Working out our future together

Four steps towards ending global poverty

the humanitarian centre

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FOREWORD

'WE DO MUCH; WE CAN DO MUCH MORE'

BY PROFESSOR SIR
LESZEK BORYSIEWICZ FRS,
VICE-CHANCELLOR,
UNIVERSITY OF
CAMBRIDGE

In overseas development work, partnership is a necessary condition of success. Universities, pleasingly, find partnership and collaboration natural. I applaud the Humanitarian Centre for the collaborations it has fashioned with NGOs, student societies, charities, policy-making bodies and the private sector, and with University departments and colleges.

It is clear to me that poverty is best understood, and addressed, as a system of interlocking and co-dependent challenges. A poor harvest means a village can't afford medicines or education; poor health means workers can't plough the fields or look after the livestock, or go to school as pupils or as teachers; and poor education means that healthcare and hygiene are not prioritised. The 2013 *Cambridge International Development* report looks at these interconnected challenges and explores ways that we can help shape each other's efforts to make a fitting contribution to the development jigsaw.

In April this year I gave the Richard Larkins Oration for Monash University, Australia. My title was *Universities and the Poorest Billion*, and my message was that universities' contribution to the alleviation of world poverty is seriously undervalued, including by universities themselves. We do much; we can do much more.

The key to doing more is understanding our strengths and our limitations. This understanding comes from doing what universities do best: learning. Universities are multidisciplinary and excel at complex problems; we can support the growth of universities in the global South, which bring untold local benefits; and we can broker relationships with others, including the private sector.

In every historical and geographical incarnation of a university in the West, making a difference in the world has been a recognisable aim. Although they sprung from monastic roots, universities are not monasteries: they are functionally the opposite.

Academics do not withdraw into universities to think deep thoughts – we deepen those thoughts by constant engagement with others. Our mission to serve global society is illustrated in the pages of this report, which features contributions from academics who are working with, and learning from, people living in poverty to realise our shared development futures.

My challenge to the members of the Humanitarian Centre network is to help universities find new ways of matching our skills and motivations with the world's development needs, through meaningful collaborations with partners here in Cambridge and all over the world. When we can all learn from one another, we will be 'inspired, empowered and equipped'* to end global poverty. This is a journey that has only just begun.

LK Borysiewicz

* The power of the Humanitarian Centre is in its energy
and ability to "inspire, empower and equip" Cambridge's
international development community.

INTRODUCTION

STEVE JONES,
CHAIR OF TRUSTEES,
THE HUMANITARIAN
CENTRE

ANNE RADL,
PROGRAMMES MANAGER,
THE HUMANITARIAN
CENTRE

Eight Millennium Development Goals (MDGs) were set at the turn of the 21st century to reduce global poverty and injustice by 2015. For the first time, all the members of the United Nations (UN) came together and committed to achieving a set of time-bound targets to meet the needs of the world's poor, from halving extreme poverty to ensuring that 40% of wage-earning jobs in the non-agricultural sector were held by women.

Since 2000, UN members have reaffirmed these goals – and their commitment to fulfilling them – several times. A feeling that the time was long overdue to take action on needless injustices and inequalities resonated far beyond the UN, and beyond the development community; it rallied many other actors – from schools to churches to corporations – to take action too.

There has been striking, unprecedented progress over the past 13 years; many of the targets set have already been met. But there is still so much to do, and with less than two years until the MDGs expire, there has been a flurry of activity to put a new development framework in place that has the power to inspire people all over the world, once again, to work together for global social good.

With the benefit of hindsight, our aspirations for the next framework are even more ambitious, because we have learned from what the MDGs did *not* do. The MDGs did not focus on the mechanisms for change, nor the kinds of data and evidence we needed to be collecting to ensure that change was happening. The MDGs did not translate well into planning tools, because they did not differentiate targets by countries or groups of people within countries. In certain cases, they may have exacerbated existing inequalities by lifting up those who were easiest to reach, and leaving the most neglected behind, for example, people living with disabilities and marginalised ethnic groups.

Over the past 13 years the world has changed too. The evidence for unprecedented climate change has become incontrovertible. A UN conference in Brazil in 2012, Rio+20, made it clear that human development cannot be divorced from environmental protection and sustainability goals. It proposed that, whatever framework replaced the MDGs, sustainability – social, environmental and economic – should be at its core.

As Cambridge's international development network, the Humanitarian Centre has been following the many discussions, conferences and reports from international policy makers and advocacy groups, and we are responsive and ready to help our stakeholders join in a global partnership to usher in and implement a new set of global goals.

We are excited by some of the changes we have seen in the processes to develop a new development agenda, in particular a powerful assertion that *everyone* is implicated in the goals we will set. *We are all stakeholders in the new development agenda, because we all have something at stake.* The rich and poor alike are vulnerable to the volatility created by increasing social inequalities and environmental risks.

We have written this report with 'everyone' in mind. Our network includes not only our core membership of non-governmental organisations (NGOs) working for poverty alleviation, but academics and researchers – from plant geneticists to historians – students, young people, volunteers, business leaders and budding entrepreneurs, tech innovators and policy experts and their networks and
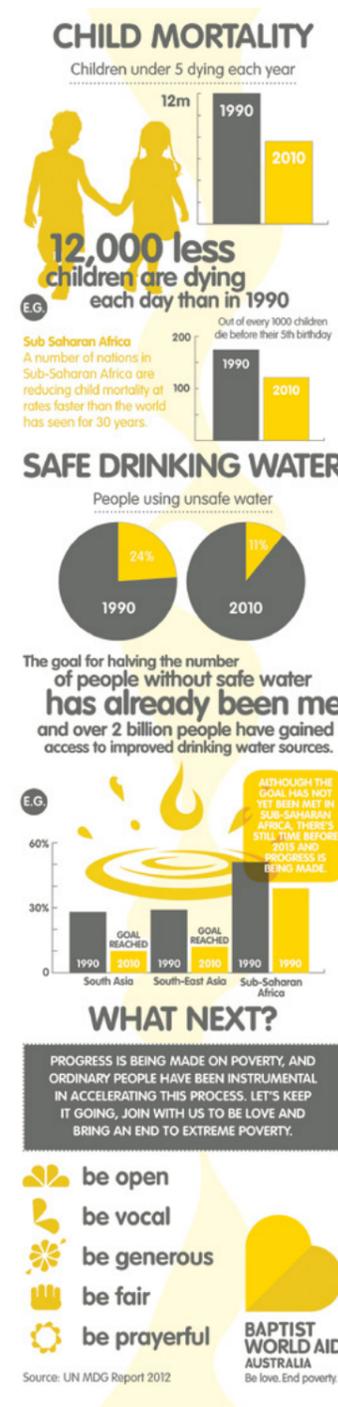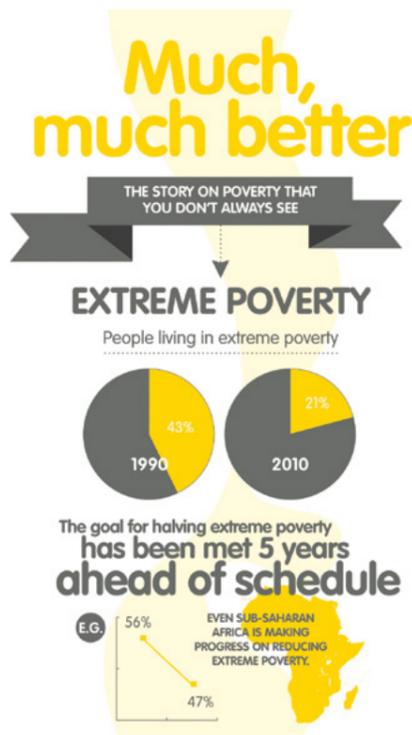
partners all over the world, particularly in developing countries. Just as it has been suggested that the new goals should differentiate targets by groups, so we believe that we must begin thinking about how each of us will make an appropriate and effective contribution to achieving them.

Four things are clear to us:

1) The needs of the poor have to be at the centre of any new development agenda. To ensure that this happens, we need to listen to the experiences, desires and ideas of people in impoverished and vulnerable communities, and to the thought leaders in so-called 'developing' countries. We can learn by listening how to support them in charting the future course of their own development.

2) When we listen, we hear many voices, calling for many different actions. We need to develop better mechanisms and strategies for coping with complexity, whether these are forums for promoting better understanding of one another's priorities, more creative and effective communications techniques, or better evidence bases and the capacity to use them to build consensus.

3) By embracing complexity, and understanding the potential contributions and limitations of different approaches, we also come to a clearer understanding of how each of us can add value. The post-2015

development agenda has to be about the 'how' as much as the 'what'. When we know exactly what is wanted from us, and how we can contribute using our particular capabilities, we can proceed in truly impactful partnerships. In situations where we do not have value to add, we can support other efforts from the sidelines.

4) Whatever it is that we can do, we need to do it – all of us. Achieving social, economic and environmental equality and sustainability is *the most important challenge* facing the world today. This means mobilising actors who may have been seen as peripheral, or even antithetical, to these goals, like big business. Groups that do not get on board with the new sustainable development agenda will find that they themselves are not sustainable in a rapidly shifting landscape.

With these four ideas as our framework, we have gathered a set of essays that demonstrate the challenges we will all encounter in setting and implementing a post-2015 development agenda, and case studies that illustrate potential ways forward.

Each chapter ends with a series of suggestions of how different individuals and organisations can play a role at every point, with the hope of 'inspiring, empowering and equipping' *everyone* who reads this report to make an appropriate contribution to ending poverty and achieving sustainable development in the next 15 years.

INFOGRAPHIC FROM BAPTIST WORLD AID AUSTRALIA,
BE LOVE, AUGUST 2012

CHAPTER ONE:

LISTEN TO LEARN

We are all stakeholders in the fate of our planet and the people on it. However, the people with the greatest stake in the post-2015 development agenda are those who are most at risk of poverty, disease, vulnerability and hardship.

There are many parallel dialogues happening around the world, from the United Nations to the grassroots level, to assess who we are and where we're going.

The world must make space for listening to the previously unheard voices of the poor and marginalised, to hear their experiences and values, their history, and their self-reflections, and draw on these to chart our future course of direction.

By listening to the unheard voices, we hear previously unarticulated ideas about development – radical transformations and reimaginings of what our future can be. Critically, we must ensure that everyone can listen and learn from these voices.

CHALLENGE

HOW DO WE REALISE THE ELUSIVE VISION OF AN AFRICA-LED DEVELOPMENT AGENDA

African 'development' is mired in the legacy of post-colonialism. Alioune Sall and Alinah Segobye challenge African academies to break down barriers that prevent them from hearing one another, and from working together towards an African-led development agenda. With reflection, communication and action, Africa's thought leaders can reconceptualise our development futures, eradicating Africa's 'poverty' and embracing the wealth and abundance of the continent's true potential.

DR ALIOUNE SALL,
EXECUTIVE DIRECTOR
AFRICAN FUTURES
INSTITUTE

PROF ALINAH K. SEGOBYE,
DEPUTY EXECUTIVE
DIRECTOR &
HEAD OF RESEARCH
IMPACT ASSESSMENT,
HUMAN SCIENCES
RESEARCH COUNCIL

The legacy of post-colonial 'development' endures. This is why ordinary people in developing countries should be shaping the post-2015 development agenda.

2013 has seen a variety of celebrations for and about Africa at 50. An equally important activity driven by the African Union Commission has been the development of a vision for Africa for 2063. *Agenda 2063* is unfolding in the wings of the United Nations exercise to develop the next global development agenda (post 2015). These events have generated interesting conversations and debates, and we wish to reflect on just a few.

