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International Institute for Educational Planning

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Pôle de Dakar
EDUCATION SECTOR ANALYSIS

WHO PAYS FOR WHAT IN EDUCATION?

The real costs revealed through national education accounts

With the support of

GLOBAL PARTNERSHIP for EDUCATION
quality education for all children

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WHO PAYS FOR WHAT IN EDUCATION?

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1. Better data on education financing is needed

How much do countries spend on education? Where does the funding come from, and how is it spent? We have trouble answering these questions, simply because many countries lack sustainable systems for collecting, disseminating and analysing data on education financing. To paint a complete picture of education financing in a given country, national statisticians must gather data from many different sources, often using different data classification systems. In many cases, such as for household or non-governmental organization (NGO) spending, the data are not compiled. When they are, they may be collected only occasionally and in aggregate form.

Despite these difficulties, good quality data on financial flows are important to help governments understand how funds are disbursed, which groups are disadvantaged in terms of access to funding, and what can be done to improve cost efficiency and effectiveness. Calculating accurate unit costs for education is not currently possible in most countries. But gaps in international data availability prevent the effective monitoring of progress towards the Education 2030 framework and Sustainable Development Goal 4 (SDG 4 - ensure inclusive and equitable quality education and promote lifelong learning opportunities for all). They also impede the development of realistic costing exercises, both at national and international levels.

The National Education Accounts (NEA) methodology has been developed to help fill those gaps. This brief presents an overview of the results and data produced in eight countries that participated in an NEA project funded by the Global Partnership for Education (GPE) and implemented by the UNESCO Institute for Statistics (UIS), the UNESCO International Institute for Educational Planning (IIEP), and the IIEP Pôle de Dakar *(see **Box 1**)*.

2. What are NEAs?

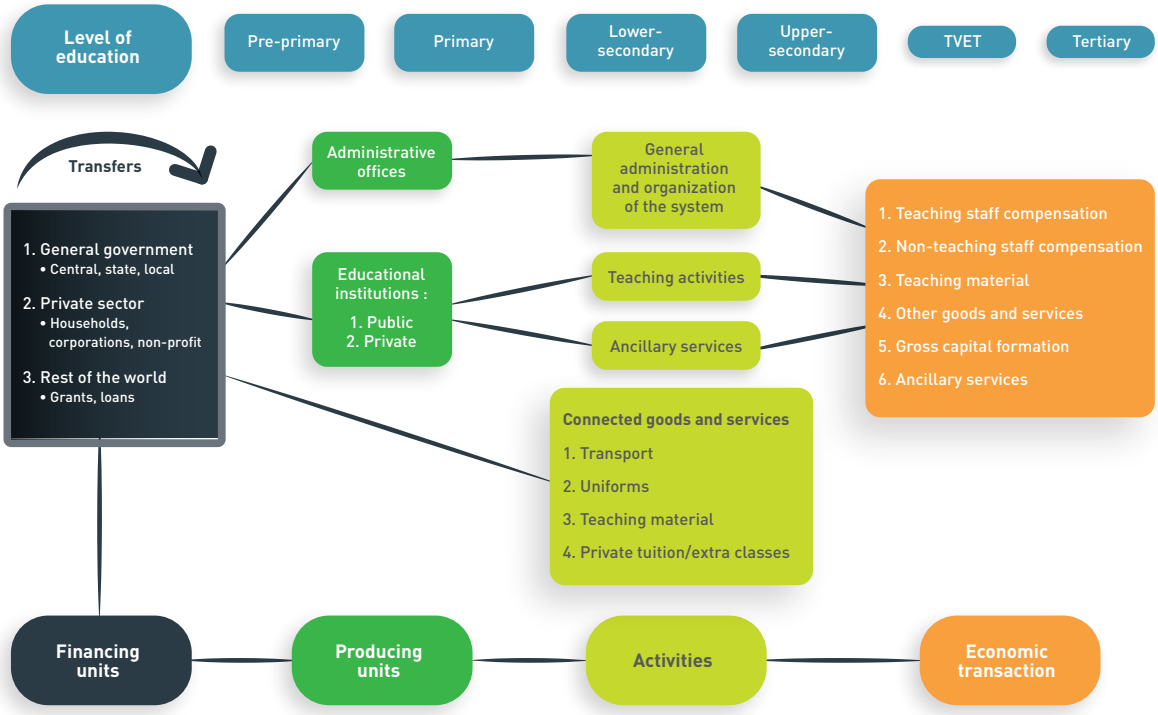
NEAs are based on the principles of satellite accounts. A satellite account is used to provide detailed financing data for a specific sector while maintaining consistency with the central framework of national accounts (which produce key economic indicators such as gross domestic product, or GDP). Satellite accounts exist in many sectors, including health, tourism and agriculture, but have so far been used only sporadically in the education sector.

An NEA is a **comprehensive** education finance data collection, processing and analysis exercise. It covers all education levels, from pre-primary to tertiary education, including vocational training. It includes all sources of funding (all levels of government, private and external sources) and all types of education providers, whether public or private.

An NEA is a **logical and systematic** framework to analyze education financing flows. The IIEP-UIS methodology collects data from financing units (those funding education), as well as producing units (those providing education services). The data are then processed using common classifications of education level, activities and economic transaction, so that they can be consolidated under one cohesive framework that reconciles the perspectives of financing and producing units. The common dimensions and classifications of the NEA are presented in **Figure 1**.

An NEA will help produce **comparable** data over time and across countries, while keeping a degree of **flexibility** to reflect different national realities. Each dimension of the framework uses existing international definitions as the reference, but can be adapted to each country's system. For example, economic transactions are classified according to the definitions of the System of National Accounts (SNA) and the Government Finance Statistics (GFS) manual. Education programmes are classified to reflect national programmes, while being compatible with the International Standard Classification of Educational Programmes (ISCED). This comparability is needed for global monitoring but also for national governments to gain some perspective when assessing the performance of their own system.

Figure 1. Dimensions and classifications of an NEA



For more details on the NEA methodology, please refer to the methodological guide published by IIEP and the UIS (see references at the end).

BOX 1. THE GLOBAL PARTNERSHIP FOR EDUCATION-UNESCO NATIONAL EDUCATION ACCOUNTS PROJECT

Data presented in this brief are the result of a collaborative project between the UNESCO Institute for Statistics (UIS), the UNESCO International Institute for Educational Planning (IIEP), and IIEP Pôle de Dakar, implemented in 2013-2016. Using the NEA methodology as a common framework, the project leaders provided technical support to eight countries to develop and implement sustainable methodologies for collecting, producing, reporting and using quality education finance data. Participants produced data in a way that could both inform sector planning and allow for regular reporting at national and international levels.

