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Towards an Innovative Demand-Driven Global Strategy for Education Data

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Summary and purpose

The collection and analysis of good quality data to track progress in education across the world are vital to ensure that no one is left behind. According to a 2016 inventory undertaken by the UNESCO Institute for Statistics (UIS), the world currently gathers only half of the data needed to monitor progress towards the Sustainable Development Goal 4 (SDG 4) targets.

Why?

- **Demand side needs are not incorporated.**
- **Innovation is disregarded** despite the need to integrate old approaches with new ones.
- **Lack of consolidation of education data sources** into an integrated system of information that serves evidence-based decisions.
- **Insufficient demand and utilisation** of data for decisionmaking.
- **Multiplicity of standards** that misguide stakeholders and difficult data use.
- **Inadequate capacity** that precludes the sustainability of the efforts.
- **Lack of methods which are adequate for data production and use** in fragile and emergency situation.
- **Insufficient funding** that challenges country capacities to sustain monitoring efforts.

What?

A long-term programmatic approach towards 2030 is needed, focusing on education information systems in an integrated way, including various sources of information, and incorporating demand and using innovation and research as accelerators of change. The approach would include:

- Being demand-driven.
- Results are achieved through innovation, clearinghouse for ideas and network effect.
- Improving accountability.
- Supply/demand outcome will be layered into international, regional and national levels.

How?

The outputs are a set of global public goods:

- A **comprehensive integrated information system in education** based on:
 - Being demand-driven.
 - A set of minimum data and sources of information aligned with demand and policy priorities, including use and dissemination.
 - Integrating applied research with practical solutions to implementation, analysis and use.



- A product-oriented initiative, with tools and guidelines in an innovative sharing platform (edu2030.org/country and edu2030.org/research) designed to harmonise methodologies and fill the gaps in data collection and use, promote and share good practices, new approaches and technologies around data collection, compilation, reporting and use.
- Knowledge transfer and country absorption: training through the online school of education data science through tools and platforms to report data, calculate indicators and assess quality and procedures developed and harmonised for improving the institutional, organizational and technical capacity of education statistical systems at all levels (edu2030.org/capacitydevelopment).
- Innovation translated into agility, speed, timeliness and new cost-effective methods in data collection.
- Following a strategy and action plan for long-term sustainable education statistical systems in developing countries in order to address sustainability and ownership.

Who?

- Implemented through the UIS.
- The innovation component is funded by a Trust Fund managed by the UIS that will include donors, data producers and users at all levels.

Where?

- In countries based on their demand.

When?

- Starting in 2018 with a 12-year vision towards 2030.

How much does it cost?

- US\$45 million over five years.

GSED values added

- Placing demand (country ownership) and innovation in the forefront.
- Mining the potential of big data and informatics.
- Mining the potential of research and technology to increase efficiency and effectiveness.
- Through UIS' role and mandate, leverages the multilateral coordination architecture.



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1. A rationale for a systemic and systematic approach to education statistics^{1,2}

Effective and efficient use of data has transformed numerous government sectors, improving their organizational structure, their delivery models and the equity and efficiency of their functioning. **This has not happened sufficiently in education.** This in spite of decades of donor activities trying to improve Education Management Information Systems (EMIS), including (some) education-related questions in general household surveys, learning assessments, bottom-up measurement via citizen-led assessments, and thousands upon thousands of person-years of capacity building via rather traditional training. While one could quibble with the amounts spent by development partners, and countries themselves, on education data, it would seem that “raw” expenditure on data has not been the problem, but that the quality or return on investment of that expenditure is an issue.

The most recent World Development Report (WDR) 2018, the first devoted to education, mentions EMIS and data systems only two or three times, when decades ago investment in these areas would have received lot of detailed recommendations. The Learning Generation’s report acknowledges the fact (in literally two mentions) that data are important but omits how one might go about improving data systems.

Everyone agrees on the importance of data, but currently proposals for spending in an effective manner are few. So, how does one explain this contradiction? It is possible that institutional innovations in how we approach data systems for education are needed. We could learn from other sectors, simply exercise creativity to come up with things other sectors have not tried, learn from prize-giving and challenge-oriented approaches, or could also mix in some of the traditional approaches, even if those have not worked perfectly in the past (since there would be no other way to supply the basic public goods needed). It might be that there is a case for adding new approaches as a catalyst to speed up the traditional approaches to basic public goods in the data field.

Yet, it would seem that old solutions (more funding, more training and more coordination) that tread the same paths as before, unless coupled with other demand and innovation components, are unlikely to yield the solution.

The solution is within the context of a Global Strategy for Education Data (GSED) that includes better collection, storage and sharing of data, as well as stronger analysis and better use of data analytics coupled with demand, innovation and the intensive use of virtuality. To do this, we need to have both the creation of an effective demand and to bring innovative solutions as used in other sectors, such as Health and Agriculture.