REFLECTING ON PAST 'DEVELOPMENTS'

It is opportune for an African-led agenda of Africa's future(s) to be on the global discourse on development. However, the concept of development remains problematic. For Africa, it is interwoven with the colonial and post-colonial project[1]. The Berlin Conference[2] led to a holistic approach to colonisation, which thereafter was seen and approached as an enterprise of controlling resources, both natural *and* human. Independence for Africa was yet another tool for maintaining hegemony of the West[3]. It was based on knowledge and analyses generated from Euro-American intellectual centres, think tanks and political forces. It was engineered in such a way that it would be:

- Economic growth without social progress
- Democracy without accountability
- Independence without emancipation
- Decolonisation without liberation
- Crown without the jewel[4]

Because of these characteristics, the independence project was dubbed, "neo-colonialism" by Kwame Nkrumah[5]. The project was well thought out and well designed to be the most cost-effective way to maintain domination.

It can be surmised that the neo-colonial project was anchored heavily in nation-building and the process of 'developing' African states. This served to generate new local elites, who played the role of *chiens de garde*[6]. A bourgeoisie was created without roots in the production system or capital. Then and now, conspicuous consumption and instant gratification were the main characteristics of the elite. In South Africa, the *Broad-Based Black Economic Empowerment* project (B-BBEE) has generated what is called the "Black Diamonds" who have a similarly voracious appetite for materiality.

The adoption of an externally driven development trajectory led to a permanent "nervous condition"[7] where Africa would be producing what it does not consume and consuming what it does not produce. African elites remain obsessive in their adoration of all things western, including a fastidious embrace of European languages and culture and rejection of Africa and her heritage.

The post-independence development trajectory was buttressed by the financial incentives of aid and latterly loans, which have been pervasive, addictive and cancerous, thus weakening the immune system of the recipients of aid (African societies). We see this dependence as a major threat to the pan-Africanism and renaissance paradigm and agenda in the architecture of Africa's future(s).

RE-ENVISIONING THE FUTURE

The question therefore is: how do Africans become their own liberators? To answer that question, we would submit that what is needed is a new triangle.

Reflection, communication and action are its three points and nexus. As far as the reconceptualisation is concerned, it begins by defining ourselves and our project of society. *Who and what are we*[8]? We need to answer that. A paradigm shift is a must, and the role of universities has been crucial where such shifts have taken place in the world.

First, we should do away with the methods of development planning that consist of measuring gaps, with a view to filling them and "catching up". These methodologies are anchored in the idea that development is about economic growth and that economics is the science of the management of scarcity. They emphasise deficiencies rather than potentialities, poverty rather than abundance. We should look at development as an opportunity to create and manage wealth and abundance.

Reflection, communication and action are the three points of a 'liberation triangle'. Africa's thought leaders are coming together to reflect and listen to each other as they ask, "Who and what are we?"

IN IGUNGA, TANZANIA, ZAWADI (WHICH MEANS 'GIFT') LEANS OVER PLANS FOR A WATER TANK, WHICH IS BEING CONSTRUCTED IN THE BACKGROUND. © EWB UK

WE SHOULD LOOK AT DEVELOPMENT AS AN OPPORTUNITY TO CREATE AND MANAGE WEALTH AND ABUNDANCE

1. For more thoughts, see Karuri-Sebina, G., Sall, A., Maharajh, R., Segobye, A. (2012). Fictions, factors and futures: reflections on Africa's impressive growth. *Development* 55(4), 491-496.

2. The Berlin Conference, 1884–85 formalised European powers' colonial control over Africa, leading to the 'scramble for Africa' and squelching African self-governance and autonomy.

3. The 'West' is used in reference to countries of the developed global north, inclusive of Europe and North America.

4. C.f., Mazrui, A.A. (2001). Shifting African Identities: The Boundaries of Ethnicity and Religion in Africa's Experience. *Shifting African Identities* 2, 153.

5. Kwame, N. (1965). *Neo-Colonialism: The last stage of imperialism.* London: Thomas Nelson and Sons.

6. 'Watch dogs'

7. Dangarembga, T. (1988). *Nervous conditions.* London: Women's Press.

8. This question, posed by Aime Cesaire in 1946, remains pertinent today.

After reflection comes communication. To build a constituency for change, communication must break down barriers.

Reconceptualising development includes challenging frameworks, like the post-2015 development goals, as to whether they can appropriately represent the many concerns of the world's diverse citizenry.

We should aim at correcting the epistemological fallacies that have dominated intellectual discourse on development, and have led us to believe that Africans are poor and need aid, while Africa's impoverishment can be linked to development aid.

Further, our complacency with corrupt elites cannot continue unchallenged[9]. African academia must play the positive role of an organic, intellectual, thought-leadership cadre and contribute to the paradigm shift alluded to above[10].

The second point is about communicating with a purpose. Specifically, this speaks to building a constituency for change. Communicating is about breaking barriers, be they generational, gender-based or geographic.

The question of local and indigenous languages remains a major battlefield as many of the elite draw their power, status or authority from the mastery of a foreign language.

Breaking the disciplinary boundaries is an essential ingredient of communicating within and between communities and countries in Africa. The late Ugandan scholar Dani Nabudere was influential on this point, arguing persuasively against the "fragmentation of knowledge through academic disciplines".

Recognising and harnessing the diversity/plurality of forms of expression is paramount. That requires addressing the toxic hierarchy established between different forms of expression and the privileging of written forms, particularly in the African academy.

It is timely to venture into explorations of Africa's future(s). However, the project needs to be rooted in a truly self-conscious African academy and remain critical of the conceptual frameworks that create time-bound agendas not anchored on the aspirations of a very diverse African citizenry.

WAY FORWARD

BY BROADCASTING AFRICA'S MANY VOICES

A RADIO BROADCAST WITH VICTOR OTIENO JUMA AND A GUEST AT RADIO NAMLOLWE IN KISUMU, KENYA. © AFRICA'S VOICES

"AFRICA CAN ONLY DEVELOP IF PEOPLE IN RURAL COMMUNITIES ARE ASKED FOR THEIR VIEWS, RATHER THAN HAVING DECISIONS IMPOSED ON THEM. LET'S GIVE PEOPLE A PLATFORM TO VOICE THEIR CONCERNS."

JOSEPH MAZIZI, JOURNALIST, MUDZIWATHU RADIO STATION, MCHINJI, MALAWI

The third point in Sall and Segobye's liberation triangle is action. Africa's Voices is an innovative project that uses radio broadcasting, SMS technology and social research to help policymakers, development actors and thought leaders to hear the opinions of a diverse citizenry and take responsive actions.

Radio stations across eight African countries are using *Africa's Voices* to ask questions on-air about relevant public issues, and inviting listeners to send a text message to the station voicing their opinion. Questions focus on topics such as governance, health, education, gender equality and environment, for example: "Should our government ban the use of plastic bags?"

Because the questions are asked in local languages and many people have access to a mobile phone, the discussions are largely inclusive. The text messages are analysed by the Centre of Governance and Human Rights in Cambridge (CGHR) to find common themes as well as differences among countries. These findings are shared with the stations and discussed on *Africa's Voices* programmes,

fostering audience engagement with local issues.

The data gathered have great potential for use by policymakers, researchers and NGOs. The project aims to provide an opportunity for comparative study of public opinion on a range of issues, and plans to collaborate with Cambridge researchers across the natural and social sciences interested in deploying the platform.

Over the next three years, CGHR is hoping to expand *Africa's Voices* to include 30 radio stations across 15 countries. Widening the project's reach means that more people from across the continent can contribute to and influence local, national and international public debate on issues that matter to them.

9. The 2013 Nelson Mandela Annual Lecture delivered by Dr Mo Ibrahim eloquently spoke to the subject of the leadership deficit plaguing Africa.

10. This debate was interrogated by some of Africa's leading scholars at the Thabo Mbeki African Leadership Institute symposium aptly titled, *Finding Solutions to Africa's Development* (August 2013).

CHALLENGE

'INCLUSIVE EDUCATION' IS NOT ENOUGH; WE NEED EMPOWERING, QUALITY EDUCATION FOR ALL

DR NIDHI SINGAL,
SENIOR LECTURER IN
INCLUSIVE EDUCATION,
FACULTY OF EDUCATION,
UNIVERSITY OF
CAMBRIDGE

What can happen when we listen to unheard voices? Well, we can hear ideas that we have never previously thought of! In the following piece, Nidhi Singal shows how listening to the experiences of people with disabilities can challenge education policy makers "to look for innovative and flexible ways of educating, which move beyond the four walls of schools".

"Almost everyone will be temporarily or permanently impaired at some point in life, and those who survive to old age will experience increasing difficulties in functioning" – *World Report on Disability* (WHO, 2011).

Disability is a global issue, which means that it is also deeply complex. The demographic profile and nature of impairments is changing as childhood mortality rates are reduced and people live longer. No country – developed or developing – is omitted from this phenomenon.

Attitudes to disability differ depending on wider social attitudes about issues such as class, gender and religion, and the specific circumstances of the person themselves – their age, their position in the household and so forth. But mounting evidence also highlights the broad commonalities that mark the lives of people with disabilities. This is illustrated in the significant deprivation that they face as a result of their status of being disabled.

Across the world, people with disabilities have poorer health outcomes, lower educational achievements, less economic participation and higher rates of poverty than those without disabilities. This is partly because they experience barriers in accessing basic health, education, employment and information services and are also more likely to experience social stigma[11]. These issues are amplified in low and middle-income countries, which are already saddled with education and health systems that cannot meet the demand for quality service provision, outreach and resources[12].

THE COSTS OF NO EDUCATION

Education is regarded as central to poverty reduction and individual wellbeing. It strengthens individual and collective capabilities of people such that they become less poor or escape poverty altogether. Education nurtures an enabling environment for social and economic transformation, underpinned by inclusive democratic processes and fostering co-operative social networks.

Education is arguably the crux of development in contemporary society, yet research shows that disabilities will prevent more children from participating in school than other issues such as gender, rural residence, or economic status differentials[13]. This has a significant impact on poverty in adulthood, but also on family poverty. In Bangladesh the cost of disability due to forgone income from a lack of schooling and employment of people with disabilities and their caregivers is estimated at £770 million annually, or 1.7% of gross domestic product (GDP).

While international and national initiatives have led to an increase in enrolment numbers for children with disabilities in low and middle-income countries, their transition from primary schooling to secondary and beyond remains concerning. Fundamental issues of quality and parity in participation

© ROBIN WYATT VISION, 2013, FOR CBM

in school-based processes remain overlooked. Research shows that children with disabilities remain at the very margins (socially and in terms of learning) even if they attend school. Teachers fail to adapt pedagogical approaches for students with disabilities, and school cultures are unresponsive to the needs of increased diversity.

FROM THE MARGINS TO THE MAINSTREAM

Nora Groce, in a review commissioned by the United Nations (2011), notes a striking omission in the Millennium Development Goals, which do not even mention disability in any of the eight

goals or the attendant 21 targets and 60 indicators. In setting out a range of entry points for disability issues, she argues that to achieve the vastly better development prospects that lie at the heart of the post-MDG agenda, people with disabilities need to be central to mainstream debates, not on the margins.