The GPE's Global and Regional Activities programme (GRA) funded this activity.

Not all eight countries implemented full NEAs covering all sources of funding. Instead, they were split into streams focusing on key areas of education financing:

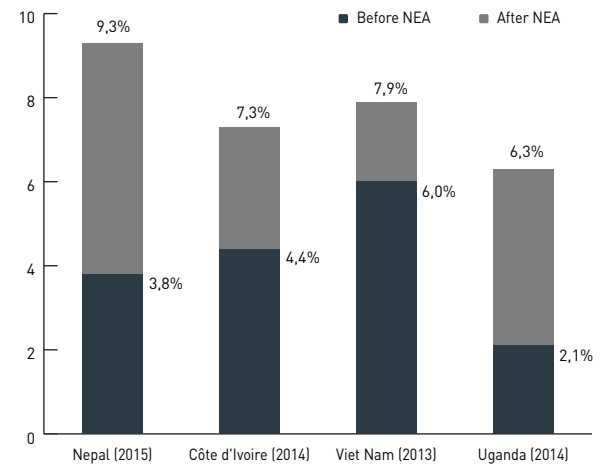
1) Allocation of resources within the system (**Guinea** and **Zimbabwe** with IIEP Pôle de Dakar)
2) Household expenditures (**Côte d'Ivoire** and **Viet Nam** with UIS)
3) External resources (**Lao PDR** and **Senegal** with IIEP)
4) In two countries (**Nepal** and **Uganda**), a comprehensive education finance information system was built around the national education account (NEA) approach.

This difference in focus should be kept in mind when comparing the results, and explains why not all countries are represented in all the figures.

3. Countries spend more on education than is often assumed

Collecting funding data from as many sources as possible within the NEA framework changes the picture of education financing dramatically. Because published education financing figures (whether at the national or international level) tend to focus on the key government actors, the picture is incomplete. **Figure 2** shows how education expenditure as a share of GDP differs when comparing previously used funding sources against what was collected through the NEA exercise. Before NEA, Uganda and Nepal appear to spend less than Côte d'Ivoire and Viet Nam (2.1% and 3.8% versus 4.4% and 6.0% of GDP, respectively). But the picture changes when all sources of funding are included, with Uganda spending 6.3% of GDP, Nepal 9.3%, Côte d'Ivoire 7.3% and Viet Nam 7.8% for the most recent available year. In all cases, the share is significantly higher than what was previously known. This is mostly due to the addition of household contributions as well as more complete coverage of government sources.

Figure 2. Total expenditure on education as a share of GDP, before and after an NEA



Source: National reports as listed in the references section

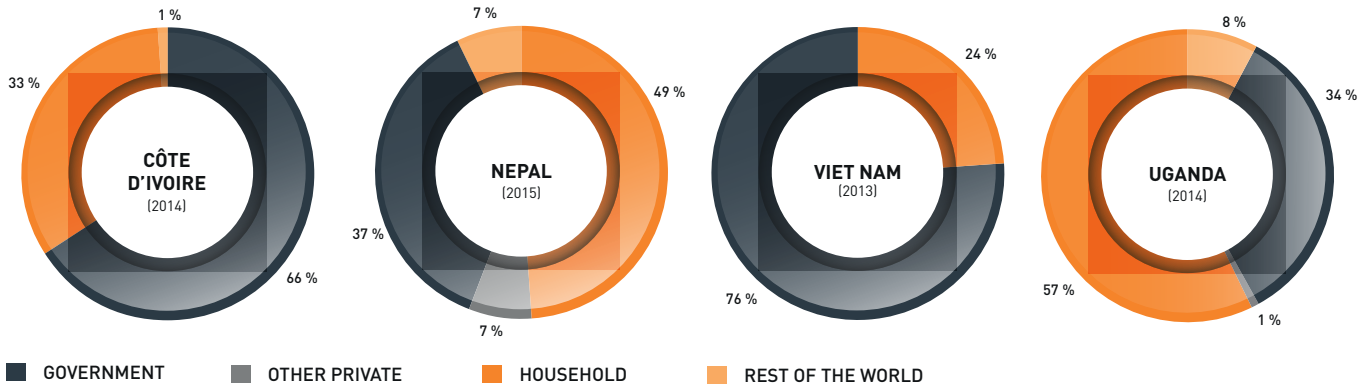
4. Households are major but often forgotten contributors to education funding

As **Figure 3** shows, households fund about one-quarter of education expenditure in Viet Nam, around one-third in Côte d'Ivoire, one-half in Nepal and more than one-half in Uganda. This has two important implications:

- Accounting for household contributions is essential to knowing how much is really spent on education, since the share is so significant. But this contribution is often forgotten because data sources are scarce. In the four countries below, data from a household survey were used (in some cases complemented by other sources), but these are not available in all countries.
- When the burden on households to pay for their education is too heavy, issues of equity and accessibility may arise.

The government is the most important funder of education in two out of the four countries for which data on household expenditure were collected (Viet Nam and Côte d'Ivoire). In Uganda and Nepal, the rest of the world (external donors) plays a small but significant role with 7% and 8% of total funding respectively.

Figure 3. Total funding for education by source

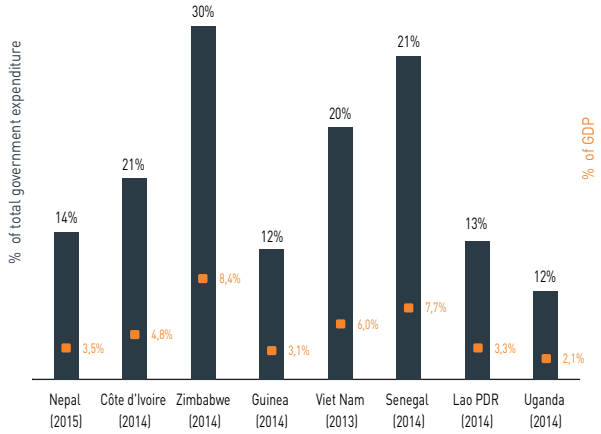


Source: National reports as listed in the references

5. Government sources of education funding are diversified and Ministries of Education are not always the main funders

How much the government spends on education as a share of total government expenditure (all sectors) and as a share of GDP are often-used indicators to assess government commitment towards education. In the eight countries participating in the project, government expenditure on education as a percentage of total government spending ranges from 12% in Guinea and Uganda to 30% in Zimbabwe *(see **Figure 4**)*. Government expenditure as a share of GDP follows a similar pattern, with Uganda spending 2.1%, and Zimbabwe 8.4%.

