 2007-11 broken down by level and source of funding in order to highlight how the cost of education is shared between government, donors and households. Among other conclusions, the comparison shows that “*the share of education expenditure borne by households ranges from 14% to 37% in primary education and from 30% to 58% in secondary education*”. The key message is the need to develop a comprehensive national education accounts system, modelled on the experience of national health accounts.

### Framework

The objective of the exercise was to estimate and assign education expenditure (**Table 1**):

- by level (primary, secondary, and tertiary);
- by financing source (government, households, and aid); and
- by function or use (salaries, other recurrent and capital).

A fourth dimension (by sector of provider) was not pursued in the absence of detailed information on private providers.

*Table 1. National education accounts for country X*

Level	Source			Total
	Government	Aid	Households	
	Function			
	Salaries	Non-salary	Capital	
Primary				
Secondary				
Tertiary				
<b>Total</b>				

The remainder of this note explains the sources used and assumptions made to develop the estimates for:

- public expenditure;
- aid expenditure; and
- household expenditure

### Public expenditure

The analysis relied on information directly obtained by government publications except for the cases of Indonesia and Tajikistan where World Bank-sponsored public expenditure reviews were used. The sources used are listed below (**Table 2**).

Given the differences in the way public budget and expenditure information is reported in different countries, a number of simplifications were needed. Common limitations refer to the following:

- Information tends to be available for *budget rather than expenditure*. Given that salaries tend to dominate the education sector budget, and that such budgets are usually executed according to plan, it has been assumed that budget equals expenditure. This is likely to introduce some bias in the direction of overestimating public expenditure.
- It is often not possible to break down information on *expenditure by each level*.
  - o It is difficult to separate pre-primary education. Even in countries where this was possible, information on expenditure at this level has been merged with primary education. This should not lead to a major bias: all 6 of the 7 countries with data, had spent less than 0.2% of GNP on pre-primary education.
  - o Depending on the country, it can be difficult to distinguish between (i) expenditure at the lower and upper secondary education level or (ii) between expenditure at the primary and lower secondary level. The education level classifications used by the respective governments have been followed. In one case (Tajikistan), information available was only available for the combined primary and secondary education levels.
- In some countries, there are two budgets referring to *recurrent and development expenditure* respectively. The latter mainly, but not exclusively, covers capital expenditure. An analysis of project-specific documents is required at least for the larger projects to distinguish recurrent-like expenditure that may be channelled through a development budget.
- In several countries, responsibility for delivering basic education is delegated to *local government* authorities. Central government education expenditure information by function is therefore limited to those functions for which the central government is responsible. By contrast, the only information available for local government tends to be the total grant by local government authority for all services for which they are responsible (plus information on revenues that local government authorities are projected to raise). As decentralisation is quite recent in many countries, the reporting mechanisms in place are often underdeveloped. As a result, a complete picture of what local government authorities spend on education (let alone information on expenditure by level or function) is typically not available. Assumptions have been made for countries where this may be making a difference.
- Expenditure on *central administration* has been assigned to the other levels using the expenditure shares by level net of expenditure on central administration.

*Table 2. Sources of public expenditure data*

		Sources
Albania	2008	<i>Central and local government</i> : Ministry of Finance 2008 budget data: tables 1, 3 and 5 <i>Local government</i> (details): Assumptions were made to impute the average share of education in municipality budgets based on published data from three municipalities (Durrës, Korça, Tirana).
Bangladesh	2010	<i>Recurrent and development budget</i> : Ministry of Primary and Mass Education 2009-2010 and 2010-2011 revised budget data; Ministry of Education 2009-2010 and 2010-2011 revised budget data (average of the two is used) <i>Development budget</i> (details): Information from project appraisal documents or annual operation plans was used to assign expenditure by function for four major development budget projects: Second Primary Education Development Programme, Secondary Education Sector Development Project, Secondary