Within education there are particular challenges. Everyone agrees that all children should be in an engaging and empowering learning environment, but it is still not clear how this is best achieved. In a society where people, states and corporations put unquestionable faith in the power of formal education, the onus to deliver is high. Can a system

Providing access to schools is only the first step in addressing exclusion from education.

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11. World Health Organisation and World Bank (2011). *World report on disability.* UNICEF (2013). *The state of the world's children.* These reports have startling evidence on the high level of exclusion from basic services experienced by children and adults with disabilities.

12. Filmer, D. (2008). Disability, poverty, and schooling in developing countries: results from 14 household surveys. *The World Bank Economic Review* 22(1), 141-163.

13. A World Bank (2009) study examining evidence from India notes that the share of disabled children who are out of school is around five and a half times the general rate and around four times even that of the tribe population. Even in states such as Kerala, which otherwise have the strongest educational indicators, 27% of children out of school are those with disabilities.

Learning life skills is a crucial part of inclusive, quality education. To achieve this, educators and policy makers need to listen to people living with disabilities.

historically designed for a completely different social structure respond to our current challenges, or do we need to ask more fundamental questions about the structure and purpose of education?

WHAT DO PEOPLE WITH DISABILITIES WANT FROM THEIR EDUCATION?

To understand the role of education in the lives of young people with disabilities in poor communities, the Disability, Education and Poverty Project[14] conducted research across four countries: Ghana, India, Kenya and Pakistan. The young people who had achieved high levels of schooling valued greater flexibility in the system. They came from poor but aspirant families, who wanted to see them employed and financially independent. Their educational journeys highlighted how crucial it was for schools to respond to their particular needs, such as teaching them basic living skills and providing them with role models with disabilities, especially as they came from families with very limited social and economic capital. For them the perceived role of education in employment was important, but increased self-confidence and self-respect were central.

Although it was clear that what the young people valued most from education was the self-respect and confidence they gained from going to school, these factors did not feature in the discourses of other stakeholders such as their teachers and heads of schools.

MAKING NEW SPACES

Our research highlights that young people provide powerful insights into what works for them. Their stories suggest that we must look for innovative and flexible ways of educating, which move beyond the four walls of schools. For instance, is there merit in beginning to think about 'value free' transition points between different educational streams (special, mainstream etc.), where the participation in one system will not stigmatise learners for life?

Current policy debates focus narrowly on where children with disabilities should be educated, that is, in special or mainstream schools, rather than centering on the quality of their learning experience. For too long there has been a complete silencing of the voices of people with disabilities in Southern contexts. We have not heard them reflect on their educational experiences, nor listened to their ideas for charting the future course of education. These key stakeholders must have spaces to speak and to influence. By seeking to understand individual and collective stories, in context, we can open up the moral and political space for effective educational reforms.

While many of the current MDGs remain unfulfilled and the future is being re-charted, maybe it is time to make space for those who have not yet been heard, so that we might together create solutions we have not yet thought of.

YOUNG PEOPLE PROVIDE POWERFUL INSIGHTS INTO WHAT WORKS FOR THEM. THEIR STORIES SUGGEST THAT WE LOOK FOR INNOVATIVE AND FLEXIBLE WAYS OF EDUCATING, WHICH MOVE BEYOND THE FOUR WALLS OF SCHOOLS

14. *The Disability, Education and Poverty Project* was carried out under the aegis of the Research Consortium on Educational Outcomes and Poverty (RECOUP) funded by DFID. A full list of publications is available at: http://recoup.educ.cam.ac.uk

WAY FORWARD

GIVE PEOPLE WITH DISABILITIES A VOICE, AND THE WHOLE COMMUNITY LEARNS

CBM and Mobility India are supporting a community-development approach for including people with disabilities. Self-help groups, formed by people with disabilities and their families, are the vehicle for this holistic approach. As people with disabilities participate and raise awareness of related issues, they also ensure that the rest of the community is learning.

JAYAMMA (RIGHT), PRESIDENT OF THE CHAMKOL SELF-HELP GROUP FEDERATION, FELT SHE SHOULD GET AHEAD IN LIFE, NO MATTER WHAT THE CHALLENGES TO HER MOBILITY MIGHT BE.
© ROBIN WYATT VISION, 2013, FOR CBM

CBM and Mobility India are supporting individuals with disabilities and their families to gain greater inclusion within their communities – in decision making, employment, health services and education.

In the broader community, self-help groups for people with disabilities are delivering project components, including peer support, training, livelihood opportunities, and sharing of personal experiences in a safe environment.

Elected members of the self-help groups coordinate after-school clubs for children from families affected by disability. These coordinators serve as inspiring role models and bring their own valuable experience of disability to their work.

The clubs provide an opportunity for children to relax and have fun, receive educational support and develop their confidence and participation within their schools and communities.

In addition to the community focus, government teachers are trained on inclusive approaches, running pupil's clubs, liaising with after-school-club coordinators and on developing individual education plans for children with disabilities and special needs with community members and project staff.

Local advocacy initiatives are starting to grow as the self-help groups and after school clubs raise awareness of disability-related issues. In 2014, school and village awareness campaigns will culminate in CBM UK's marking of the Global Campaign on Education's Global Week of Action in May with its focus on the education of children with disabilities.

CHALLENGE

SHOULD GENDER EQUALITY GOALS DO MORE TO PROMOTE THE RIGHT TO BE RESPECTED?

PROF MADELEINE ARNOT,
PROFESSOR OF
SOCIOLOGY OF
EDUCATION,
UNIVERSITY OF
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Many people would have heard that educating girls is the single greatest investment in development that we can make. But this statement says nothing about what they actually want from an education. Madeleine Arnot is behind the Cambridge team that has listened to young women and men across different societies, and learnt that gaining respect is a powerful driver for "becoming educated". By reframing the discussion about the role that respect plays, Arnot and colleagues have set a challenge to reimagine the educational space as a place where both girls and boys have the power and agency to define themselves, and to achieve a most powerful ambition — namely "to become someone who has the right to be respected".

In 2012, UNICEF established a global thematic consultation on *Addressing Inequalities: the heart of the post 2015 Development Agenda and the future we want for all*. The submission from the Cambridge Faculty of Education prioritised the notion of gender respect[15]. Dr Sharlene Swartz[16] and I pointed out that the time was ripe for a shift in thinking about the goal of gender equality. Whilst a powerful goal in relation to the 2015 global educational target, women often fail to gain respect and power for the contribution they make to the social, moral and economic fabric of society. Recognition of rights has been used to promote gender equality, but many women still experience economic exploitation, male violence and physical oppression in poverty, with high levels of illiteracy.

RESPECT AS A GOAL
The right to be respected is now defined as a human right and respecting difference, including gender difference, is recognised as central to this ideal. But how does this right translate into concrete development goals? In his book *Respect*,

Richard Sennett cautions that "behavior which expresses respect is often scant and unequally distributed in society", and "what respect itself means is both socially and psychologically complex. As a result, the acts which convey respect – the acts of acknowledging others – are demanding, and obscure"[17].

Cambridge education and poverty research has shown that there is a unifying, powerful ambition found amongst young people, their parents and teachers to be respected, or to "become somebody"[18] with the right to be respected. Our contribution to the global debate draws on the empirical findings of the DFID-funded *Youth, Gender and Citizenship project*[19], and seven associated community-based doctoral research projects[20] which focused on the schooling of the poor in Ghana, India, Kenya and South Africa.

This research highlighted how gender works with the giving and receiving of respect, the sometimes violent struggle for respect, and the role of schooling in helping youth to gain self-respect. There are five key dimensions of building gender respect:

RESPECTING OTHER GENDER CULTURES
The act of respecting other cultures means recognising that other societies have different attitudes towards gender and gender roles. Any approach towards gender equality needs to respect different sets of gender relations and different female roles in civic and private life. There is also not one model of a 'girl' or a 'girl-child' across societies (or even within them). For example, encouraging a young woman in non-Western societies to act 'in her own right' – in isolation from her family – would disregard strong communal cultures. There are different female worlds and different ways in which girls develop and negotiate cultural norms. It is essential to respect the agency, capabilities and experiences of minority and marginalised groups of girls.

RESPECTING REAL WOMEN'S VOICES
Respecting women involves moving beyond models that plot the impact of female education; it means letting go of participatory consultation and poverty alleviation strategies that leave women voiceless and powerless, or can even deepen gender inequality. Respect for women involves understanding that the interrelations between poverty, gender and education play out differently for women than for men. We begin to

unravel this nexus[21] when we listen to women voice the importance of tiny, imperceptible and very specific impacts that school can have on their sense of identity, relationships and decision-making.

RESPECTING THE CONTRIBUTION OF WOMEN AS TEACHERS AND MOTHERS
Cambridge researchers have documented how mothers and female teachers have to fight to be respected, especially in the context of male-dominated hierarchies. The role of mothers in deciding which of their many children is to be educated is insufficiently recognised, yet a mother's role is key to achieving education for all. Similarly, female teachers contribute greatly to the education of the poor, but they struggle to achieve status or recognition.

PROMOTING SELF-RESPECT AND ELIMINATING DISRESPECT THROUGH SCHOOLING
Being educated may help a young person 'become somebody', but schools can also be disrespectful of the poor. Young men can resort to sexual violence – even rape – to achieve respect from girls or their male peers. Young women living in poverty may also use physical violence as a means of sustaining their self-respect, literally fighting for survival. Reform programmes need to remove the

> Girls can demonstrate their power and capability in many ways; it's not just about asserting independence.

> Worldwide, two-thirds of adults who cannot read are women.

THE CHALLENGE OF THE 21ST CENTURY IS TO FIND WAYS OF EDUCATING YOUNG WOMEN AND MEN TO FIND THEIR OWN VOICE, AGENCY, CHOICE AND EMPOWERMENT RATHER THAN ASSUME A UNIVERSAL DEFINITION OF GENDER EQUALITY

15. Arnot, M. & Swartz, S. (2012). Recognising women's contribution the social-moral fabric in the 21st century: countering violence and building gender respect. *Addressing Inequalities: the heart of the post 2015 Development Agenda and the future we want for all.*

16. A research director in Human and Social Development at the Human Sciences Research Council, South Africa.

17. Sennet, R. (2003). *Respect: The formation of character in an age of inequality.* New Haven: Yale University Press, 59.

18. Wexler, P., Crichlow, W., Kern, J., Matusewicz, R. (1992). *Becoming somebody: Toward a social psychology of school.* London: Routledge.

19. Research working papers can be found at http://recoup.educ.cam.ac.uk/publications/policybriefs.html

20. The Cambridge research on education, gender and poverty includes the doctoral work of Fatuma Chege, Fibian Lukalo, Angela Githitho-Muriithi, Manasi Pande, Georgina Yaa Oduro, Arathi Sriprakash and Sharlene Swartz. The full text of the original paper can be found at http://www.worldwewant2015.org/node/287843

21. Chege, F.N., & Arnot, M. (2012). The gender–education–poverty nexus: Kenyan youth's perspective on being young, gendered and poor. *Comparative Education* 48(2), 195-209.

WOMEN'S CHAMPIONS SPEAKING AT KHANDEL LIGHT
WOMEN'S EMPOWERMENT DAY IN RAJASTHAN, INDIA.
© KHANDEL LIGHT

Respect looks different in different societies: there is no need for a one-size-fits-all, 'Western' notion of gender equality.

destructive material conditions which lead to the lack of respect. Schools need to recognise the role that respect plays in male and female youth cultures and help youth achieve self-respect, and respect from others, by 'becoming educated'.

