



**International  
Initiative for  
Impact Evaluation**

## **IDENTIFYING THE ENDURING QUESTIONS<sup>1</sup>**

### **1. Background**

The enduring questions which will form the basis of 3ie's work program are intended to be informed by a broad-based process, which draws in a range of views from developing countries, with the final selection being made by 3ie members. This note lays out the process which is to be followed in more detail.

The note begins by a discussion of the Grand Challenges approach, with which there are many parallels. Subsequent sections lay out the proposed steps to be followed for 3ie. The final section gives the timetable.

### **2. The Grand Challenge Approach**

The Grand Challenge approach draws its name from the 23 Grand Challenges in Mathematics listed by the German mathematician David Hilbert in 1900, which provided the framework for a large body of mathematical research in the ensuing decades. The basic rationale is to provide a focus to research so that many minds are concentrated on a common set of problems, thus increasing the likelihood of a breakthrough. In recent years the idea of setting Grand Challenges has re-emerged in diverse fields. Of most relevance to 3ie's work are the Grand Challenges in Global Health (GCGH) and Grand Challenges in Non-Communicable Diseases (GCNCD), and it is these which are discussed here.

Unlike Hilbert's individually selected Grand Challenges, the two health Grand Challenge programs solicited expert opinion through variations on the Delphi method – that is iterative rounds of a facilitated discussion to reach a consensus (see Box 1).

But before consulting with experts it was necessary to define (1) what is meant by a Grand Challenge, and (2) the scope (field of study) of the exercise. This was done by the core team, including staff from Gates for GCGH. The Grand Challenge definitions from the two health exercises were “a call for a specific scientific or technological innovation that would remove a critical barrier to solving an important health problem in the developing world with a high likelihood of global impact and feasibility”, and “a specific critical barrier that if removed would help to solve an important health problem. The intervention(s) it could lead to might be innovative and, if successfully implemented,

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<sup>1</sup> This note was prepared by Howard White (hwhite@3ieimpact.org). The draft was informed by comments from Blair Sachs, Morgan Rota and Kent Glenzer during the preparatory work on the enduring questions.

would have a high likelihood of impact and feasibility,” respectively. Common elements are (1) importance, (2) doable, and (3) a bottleneck to progress.

### **Box 1 - The Delphi Method**

The Delphi Method was originally developed by the Rand Corporation for a range of military applications during the Cold War, but has since been widely used for expert panel-based forecasts of socio-economic and business trends. The process can be broadly described as follows:

- The facilitator collects views individually from each panel member
- The facilitator collates these views (discarding inappropriate views) and provides a synthesized feedback to all participants
- Panel members resubmit their views in the light of the new information provided
- There are a number of iterations until a consensus is reached
- In all this panel members do not interact directly with one another and may not know the identity of other panel members

Getting understanding of what a Grand Challenge is amongst those consulted was a crucial step, which was done both through the definition and providing examples of possible Grand Challenges, pointing out that those were not being specifically proposed. The scope, other than being confined to the health field, was left deliberately broad. However, the wording of the GCGH call and subsequent work resulted in challenges of scientific and technical nature, whereas those from GCNCD are more policy-oriented (the challenges are reproduced in Annex 1). During the course of both exercises the challenges were categorized under goals, which have proven useful in communicating about the programs. These headings emerged from the exercise; they were not set before it started.

The two approaches differed in approach (Table 1), the main difference being that the longlist for GCGH was identified by a Global Call for Ideas, whereas for GCNCD it came from an expert panel. But the lengths of the longlists and subsequent processes were similar. Both exercises took close to one year from start to finish and cost up to US\$1 million each. In the case of GCGH Gates had already allocated US\$250 million to fund the program so this seems a reasonable amount for a planning exercise. For GCNCD there were no pre-existing funds in place, so justification of the expense has to come from subsequent impact on research agendas.<sup>2</sup> During selection of the shortlist and final selection much of the discussion focused around what was known already and where

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<sup>2</sup> The GCGH team studied an earlier exercise on Global Challenges in Environmental Science – there had been no funds in place to conduct the priority research identified and no discernible impact on the allocation of other research funds.

least was known – you have to know what you don’t know. But this information feeds into the second and third rounds of the process, not the first.