		Education Quality and Access Enhancement Project, and Teaching Quality Improvement in Secondary Education Project.
Indonesia	2009	<i>Central and local government</i> : World Bank (2013) <i>Spending more or spending better: improving education financing in Indonesia</i> (data tables provided by the World Bank) <i>Local government</i> (details): The World Bank publication provides estimates on a subset of districts that are assumed to apply across the entire country.
Malawi	2010-11	<i>Central government</i> : Ministry of Education and Technology detailed recurrent and capital expenditure by programme, subprogramme and sub-subprogramme <i>Local government</i> : Councils consolidated cost centre budget estimates
Nicaragua	2009	<i>Central and local government</i> : Ministry of Education budget <i>Capital expenditure</i> (details): Expenditure by project and other capital expenditure <i>Tertiary education</i> (details): Assignments and subventions
Rwanda	2010-11	Ministry of Education, Rwanda Education Finance Brief, March 2012
Tajikistan	2007	<i>Central and local government</i> : World Bank (2008) <i>Second Programmatic Public Expenditure Review</i> (supplemented by UNESCO (2010) <i>Implementing medium-term expenditure frameworks: Tajikistan</i> )

## Step 2: Aid expenditure

The analysis relied on the OECD Development Assistance Committee (DAC) Creditor Reporting System (CRS) database and the GMR definition of aid to education, which assigns a percentage of direct budget support to education. Aid data relate to the same year for which the household and government expenditure data were available. This has then been converted using the exchange rate of that country for that year.

Total aid flows were broken down in three parts (Table 3):

1. *Indirect education aid channelled through general budget support*: It was assumed that 20% of general budget support was allocated to education, broken down as follows: 10% for primary education, 5% for secondary education and 5% for tertiary education.
2. *Direct education aid channelled through the government*: The OECD DAC CRS database indicates the following ways in which aid can be channelled: (i) public sector (ii) NGOs and civil society (iii) public-private partnerships (iv) multilateral organisations and (v) other. Direct education aid channelled through the government is assumed to be that which is channelled through the 'public sector'.
3. *Direct education aid channelled outside of government*: Direct aid to education through the other four channels was included in this category.

*Table 3. Aid to education – sector codes from OECD Development Assistance Committee CRS database*

	<b>Indirect aid to education</b>	<b>Direct aid to education (government):</b>	<b>Direct aid to education (outside government)</b>
Channel	100: All channels	10000: Public sector	20000: NGOs & civil society 30000: Public-private partnerships 40000: Multilateral organisations 50000: Other 0: To be defined
Primary education	51010: General budget support (10%)	11220: Primary education (100%) 11230: Basic life skills for youth & adults (100%) 11240: Early childhood education (100%) 11110: Education policy & admin mgmt. (50%) 11120: Education facilities & training (50%) 11182: Educational research (50%)	11220: Primary education (100%) 11230: Basic life skills for youth & adults (100%) 11240: Early childhood education (100%) 11110: Education policy & admin mgmt. (50%) 11120: Education facilities & training (50%) 11182: Educational research (50%)
Secondary education	51010: General budget support (5%)	11320: Secondary education (100%) 11330: Vocational education (100%)	11320: Secondary education (100%) 11330: Vocational education (100%)

		11110: Education policy & admin mgmt. (25%)	11110: Education policy & admin mgmt. (25%)
		11120: Education facilities & training (25%)	11120: Education facilities & training (25%)
		11182: Educational research (25%)	11182: Educational research (25%)
Tertiary education	51010: General budget support (5%)	11420: Higher Education (100%)	11420: Higher Education (100%)
		11430: Advanced tech & manag. train. (100%)	11430: Advanced tech & manag. train. (100%)
		11110: Education policy & admin mgmt. (25%)	11110: Education policy & admin mgmt. (25%)
		11120: Education facilities & training (25%)	11120: Education facilities & training (25%)
		11130: Teacher training (100%)	11130: Teacher training (100%)
		11182: Educational research (25%)	11182: Educational research (25%)

## Household expenditure

The analysis relied on household surveys carried out during the same year for which public expenditure data were available (**Table 3**). In addition, these household surveys identified expenditure per child (which enabled the expenditure to be assigned to a particular education level) and by type.