RESPECTING RESPECT

Amanda Roth noted that "feminists have long recognized the significance of respect in overcoming oppression"[22]. Respect is not just about individual persons, it is about relationships. People stand in relation to each other; therefore respect is about "experiencing or perceiving others in the right way"[23].

It is one thing to believe intellectually that gender equality is a good and worthy goal. It is another to enact the truth of that within unequal or oppressive gender relations. It is crucial that people experience their status as respect-worthy. The challenge of the 21st century is to find ways of educating young women and men to find their own voice, agency, choice and empowerment rather than assume a universal definition of gender equality. Promoting substantive, not just formal, gender equality[24] involves reframing respectful gender relations. This involves listening to the real experiences of women and men.

WAY FORWARD

CHILDREN CAN BE AGENTS OF CHANGE IN THEIR COMMUNITIES

Children for Health is a Cambridge-based NGO that is founded on the idea that children can be effective agents of change. Children for Health's project 'The 100' helps children gain self-respect and the respect of others by taking them from 'becoming educated' to becoming educators within their families and communities.

A YOUNG GIRL LEARNS ABOUT GOOD HEALTH FOR HERSELF AND HER FAMILY. © CHILDREN FOR HEALTH

"CHILDREN ARE RESOURCEFUL, COMPETENT AND THEY CAN CONTRIBUTE; THEY HAVE THE POWER TO CHANGE THEIR COMMUNITIES."

CLARE HANBURY,
FOUNDER,
CHILDREN FOR HEALTH

Children have great potential to learn and communicate vital knowledge to the rest of their community, yet this ability is often undervalued. When children are taught about health and disease, with some encouragement, they can share what they have learnt with others.

Children, especially older siblings, are often caregivers for their relatives. Investing in their health education will enable them to relay their knowledge to others in their community, and also to practically address the health issues which they and their families face daily.

To that end, Children for Health is producing 'The 100': ten simple messages on ten health topics, such as nutrition, sanitation and development, covering the causes, symptoms, treatment and prevention of disease. Health workers, teachers and anyone else working with children can access

these messages, and additional resources, online or through a mobile phone.

The 100 provides a starting block for children to create their own relevant health messages, reinforced through activities like putting on a play or making a poster about a health issue. Children can aim to collect, learn and share all 100 messages, which together provide a solid foundation of health awareness.

Children for Health launched in March 2013 and has already made significant progress, with partnerships with Zimbabwe-based international NGO Africa Ahead and the National Rural Support Programme based in Pakistan. Once The 100 are completed, the messages will be translated for use globally to encourage more children to act as health ambassadors, sharing their health knowledge and reducing disease.

22. Roth, A. (2010). Second-Personal Respect, the Experiential Aspect of Respect, and Feminist Philosophy. *Hypatia* 25(2), 316.

23. Ibid., 320.

24. Arnot, M. (2010). Promoting substantive gender equality in education: youth citizenship. RECOUP Policy Brief no. 17. http://recoup.educ.cam.ac.uk/publications/pb17-gender-youth_citizenship.pdf

CHALLENGE

BRING THE ACCESS REVOLUTION TO EVERYONE!

DR VIRGINIA BARBOUR,
MEDICINE EDITORIAL
DIRECTOR,
PLOS

When it comes to listening and learning, we know that access to information and to spheres where disparate perspectives can be voiced is key. Nidhi Singal and Madeleine Arnot have written about improving social access, but there are also other barriers to access, including resources, technology, licensing, policies and capacities. In the 2012 Cambridge International Development report, we featured ideas about 'Getting in the Access Loop', which highlighted how health researchers in Africa could access the resources needed to develop and share new solutions to local and global health challenges. Below, Virginia Barbour describes continued challenges in getting information 'the last mile' to become fully accessible to all.

Open access publishing is now an established model of publishing with overall agreement on its benefits and its importance as a way of making information a global public good. Intensive discussion continues on the best ways to achieve widespread open access, but what this does not address is a recognition that open access is just one part of a much wider issue of translating knowledge into action – where open access is required but not sufficient.

To that end PLOS has consistently collaborated with other organisations that have an interest in taking information 'the last mile' One shining example here is the HIFA 2015 campaign, a phenomenally active advocacy and discussion forum of many groups and individuals in the health information chain, which has as its vision "a world where people are no longer dying for lack of healthcare knowledge".

Both HIFA 2015 and PLOS are also involved with a wider group that includes publishers, librarians and other health information professionals and organisations who have tried to articulate what is specifically needed for the more equitable sharing of science information in the less developed world.

What has become clear in the discussions among groups who care deeply about access is that many different components are needed. What is required is not only the will to provide access, but also the correct licenses to ensure this access sits within the correct legal framework and the development of tools that will allow access. Crucially these tools must enable use and reuse, and have designs that are driven by the needs of end users.

The good news of course is that all these aims are achievable. When open access was first mooted computing was primarily on desktops; smart phones and tablets were not yet even imagined. The challenge for the next few years will be to harness the new technologies with the current drive to improve access.

WAY FORWARD

BY COLLECTING THE WORLD'S OPEN DATA ALL IN ONE PLACE

"BY AGGREGATING THE WORLD'S OPEN DATA ONTO ONE FUNCTIONAL PLATFORM, WE CAN EMPOWER CITIZENS WITH A TOOL THAT WILL HELP MAKE GOVERNMENTS AROUND THE WORLD MORE ACCOUNTABLE."

ELLIOTT VERREAULT,
DIRECTOR OF PRODUCT
DEVELOPMENT,
STAT.IO

Another element of the access revolution is open data. Open data is an increasingly valuable resource, and its potential is expanding as more and more governments begin to release it. Open data can be used by NGOs or researchers anywhere in the world to identify areas of interest and to monitor the success of projects; by policymakers to assist in decision-making; and by citizens to actively participate in governance.
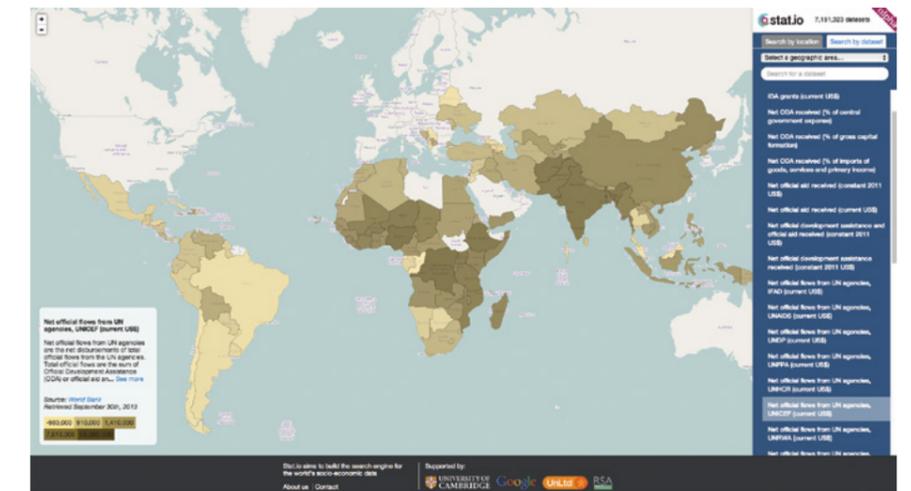
Stat.io, first set up at the Cambridge StartUp Weekend in November 2012, has a simple vision for open data – they are working to aggregate the world's government data into one platform, with a free version open to all. Once the platform is established, citizens, organisations, and policymakers will be able to access and visualise socio-economic data across all levels of government – be it international or local – from energy usage to crime figures to mortality rates. The Stat.io platform will allow people to view and compare data from many different sources at once, eliminating the complexities involved in compiling data from different places and in different formats.

The potential for Stat.io in development is enormous: the ease of access to open data which it provides will be invaluable. In countries which do not yet have open data, or where the official government data may not be an accurate representation of the true statistics, users will be able to publicly moderate information by commenting on published data or uploading their own data alongside it.

Being able to access government data *and* to challenge it will help promote transparency, which is not only crucial for open governance, but helps researchers, NGOs and community-based groups to work more effectively.

Stat.io is expected to be operational in early 2014, but will be continually updated as more data is made available to make it more comprehensive and dynamic. The founders see it as a tool available to citizens to interact with public data and increase accountability.

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YOU!

LISTEN! LEARN!

DEVELOPMENT POLICY MAKERS:

Check out the wonderful work done by Participate, co-convened by the Institute of Development Studies and Beyond2015, on the post-2015 development agenda. They are not only listening to the needs of poor people all over the world, but they are supporting them to take a stake in making sure their voices are translated into actions. Why not borrow their participative methodology?

RESEARCHERS:

Support the improvement and development of open access publishing by engaging with it. The system is not perfect yet, but working towards a world where the fruits of research and thinking are accessible to all is imperative for achieving equality.

SMART PHONE USERS:

Download one of the many apps that allow you to hear news and editorial perspectives from all over the world. You can 'TuneIn' to radio in Nigeria or peruse any 'World Newspaper' right from your phone.

CHAPTER TWO:
COPING WITH COMPLEXITY

When we listen, we hear many voices. But many voices do not necessarily speak in harmony. Louder, more powerful voices – voices that speak for vested interests – can overwhelm dialogues and turn them into arguments. And of course there are repercussions from unresolved arguments: blockages, rejection and conflict. Even when we listen well, giving minority and marginalised voices a central platform, it is unlikely that incorporating diverse perspectives, opinions and needs will lead to simple, straightforward solutions where everyone wins.

Rather than suppress some voices, coping with diversity means looking for new platforms for understanding and dealing with complexity. It can even mean creating new cultures of conversation and interaction, to finally pull ourselves out of entrenched, over-simplified positions and make real progress.

CHALLENGE

BEFORE WE CAN FEED THE WORLD, WE NEED TO UNDERSTAND FOOD POLITICS

DR BHASKAR VIRA, DIRECTOR, CONSERVATION RESEARCH INSTITUTE; SENIOR LECTURER IN ENVIRONMENT AND DEVELOPMENT

DR DAVID NALLY, SENIOR LECTURER IN HUMAN GEOGRAPHY

DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF CAMBRIDGE; MEMBERS OF THE CAMBRIDGE UNIVERSITY STRATEGIC INITIATIVE IN GLOBAL FOOD SECURITY

From geography to plant biotechnology, the new Cambridge University Strategic Initiative in Global Food Security is bringing together researchers together from across disciplines.

Technologies that increase food production may seem like a straightforward solution to hunger. But Bhaskar Vira and David Nally[25] show that technologies for food security are embedded in power relations that, far from being win-win, can produce deprivation and new forms of precarity. For these technologies to truly benefit the poor, the people whose lives are at stake must also have a stake in them.

As a result of the UK's recent *IF Campaign* and Nutrition Summit, which took place before this year's G8 meeting, many people will now be familiar with the scandalous statistics on hunger in today's world. Although the world produces enough food for everyone:

- 870 million people (one out of eight) still go hungry, and the vast majority (852 million) live in so-called developing countries.
- Nearly half of all deaths in children under five – more than three million children – die every year from undernutrition.

Knowing the scale of the problem is merely the first step in tackling it. Eliminating hunger will require action on a host of fronts, from governance issues – as we saw in the *IF Campaign*, calling for more transparency around aid, tax and land use – and social protection mechanisms, including investment in agriculture and the provision of decent work opportunities, especially for smallholders. Partnerships between governments, civil society groups and industry will be of particular importance. Such partnerships are not easy to broker, as stakeholder views differ, often irreconcilably, on a number of vital issues.