**Table 1 Delphi process for GCGH and GCNCD**

	GCGH	GCNCD
Identification of initial list of possible GCs (long list)	Global call to scientific community via journals, websites, email lists etc. 1,048 GCs proposed from institutions in 75 countries	Expert panel of 155 scientists and public health specialists (with regional and gender balance) – open ended yield 1,854 proposals
Facilitation	1,048 reduced to 109 by removing inappropriate proposals and collating others. For 109 remaining a one page proposal prepared on each	1,854 reduced to 109
Prioritization (short list)	Two day meeting of experts, working partly in sub-groups,	Panel select and rank top 30
Final selection	Executive Committee – but more finalizing wording etc., the 14 came from previous step	Executive Committee and Scientific Board refined wording and presentation

Before drawing lessons from this experience it is worth bearing in mind the differences between the GC health agenda and 3ie’s agenda. These differences arise from the fact that 3ie will work on policy questions not areas of medical science. The implications are:

- 3ie’s scope is far wider – all interventions which can affect social and economic welfare outcomes. Hence there is a need to draw on a far wider range of opinion.
- 3ie does not have a single, well-defined stakeholder group as the health GCs did (the medical scientific community). Rather we have diverse stakeholders, including 3ie members, developing country governments, development workers and of course the poor themselves.
- It is debated, but the idea of ‘proof’ is less widely accepted in policy circles. Rather, one gathers evidence for the advocacy of a particular policy or program approach (hopefully overwhelming evidence, but is this the same as proof etc.).
- Proposed responses to the health Grand Challenges are less context specific than those with which 3ie will deal.
- GCGH had a far larger committed budget than 3ie. Although GCNCD spent a similar amount on its GC exercise on a speculative basis, it was building on an established relationship with a well-defined community. 3ie can probably not afford either the time frame or the budget of those exercises, though this point is revisited below.

Despite the above points, there are useful lessons to be drawn from the GCGH/GCNCD experience:

1. The starting point is to generate a longlist, for which little guidance is given beyond the definition of an Enduring Question and some examples of possible Enduring Questions
2. The longlist should be reduced by the facilitator (3ie) through elimination and collation. The remaining EQs should be categorized into themes.
3. Expert opinion is required in deciding and refining the final set of questions to draw on their knowledge of what is known and not known.

This discussion provides the foundation for the approach which is being adopted to the 3ie enduring questions. Namely a preparatory Round 1 in which members discussed their own understanding of the nature and scope of an enduring exercise. Round 2 establishes the longlist through a broad call, which is consolidated to a middle list. Round 3 is in the initial prioritization, again through a broad-based exercise, and Round 4 moves to the shortlist on the basis of 3ie member inputs. Round 5 finalizes the process.

### **3. Approaches to soliciting the long list**

#### *Channels for long list submissions*

The long list will be produced through the following exercises:

- In-house consultation in 3ie member institutions
- Facilitating similar consultations in other official development agencies, NGOs and in academic (including secondary school) institutions in both developed and developing countries
- Promoting a discussion on the main evaluation and development listserves
- Commissioned participatory work in 2-3 developing countries
- Invitation of individual submissions via a range of channels

The target longlist is 1,500 EQs. The process of elimination and collation is expected to reduce this to a middle list of 150. These figures are similar to those in the health GC exercises.

As mentioned above, the EQs will be divided into themes (e.g. quality basic education for all). Many groups of stakeholders may work more easily identifying priority themes rather than enduring questions. An example, from groups of teachers and schoolchildren in the town of Hohoe (Volta District, Ghana) is attached as Annex 2.