*Table 3. Sources of household expenditure data*

Sources		
Albania	2008	Living Standards Measurement Survey
Bangladesh	2010	Household Income and Expenditure Survey
Indonesia	2009	National Socio-economic Survey
Malawi	2010-11	Integrated Household Survey
Nicaragua	2009	National Living Standards Survey
Rwanda	2010-11	Integrated Household Living Conditions Survey
Tajikistan	2007	Living Standards Measurement Survey

The analysis proceeded in the following steps:

- School types were classified into public and private. The proportion of students in public education institutions was estimated at each level.
- Expenses for all items were converted to a common reference period (one year).
- Households were classified by level of consumption or through an asset-based measure in five quintiles in order to also look at issues of expenditure incidence by level of household socioeconomic status.
- Extreme outlying values were replaced by median values for households with children attending the same level of education, in the same location (urban/rural), at the same type of school (public/private) and belonging to the same consumption/wealth quintile.
- Estimates were expanded with sample weights to provide a national household expenditure figure.

Specific adjustments were needed in particular countries. For example:

- In Bangladesh, data on school type attended were missing for a large number of observations and were randomly assigned following prior information on the distribution of enrolment by school types.
- In Indonesia, there were two estimates of total household education expenditure in the dataset: one was equal to the sum of individual expenditure items; the other was a single annual total household education expenditure estimate. The latter, which was higher, has been used in the analysis.

## Synthesis

The results from the three steps were combined. Aid channelled through the government was subtracted from the public expenditure to education. Tables in the annex present some of the results.

- Table A1 provides the summary table of expenditure by source, level and function expressed in local currency terms.
- Table A2 shows the gross enrolment rates by level, school type and quintile. Based on this, public education expenditure has been assigned to each quintile.
- Table A3 compares the incidence of expenditure for the poorest and the richest quintile by level.

## Related work

The above analysis follows closely the approach of the [UOE](#) project, which is the main international initiative that systematically calculates the distribution of education expenditure and is coordinated by Eurostat, OECD and the UNESCO Institute for Statistics. Its results are published in the annual OECD Education at a Glance report and the data are provided by the respective governments, which include all OECD countries and a few middle income countries.

*Table 4. UOE education expenditure framework*

Type	Financing source	Provider	
		Education	Non-education
Core goods and services	Public Subsidised private Private		
Peripheral goods and services	R&D		
	Non-instruction		

The approach is built around three dimensions (**Table 4**):

- by type: 'core' goods and services, directly related to instruction (such as teachers, school administration, school maintenance, teaching and learning materials, and tuition) versus 'peripheral' goods and services (such as research and development at the tertiary level and non-instruction expenditure related to student living costs or services to the general public);
- by provider: education entities (include teaching institutions as well as non-teaching institutions, such as ministries, local authorities and student unions) versus non-education entities (ranging from stationery retailers to transport companies); and
- by financing source: in addition to public and private sources, the case of private expenditure that is subsidised by public funds is also identified.

Currently, through funding by the Global Partnership for Education, the UNESCO Institute for Statistics, the UNESCO International Institute for Educational Planning, and Pole de Dakar, are collaborating to develop a standard methodology for national education accounts using two countries as pilot case studies. Pole de Dakar has already developed an approach and estimation techniques to estimate private education spending using household surveys.

The attempt will aim to transpose the experience of the **national health accounts** to the education sector. The reference manual 'A System of Health Accounts' (OECD, [2000](#); revised version by OECD, Eurostat and WHO [2011](#)) has set global standards and has included an associated set of classifications of financial flows known as the International Classification of Health Accounts.