POLITICAL TECHNOLOGIES

One particularly contentious area is the role and appropriate use of genetic technologies as a key component in the transition towards what has been described as 'resilient,' 'nutrition-sensitive' and 'climate-smart' agriculture for the 21st century.

There seems little doubt that future food security will involve some use of agricultural biotechnologies such as genetic modification. What is more contentious, in our view, is the way in which these technologies are likely to be rolled out and, more to the point, who stands to benefit.

As with most technologies, the development, deployment and control of agro-biotechnology is likely to result in winners and losers. Despite the common rhetoric of a 'win-win' situation, there is simply no such thing as 'socially neutral' or 'apolitical' technology. There are, for example, considerable differences between publicly funded genetic research, which is made freely available to farmers and other producers, and patented and protected technologies that are distributed under the proprietary control of private companies. In reality, developing these technologies is likely to involve some compromise between the need to provide adequate incentives for research and development within the private sector – including the possibility of using limited patents to propel innovation and protect profitability – and the need for these technologies to be used at a sufficient scale to offer truly sustainable solutions to the challenge of feeding over seven billion people.

CONCERNS MATTER

Concerns about the safety of these technologies are equally paramount. For proponents to dismiss these as the 'irrational fears' of misinformed consumers is short-sighted and seriously underestimates the power of the consumer voice, especially in the digital communication age and with the emergence of strong online lobby groups. It is also patronising, suggesting that consumers should have choice on the shelves but not on the level of information provided on the origins of these products.

National attitudes matter as well. The debate in Europe over the use and deployment of genetically-modified (GM) foods is considerably more cautious than that in North America, and European regulators are far more sensitive to public opinion in their approach to GM crops. In India, one of the largest public consultation exercises on such issues led to the imposition of a two-year moratorium on growing GM *brinjal* (aubergine) in 2010, despite a report by six of the country's science academies concluding that the crop was safe for cultivation and consumption. More recently, in August 2013, an advanced trial plot of genetically modified *golden rice* (developed to address Vitamin A deficiency amongst children) in the Philippines was destroyed by local protestors who were resistant to the use of GM technology in the country.

As global food markets become more integrated, the regulation of new biotechnologies, whether in Europe, India or elsewhere, will have a much wider impact. Indeed, we have already witnessed the tragic consequences of US food aid being rejected by the Zambian government at the height of a major famine in 2002. While people were in desperate need of food, the Zambian leadership felt unable to accept delivery because the majority of US corn and soya was GM, citing health concerns (perhaps unfounded, as Americans were consuming the same stocks) as well as potential longer-term consequences of GM strains entering the Zambian food system. These included the possible impact on Zambia's future ability to export to GM-wary European markets. The decision to avoid risks associated with 'bio-pollution' may compromise poorer countries' ability to engage in agricultural trade.

WORKING TOWARDS SOCIALLY-ACCEPTABLE SOLUTIONS

The regulation and control of biotechnologies, the transparency of these developments and the right to make informed consumption choices – these concerns are likely to lead to a broader debate, as we move towards an ever-more globalised food production system. The outcomes will profoundly shape our ability to respond to the challenges of feeding the world in the 21st century. While some form of biotechnology is likely to be part of the solution, its proponents need to recognise that there are political, social and economic consequences that go beyond technocentric debates about efficiency and scaling up to more profitable agricultural practices. Only by first recognising the interplay between technology and power can we harness the promise of these developments in a manner that provides solutions for global food security that are socially responsible and better for human and environmental wellbeing.

Through surveys, Bangladesh-based NGO BRAC gauged people's concerns about new rice biotechnology. Policy and research is now informed by civil society's suggestions.

25. A version of this article first appeared on the UNA-UK site, *New World*, on 19 April 2013: http://www.una.org.uk/magazine/spring-2013/bhaskar-vira-david-nally-biotechnology-food-security
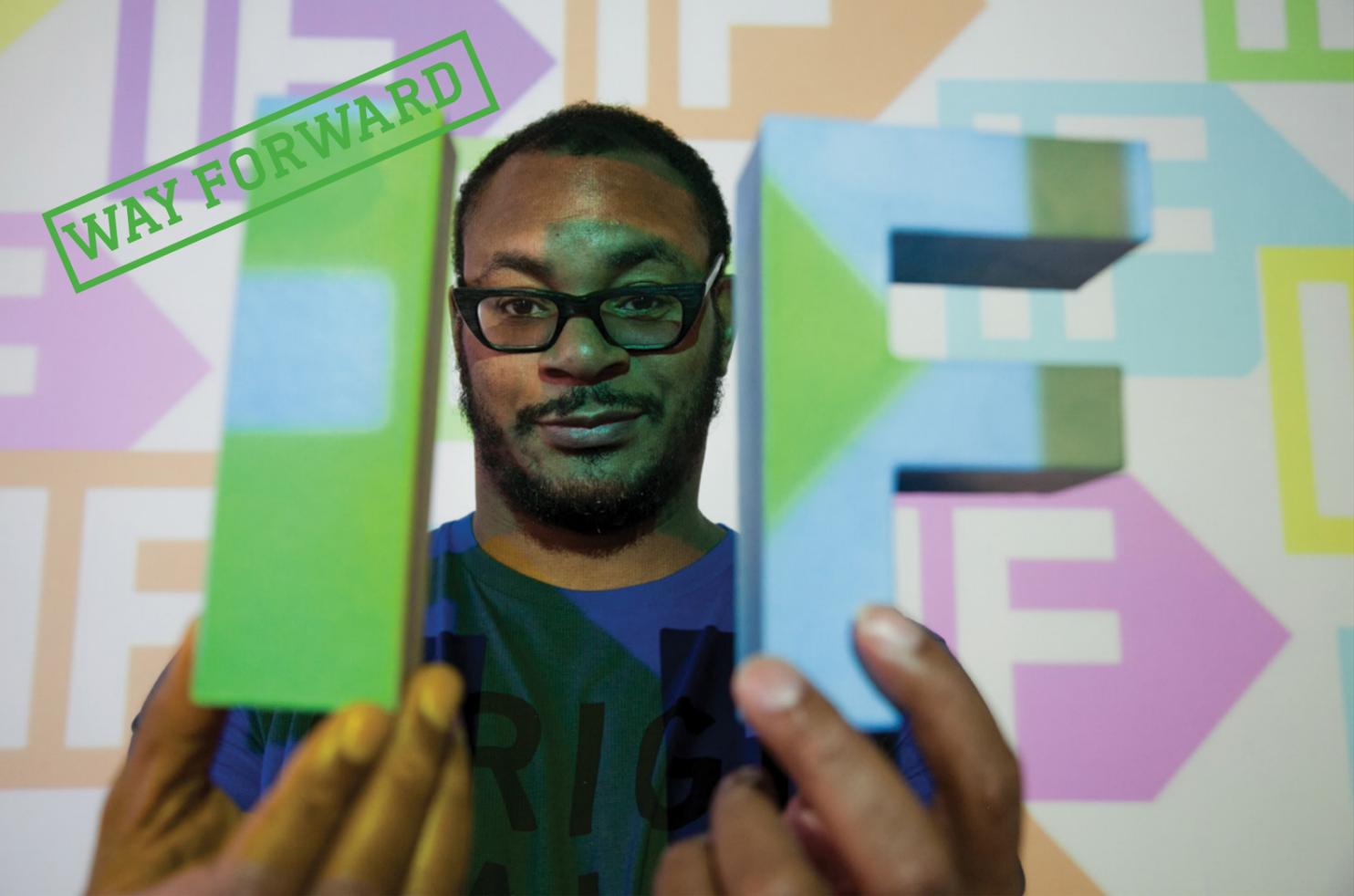
WAY FORWARD

© KRISTIAN BUUS

COMPLEX DOES NOT NEED TO BE IMPENETRABLE: THE STORY OF A SUCCESSFUL CAMPAIGN ABOUT FOOD

The Humanitarian Centre was recently one of more than 200 organisations in the coalition behind the 'Enough Food for Everyone IF Campaign', coordinated by Bond. The 'IF Campaign' looked at the root causes of inequity that lead to one in eight people going to bed hungry each night, when there is enough food produced to feed everyone in the world. Root causes included a lack of transparency around aid and tax, and land grabs that divert resources and income from smallholder farmers.

But by employing Einstein's tenet that everything should be as simple as possible, but no simpler, the 'IF Campaign' was able to derive clear, strong messages from a complex landscape; thereby drawing over 50,000 people out of their homes to rally for action, and securing a commitment of £4.1 billion from world leaders to address hunger and undernutrition at the Hunger Summit that preceded the 2013 G8.

CHALLENGE

USE CREATIVE COMMUNICATIONS TO BREAK DOWN PEOPLE'S RESISTANCE TO (CLIMATE) CHANGE

Culture can be a nebulous concept that means many things to many people. It can also be a concept used to build and reinforce very real barriers to communication and interaction. In his work with The Culture for Climate Action Network, David Viner challenges us to use the malleability of the concept of culture to build bridges, rather than construct barriers, between us. He asks us to employ sound and creative communication techniques to work together on combating climate change, superseding other kinds of differences that divide us, such as demography and geography.

BY DR DAVID VINER,
PRINCIPAL ADVISOR
FOR CLIMATE CHANGE,
MOTT MACDONALD

In the 23 years that I've been working as a climate change professional, I have seen the atmospheric concentration of carbon dioxide skyrocket from 350 parts per million to over 400 parts per million. There is an overwhelming scientific consensus that the climate system is changing, and that this is predominantly a result of human activity. Yet internationally, we still don't see the far-reaching agreements that will limit future changes in climate to anything near a safe level.

Recently, the rise in the global temperature has slowed, and some people have used this fact to make the case that climate change isn't happening or has been over-stated. Published research, however, shows that the temporarily reduced rate of change in global mean temperature is largely due to additional ocean heat uptake. 2001-2010 was still the warmest decade on record.

LIVED EXPERIENCE OF CLIMATE CHANGE

The backdrop to the global temperature curve is becoming depressingly familiar; everyday we witness the impacts of climate change, from a dying coral reef that is destroying the livelihoods of local communities, to the suffering of thousands from short-term transient rainstorms (like floods in Uttarakhand, India that killed over 5,000 people).

Although a single meteorological event cannot be directly attributed to climate change, climate change does increase the likelihood of an extreme event occurring. It is very likely, for example, that human influence has at least doubled the risk of experiencing heat waves: extremely hot summers are now observed over 10% of the global land area, compared with 0.1 – 0.2% in the period of 1951 – 1981[26].

Our understanding of climate change, however, is filtered through society's web of values, beliefs, attitudes, norms, cultures, perceptions and habits. All of these lived experiences affect how we interpret and communicate climate change, and our resulting action. So if we want to see far-reaching, international agreements in place to mitigate climate change, we have to understand the role that our proclivities have in influencing decision-making and leadership on climate (for individuals and systems).

26. For more information on climate change and its effects: http://www.climatecommunication.org/new/articles/heat-waves-and-climate-change/heat-waves-the-details

Record-breaking weather events are becoming increasingly familiar and having greater impacts on people, communities, property and the environment.

2013
Another devastating heat wave in the USA.

2013
Extensive flooding in Germany and Hungary caused widespread damage with total costs in excess of £19 billion.

2012/13
Australia: 123 temperature records were broken throughout the country in just 90 days.

2011
The USA experienced 14 weather events that in total caused nearly £320 billion of damages.

2010
Pakistan floods affected 20 million people and killed nearly 3,000 people. They are deemed to be the worst in the region's history.