¹ Many of the ideas presented in this note originate from Luis Crouch, under commission to the Global Partnership for Education (GPE). A more complete version of the ideas will be available by mid-January 2018 under GPE auspices and will be debated over the 2018 calendar year. The ideas are offered in the spirit of creating common cause towards the public good of producing better education statistics and improved data systems, both globally and in countries.

² This is only an initial concept paper, to be discussed with partners. If they identify with the agenda, we will discuss ways to work together. To date, the discussion has not been opened.



The impact of the proposed innovation component to be integrated in the GSED is to improve evidence-based decision-making for education in line with SDG 4 targets to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”.

The outcome is sustainable statistical systems for education, production and dissemination of accurate and timely education statistics which are comparable over time and across countries by introducing demand and innovation to the approach developed in the investment case.

The output is a set of global public goods:

- A virtual platform covering all different phases in data production, reporting and use: **edu2030.org**.
- Tools and platforms to report data, calculate indicators and assess quality and procedures developed and harmonised for improving the institutional, organizational and technical capacities of education statistical systems at all levels: **edu2030.org/capacity development**.
- Systems in place in countries for easy access and dissemination of national and sub-national data such as **edu2030.org/country** in education.
- A living database, which includes the relevant data innovation projects and best practices for sharing knowledge and a roster of experts (names, contact details, areas of expertise and past projects). Innovations will be classified according to type (report, empirical, studies and methodological studies) and topic in **edu2030.org/research**.
- Innovation translated into agility, speed, timeliness and new cost-effective methods in data collection, elaboration, analysis and presentation, including covering populations in emergencies.

2. By way of diagnosis

The experience of the UIS, as well as experts in the UIS family, suggests that the causes for data under-production and under-utilisation have been the following, in no particular order:

- a. **Data are produced by schools and learning institutions (and often by governments) largely for reporting upwards (to the government or to international agencies) rather than being reported upwards as a by-product of usage at their own level.** This in turn suggests that the data being reported upward are not always actually found useful by schools for their own management, or that schools do not feel sufficient incentive to actually use the data, even if the data would be objectively useful.
 - ✓ A key example is the reporting of enrolment versus attendance data or the lack of data on school preparedness and malnutrition (that may exist but schools may not have). This problem cannot be fixed via the old recommendation of “national levels must share back down.” This, by itself, cannot work if there is a fundamental motivational issue.
- b. **A related issue is that in many countries there are no efficient systems for schools or teachers to compare practices with each other, based on either outcomes or process data.** Friendly emulation or even some level of competition can be a useful way to spur demand for knowledge, yet is it not often used in countries (except in experimental efforts, often initiated by development partners around school clusters).



- c. **Not all data suffer from the same situation.** Since the MDGs used primary school enrolment and completion as a “data currency,” measurement of these indicators improved over the years. Civil society and specialised groups within ministries improved their measurement and reporting over time, all the way up to the global level, and lively national debates sometimes took place around data. This is a good sign. What gets prioritised, on the whole, gets measured and then, increasingly, gets done.
- d. **The data reporting systems are not based on real science or research** on what inputs to track because they make a difference.
 - o The enrolment versus attendance tracking also serves as a case in point. Attendance is what really matters, yet systems mostly track enrolment.
 - o But so does the failure to track the deployment of teacher skills and efforts in the classroom, as opposed to simply tracking certification and (at best) presence.
 - o The lack of data on book usage is another case in point.
- e. **Children out of school remain largely invisible in national data on education systems.** Measurement of issues pertaining to children not in school seems to fall upon NGOs, national statistical offices and special development partner projects. These organizations do not always talk to each other, although the situation is improving.
- f. **Household surveys, useful as they have been in other sectors, are often still distrusted and/or misused** by education planners, often because of ignorance as to their power and their rigorous underpinnings (when done well). At the same time, they are often carried out improperly (; for example, questionnaires with imprecise questions may lead to ambiguous data, indicators may not be calculated in accordance with international standards, and sampling weights may not be taken into account correctly when reporting totals.
- g. **Innovation is disregarded despite the need to integrate old approaches with new ones.** A vast array of interesting ideas has been demonstrated.
 - o UNESCO’s mobiles-in-learning week in 2017 was devoted solely to the issue of technology for managing education for refugees and children in crisis (<http://www.unesco.org/new/en/unesco/themes/icts/m4ed/mobile-learning-week/>).
 - o Similarly, the *mEducation Alliance* holds symposia, awards prizes and evaluates many innovations. These do not always pertain to technical innovations for data for policy and management (many pertain more to teaching and learning), but nonetheless, promising ideas are not lacking. While these “tech” innovations abound, the issue of deep and systemic innovation on data for management lags behind in key reports such as the WDR 2018 and the Learning Generation’s report.