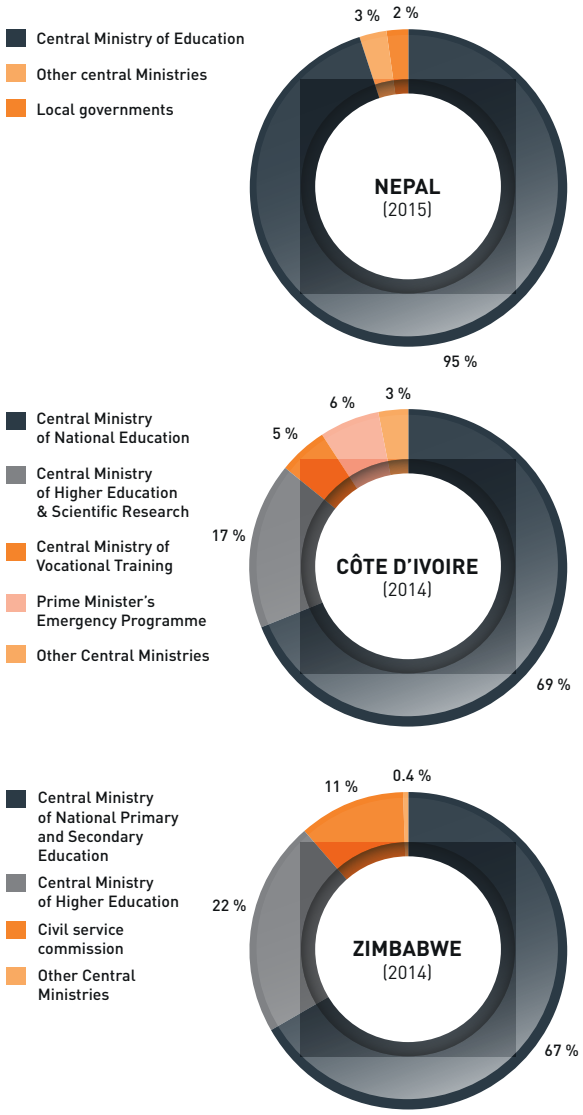
Figure 4. Government expenditure on education as % of total government expenditure and as a percentage of GDP

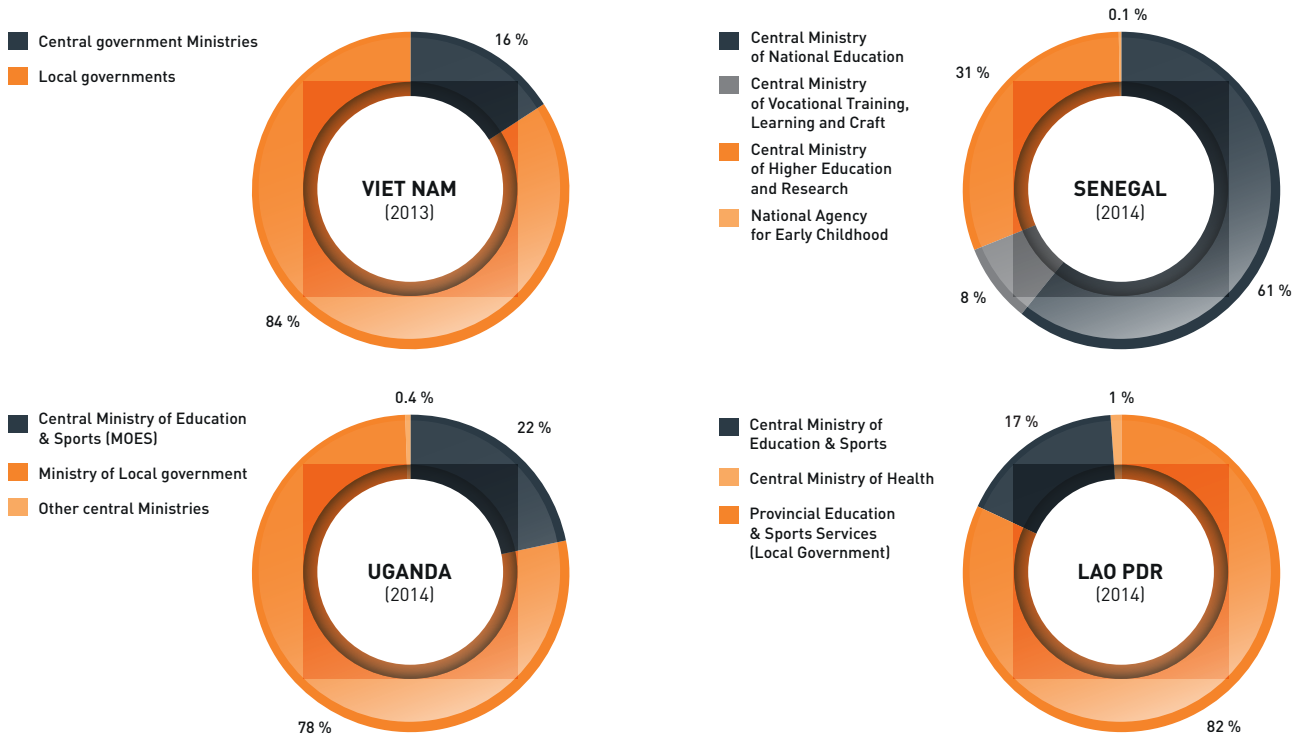


Source: National reports as listed in the references

Public funding of education is diversified and sometimes decentralized. The Ministry of Education may not be the only — or the main—actor. In some cases, the NEA exercise allowed for the inclusion of previously unknown government sources. In Côte d'Ivoire, including previously ignored government agencies involved in education (such as the President's Emergency Programme and a list of 17 'other' ministries with tertiary and pre-primary institutions under their responsibility) added 9% to government expenditure on education. In Zimbabwe, including the civil service commission's funding of education staff pensions added 11% to government expenditure on education. In Viet Nam, the central Ministry of Education is only responsible for tertiary institutions (and not all of them). Pre-primary, primary and secondary education is completely decentralized to districts and provinces. As in Viet Nam, Uganda and Lao PDR both decentralize more than 80% of government expenditure through local levels *(see **Figure 5**)*.