2007
England and Wales' summer was the wettest since records began in 1766 and caused major flooding with costs in excess of £3.2 billion.

Young people's views on a changing climate need to be heard. In 2008-2011, the British Council empowered 120,000 young people in over 60 countries to consider climate change.

THE NEW CLIMATE CULTURE

The Culture for Climate Action Network is being developed by Dr Candice Howarth of the Global Sustainability Institute at Anglia Ruskin University, with support from Mott MacDonald. It has an ambitious vision to address sustainability challenges in creative and academically robust ways, based on evidence of what has worked from previous programmes of engagement and trust[27]. The network will bring together experts from backgrounds ranging from government, research, policy, the arts and business, to forge new communications routes that navigate different values, beliefs, attitudes and cultural influences to influence decision making on climate.

By engaging across different sectors, we form alliances that stretch beyond national boundaries. We can run activities that link individuals and communities that otherwise would have no reason or circumstance to connect. These links break down barriers between groups, and pave the way for open conversation about shared values, and how these values lead us to take action on climate change. By applying learning from different cultures and disciplines and evaluating impact, we can help make the complex world of climate change communication most effective at delivering useful, impactful climate action.

When people have effective, innovative communication techniques, they can exert powerful influence, and heal fissures between communities and nations.

We have the communications tools and techniques now to move on from the tired debate that scientists and policy makers have with deniers of scientific evidence, to focus instead on positive influencers in our global society.

USHERING IN THE AGE OF RESILIENCE

The progress in climate change science, the evolution of public perceptions and the ongoing international negotiations should all add up to a sufficient force to break down barriers that are preventing a global deal on carbon reduction.

While we hammer away at the old barriers, we also need to be building a new foundation of resilience. We can design and construct our buildings, infrastructure and communities in ways that allow society and the environment to be preserved and protected from the consequences of climate change, with no lasting damage borne when extreme events happen.

What will allow us to do this is supporting a culture for climate action – a culture across cultures – where it is the norm for governments, businesses and organisations to account for climate change in their planning and strategies and take actions to build a more resilient and sustainable future. Our actions have indeed led to climate change, but they have also led to intercultural communications pathways and scientific endeavor that can ensure that the coming era is not the age of catastrophe but the age of resilience.

Resilience is a crucial concept. Embodying both effort and hope, it allows us to move from humanitarian crises to sustainable development.

© DAVID VINER

WE HAVE THE COMMUNICATIONS TOOLS AND TECHNIQUES NOW TO MOVE ON FROM THE TIRED DEBATE THAT SCIENTISTS AND POLICY MAKERS HAVE WITH DENIERS OF SCIENTIFIC EVIDENCE, TO FOCUS INSTEAD ON POSITIVE INFLUENCERS IN OUR GLOBAL SOCIETY

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27. For example between 2008-2011, on behalf of the British Council, I ran an innovative assessment of barriers to implementing solutions to climate change. Barriers were grouped into four categories: cognitive, normative, political and economic. A global strategy was implemented to overcome these barriers. Learning from the successes and challenges of this massive programme is being built on by initiatives like The Culture for Climate Action Network.

WAY FORWARD

IN SUDAN, FILM IS A POWERFUL TOOL FOR MOVING FORWARD TOWARDS PEACE

"THE AIM OF CULTURAL HEALING: SUDAN WAS TO INSTIGATE A CONVERSATION THAT BRINGS INSIGHTS, TOLERANCE AND UNDERSTANDING INTO THE FILM-MAKERS' LIVES AND THE LIFE OF THEIR COMMUNITY - AND ULTIMATELY THE NATION AS A WHOLE."

TAGHREED ELSANHOURI,
ARTISTIC DIRECTOR,
CULTURAL HEALING

© CONCORDIS INTERNATIONAL

There is no better example of coping with complex issues and emotions than finding a peaceful way forward from a sustained conflict. Taghreed Elsanhouri's project Cultural Healing: Sudan (2010-2013) harnessed the medium of film to allow fragmented Sudanese people to hear one another's concerns and aspirations, and come together over their shared humanity. Elsanhouri was supported in developing and implementing the project by the Nasaq Journalism Training Centre in Khartoum and Cambridge-based Concordis International.

Cultural Healing: Sudan was a creative peace-building project in Sudan that trained journalism students, civil society representatives and young people to make short documentary films which expressed their cultures and traditions.

Reflecting on the challenges and opportunities facing their country, these auteurs were asked to film the story which mattered most to them in their communities. Topics covered in the films include education, divorce, the succession of South Sudan, the environment and the care of war veterans. The films were shown in Sudan, accompanied by participative workshops.

This project has given practical training, professional guidance and local support to people exploring the medium of film for the first time.

Beyond presenting the new film makers with a powerful tool for self-expression and self-healing, whole communities have come together to collectively share, discuss, heal and move towards a more peaceful future.

YOU!

EMBRACE COMPLEXITY!

BARGAIN HUNTERS (WITH INTERNET ACCESS):
Participate in a MOOC (massive open online course). World-class universities are now offering free classes to anyone in the world, to get to the bottom of some of the world's most complex global challenges. Because MOOCs are open to everyone, this is also an opportunity to *listen to* and *learn from* your classmates' thoughts and ideas from all over the world.

SOCIAL SCIENTISTS:
Use your skills to act as 'brokers': helping people to understand what an appropriate role may be, translating between sectors and dealing with social complexity.

SCIENTISTS AND ENGINEERS:
Look for opportunities to build your diplomacy, negotiation and leadership skills. Complexity may be an area that you feel familiar with from grappling with equations and seemingly impenetrable data sets, but there is growing recognition that future development leaders also need 'soft' skills to work with people from different backgrounds.

LOOKING FOR NEW CONNECTIONS?:
Network. Networks like the Humanitarian Centre and Cambridge Conservation Initiative help integrate knowledge and experience of complex issues like poverty and biodiversity, by drawing on expertise across disciplines, sectors and countries. When members of networks like the Humanitarian Centre and the Cambridge Conservation Initiative network together (meta-networking!), they can develop new approaches to interconnected global challenges.

IF YOU FEEL YOUR LIFE IS ALREADY TOO COMPLEX:
Transition. The *Living Off the Grid* and *Simple Living* movements promote happier, healthier, sustainable lifestyles as a reaction to what is seen as an overly consumption-driven, developed world. While fully subscribing to this way of life may not be for you, case studies suggest ways to significantly reduce personal complexity and prioritise positive individual and social impact.

CHAPTER THREE:
ADDING VALUE

The post-2015 development agenda has to be as much about the 'how' as the 'what'. The working methods and the attitudes with which we approach our development goals are as important as the goals themselves, and bring coherence to an agenda that seeks to address climate change as much as gender equality.

The upside of learning to cope with complexity is having an understanding of the strengths and limitations of different approaches, and how to integrate these approaches when situations call for many different people working together. Sometimes we have a clear idea of how we can add value. Sometimes, with a scant evidence-base, we are still trying to make a best guess, experimenting and innovating as we go.

As individuals in different disciplines, sectors and cultures, we have different priorities and capabilities. We need people who can move between these different sectors and broker communication and understanding. When we find that others can add more value, more effectively and sustainably than we can, we also need to practice the humility and good sense to step into a supportive role so that they can get on with it.

CHALLENGE

A PARADOXICAL CHALLENGE: HOW CAN INTERNATIONAL DONORS SUPPORT AUTONOMOUS LOCAL DEVELOPMENT?

BY IAN STEED, ORGANISATIONAL DEVELOPMENT ADVISOR, INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETIES

BALTHAZAR BACINONI, HEAD OF ORGANISATIONAL DEVELOPMENT DEPARTMENT, BURUNDI RED CROSS SOCIETY

Person-to-person persuasion is a powerful way to make change. 'Rallying one's neighbours' may be the very way that ideas spread.

When it came to developing locally owned institutions in post-conflict Burundi, roles for local, national and international actors were not immediately apparent. Ian Steed and Balthazar Bacinoni show how, through leadership at all levels to unite fractured communities around commonly identified goals, there turned out to be a role for everyone from the bottom up to the top down. But in supporting the emergence of new, locally sustained organisations, a new and paradoxical challenge has arisen: how do international actors assist these without undermining their autonomous development?

In a field in Ruyigi Province, Burundi a row of men and women are singing. Standing in a line their hoes rise and fall to the rhythm of the song. At the top of the field, two old people watch as their neighbours carry out the physical work that will ensure their survival for the coming months.

On a hillside above, rows of small trees have been planted on an unstable hillside as part of an effort to reduce mudslides. Lower down, terraces have been built by volunteers to prevent further erosion.

In the village itself, someone proudly shows a corner of a hut which holds simple materials that the community has collected for use in a disaster. Several fields have been bought and cultivated using funds invested by local members: proceeds are split between investors, vulnerable people and Red Cross funds.

All of these activities and more are going on under the auspices of the Burundi Red Cross. Some 98% of Burundi's communities have a Red Cross unit, mobilising over 400,000 people of a population of 9 million on a weekly basis.

Yet ten years ago, with the country recovering from the inter-community violence which was most visible to the world in neighbouring Rwanda, trust within communities was so low that traditional mechanisms of mutual aid had largely broken down. In a very poor country with chronic food insecurity, health challenges and small-scale disasters, people were not able to work together to provide what mutual help they could.

The process of this transformation tells us a lot about the development challenges that the post-MDG world must deal with.

A STORY OF LEADERSHIP

Firstly, this is in part a story of leadership, both at the national level of the organisation, and at local levels. The Burundi Red Cross had previously operated largely as a funnel for donor funds, but new leadership was clear that this model could not address the long-term needs of the country. To operate at scale and actually reach communities required consistent mobilisation of very poor communities themselves.

In communities too, this required people willing to stand up and rally their neighbours to help one another.

It required people willing to try something new and convince other people that it was to everyone's benefit for the most vulnerable people within communities to be helped, irrespective of ethnic background.

Secondly, it involved navigating the ambiguities of the aid system and its impact on poor communities. If the Red Cross was understood as an organisation that came into communities and gave things to people, would people be willing to contribute their time to it? Would people volunteer if they did not own and determine activities taking place in their own communities?

SUPPORTING LOCAL OWNERSHIP

At the local level these activities are

Foreign aid need not exacerbate poverty. In Ruyigi Province, where local people drive local development, aid can make projects sustainable.

sustainable – they are decided by local people, managed in line with local cultural norms, and use locally available resources, most often people's skills, tools and strength. And aid, if well spent, can enhance this by spreading simple messages, skills and techniques through the system. Donors such as World Food Programme (WFP) recognise the unique access and credibility that local Red Cross groups have, and use these for food distributions in preference to international NGOs. It can also be destructive: local units have been damaged and destroyed by funded projects creating unsustainable incentives within communities.

Looking to the system of regional and national coordination that supports these local units, this is far more dependent on the aid system to exist. Even with efforts to broaden the resource base within Burundi, such resources are not freely available. Yet while donors are eager to make use of this unique community-based system, they are less willing to consistently pay for its upkeep.

And while such solidarity at scale is arguably a powerful force for peace and reconciliation in a post-conflict society, having an important impact on marginalised individuals and groups in very poor communities, it cannot address wider development issues: the lack of land, sluggish economic conditions, inadequate health provision or the increasing instability of the climate.