### *Formulating the invitation to submit enduring questions*

The invitation consists of four parts: (1) background on 3ie, (2) definition of an enduring question; (3) a list of sample enduring questions, and (4) instructions on the form in which responses should be submitted and to where.

Background on 3ie and impact evaluation is necessary. The practice exercises to date have shown that participants have questions of this nature, e.g. what can't an impact evaluation cover, who will use the findings, will the data be publicly available?

As found in the health Grand Challenge exercise, the definition of what an enduring question is matters a great deal to receiving the right types of response – though it should be recalled that they did have to eliminate a substantial number of their submissions as inappropriate. Thus far the 3ie implementation team has discussed the characteristics of an enduring question, but not set out an agreed definition. The following definition is proposed:

An Enduring Question is one the solution to which would have a demonstrable effect in increasing the impact of interventions to improve welfare outcomes in developing countries. A specific Enduring Question will usually relate to a sector or sub-sector. The issue it addresses is expected to be of lasting importance in improving performance in that sector. The question will be amenable to analysis.

The list of sample questions will be drawn from the responses for 3ie members in Round 2a (and possibly some from Round 1).<sup>3</sup>

## **4. Prioritization and selection**

### *Global questionnaire*

An on-line survey will be constructed using esurveyspro.com.<sup>4</sup> The questionnaire will ask respondents to prioritize from a middle list (the reduced longlist). It will also collect basic demographic information.

It is hoped to receive at least 5,000 responses. This will be achieved through a snowball email, i.e. asking recipients to forward to their whole organization and address book. Initial mailing will be to:

- All 3ie members
- Those registered as 3ie 'interested parties'
- Evaluation and development listserves

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<sup>3</sup> Questions proposed by members in Round 2a are all to be admitted to the longlist.

<sup>4</sup> We conducted a review of free on line survey tools. Esurveys proved the best for our purposes, mainly because there is no limit on the number of respondents.

It is also hoped to obtain a link from the main Goggle search page, even if just for one day, or to appear as a sponsored link for development-related searches for a longer period.

3ie will prepare an analysis of the responses

#### *Developing country priorities identified from secondary sources*

There are existing data sources on priorities in developing countries. These sources do not identify EQs, but can be used to rank the EQs which emerge. The following secondary data sources have been identified:

1. Poverty Reduction Strategy Papers (PRSP) – these are government-produced documents originally introduced as a requirement to be eligible for debt relief under the Enhanced HIPC Initiative. To date 65 countries have produced a PRSP for which these documents can be analyzed to identify the priority sub-sectors and issues.
2. Participatory exercises – the World Bank’s *Voices of the Poor* was a global participatory exercise conducted in the run up to the 2001 *World Development Report* which included over 60,000 respondents. The three volumes published from this exercise will be reviewed to identify priorities of the poor by various disaggregations (gender, region etc.).
3. Household surveys – some surveys include a question along the lines of “What are the development priorities in your community?” (IEG alone has conducted at least three such surveys in 10 countries).

#### *Shortlisting by members*

Member institutions will come up with a shortlist of 30 EQs, categorized under up to 5 themes, based on the following documentation:

1. The middle list of 150 questions, organized by theme, each with a rationale (see example in Annex 3)
2. The results from the online questionnaire
3. The review of priorities in developing countries in secondary data sources
4. Any other submission any 3ie member cares to make for consideration

#### *Final selection*

3ie will host a meeting at which the final questions will be reviewed and prioritized. Four themes will be selected for the first two years of RFPs. Each theme will have a small

number of associated EQs. The final definition of the questions will be carried out in consultation with the assistance of an expert panel.

## **ANNEX 1 HEALTH GRAND CHALLENGES**

### **Grand Challenges in Global Health**

#### **To improve childhood vaccines:**

- GC 1: Create effective single-dose vaccines that can be used soon after birth;
- GC 2: Prepare vaccines that do not require refrigeration
- GC 3: Develop needle-free delivery systems for vaccines.