Figure 5. Government funding by ministry and agency





Source: National reports as listed in the references

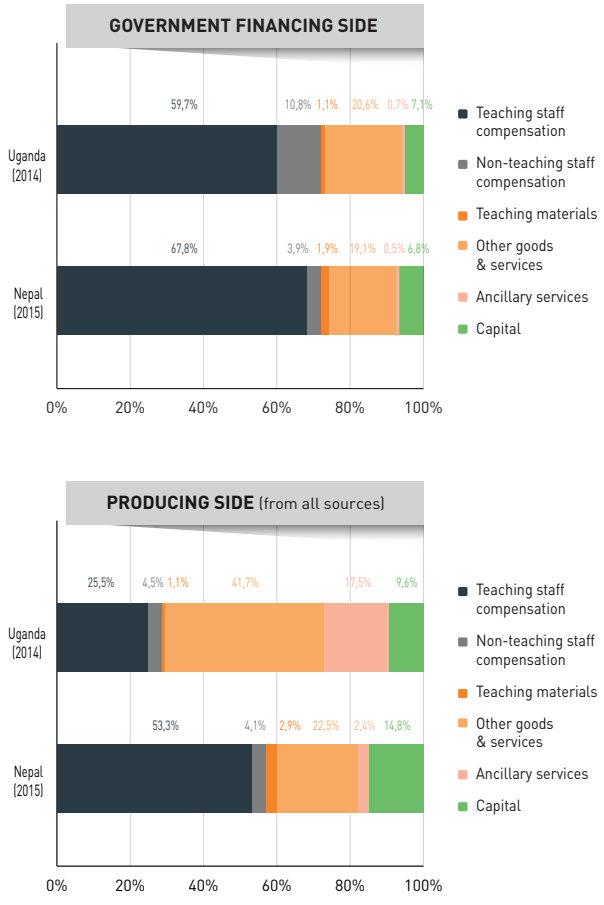
Accounting for previously unknown government sources complicates data collection, especially in places where no accessible databases include all government levels, ministries and agencies. It also indicates a potentially challenging policy environment because of the many actors involved.

6. Teachers' compensation is the main item for government expenditure, but is less significant when looking from the perspective of educational institutions

NEAs disaggregate all expenditures by economic transaction to permit analysis of where funds are spent. One common assumption about education expenditure is that it mostly goes to teachers' salaries. The NEA exercise confirms that teacher compensation represents at least half of government expenditure on all levels of education in all eight countries. However, the actual share can vary significantly, ranging from 56% in Côte d'Ivoire to 71% in Lao PDR, to 81% in Zimbabwe. When the compensation of non-teaching staff is added, this share increases a little bit in Lao (by 7%), and significantly in Côte d'Ivoire, where non-teaching staff take up 16% of government expenditure on education, for a total of 72% spent on all staff compensation.

Considering only the government financing side, however, does not give us a complete or accurate picture of how funds are actually used, since schools receive funding from sources other than the government, or may use the funds differently. In addition to the financing perspective, the two countries doing complete NEAs (Uganda and Nepal) also looked at the producing side, or how educational institutions use the funds. When considering the expenditure of producing units, for example, teacher compensation makes up a smaller proportion of the total, since government financing is only a part of the total funding. In Uganda, the government spends 59.7% on teacher compensation, but public and private institutions actually use only 25.5% *of all funds received* to pay teachers. In Nepal it is 67.8% versus 53.3%. Capital expenditure is also more significant in both countries when considering the perspective of schools, the producing units *(see **Figure 6**)*.

Figure 6: Expenditure by economic transaction, all levels, %

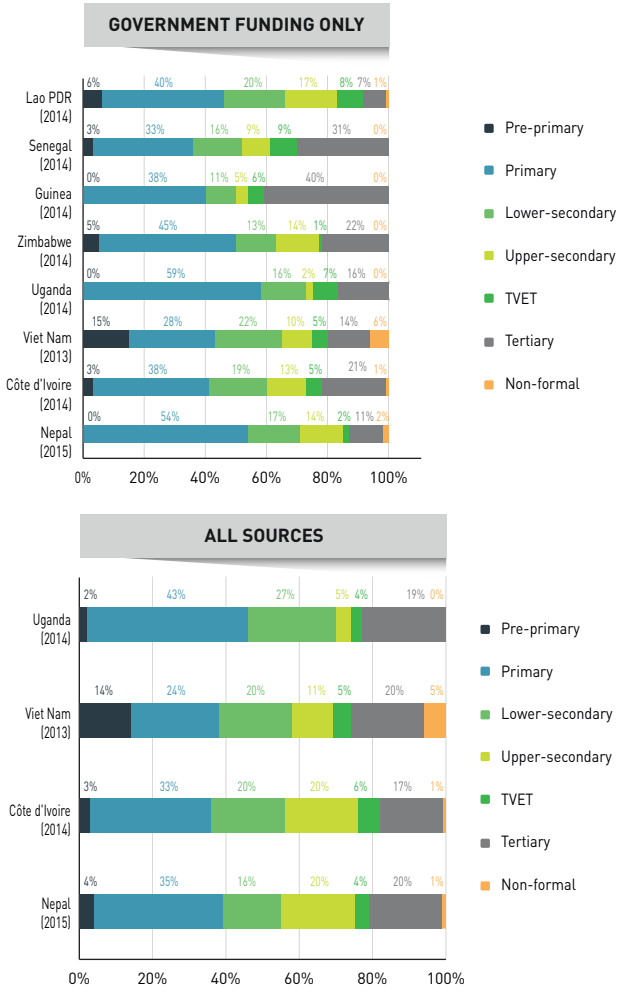


Source: National reports as listed in the references

7. Primary education remains the level of highest spending

Looking at expenditure by level of education from government sources, primary education receives the largest share in all countries except Guinea, which spends as much on tertiary education as on primary (41% versus 38% of the total). The Vietnamese government distinguishes itself by spending by far the largest amount (15%) of all the countries on pre-primary education. This reflects the high priority given to equipping young children with the background for primary education through the 2010 policy of universal pre-schooling for all five-year-old children. The Ugandan government, on the other hand, spends a comparatively high share (7%) on technical and vocational education and training (TVET) *(see **Figure 7**)*. When considering all sources of funding, the picture changes: all countries spend proportionally more on both higher-level and pre-primary education. This reflects the fact that primary education tends to be heavily funded by public sources, while other levels receive more private funding.