3. Towards a Global Strategy for Education Statistics that includes demand and innovation

At the core of this concept note is innovation: creating demand and new methods of data collection and dissemination. It does not really touch all the conventional needs for training, capacity building, standard-setting, etc. As the techniques improve and as the need for techniques on a global and more or less



standardised manner emerges, more traditional supply-side mechanisms would take over. At that point, the technical solutions spread via supply-side mechanisms would be based on practical ideas that have been shown to work in a limited number of “lead” countries.

Objective

This concept note proposes an ambitious initiative with a 12-year perspective, focusing on education information systems in an integrated way, including various sources of information, and incorporating demand, using innovation and research as accelerators of change.

This long-term programmatic approach should produce stronger, more sustainable and more coherent education statistics systems worldwide that will be able to adapt to ongoing and new data needs with a diminishing need for assistance in developing countries.

The proposal has as principles:

- To be demand-driven.
- Results are achieved through innovation, clearinghouse for ideas and network effect.
- Improved accountability.
- Supply/demand outcomes will be layered into international, regional and national levels.

Based on the [UIS Theory of Change](#), **Figure 1** summarises the GSED operational model.

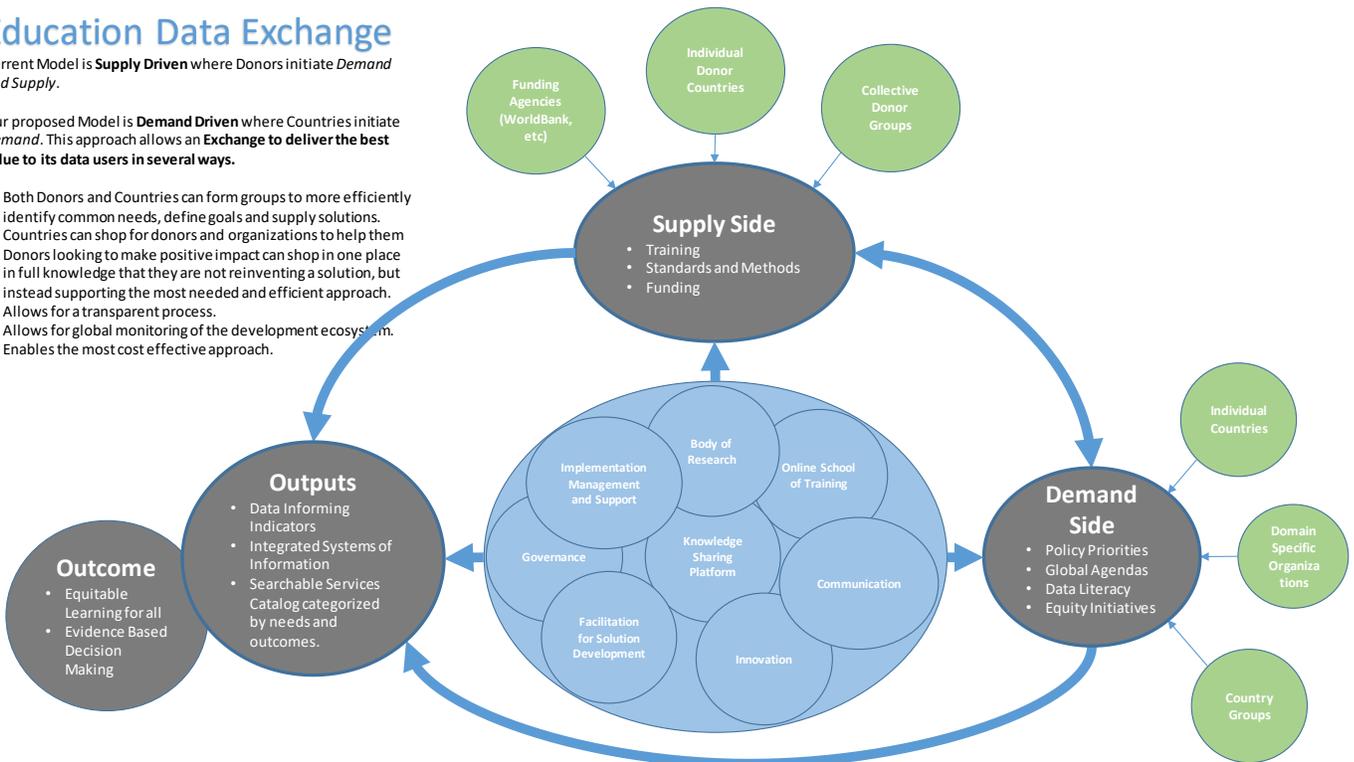
Figure 1. GSED Operational Model

Education Data Exchange

Current Model is **Supply Driven** where Donors initiate *Demand and Supply*.