#### **To create new vaccines:**

- GC 4: Devise reliable tests in model systems to evaluate live attenuated vaccines;
- GC 5: Solve how to design antigens for effective, protective immunity;
- GC 6: Learn which immunological responses provide protective immunity.

#### **To control insects that transmit agents of disease:**

- GC 7: Develop a genetic strategy to deplete or incapacitate a disease-transmitting insect population;
- GC 8: Develop a chemical strategy to deplete or incapacitate a disease-transmitting insect population.

#### **To improve nutrition to promote health:**

- GC 9: Create a full range of optimal bioavailable nutrients in a single staple plant species

#### **To improve drug treatment of infectious diseases:**

- GC 10: Discover drugs and delivery systems that minimize the likelihood of drug-resistant microorganisms.

#### **To cure latent and chronic infections:**

- GC 11: Create therapies that can cure latent infections;
- GC 12: Create immunological methods that can cure chronic infections.

#### **To measure disease and health status accurately and economically in poor countries:**

- GC 13: Develop technologies that permit quantitative assessment of population health status;
- GC 14: Develop technologies that allow assessment of individuals for multiple conditions or pathogens at point-of-care.

### Grand Challenges in Non-Communicable Diseases

Goals	Grand challenges	Research needed to address goals
<p><b>Goal A</b>  <b>Raise public awareness</b></p>	<p>1 Raise the political priority of non-communicable disease                  2 Promote healthy lifestyle and consumption choices through effective education and public engagement                  3 Package compelling and valid information to foster widespread, sustained and accurate media coverage and thereby improve awareness of economic, social and public health impacts</p>	<p>Study how to engage governments in partnerships for disease prevention                  Develop research activities for health that bridge government departments (for example, transport, civic planning, health, education and environment) Identify reasons for low awareness and advocacy of chronic disease in societies Study how to create public forums that sustainably raise awareness of issues relating to chronic non-communicable diseases</p>
<p><b>Goal B</b>  <b>Enhance economic, legal and environmental policies</b></p>	<p>4 Study and address the impact of government spending and taxation on health                  5 Develop and implement local, national and international policies and trade agreements, including regulatory restraints, to discourage the consumption of alcohol, tobacco and unhealthy foods                  6 Study and address the impacts of poor health on economic output and productivity</p>	<p>Evaluate the health impacts of agricultural policy interventions                  Study the health and economic impacts of comprehensive community-based interventions                  Create general population metrics and outcome indicators for policy and programme surveillance.                  Quantify impact of chronic non-communicable diseases on domestic economies                  Study the international ramifications of changes in food and tobacco consumption                  Probe motivations behind domestic expenditures, and how these affect lifestyle choices                  Investigate the impact and effectiveness of food-labelling legislation</p>

Goals	Grand challenges	Research needed to address goals
<b>Goal C Modify risk factors</b>	7 Deploy universally measures proven to reduce tobacco use and boost resources to implement the WHO Framework Convention on Tobacco Control 8 Increase the availability and consumption of healthy food 9 Promote lifelong physical activity 10 Better understand environmental and cultural factors that change behaviour	Do prospective cohort studies to identify risk factors, the magnitude of their effects, and the factors that reduce risk in chronic non-communicable diseases Evaluate fetal and early-life influences on chronic disease risk Find and evaluate new or combined medical preparations to prevent cardiovascular disease and diabetes or reduce their morbidities Evaluate behavioural modifications to reduce risks Establish metrics, and relationships between metrics, that are culturally and ethnically specific Investigate cultural and ethnic variation in risk factors to refine behavioural interventions Quantify personal risk related to phenotypes, genotypes and multiplicative risks Study the interaction of environment and genes in risk factors and in outcomes Develop new biomarkers and diagnostics for risk and for early disease detection
<b>Goal D Engage businesses and community</b>	11 Make business a key partner in promoting health and preventing disease 12 Develop and monitor codes of responsible conduct with the food, beverage and restaurant industries 13 Empower community resources such as voluntary and faith-based organizations	Study marketing techniques and marketing data derived from commercial companies on behaviour modification Investigate mechanisms for consumers and the public to exert a positive influence on the food industry Research the impact of taste, flavour, packaging, labelling and advertising on choice and health Create and evaluate community-based strategies to promote healthy living Identify modes of effective public-private partnerships that support health Develop better understanding of nutrient benefit in foods
<b>Goal E Mitigate health impacts of poverty and urbanization</b>	14 Study and address how poverty increases risk factors 15 Study and address the links between the built environment, urbanization and chronic non-communicable disease	Investigate the biological basis of health risks related to poverty Examine the influence of poverty on the adoption of high-risk behaviour Identify negative effects of economic growth on health Study how to work with planners, architects and city representatives to enhance the environment for healthier living