Figure 7. Expenditure by level of education (%)



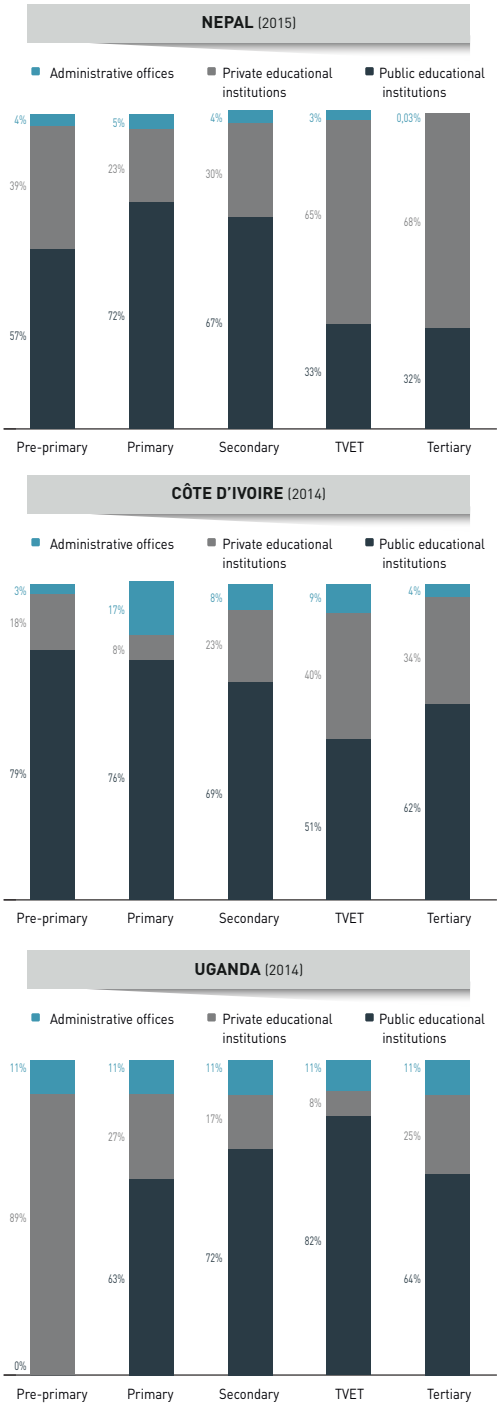
Note: *Small adjustments were made to the data from national reports to align levels of education, including allocating all administrative expenses by level of education.*

Source: National reports as listed in the references

8. A great deal of education expenditure flows through private institutions

The higher proportion of private spending at non-primary levels is mirrored by analysis of expenditure by type of institution (the producing units of the NEA framework). In Nepal, about two-thirds of spending on TVET and tertiary education flows through private institutions, while in Uganda public institutions receive the vast majority of funding for TVET. For primary and secondary education, in all three countries public institutions receive the largest share. At pre-primary levels the picture varies greatly among countries. In Côte d'Ivoire, 18% of funding goes to private institutions, while it is 39% in Nepal and 89% in Uganda, where pre-primary education is entirely private *(see **Figure 8**)*.

Figure 8. Expenditure by type of producing unit



Source: National reports as listed in the references

9. Households pay fees, but also spend outside schools

A more detailed analysis of expenditure by households (through the processing of household surveys) shows what they are spending money on. Fees and payments to schools are the most significant items in private schools and at the secondary level in Uganda, Nepal and Côte d'Ivoire. These include official fees but also other types of charges to parents and students such as registration or exam fees, ancillary fees, contributions to parent-teacher associations or school management committee fees. Nonetheless, when taken together, payments made outside of schools for items such as uniforms, teaching materials, private classes and other expenses often represent more than one-half of what households are spending on education, especially in public schools. In Nepal, these 'outside payments' represent 82% of household spending for students attending public primary schools, and 65% for those attending public secondary schools. In Côte d'Ivoire, they represent 65% (primary) and 69% (secondary) of the total for students in public schools. In Uganda, these payments represent a lower share of household expenditure on education in public schools: 56% at the primary level and 38% at the secondary level.

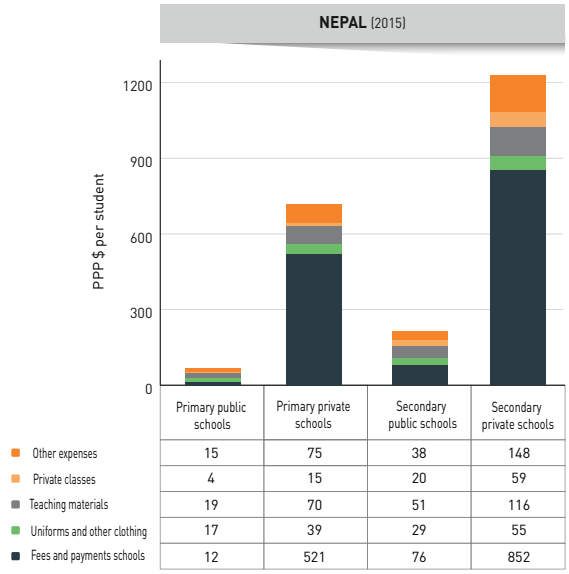
In Nepal's public primary schools, the largest expense is teaching materials (PPP$19 per student[1]), followed by uniforms (PPP$17 per student). In total, parents spend PPP$67 on educating their children in public primary schools, compared to PPP$720 in private primary schools. In Côte d'Ivoire, the largest expense is made up of the various fees paid to schools, even in public primary schools (PPP$45 per student), despite the fact that primary schooling is meant to be free. The second item is teaching materials (PPP$32 per student), for a total cost of PPP$128 on average to attend a 'free' primary school—and PPP$439 to attend a private one.

At the secondary level, households are contributing PPP$375 in total for students in public schools, and PPP$731 for students in private schools. In Viet Nam, the small number of private primary schools and the resulting small sample size prevented the calculation of average costs. Nonetheless, in public schools—where education is also meant to be free—parents and students still contribute PPP$178 a year on average, with PPP$38 spent on various payments to schools, even though official fees do not exist at that level. Viet Nam distinguishes itself with the significant amount spent on private classes. At the secondary level, households spend more (PPP$110) on private classes than on fees (PPP$89) in public schools. This type of spending is also important in private secondary schools, with an average of PPP$189 a year spent on private classes, for a total cost of PPP$1,027 on average per student.