Our proposed Model is **Demand Driven** where Countries initiate *Demand*. This approach allows an **Exchange to deliver the best value to its data users in several ways.**

- Both Donors and Countries can form groups to more efficiently identify common needs, define goals and supply solutions.
- Countries can shop for donors and organizations to help them
- Donors looking to make positive impact can shop in one place in full knowledge that they are not reinventing a solution, but instead supporting the most needed and efficient approach.
- Allows for a transparent process.
- Allows for global monitoring of the development ecosystem.
- Enables the most cost effective approach.





4. A demand-driven data strategy

A traditional approach is supply-led or, if demand-led, uses a concept of aggregated or average demand or even assumes that no objection is equivalent to actual demand. Having average demand, traditional supply-side approaches tend to offer more or less the same training, meetings to compare problems, and funding levels based on a common diagnostic framework to groups of countries.

An alternative approach will complement a renewed traditional supply-oriented side (such as that which has been tried for the last few decades) with a demand-side approach. A new approach would still include all the useful tools developed by a supply-side model; for instance, a standardised framework for diagnosing why an education data system is not as strong as it ought to be is still a valid and useful – if supplemented by demand-side ideas³ such as those proposed here.

The argument, however, is that without working on the demand side, these latter matters, important as they are (and in fact deserving of a much larger budget than the innovations described here), will tend to take the same road that has been trod for decades and has not tended to solve the basic problems. We would suggest that the standard work of the UIS, but well-funded and managed, is the necessary complement to the innovation work outlined here.

4.1. A central virtual fund

This demand-side, innovation-led supplemental approach to the traditional supply-side approach **would create and implement a single central fund (edu2030.org/funding)**. In principle, it need not be the only fund, but it needs to be big enough and central enough that it would attract attention. It would have the following features in no particular order:

a. Characteristics

It need not be a “physical” fund in the sense of being in one bank account under the fiduciary control of any given agent. **It could be a virtual fund under the statistical or data control of a given, central broker**, who is tasked with tracking and publicising how much money comes into the fund, how much leaves, for what purposes, and with what results. The fundholder would also convene decisions about spending from a small trust but would not necessarily allocate. Reporting standards, such as the International Aid Transparency Initiative (IATI), could be used to support this work.

b. Scope

The fund would be used to address challenges which no other fund or mechanism is addressing. For instance, it could be decided to avoid dealing with learning assessment challenges, since there are already complicated processes dealing with these. Alternatively, the fund could interact with those efforts but only at limited points of contact. For instance, management or governing representatives should not cross-sit on the organizing bodies. However, points of contact on specific issues such as funding would be possible.

³ This is to note that the various frameworks and data quality assurance systems, such as SABER and Data Quality Assessment Framework (DQAF), are valid but insufficient for our purposes.



- i. **The importance of learning data are not diminished.** At this point, the lack of (and lack of use of what exists) learning data (not only learning assessments but also teaching practices, classroom observations among others) is probably the single most binding constraint. But it faces so many challenges that it should be dealt with separately. It should be, at least, a hypothesis.
- ii. **The fund's manager/aggregator would therefore be in a good position to ensure little duplication of effort** or to ensure only *purposeful* duplication of efforts in order to ensure that lessons learned emerge. The funded projects do not all have to look the same. As long as there is a common set of features to projects that mix-and-match those features, then projects can be compared.

Box 1. The country data portal “edu2030.org/country”

An output of the process will be the generation of a web-based information technology system for education statistics at the national and sub-national levels, hosted at edu2030.org/country. It will serve two ends. First, it allows countries to better organize, harmonise and standardise data from multiple sources and integrate them into a common platform (a one-stop data centre). Second, it will serve as a platform to submit data to the UIS and to validate indicators. This would reduce costs for both the UIS and countries in submitting globally-comparable data.

Easily accessible online, it will enable researchers, policymakers, development organizations and the private sector to design and implement better policies and reduce transaction costs and asymmetries of information.

In each country, the national government will have to make a substantial contribution to ensure the deployment of the system and continued training and maintenance.

In the case of agriculture, *CountrySTAT* (<http://countrystat.org>) has been supported by the Bill and Melinda Gates Foundation (BMGF)⁴. The *CountrySTAT* system was implemented in 17 sub-Saharan African countries over three years, with a budget of US\$6.4 million. The system is also being expanded to other African countries and other regions. The West African Economic and Monetary Union has adopted the *CountrySTAT* system for all of its member countries and regional headquarters and has provided the additional funding needed to cover three countries not covered by BMGF funding.

c. Prioritisation of projects

It will be based on two factors:

- i. **Country demand.** This would be gauged in terms of how much the issue to be measured (e.g. measurement of disability and attention to the disabled, measurement of needs of linguistic minorities for book production, etc.) is enshrined in real demand as revealed by the number, power and unity of stakeholders demanding a solution. (For example, are government and civil society working well – and holding each other accountable – on the issue of disability?)