## Annex

Table A1. Education expenditure by level, source and type

		Public				Aid				Private	TOTAL
		Salaries	Other recurrent	Capital	Total	Budget support	Other aid to government	Other aid	Total	Total	
<b>Albania</b>	Pry and lower sec	16,635	1,881	5,682	24,199	32	194	137	364	4,320	<b>28,656</b>
2008	Upper sec	5,306	806	2,406	8,519	16	309	254	579	4,050	<b>12,822</b>
(Lek)	Tertiary	4,418	1,632	1,539	7,588	16	4,255	423	4,695	8,213	<b>16,224</b>
	<b>Total</b>	<b>26,359</b>	<b>4,319</b>	<b>9,627</b>	<b>40,305</b>	<b>65</b>	<b>4,759</b>	<b>814</b>	<b>5,637</b>	<b>16,583</b>	<b>57,702</b>
<b>Bangladesh</b>	Primary	44,193	16,526	11,839	72,558	0	3,571	12,683	16,254	53,184	<b>138,425</b>
2010	Secondary	61,114	15,555	4,688	81,357	0	1,473	3,196	4,669	117,921	<b>202,475</b>
(Taka)	Tertiary	8,404	1,747	2,406	12,557	0	480	2,465	2,945	38,446	<b>53,469</b>
	<b>Total</b>	<b>113,711</b>	<b>33,828</b>	<b>18,933</b>	<b>166,472</b>	<b>0</b>	<b>5,524</b>	<b>18,344</b>	<b>23,868</b>	<b>209,552</b>	<b>394,368</b>
<b>Indonesia</b>	Pry and lower sec	80,526	50,046	14,742	150,351	208	303	1,171	1,682	24,226	<b>175,748</b>
2009	Upper sec	12,505	9,608	4,411	26,329	104	780	439	1,323	11,603	<b>38,372</b>
(Rupiah)	Tertiary	6,234	14,206	12,438	28,035	104	593	565	1,262	13,414	<b>42,013</b>
	<b>Total</b>	<b>99,264</b>	<b>73,859</b>	<b>31,592</b>	<b>204,715</b>	<b>416</b>	<b>1,676</b>	<b>2,175</b>	<b>4,267</b>	<b>49,243</b>	<b>256,133</b>
<b>Malawi</b>	Primary	15,771	3,950	3,754	23,476	2,057	5,679	3,981	11,717	6,353	<b>33,810</b>
2010-11	Secondary	3,793	3,034	2,289	9,115	1,028	947	438	2,413	4,919	<b>14,472</b>
(Kwacha)	Tertiary	5,427	7,117	543	13,087	1,028	818	926	2,772	4,065	<b>18,078</b>



	<b>Total</b>	<b>24,990</b>	<b>14,102</b>	<b>6,585</b>	<b>45,677</b>	<b>4,113</b>	<b>7,444</b>	<b>5,345</b>	<b>16,903</b>	<b>15,337</b>	<b>66,360</b>
<b>Nicaragua</b>	Primary	2,943	892	452	4,287	75	380	405	859	1,122	<b>5,814</b>
2009	Secondary	609	223	305	1,137	37	326	135	498	1,050	<b>2,321</b>
(Cordoba)	Tertiary	1,682	229	221	2,133	37	207	64	308	1,364	<b>3,561</b>
	<b>Total</b>	<b>5,234</b>	<b>1,344</b>	<b>978</b>	<b>7,556</b>	<b>149</b>	<b>912</b>	<b>604</b>	<b>1,666</b>	<b>3,535</b>	<b>11,695</b>
<b>Rwanda</b>	Primary	32,412	15,964	10,552	58,929	8,858	12,839	8,611	30,308	23,197	<b>90,737</b>
2011	Secondary	21,011	17,276	11,545	49,832	4,429	6,271	8,479	19,179	51,630	<b>109,941</b>
(Rw francs)	Tertiary	30,623	10,466	4,174	45,263	4,429	8,594	11,435	24,458	46,060	<b>102,759</b>
	<b>Total</b>	<b>84,046</b>	<b>43,707</b>	<b>26,271</b>	<b>154,024</b>	<b>17,715</b>	<b>27,704</b>	<b>28,525</b>	<b>73,945</b>	<b>120,887</b>	<b>303,437</b>
<b>Tajikistan</b>	Pre-primary	14	4	2	20	0	0	0	0	6	<b>26</b>
2007	Pry and sec	324	93	46	463	0	6	26	32	263	<b>753</b>
(Somon)	Tertiary	29	8	4	42	0	7	2	8	87	<b>130</b>
	<b>Total</b>	<b>367</b>	<b>105</b>	<b>52</b>	<b>524</b>	<b>0</b>	<b>13</b>	<b>28</b>	<b>41</b>	<b>356</b>	<b>908</b>

Note: Figures are expressed in million local currency units except for Indonesia where they refer to billion local currency units.