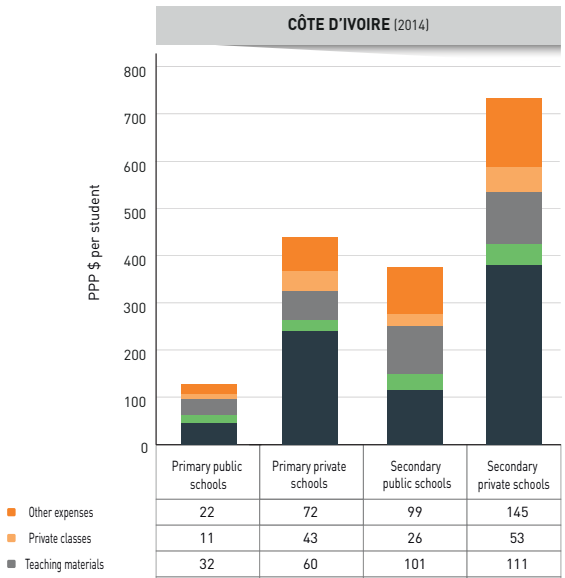
In Uganda, the biggest spending area includes fees and payments to schools, although fees are fairly low in public primary schools (PPP$26) compared to private schools (PPP$217). At the secondary level, students pay on average PPP$316 a year to public secondary schools, and PPP$553 to private ones *(see **Figure 9**)*.

[1] PPP= at purchasing power parity, used to compare costs between countries, taking into account the cost of living. PPP$1 is meant to buy the equivalent to what 1 US$ can buy in the United States.

Figure 9. Household expenditure on education per student and by type of expenditure, PPP$



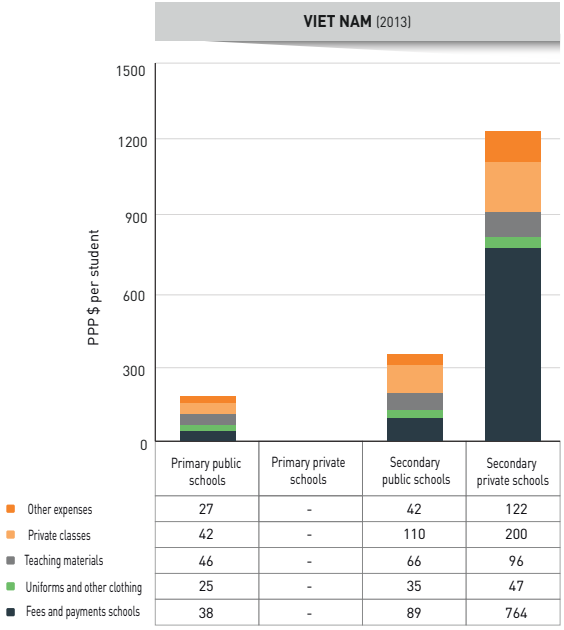
	Primary public schools	Primary private schools	Secondary public schools	Secondary private schools
Other expenses	15	75	38	148
Private classes	4	15	20	59
Teaching materials	19	70	51	116
Uniforms and other clothing	17	39	29	55
Fees and payments schools	12	521	76	852

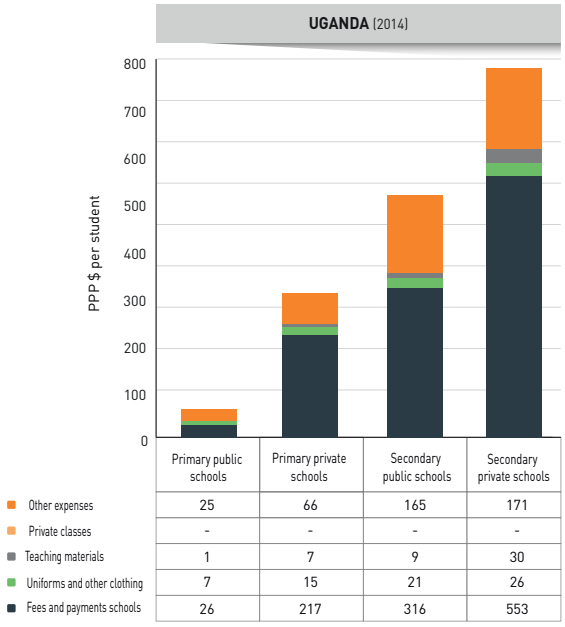


	Primary public schools	Primary private schools	Secondary public schools	Secondary private schools
Other expenses	22	72	99	145
Private classes	11	43	26	53
Teaching materials	32	60	101	111
Uniforms and other clothing	18	25	33	43
Fees and payments schools	45	239	116	380

Note: *In Viet Nam, the sub-sample size of students in primary private institutions from the household expenditure survey was too small to produce estimates. In Uganda, data on expenditure for private classes were not collected in the household survey.*

Source: National reports as listed in the references



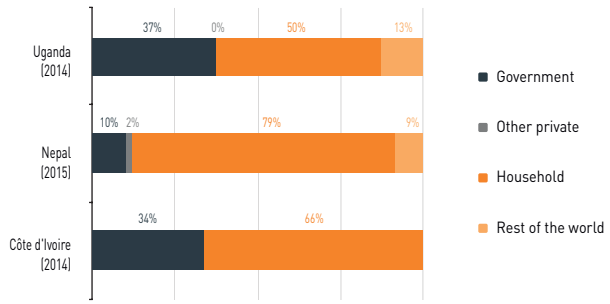


10. Teaching materials are mostly funded by households

The NEA methodology allows for an analysis of education financing from all perspectives, since it disaggregates expenditure by all dimensions. This makes it possible to answer such questions as 'who pays for what?' by looking at a how a specific item is funded. For example, who pays for school books and other teaching materials? Adding up what is spent on teaching materials within and outside of schools (when parents buy them in the general marketplace), households fund 79% of the cost of teaching materials in Nepal at the primary level, 66% in Côte d'Ivoire, and 50% in Uganda *(see **Figure 10**)*. If the availability and therefore funding of teaching materials are believed to affect the quality of learning, this finding has two main implications:

- Looking at government funding provides an incomplete picture of how much is spent on teaching materials, since the government, even at the primary level, funds a small share.
- Poorer households may suffer if they are expected to fund teaching materials. Children from poorer households may have less access to adequate materials, which may hamper their learning.