⁴ <http://www.fao.org/docrep/016/i3082e/i3082e.pdf>



- ii. **Global interest balanced with real demand.** The aim of the system is, after all, to produce global public goods, such as an improved method to measure a certain issue. These global public goods often have very high fixed costs. For example, instituting an expensive scientific process to drive agreement on good methods to measure a certain issue would require several expert panel meetings at a global level. If only one country is interested in this issue, the issue may need to receive lower initial priority. On the other hand, even if the global community feels an issue is important, but no country steps forward with a real felt need for solving the issue, the issue may also need to be de-prioritised. To facilitate the process, countries would be encouraged to spontaneously “team up” to request solutions to a challenge.

d. A virtual exchange

In managing such a novel arrangement, virtuality and the use of clever information systems are key. For example, an “exchange” in cyberspace could be set up where:

- o Catalogues of projects and their features (agility, speed, minimum viable product) would need to be created for learning and prioritising. For example, one would have to be able to answer, “what are the projects that use citizens in order to sample disability in education, and what were their results?” The system would link to, but would not depend, on other evaluation providers or aggregators such as R4D, 3ie and JPAL.
- o Prior agreements would be required. Collective bids whereby a certain group of countries would be collaborating (with each other, with data companies or with NGOs/think tanks, or some combination of these) to solve a problem would receive priority. As it is demand-driven, all actors could have a “voice”.
- o A pre-set list of priorities would exist to prevent only the countries with highest human capacity to prepare bids, which may or may not be the ones with the highest need, and countries or groups of countries, with highest priorities, would score higher points⁵.

e. Funding innovation

A key “filter” for innovations would be to use data clearly and, unambiguously, leading to service improvement. That would emphasise:

- i. **Data innovations that are part of a clear system that sets numerical goals, exerts specific actions** to achieve those goals, measures, refines, re-measures. These can focus at first on key areas in the SDGs and in specific regions, but with a goal to scale up without making assumptions across contexts (e.g. not assuming that users will have smartphones and be willing to pay for airtime).

⁵ Countries with a similar interest in a similar issue could meet up, compare notes and collectively exert pressure on the broker or administrator (the fundholder or the virtual fund) to express their priorities and create a solution.



Box 2. Leveraging research for better data: edu2030.org/innovation

There is an urgent need to contribute to a significant improvement in the quality, reliability and cost-effectiveness of education statistics in developing countries. This goal will be achieved by providing a framework for the coordinated efforts of experts. The **innovations will be classified into three categories** (report, empirical studies and methodological studies).

The expected outcomes will be cost-effective, advanced methodologies, tools and standards developed and disseminated for use by education statisticians in developing countries.

An output of the process will be the generation of an Education Innovation hub at **edu2030.org/innovation**, aimed at centralising and classifying information related to data production, methodological developments, innovations in data collection, and data dissemination and use. A Big Data sandbox could be created to support education data analysis, research and innovation.

Easily accessible online, it will enable research to inform the design and implementation of better education information systems, reducing transaction costs and asymmetries of information. The example will be the OECD's Observatory of Public Sector Innovation (OPSI, <https://www.oecd.org/governance/observatory-public-sector-innovation/>), where cases can be uploaded using a classification scheme. Thus, the aim is to use a template categorising innovations according to topics and type.

- ii. **Innovations where the basic techniques for improvement** are known. For example, improving supplies to children with a particular disability, but only the identification, tracking and response to those with disabilities would be measured⁶ because the improved delivery method already exists. In other words, the innovations discussed here are data innovations to deal with particular problems, not “pedagogical” or “technological” innovations (e.g. new technologies for teaching reading). This serves a dual function. First, it prevents the ethical problem of measuring things for which no improvement is known. Second, it would help confine the work to measurement rather than pedagogy *plus* measurement.
- iii. **Not necessarily “tech” innovations but more fundamental systems issues.**
 - o If “tech” innovations were to be funded, a special bar would have to be raised to better understand how the “tech” innovation interacts with systems, fits into existing incentives to use or not use data, and avoids the dozens of traps that tech, supply-push innovations face. Otherwise the innovations should be around data utilisation, not the “tech” aspects of data production or dissemination.

⁶ This for two reasons. First, an obvious ethical reason of not measuring that which one cannot do anything about. But, second, because to “prove” the importance of measurement, only innovations where measurement is the single most binding constraint should ideally be funded as, in those cases, measurement will lead to improvement and hence create demand for measurement (such as EPI tracking in health).