So we return to the interplay between top-down and bottom-up approaches to development, and their respective values. What we see from the success of Burundi Red Cross is that encouraging people to take the lead in their own development can be extremely potent. Assumptions about poverty and capacities can be challenged, and with good approaches even the poorest communities can systematically mobilise resources to better their lives.

Supporting this, however, must be done sensitively: upsetting the ownership and incentives of such systems is likely to lead to collapse. And so there is need for greater humility and flexibility on the part of donors.

ASSUMPTIONS ABOUT POVERTY AND CAPACITIES CAN BE CHALLENGED, AND WITH GOOD APPROACHES EVEN THE POOREST COMMUNITIES CAN SYSTEMATICALLY MOBILISE RESOURCES TO BETTER THEIR LIVES

WAY FORWARD

WE CAN CREATE PLATFORMS FOR EXCHANGING LOCAL AND INTERNATIONAL AGRICULTURAL INNOVATIONS

"SHARING AFRICA'S INNOVATIONS – IN AGRICULTURE, AS IN ALL AREAS OF HUMAN ACTIVITY – IS VITAL FOR OUR FUTURE RESILIENCE AND DEVELOPMENT."

DR TINASHE CHIURUGWI,
RESEARCH SCIENTIST,
NIAB

As Burundi Red Cross demonstrates, there needs to be communication and coordination from the top down to the bottom up to support local development initiatives. NIAB's pilot projects in Africa provide an impartial platform for people ranging from farmers, to plant scientists to politicians to learn from one another, and encourage each others' innovation and development.

On farms and in plant laboratories all across Africa, new crops are routinely being developed to improve agricultural yield and quality in the face of current challenges like climate change. But if farmers do not have access to these varieties, then they certainly cannot choose to plant them, and their options for improving and protecting their harvests remain limited.

The National Institute of Agricultural Botany (NIAB), based in Cambridge, is currently running a year-long project to address this issue, funded by the Sir John Templeton Foundation, looking at the possibility of setting up 'Innovation Farms' in Ghana, Kenya and Uganda. The NIAB Innovation Farm in Cambridge has been successfully showcasing innovations in plant genetics and holding workshops on key issues like nutrition and climate change to connect researchers and business leaders, and help advance practice in the field. NIAB wants to know whether their successful model can also make a valuable contribution in Africa.

NIAB Innovation Farms Africa would provide a forum for the many different stakeholders involved in improving food security and advancing agricultural development to learn from each other about the potential and limitations of different seeds, crops and farming practices. It would extend access to agricultural innovation to many farmers, and give them the opportunity to experiment and innovate themselves.

NIAB's role is not one of ownership, but of brokerage. Forging connections between government, businesses, researchers and farmers will be necessary for an Innovation Farm to succeed, and NIAB and partners are experienced in this area. If African stakeholders decide that the potential benefits outweigh the challenges, and establish the farms, NIAB will continue to support them, facilitating discussion between different sectors and improving the prospects for successful plant innovation.

CHALLENGE

LET'S TRY TO VIEW FOREIGN AID FROM THE RECEIVING END

If we're learning from communities about their positive and negative experiences with development aid, are we getting smarter about the ways we use it? Bernard Rivers takes a look at Kenya and aid – its past, present and future – and lays down some conditions to help aid get smart enough to know when it's no longer wanted.

BERNARD RIVERS,

FOUNDER,

AIDSPAN AND THE

GLOBAL FUND OBSERVER

'Smart aid' helps local recipients drive decisions about using aid and assessing its impact.

Tax evasion by multinational corporations costs developing countries £160 billion a year in lost revenue. The UK has a role to play in supporting international efforts to promote tax transparency.

My wife and I have lived and worked in Kenya for the past seven years and following our recent retirement, we expect to remain here for many more. This means that I've been observing aid from a very different perspective from that which I had when we lived in the UK and the USA. And that, in turn, leads me to hope for an end to all foreign aid to Kenya by the year 2030. By then, if not well before, I hope that the Kenyan economy will be sufficiently vibrant that Kenya will no longer be willing to receive aid.

Kenya is making steady progress towards self-sufficiency: over the past five years, according to the World Bank, Kenyan gross domestic product (GDP) has grown on average at 3.7% per annum. (The figure for the USA is 0.6% p.a. and for the UK is minus 0.4% p.a.) And over the same period, Kenyan gross national income per capita has grown at 2.9% per annum. (USA: 1.6% p.a.; UK: minus 0.2% p.a.) Bear this in mind when you decide where to invest your savings.

WISE INVESTMENTS FOR DEVELOPMENT

The key thing that Kenya needs, as with any country at Kenya's current stage of development, is jobs, not aid and not foreign development workers. Hundreds of thousands of Kenyan children graduate each year from elementary school, reasonably literate and reasonably fluent in English, Kiswahili and their mother tongue. Tens of thousands more graduate from secondary school and university, qualified to perform complex jobs and to become yet more skilled through on-the-job learning; yet all too many of them are destined for unemployment, in a nation with no government-funded safety net. One million dollars spent on aid will prop up the system for a short while. One million dollars invested in businesses will generate jobs and tax revenue, with a subsequent multiplier effect leading to more of the same.

The situation now is very different from a few decades ago, when the number of Kenyan doctors and other equivalent professionals was minimal. Back in those days, if there was a health-related emergency in Kenya, Western countries would fill a plane with doctors and nurses and send them off to do their best. That was fine, for that era. Then, in later years, the donors in such a situation would send money and managers, relying on Kenya to provide the doctors and nurses.

But that era, too, has reached an end. In my opinion, aid to Kenya is now only needed in very specific circumstances worked out carefully between donor and recipient. One of the smartest examples of aid I've come across in recent years is provision by the UK of an expert to help Burundi build and solidify its system for collecting income tax. The multiplier impacts of such an intervention are obvious.

FOUR KEY CONDITIONS

To accelerate the arrival of that glorious day when Kenya can say, "Thanks, but no thanks" to every offer of aid, I hope that all interested parties will push for four things:

- First, and very obviously, the planning of what forms of aid a donor will send to Kenya should be jointly agreed between Kenya and the donor.

- Second, in such conversations, Kenya should be represented not just by its government, but by other sectors as well; the government of any country is supposed to have the interests of all its citizens at heart, but things don't always work out that way; non-state actors should have a voice in planning some aid flows too.
- Third, aid should only be sent if it will, over time, reduce Kenyan dependency on aid rather than increase it.
- And fourth, there should be complete transparency; any interested person should be able to find out how the money was spent, what results it achieved, and what worked and what did not.

ONE MILLION DOLLARS SPENT ON AID WILL PROP UP THE SYSTEM FOR A SHORT WHILE. ONE MILLION DOLLARS INVESTED IN BUSINESSES WILL GENERATE JOBS AND TAX REVENUE, WITH A SUBSEQUENT MULTIPLIER EFFECT LEADING TO MORE OF THE SAME

WAY FORWARD

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CHALLENGE

WE NEED SCIENTISTS WORLDWIDE TO BE ACTIVE IN DEVELOPMENT

Governments, NGOs and activists cannot carry the burden of post-2015 development alone. Everyone must find out what their appropriate contribution is: how they can add value and learn to work with others to do so. We asked neuroscientist-turned-policy-maker Jasdeep Sandhu about the roles that scientists have to play.

DR JASDEEP SANDHU,
POLICY FELLOW,
CENTRE FOR SCIENCE
AND POLICY,
UNIVERSITY OF
CAMBRIDGE

HOW 'FOREIGN AID' CAN BE LESS 'FOREIGN': A WORD FROM A UGANDAN PARTNER

Afrinspire supports grass-roots development in Uganda – from the UK. So how does Afrinspire ensure that the support that they're providing is wanted, 'smart' and valuable?

"They reach out; they don't stand far off and throw money. They reach us and they interact with the people."
– Zadok Kamusiime, Agency for Rural Development in Africa, and Afrinspire partner.

Long-term, strategic alliances like the Cambridge-Africa Partnership for Research Excellence (CAPREx– part of the Cambridge-Africa Programme) between the University of Cambridge, the University of Ghana and Makerere University in Uganda help scientists build new relationships.

How does someone with a PhD in neuroscience get involved with the UK government's Department for International Development and UK AID?

I am a scientist by training and inquisitive by nature. What has always motivated me is the use of knowledge to understand and explore some of the fundamental challenges we face today, whether at cellular level or on the global scale. Science is critical in this endeavor.

I think the knowledge and experience I bring from my scientific and academic training are both applicable and translatable to my work within the civil service. The skills that a scientist takes for granted – such as critical, analytical thinking and logical reasoning – are incredibly important in Government. In general, scientists (and I count myself amongst these!) are good at adopting a systematic and thoughtful approach to problem solving, understanding and applying appropriate research methodologies, analysing and integrating the data and arriving at a logical conclusion.

However, the work of government often involves making decisions when the evidence base is either incomplete or uncertain. Scientific and technical information may offer just one piece of the evidence base informing government decision-making. The

role and influence of politics and people cannot be overstated. A combination of basic research and government experience has allowed me to become nimble at identifying solutions to problems, weighing up options and arguments succinctly, and understanding that as the evidence base strengthens so does our decision-making.

Why apply this knowledge and experience to international development? Today, approximately 1.4 billion people still live in poverty. The causes and consequences of poverty are complex. Science and research are fundamental in providing the solutions needed to address poverty. As a scientist, I have always been motivated to use my research training and skills for the purpose of improving human life. Working for the Department for International Development was a natural step for me.

If these skills have been helpful for you at DFID, do you think there is a role for the UK to play in building scientific and research capabilities in developing countries to address global challenges?

Science, research, technology and innovation improve people's lives and prospects, in developed and developing countries alike. Both rich and poor

countries understand the importance of science for development. However, the poorest countries are faced with the significant challenges of building their capabilities and capacities (at individual, organisational and institutional levels) to generate and exploit new and existing knowledge.

There is an important role for the higher educational sector in this effort, particularly for universities in countries like the UK, by partnering with institutions in developing countries, to jointly address global development challenges. Such partnerships offer new approaches and new opportunities to work on programmes and projects together, build the capacity and capabilities of individuals and organisations in all partnering countries (whether in the south or the north),

invest in the exchange of knowledge and information and form new strategic alliances based on science, technology and innovation. Partnerships offer an evolution from traditional approaches to aid to a more balanced, mutually beneficial relationship that respects the strengths of each partner.

Universities naturally offer a mechanism for exchange of ideas and information. With access to some of the brightest people, universities have a key role in helping develop the scientific and research capacity of poorer countries. Developing effective networks is important if we are to sustainably build scientific capacity.

Taking a holistic approach and targeting interventions at individual, organisational and institutional levels may seem sensible. However, what

DR ANNETTE NAKIMULI OF MAKERERE UNIVERSITY (LEFT) IS A PHD FELLOW WITHIN THE WELLCOME TRUST-FUNDED 'MAKERERE UNIVERSITY/UVRI INFECTION AND IMMUNITY RESEARCH TRAINING' (MUII) PROGRAMME. MUII WAS INITIATED TO HELP STRENGTHEN INFECTION AND IMMUNITY RESEARCH IN UGANDA, WITH A FOCUS ON REGIONAL ENDEMIC DISEASES. THE UNIVERSITY OF CAMBRIDGE IS A PARTNER IN THIS PROGRAMME, AND PROVIDES MENTORSHIP AND TRAINING TO THE UGANDAN FELLOWS. FOR HER PHD, DR NAKIMULI IS RESEARCHING PRE-ECLAMPSIA, WHICH IS A MAJOR CAUSE OF MATERNAL DEATH IN UGANDA. SHE IS MENTORED BY PROF ASHLEY MOFFETT FROM CAMBRIDGE (RIGHT).
© CAMBRIDGE-AFRICA PROGRAMME

WAY FORWARD

FINDING OUT WHAT WORKS

There is a great need to strengthen our evidence base on what works (and what works well) when it comes to translating *research on* development into *action for* development. The Centre for Science and Policy (CSaP) at the University of Cambridge is currently gathering evidence on which approaches for putting research into use are actually generating impacts on human and environmental wellbeing.