<b>Goals</b>	<b>Grand challenges</b>	<b>Research needed to address goals</b>
<p><b>Goal F</b>  <b>Reorientate health systems</b></p>	<p>16 Allocate resources within health systems based on burden of disease  17 Move health professional training and practice towards prevention  18 Increase number and skills of professionals who prevent, treat and manage chronic non-communicable diseases, especially in developing countries  19 Build health systems that integrate screening and prevention within health delivery  20 Increase access to medications to prevent complications of chronic non-communicable disease</p>	<p>Develop strategies to integrate health-system management of communicable and non-communicable disease  Form collaborations to find best practices in delivering affordable and equitable health care  Study how to provide more structured knowledge for health promotion  Develop strategies to ensure that medical training and curricula focus on chronic non-communicable diseases  Develop and provide culturally specific and nationally appropriate resources for training health-care workers  Study how best to ensure that disadvantaged communities have adequate resource allocations in health care and in preventative practice  Optimize use of electronic health records for predicting disease and measuring the effect of health interventions  Study how best to develop and establish real-time surveillance tools  Discover and develop tools for screening and stratifying populations according to risk</p>

## **ANNEX 2: PRIORITY THEMES GENERATED BY GHANAIAN TEACHERS AND SCHOOL CHILDREN**

The following data were collected in an exercise performed by Mr. Famous Baiku, JSS school teacher, Hohoe, Volta Region, Ghana. Hohoe is a district capital, but not a large town by any standards. Many of the themes, but by no means all, are from the sample list I provided.

The attached results is the responses from firstly, my colleague teachers with an enrollment of 21 , and secondly, a summary of the responses of students from 3 Junior secondary schools including my school and 2 Senior secondary schools.

### **TEACHERS' RESPONSES**

#### **Highly Important**

- Better quality basic education
- Clean water supply
- Good roads
- Recreation areas for children
- Full immunization
- Accessible and affordable health care
- More employment opportunities
- Computer access for all
- Better access to borrowing to start business
- Accessible hospital care
- Irrigation for agriculture
- Better transport services
- Policies to support industrial development in remote areas
- Better channels for agricultural outputs.
- Policies on the distribution of developmental resources
- Education made accessible to the poor

#### **The Three Most Important Categories**

- Better quality basic education
- More employment opportunities
- Good roads

#### **Somewhat Important**

- Increasing access to secondary education
- Increasing access to tertiary education
- Better child and maternal health
- Clean streets
- A more accountable civil service
- Business support services
- Conservation measures to reduce erosion
- Better policies on how to tap Ghana's crude oil
- Policies on wages and income
- Policies on the eradication of malaria and AIDS

#### **Less Important**

- Cheaper agricultural inputs
- Electricity in villages
- More affordable mobile phones
- More say in decision making
- Less government regulations

- Reducing air pollution
- Accessible safe delivery services
- Protection of the fundamental human rights