- On the other hand, experimental “tech” innovations should be shared as there are successful examples. Lists of such innovations are widely available and the fund or broker would keep these in stock.
- iv. **Private sector innovators supplement funding, either in cash or as equivalent contributions in kind.** For instance, if a group of countries were to meet up virtually to work up a proposal to solve a particular problem, the fund manager could assign a private sector funder (or more than one, though this would require more coordination in order to avoid issues over intellectual ownership) to either fund or provide technical assistance to the project. One approach could be to adopt the principle of “public goods” and waive intellectual property rights. The private sector actor could act, if they require no funding, as an unfunded sub-broker of technical ideas.
- v. **Responsiveness to demand-side interest,** as it is unlikely that they would spread automatically, periodically the fund would elicit interest from other countries with similar problems to solve through workshops with different streams where the current problem-solving strategies would be discussed. Not all countries need to attend all streams in order to avoid plenary-exhaustion and to keep the focus on the demand side.

5. The supply side

Another UIS paper⁷ covers in great detail many of the cost and benefit issues involved in improving the supply side. Here we offer only a summary. The supply-side work that would be needed to spread innovative discoveries, as well as to continue ongoing work in areas where the techniques are already known but more work is required, is considerable. It would center on standard-setting, quality assurance, definition of standard data objects, capacity building in sampling, data analysis, questionnaire design, infographics and presentation, systems interlinking, etc. None of this can be minimised.

Certain countries literally do not know how many schools they have or how many teachers are on payroll (and whether those on payroll even exist, much less actually work, and at the schools at which they claim to work), nor do they possess the non-innovative, but vital, systems for creating simple and effective master lists of schools. Thus, the innovation envisioned above has to be unified as all the “little data” can help countries work better.

5.1. Standards, methodologies and guidelines

5.1.1. Establishing an agreed set of data and indicators

For the supply-side work, we need to establish a minimum set of core data that countries will collect to meet the current and emerging demands at both national and international levels. Technical assistance will be needed to introduce the concept of a multidimensional approach and its implications for statistical systems. Follow-up at the national level will be required to fill critical skill gaps and to build capacity. One possibility is open training through MOOCs in edu2030.org/trainingstat.

⁷ UNESCO Institute for Statistics (UIS) (forthcoming). “Investment Case for SDG 4 Measurement: A Pitch for Education Data”. Montreal: UIS.



5.1.2. Integrating education into the national statistical system

Within the framework of the Global Strategy, countries will receive help in designing and integrating surveys within a framework. Integration of the survey process – including sample design, questionnaires, and methods of data collection, analysis and estimation – will also be supported by technical assistance. Until there is agreement on the set of data needed, there is no possibility on agreeing on the final list of instruments needed. However, a preliminary list will have as a suite of instruments:

- Annual census;
- Annual or occasional sample survey (like household surveys, labour force surveys);
- Other specialised surveys (such as learning assessments);
- Administrative data or special purpose data collected by ministries; and
- Pilot projects with alternative data sources will be explored and, where relevant, mainstreamed (as per the innovation aspects discussed above).

5.1.3. Unification of norms and standards

The material provided in **edu2030/standardstat**, will include:

- Mappings of existing information systems in education;
- Standards and methodologies for data collection and use;
- Indicator frameworks;
- Tools and platforms to report data, calculate indicators and assess quality; and
- Technical assistance procedures developed and harmonised for improving the institutional, organizational and technical capacity of education statistics systems at the global, regional and national levels.

5.2. Technical assistance

Technical assistance should address the following issues:

- Start with high-priority areas in policymaking and statistical areas in the Ministries of Education.
- Mainstream statistics in sector development policies, programmes and budgets.
- Enhance coordination, collaboration and networking in order to support a comprehensive education information system.
- Promote statistics and statistical development outside the National Statistical Office (NSO) in sectors that produce statistics related to education.

Ideally, technical assistance would:

- Start with country assessments and guidance with the development or update of the sector strategic plans to produce the minimum set of core data.
- Include support and guidance for establishing the governance structure to integrate education into the national statistical system.



- Provide documentation of statistical standards and guidelines to support in-country technical assistance as another important element.

The idea is to assemble teams of people that can go into countries and help policymakers solve accountability and managerial issues using data and to provide cases-in-point of why having good data matters. In other words, generate and assist the users of data (an assisted demand-side). This aspect in particular would be coordinated with the innovation fund described above. This is one critical aspect technology could help such as the use of cell phone reporting key data or building dashboards for school reporting.

The outcomes of the technical assistance component will be:

- More coordinated technical assistance between partners and stakeholders.
- A greater focus on longer-term technical assistance to develop statistical systems.
- An improved ability to meet the data needs for policy use by adopting a greater focus on data analysis in the country.

5.3. Knowledge transfer and country absorption: Training through the online school of education data science

This is a critical piece and the key to success. One of the challenges facing the implementation of education statistics is that the personnel in charge of education statistics in many countries (at both the management and technical levels) lack the appropriate knowledge and skills. Limited data are available on the demand for training in education statistics in developing countries, the potential supply of training centres and the gaps between the supply of and the demand for training.