Table A2. Gross enrolment ratios by level, sector and quintile

		Poorest		Poor		Middle		Rich		Richest	
		Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
<b>Albania</b>	Primary and lower secondary	94.3%	0.9%	88.7%	5.2%	93.1%	3.4%	83.7%	8.5%	62.3%	35.1%
	Upper secondary	52.5%	1.7%	58.3%	2.6%	65.4%	6.0%	78.6%	11.6%	44.1%	27.5%
	Tertiary	14.0%	1.0%	33.5%	3.1%	37.5%	1.7%	46.9%	4.0%	50.3%	13.4%
<b>Bangladesh</b>	Primary	123.2%	8.5%	114.3%	8.7%	120.8%	7.8%	92.9%	12.1%	84.5%	21.1%
	Secondary	33.4%	10.5%	52.0%	0.4%	67.0%	1.2%	72.0%	1.4%	84.9%	3.5%
	Tertiary	1.7%	1.1%	1.4%	3.6%	3.0%	5.3%	7.8%	10.3%	18.4%	21.5%
<b>Indonesia</b>	Primary and lower secondary	91.9%	7.8%	95.0%	8.0%	95.2%	9.0%	93.1%	11.8%	82.1%	21.8%
	Upper secondary	20.4%	8.6%	34.1%	15.2%	44.1%	20.6%	53.7%	25.8%	57.9%	30.5%
	Tertiary	0.5%	1.1%	1.3%	2.5%	3.0%	5.2%	7.4%	12.0%	19.8%	31.9%
<b>Malawi</b>	Primary	108.7%	0.5%	113.1%	1.0%	121.1%	1.2%	123.1%	2.6%	115.0%	13.4%
	Secondary	7.8%	0.9%	15.7%	0.5%	26.8%	2.0%	33.5%	3.8%	45.1%	12.0%
	Tertiary	0.1%		0.5%		0.4%		0.7%		11.8%	
<b>Nicaragua</b>	Primary	97.8%	0.9%	107.7%	4.4%	103.6%	6.1%	89.6%	16.8%	54.3%	46.3%
	Secondary	33.3%	2.1%	47.5%	1.8%	59.5%	9.9%	70.5%	14.3%	55.4%	45.3%
	Tertiary	0.7%	0.4%	3.3%	3.1%	4.6%	9.1%	13.0%	20.7%	24.1%	58.4%
<b>Rwanda</b>	Primary	133.8%	0.7%	141.6%	0.5%	143.1%	1.4%	144.8%	1.3%	115.5%	25.6%

	Secondary	22.4%	1.5%	32.7%	2.2%	41.1%	9.6%	51.3%	16.4%	44.9%	49.6%
	Tertiary	0.3%	0.0%	0.7%	0.2%	1.1%	0.2%	1.5%	0.8%	11.0%	14.8%
<b>Tajikistan</b>	Primary and secondary	79.1%		81.9%		81.5%		83.9%		87.3%	
	Tertiary	9.2%		12.3%		17.4%		24.2%		42.4%	

Table A3. Incidence of public and private expenditure for the poorest and richest quintile by level of education

		Public		Private		Total	
		Poorest	Richest	Poorest	Richest	Poorest	Richest
<b>Albania</b>	Primary and lower secondary	5,406	3,572	736	815	6,142	4,387
	Upper secondary	1,495	1,258	430	897	1,924	2,155
	Tertiary	585	2,095	618	1,814	1,203	3,909
<b>Bangladesh</b>	Primary	16,685	11,446	5,644	20,047	22,328	31,493
	Secondary	8,795	22,329	5,231	60,011	14,026	82,340
	Tertiary	652	7,159	227	27,066	879	34,224
<b>Indonesia</b>	Primary and lower secondary	30,205	26,993	2,399	10,608	32,604	37,601
	Upper secondary	2,560	7,246	439	5,595	2,999	12,841
	Tertiary	476	17,257	53	10,930	530	28,187
<b>Malawi</b>	Primary	4,391	4,647	462	3,899	4,853	8,546
	Secondary	553	3,187	123	2,934	676	6,121
	Tertiary	110	11,447	3	3,946	113	15,393
<b>Nicaragua</b>	Primary	926	514	81	520	1,007	1,034
	Secondary	142	237	47	537	189	773
	Tertiary	35	1,122	4	970	39	2,092
<b>Rwanda</b>	Primary	11,617	10,029	1,609	15,434	13,226	25,463

	Secondary	5,804	11,624	1,269	32,109	7,073	43,733
	Tertiary	943	34,163	24	44,494	967	78,657
<b>Tajikistan</b>	Primary and secondary	89	98	44	70	133	168
	Tertiary	4	17	5	39	9	56

Note: Figures are expressed in million local currency units except for Indonesia where they refer to billion local currency units.