## **J.S.S. AND SECONDARY STUDENTS RESPONSES**

### **Highly Important**

- Better quality basic education
- Clean water supply
- Good roads
- More affordable mobile phones
- Accessible and affordable health care
- More employment opportunities
- Computer access for all
- Better access to borrowing to start business
- Accessible hospital care
- Better transport services
- Education made accessible to the poor
- Increasing access to secondary education
- Increasing access to tertiary education

### **The Three Most Important Categories**

- Computer access for all
- More employment opportunities
- Education made accessible to the poor

### **Somewhat Important**

- Policies to support industrial development in remote areas
- Better channels for agricultural outputs.
- Policies on the distribution of developmental resources
- Clean streets
- Better child and maternal health
- A more accountable civil service
- Business support services
- Conservation measures to reduce erosion
- Better policies on how to tap Ghana's crude oil
- Policies on wages and income
- Policies on the eradication of malaria and AIDS

### **Less Important**

- Cheaper agricultural inputs
- Electricity in villages
- More say in decision making
- Less government regulations
- Reducing air pollution
- Accessible safe delivery services
- Policies to support industrial development in remote areas

## **ANNEX 3: SAMPLE EQ PROPOSAL**

**THEME: Quality education for all**

**ENDURING QUESTION: What measures can be taken to reduce teacher absenteeism?**

### *The problem*

Available evidence suggests that teacher absenteeism is a substantial and growing problem in developing countries (e.g. OED, 2004). The benefits from the growing success in getting children in school are thus undermined as learning time is reduced. However, there has been little rigorous analysis of the determinants of absenteeism and few impact evaluations of measures designed specifically to reduce it.

The evidence linking teacher absenteeism to student outcomes is also thin, even for developed countries (see discussion in Woods and Montago, 1997). An exception is Das et al's analysis of Zambian schools which shows that "a 5-percent increase in teacher absence rate reduced learning by 4 to 8 percent of average gains over the year, for both Mathematics and English" (2005: 1), and a study in India found that reduced absenteeism meant students learn more (Duflo et, 2008). There is also some evidence in the country studies in the Bank's recent absenteeism project (Rogers, 2006). A supplementary part of the research might also address the impact of reduced absenteeism of learning achievements.

### *Existing evidence*

There are reports documenting the scale of teacher absenteeism and the problems in causes more using more qualitative approaches. A report on basic education in Ghana by OED (2004) used data on absenteeism based on headteacher assessment for 1989 and this measure, plus teacher self-assessment, for 2003. OLS regression analysis was used to examine the correlates of absenteeism. The first rigorous analysis of absenteeism was an analysis of health workers in Bangladesh (Hanmer and Chaudhury, 2004), in which absenteeism was measured on the basis of surprise visits. More recently this approach has been extended to Ecuador, India, Indonesia, and Peru (Rogers, 2006). These studies confirm that rural, especially remote, locations suffered more from absenteeism. Services, including electrification, make it more likely that workers will be present. Private schools have lower absenteeism rates than do public ones. However, none of these studies address specific interventions designed to reduce absenteeism.

Five RCTs carried out in collaboration with J-PAL have assessed different interventions in Kenya and India (reviewed in Banerjee and Duflo, 2006). They find that monitoring alone does not work; incentives can be need some independent verification or objective monitoring (headmaster administered incentives in Kenya were given to all teachers although the data showed no improvement in attendance).

In addition, there is one on-going study under the World Bank's Africa Impact Evaluation Initiative addressing teacher absenteeism in Ghana. The study uses a randomized design to compare the impact of parent council monitoring of teacher absenteeism with stronger reporting mechanisms at district level. The baseline was in late 2007 and the study due to be completed in 2009. [The approach from this study, and a document of lessons learned about design will also be distributed].

#### *Suggested study components*

3ie will support studies in a number of countries to investigate the impact and cost effectiveness of different measures to reduce teacher absenteeism. These measures including parent monitoring, teacher incentives, and improved teacher housing [a more complete list will be identified].

Proposed study designs should be consistent with 3ie's Principles of Impact Evaluation.

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