A major challenge is turnover and newly-trained personnel are often “poached” by the private sector or other sectors willing to pay more. This phenomenon needs to be addressed through either continuous training, changes in the structure of salaries, lowering the barrier to analysis through simpler technology, or developing capacity in ministries to have long-standing and “deep” analytical relationships with local universities. These are all trends that are emerging in developing countries and are worth supporting. As Big Data use grows, the problem becomes worse and needs to be addressed with the proposals above.

Training needs to target the lack of skills among medium- and top-level statistical staff to better communicate with data users, especially policymakers and decisionmakers, in order to understand their data needs and help them understand how to use the data to explain policy decisions. This is a particular challenge in data use: decisionmakers know what data is needed for their routine managerial tasks and accountability as presented in laws and policies for which they are already held to account, but they are less clear about using data for decisionmaking and implementation, or for important issues for which routine accountability does not yet exist.

Developing such skills, along with periodic user-producer workshops and training on the use of data, will increase policymakers’ awareness of the importance of good statistics in their work, which in turn will positively affect the sustainability of the statistical system by ensuring appropriate budget allocations. The workshops should be focused on showing policymakers and managers how data can help them be transparent with their accountabilities and address managerial challenges.



The intended outcomes of the training component will be:

- More staff, including managers, trained to produce, analyse and disseminate education data.
- Models of ongoing research and capacity-building relationships with local universities. This model works well in places like Chile and South Africa. There is no reason why it could not work better in other places.
- More effective training centres.
- More sustained training programmes that will guide scholarships and fellowships to be aligned with existing competencies.

5.4. Articulation between supply and demand

The GSED considers the need to rebuild statistical capacity while also providing support in implementing methodologies by offering technical assistance and training as determined by the country assessments and based on methodological research. There are interlinkages between the different components.

Table 1. Examples of linkages among components

Technical assistance	Training	Innovation and research
Provide assistance for country assessments	Train the analysts conducting country assessments	
Prepare and apply standards and guidelines	Translate standards into training material Provide training	Improve data collection methods Improve methodology for data analysis Identify appropriate indicators
Document and apply current and advanced analysis methods		Improve the methodology for data analysis Identify appropriate indicators

6. Process, budget and timeline

This concept note adopts a long-term perspective and promotes the predictability of resources by establishing a Global Trust Fund to support activities. The funding strategy also encompasses other types of resources, such as bilateral agreements and in-kind contributions.

At the global level, the preparation of standards and guidelines to support the technical assistance and training programmes can begin after funding has been secured.

Country responses to the first phase of the assessment and their desire to begin implementation will be used to determine the first set of countries for an in-depth assessment.



At the country level, overall implementation will be articulated in the NSDES.

6.1. Potential demand

Based on available indicators in the UIS database to measure progress on SDG 4, developing countries are classified into the following four broad groups in order to determine the extent of assistance required and the estimated cost of interventions. **Table 2** shows a classification of countries according to the availability of indicators, level of income and crisis or post-crisis status.

Table 2. Country classification

Available SDG4 indicators	High-income countries	Low- and middle-income countries	Fragile and conflict-affected countries
>60%	4	19	2
35-60%	11	52	11
< 35 %	10	31	22

6.2. Tentative budget for the Global Strategy

The estimated funding requirements for the GSED cover national and global-level activities and include the start-up costs for the 37 pilot countries. Based on current work, the estimates from the CapED project and the UIS' current portfolio, the costs of activities per country including technical assistance are presented in **Table 3**.

Table 3. Average costs by type of country

Type of country	Costs in million	Number of countries
Fragile and conflict-affected	0.6	5
Priority country	0.4	27
Medium priority	0.3	5

The budget to implement the GSED **does not include the funding needed to conduct data collection activities**. The project spans 23 years. The overall cost for the first phase of five years are given in **Table 4**.

Table 4. Tentative funding to implement the GSED, 2018-2023 (in millions US\$)