Figure 10. Expenditure on teaching materials by source of funding in primary education (%)



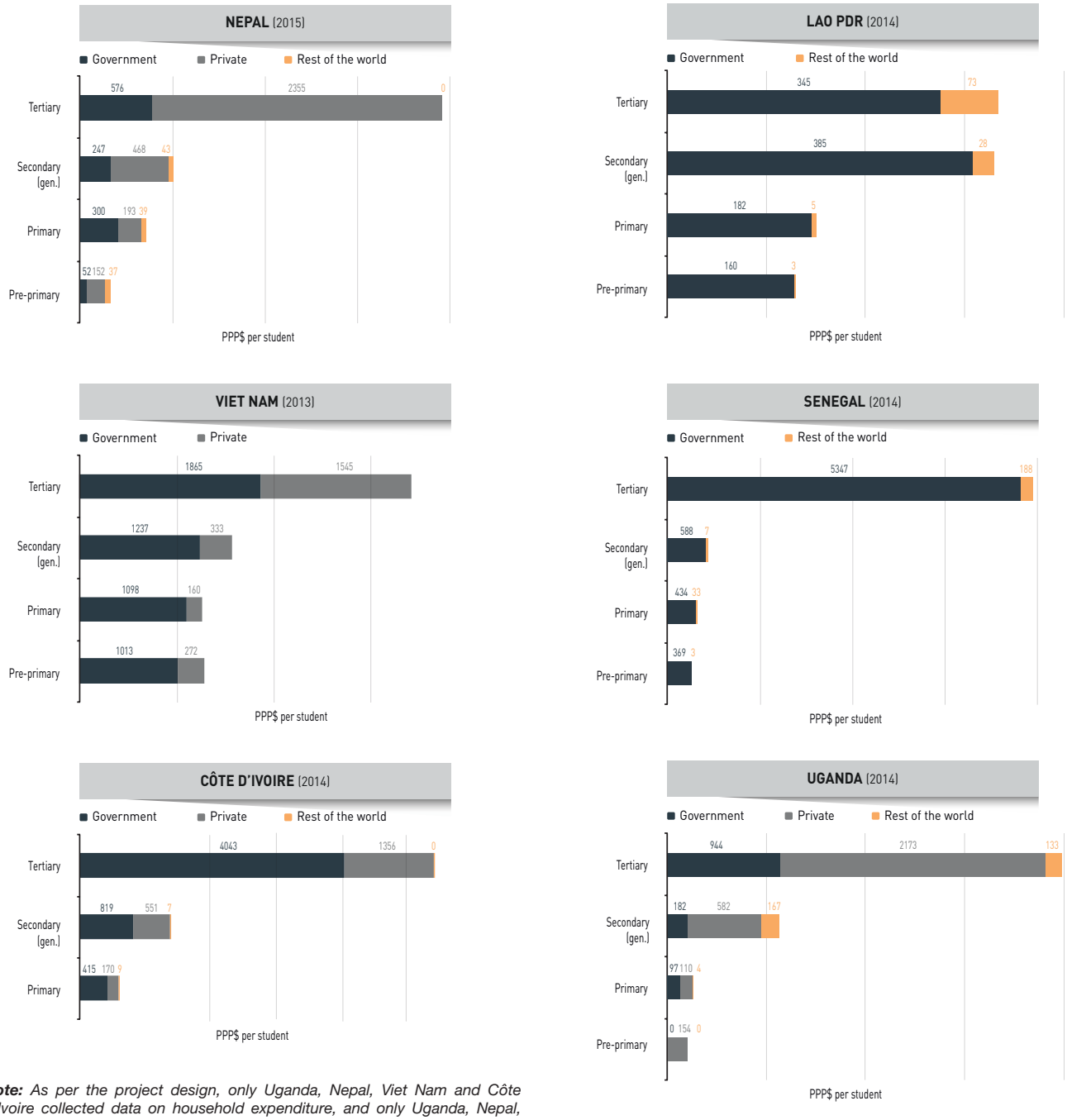
Source: National reports as listed in the references

11. Expenditure by student and by source of funding reveals disparities

There are a few ways in which education spending can be compared among countries. The share of GDP or total government expenditure is often used, but expenditure by student may be the most straightforward way to assess actual spending using a common denominator. The new Education 2030 Framework for Action includes such an indicator (20): *Education expenditure per student by level of education and source of funding*. Because it requires data from all sources of funding, producing this indicator will be challenging in countries with no comprehensive data collection such as an NEA in place. This indicator reveals key differences between countries *(see **Figure 11**)*:

- All countries except Lao PDR show a big jump in total spending per student between secondary and tertiary levels. In Viet Nam and Nepal, this is a consequence of much higher spending by private sources (households), while differences in government spending per student are less drastic. In Côte d'Ivoire, government spending per student is five times higher for tertiary than for secondary education. In Senegal, it is nine times higher.
- In Nepal, because of higher investments from private sources at the secondary level, total spending per student (PPP$758) is significantly higher than for primary (PPP$533). The picture is quite different when considering government funding only, with secondary students receiving less per head (PPP$247) than primary students (PPP$300).

Figure 11. Education expenditure per student by level of education and source of funding (PPP$)



Note: *As per the project design, only Uganda, Nepal, Viet Nam and Côte d'Ivoire collected data on household expenditure, and only Uganda, Nepal, Côte d'Ivoire, the People's Democratic Republic of Lao and Senegal collected data on rest of the world expenditure.*

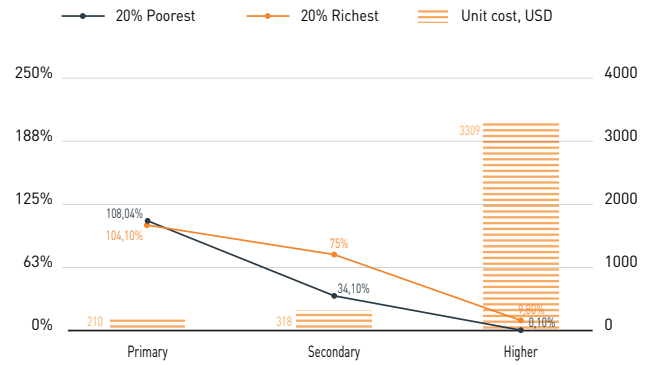
Source: National reports as listed in the references

12. Public funding for education tends to favour richer households

The vast array of statistical information produced by an NEA provides an invaluable opportunity to investigate potential issues of equity in public resource allocation within the education system. Governments the world over spend considerable amounts of public resources to fund education services, yet access to those services is not always equitable for all intended beneficiaries. Instead, access is skewed toward segments such as specific educated classes, schools, regions, wealth quintiles and districts. Only those with access to public schools benefit from public education resources.