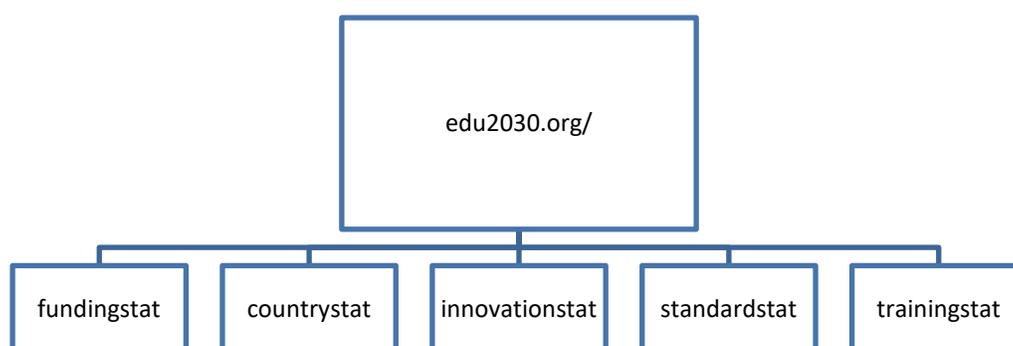
Level	Total
Fragile and conflict-affected countries	3.0
Priority countries	10.8
Medium-priority countries	1.5
Country-level total	15.3
Global level	7.0
Virtual exchange / Edu2030/countrySTAT and /innovationSTAT	8.0
Sub-total	30.3
Administrative costs	1.5
Total	31.8



6.3. Phases

In the initial phase, the online tools can be published, such as the virtual exchange, *fundingSTAT*, *countrySTAT*, *innovationSTAT*, *trainingSTAT* and *standardSTAT* to then scale up and work on the traditional supply side component.

Figure 2. GSED virtual exchange, innovation and service delivery



7. Funding strategy and administration of the Global Trust Fund

A funding strategy will be put in to place to:

- Enhance the availability, transparency, efficiency and effectiveness of the provision of substantial additional financial resources; and
- Strengthen international cooperation to support and complement the efforts in the implementation of the GSED.

7.1. Funding mechanisms

Two alternative funding mechanism are under consideration. The first one entails pooling funds to support a results framework or what is named a portfolio-wide approach.

The second mechanism entails virtual crowdsourcing to fund some programme initiatives and collecting money or in-kind contributions through the Internet.

7.2. Type of resources

The funding strategy would encompass different types of resources:

- Voluntary contributions to the Global Trust Fund;
- Bilateral agreements between resource partners and countries;
- Agreements between developing countries (South-South cooperation agreements);
- Resources from the UIS or regional organizations;



- Universities and NGOs; and
- In-kind contributions by individuals, organizations or civil society.

7.3. Donor engagement models

The idea is to generate a vehicle to effectively mobilise large-scale funding needed to sustain long-term results by providing donors the flexibility to make investments aligned to their respective strategies, whilst supporting collective efforts to ensure that gains are sustained by longer-term, predictable funding streams and new investments are leveraged to their maximum potential.

- Project: Donors use the transactional capacity of the UIS to receive and channel contributions to specific projects.
- Programme: Donors could jointly develop programmes, increasing both their scope and flexibility.
- Portfolio: UIS donors have more leverage to maximise the opportunity to optimise resource allocation based on portfolio performance.

Portfolio-wide contributions are especially important to the success of the agenda since they influence the overall direction in accordance with the Strategy and Results Framework and drive collaboration amongst the many public and private partners. Portfolio-level investments are the most catalytic and build sustained global capability.

7.4. Administration of the Global Trust Fund

The Global Trust Fund to implement the GSED will consolidate partner contributions and ensure a stream of funding to support the implementation of the GSED at the global, regional and national levels. The UIS would serve as the Fund Administrator.

7.5. Institutional organization and tentative timeline

Project execution will be managed by the UIS under the direct supervision of the Director and through a dedicated team under Project Appointment contracts. Location will be determined by agreement with the main stakeholders.

**Table 5. Tentative timeline for an integrated strategy**

Issue		2018	2019	2020	2021	2022
Global coordination						
Global plan		Finalised				
Trust Fund		Set-up				
	Technical assistance	Guidelines	Technical assistance in countries			
	Training	Material for activities underway	Training in countries	Training in countries	Training in countries	Training in countries
Innovation and research (Edu2030.org/..)						
Virtual exchange fundingSTAT		Definition of selection mechanisms Prioritisation guidelines Scoping Piloting	Piloting	Full operation	Full operation	Full operation
countrySTAT		Elaboration of guidelines Set Platform	Pilot in 10 countries	Full operation	Full operation	Full operation
innovationSTAT		Elaboration of guidelines Elaboration of platform and launch	Full operation	Full operation	Full operation	Full operation
trainingSTAT		Definition of contents Piloting	Launch	Full operation	Full operation	Full operation
Standardsandframeworks		Definition of contents Piloting	Launch	Full operation	Full operation	Full operation
Country level (actual on-the-ground innovations)						
	Assessment	Start	Continue	Continue	Continue	Continue
	Develop/update	Pilot countries	Remaining countries	Remaining countries	Remaining countries	Remaining countries
	Implementation	Pilot countries	Remaining countries	Remaining countries	Remaining countries	Remaining countries

8. Monitoring, evaluation and reporting

A log frame will be prepared.

The UIS will be responsible for monitoring and supervising the implementation strategy at all levels.