For example, in Zimbabwe, the top 20% on the wealth scale have a Gross Enrolment Ratio (GER) in secondary education of 75%, more than twice that (34%) of the poorest 20%. Almost none (less than 1%) of the poorest 20% attends higher education, compared to 10% for the top 20%. Taking into account the structure of per-student cost, it follows that heavy government expenditure at the secondary level (US$318 per student) and in higher education (US$3309 per student) disproportionally benefits individuals from wealthy economic backgrounds, revealing a disturbing level of inequity in the allocation of public education resources in Zimbabwe *(see **Figure 12**).*

Figure 12. Rich versus poor enrolment ratios by levels of education and corresponding per student cost, Zimbabwe, 2014

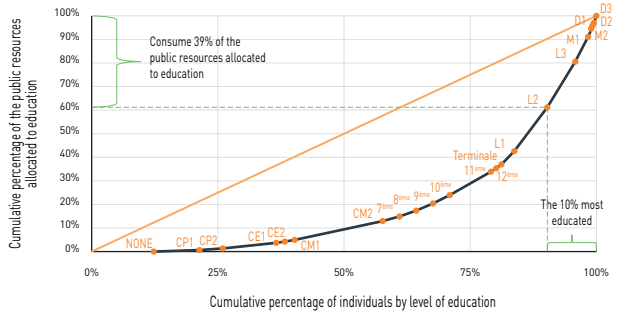


Source: Authors, GER figures were derived using Zimbabwe MICS 2014

Similarly, **Figure 13** shows further analyses that NEA can provide in assessing the distributional impacts of education spending through a Benefits Incidence Analysis (BIA).

Combining school profile and unit cost reveals that public funding of education in Guinea is skewed towards higher levels of education: the 10% most educated individuals benefit from 39% of public resources allocated to education in the country.

Figure 13. Concentration curve of public resources allocation in education, Guinea, 2014



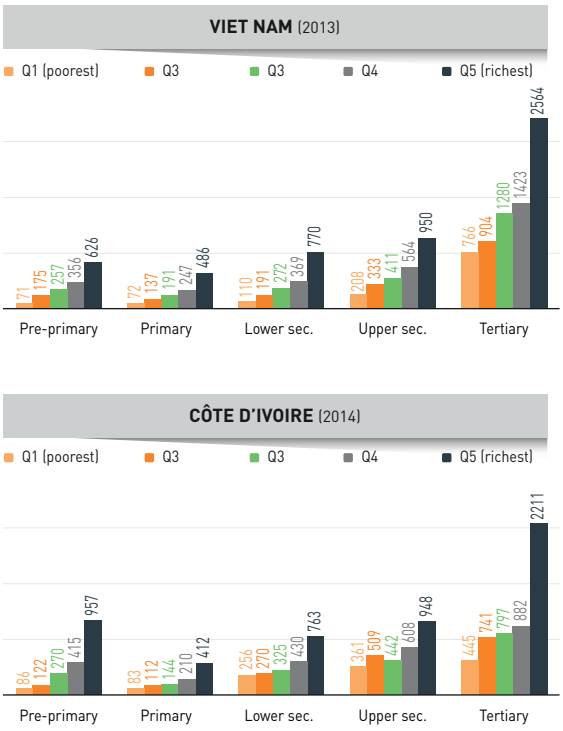
Source: Authors

13. Children from richer households receive much more investment in their education

Using household surveys to estimate education spending allows for an analysis of equity, since these surveys often include variables on household wealth. For example, **Figure 14** shows a similar pattern and figures in PPP$ in Viet Nam and Côte d'Ivoire when looking at average household expenditure by wealth quintile:

- Expenditure per student rises gradually alongside household wealth, but there is a marked increase between Q4 and Q5 (the richest).
- Expenditure also rises with each level of education, with a marked increase at the tertiary level (with the notable exception of pre-primary, which tends to be more expensive for households than primary education). This reflects the fact that primary education is in many countries the most heavily government-subsidized level (see point 11).

Figure 14. Average household expenditure per student in PPP$, by wealth quintile



14. NEAs require strong support by governments and the global education community

The process of collecting and consolidating education finance data is inherently complex. But the NEA methodology provides a comprehensive and systematic perspective, facilitating the production of data comparable between countries and over time. At the same time, its flexibility in representing each country's reality keeps it useful and meaningful to national policymakers.

The NEA exercise itself encourages institutional collaboration and dialogue. The formal collaboration arrangement of the NEA unites institutions that do not always work together, with ministries of education, finance and the national statistical office at the forefront providing all the pieces of the data puzzle.

To build on the momentum around NEA generated by the UNESCO-GPE project and to encourage more countries to use the tool, governments and the global education community should consider doing the following:

1. ***Ensure strong institutional and technical leadership at the international level:*** Efforts are needed to ensure that the NEA methodological guidelines, published by IIEP and the UIS with the support of GPE, are largely disseminated and used. IIEP and the UIS could assure technical leadership along with other interested partners. An international expert group on NEA could be set up to continue working on common standards and provide a pool of technical experts available to support countries.
2. ***Provide support to countries interested and suitable for the implementation of an NEA***: Implementing an NEA, especially for the first time,

is a demanding and very technical exercise. Many developing countries will need technical and financial support. Donors—potentially under the leadership of the GPE—should step in to provide funding for countries where the right elements are in place (namely a minimum of data availability and government interest).

3. ***Consider a gradual approach:*** All data collection and consolidation exercises exhibit a tension between producing regular data quickly and developing higher quality, more comprehensive data. A 'full' NEA covering all sources of funding can be complex and demanding, and therefore lack appeal for national governments and donors. A good strategy could be to provide quick and regular basic data, while gradually improving data quality and coverage—including private and international sources of funding. A step-by-step approach to the NEA may be advisable, where each phase updates existing data, adds new data and improves overall data quality. This approach could disseminate a new source of data every year, for example, starting with government expenditure. Using the NEA methodology from the outset would be critical to ensuring the success of this building-block strategy.

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