The *Understanding How Research is Put into Use* project examines:

*   when research has impact
*   what types of research and knowledge sources have the most impact
*   who needs to be involved to translate research into policy and practice
*   and how research is communicated for achieving impact.

we all need is a stronger evidence base of what works and what does not. This requires a combined effort from national governments and from research institutions and universities in both rich and poor countries.

You clearly see a role for partnerships between academia and government across countries, what about bringing the private sector and NGOs into these partnerships?

Unless we have a triangulation between government, academia and business, we won't be able to solve the complex and interconnected challenges presented by extreme poverty. However, there is still a lot of work to do. Government, academia and business have different motivations, objectives and targets, and often speak very different languages. An area of common ground that offers an opportunity to link these sectors is technical relationships based on science, research and innovation. We need to improve our understanding of how to harness the individual expertise of government, academia and business to

address some of the biggest challenges faced by the poor.

In order to do this, you need more than scientifically-competent people. Although knowledge and technical capabilities are crucial, you also need something else: people who can effectively move from a policy-making or operational delivery environments in government, to research and academia, and to industry (big and small). Unless we have people who can move between these sectors at strategic *and* operational levels, no one sector will really be able to understand the needs and requirements of the other.

Rhetoric isn't always helpful. Everyone agrees, 'Yes! We should partner', but what does that mean in practice? We need to establish effective ways to partner and better understand how to align differing interests around a common goal. When we partner, we need people bringing their expertise from different disciplines and sectors to work on development solutions together. If partnerships are to be effective and sustainable they should have a clear aim and line of sight to how they will positively impact on development targets.

Short-term secondments at the Department for International Development or the World Health Organisation help early-career academics understand how academic work can contribute to development programmes on an operational level.

WHAT WE ALL NEED IS A STRONGER EVIDENCE BASE OF WHAT WORKS AND WHAT DOES NOT

WAY FORWARD

THE GLOBAL SUSTAINABILITY INSTITUTE IS MODELLING NEW WAYS TO GROW IN THE FACE OF RESOURCE SCARCITY

DR ALED JONES,
DIRECTOR,
GLOBAL SUSTAINABILITY
INSTITUTE,
ANGLIA RUSKIN
UNIVERSITY

Jasdeep Sandhu highlights the need to better "understand how we can harness the individual expertise of government, academia and business to address some of the biggest challenges faced by the poor". A recent initiative at the Global Sustainability Institute at Anglia Ruskin University in Cambridge is doing just that – harnessing its research and analytical skills to help governments and businesses use evidence-based models to make better choices about using resources equitably and sustainably.

In 1972 the Club of Rome produced *The Limits to Growth*. This used systems dynamics theory[28] to analyse the long-term causes and consequences of growth in the world's population and material economy. Subsequent analysis has continued to support the general conclusions within the original report and further work has shown economic and political consequences of such limits.

As it becomes more difficult to access those resources that are fundamental for human life (water, food, energy, land and minerals), we can expect:
- Uncertainty about future economic growth
- Coupled with a decrease in available public and private sector investment, due to the financial crisis and uncertain economic outlook, less availability of finance for solutions such as efficiency measures
- The spread of systemic risks in highly indebted (and highly resource-intensive) countries, such as the USA
- Highly volatile commodity prices
- Rising inequality and inequitable exploitation, such as land grabbing, around resource use.

All these consequences of scarce resources have significant implications for development, leading to worsening living conditions, food insecurity in vulnerable regions, and thus the potential for international political instability.

MODELS FOR GROWTH

The Global Sustainability Institute at Anglia Ruskin University, with the generous support of the Peter Dawe Charitable Trust, has launched the Global Resource Observatory (GRO) to re-examine the conclusions of 1972's *The Limits to Growth* study. GRO will explore the shortterm (five year) consequences associated with resource constraints, through the use of mathematical modelling of the social-economic-environmental systems. By starting with the feedback loops between resources (such as the need for energy to produce water and water to produce energy), it will attempt to model the behaviour of countries in response to changing resource availability.

The results will enable us and others to investigate the possible implications of resource scarcity, international relationships and protocols on economic growth. Through this kind of investigation, we can better understand what key future risks are critical to not achieving wellbeing and social prosperity in countries all across the world.

The backbone of GRO is a newly developed database of variables at the global and country level, organised around six main groups of commodities –food, water, land, fuel, minerals and air – as well as key social and demographic indicators. The database includes variables for all UN countries that are: internationally validated, comparable, yearly-updated variables (1995 onward) and multidimensional (agricultural, socio-economic, demographic, environmental and social cohesion).

THE GRO PROJECT HAS THREE MAIN OBJECTIVES:
- Provide clear information to policy makers and business leaders on 'what if' scenarios, to demonstrate what can feasibly happen and help develop better resilience strategies.
- Provide clear evidence of the need for universal understanding of resource scarcity and its impact on economic activity globally.
- Advance our understanding of what the impact of resource constraints will most likely be on political (in) stability in the short-term.

FROM LIMITS TO OPPORTUNITIES

You can represent human society with a fairly simple model of capital flows, based on the goods and services that people use. The current economic system behaves as if it is a linear system with no concept of limitations to resources.

Some economists and market analysts would argue that the price of a resource increases the scarcer it gets, or the more damage it does (if that damage is measured and priced), therefore the market will create solutions to resource scarcity.

However, there are market imperfections in the current system, in particular the lag in time between pricing and impact, incomplete resource data and unaligned policy frameworks. And there is increasing evidence that with our current inputs, outputs and market imperfections, appropriate management of scarce resources is not happening.

GRO can help our political and business leaders to understand and manage resource scarcity, so that the materials that we use to (literally) build our future do not slip away from us. In doing so, it can help us redefine what it is to grow, so that in 2030 we finally have a solid and sustainable foundation to transition from looking at limits to looking at opportunities.

"ANY ACADEMIC INSTITUTION THAT RESEARCHES SUSTAINABILITY NEEDS TO UNDERSTAND OUR ROLE IS HELPING DEVELOP PRACTICAL SOLUTIONS. THIS INVOLVES DEVELOPING PARTNERSHIPS ACROSS ACADEMIC DISCIPLINES WITHIN OUR UNIVERSITY AND BEYOND, AND WITH LEADERS IN BUSINESS AND GOVERNMENT."

28. Systems dynamics attempts to model the various feedback loops and time delays that affect the changing properties of a system over time. For example, the links between fishing and fish stocks is a classic 'system'.

YOU!

ADD VALUE!

DONORS:
Stay flexible; support what works; support core costs.

THE RESEARCH EXCELLENCE FRAMEWORK (REF):
Give academics and researchers the flexibility and encouragement to explore other avenues to share their work (outside of academic journals) and help building the skills they need to engage with other groups who can potentially use the fruits of their labour – like policy makers, businesses and the general public.

VOLUNTEERS:
Get in there! It's not only NGOs and community groups that need help, research institutions, social enterprises, even governments (see the UK's *International Citizen Service*) can use volunteers to support their work at nearly every level. What is key to being a *great* volunteer is thinking about how your skills match up with what the organisation needs. Fundraising and administrative volunteering roles may not be the sexiest, but sometimes they are the ones where you can add the most value.

EARLY-CAREER PROFESSIONALS:
Bring a breath of fresh air into institutions that have been working on these complex problems for years and years. Put your ideas into action, but avoid known pitfalls by listening to the voices of experience. Innovation is likely to succeed where vested interests can be set aside, and there is space to be creative in collaboration with those who have more experience of the opportunities for, and barriers to, practical action.

LATER-CAREER PROFESSIONALS:
Consider mentoring early-career professionals in your field, either close to home or further afield. Information and solutions to practical concerns that you take for granted could, when shared with a mentee, be the difference between inaction and action, allowing more and richer ideas to see the light of day.

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CHAPTER FOUR:

TAKE ACTION - EVERYONE!

We are all stakeholders in the next global development agenda, because everyone has something at stake. So far in this report, contributions have been largely from the usual development suspects: NGOs, academics and policy makers. To further illustrate the point that everyone can and must contribute appropriately to the post-2015 development agenda, in the last section of this report, we turn the focus to the groups of people who are least often perceived to be associated with equitable, sustainable development for the public good – businesses and entrepreneurs.

Business cannot continue as usual. Like the rest of the world, businesses must listen to the voices of the poor and must move forward with self-reflection and openness to new models which allow them to reconceptualise new ways of growing and developing. As Aled Jones has shown on page 48, it simply won't be possible to operate with the same nonchalance about resources, material or human, nor to ignore the environmental or social impact of our actions. Environmental degradation and growing inequality put everyone in jeopardy.

CHALLENGE

IS THERE A ROLE FOR BUSINESS IN NAVIGATING US THROUGH THE 'PERFECT STORM'?

Our development futures are interconnected; the consequences of making business and policy decisions with disregard for global development goals are likely to be damaging for companies and government as well as for those directly affected by poverty, hunger, conflict and disasters. Polly Courtice encourages business to wake up to the threat of the 'perfect storm' that approaches, and take action to drive economic activity that enhances, rather than damages, the environment and sustains, rather than erodes, livelihoods and wellbeing.

POLLY COURTICE LVO,
DIRECTOR,
CAMBRIDGE PROGRAMME
FOR SUSTAINABILITY
LEADERSHIP

The world has a singular challenge: how to provide for as many as nine billion people by 2050 with finite resources, whilst adapting to the destabilising effect of a warmer, less predictable climate.

Since the year 2000, the Millennium Development Goals (MDGs) have galvanised governments, civil society organisations and businesses around the world to tackle poverty – and although not all the goals will be met by 2015, the evidence of some significant progress is widespread. But what about the next 20 years and beyond? Trends suggest that societies will face growing challenges across a range of issues – from climate change and biodiversity loss to inequality and the digital divide – that will shape a very different development agenda.

By 2030, the number of people living in extreme poverty is expected to halve from 1.2 billion to 600 million, with a consequent rise in the global middle class to nearly 5 billion, of which 3.2 billion will be in the Asia-Pacific region[29]. That is the good news.

THE BAD NEWS
The bad news is that a more affluent, more urban global population will have potentially devastating impacts on the environment, if the emerging countries follow the same energy- and resource-intensive path of the West.

Under a 'business as usual' scenario, between 2010 and 2030 it is predicted that between 150 and 200 species of life will continue to go extinct every 24 hours as biodiversity declines, and carbon emissions will have risen 30%[30]. Crucially, environmental impacts like these over the coming decades are inextricably connected to human wellbeing. For example, it is also predicted that 350 million people will require immediate assistance as a result of weather-related disasters by 2030. By 2050, an estimated 200 million environmental refugees will exist, of which 150 million will be 'climate refugees', most in developing countries[31]. Furthermore, 6 million people will live in water stressed river basins, and more than 5 million people could die prematurely as a result of industrial pollution.

What these statistics – and many others – forcibly demonstrate is that advancing human development with disregard for the environmental impacts of economic advancement is a recipe for disaster. In fact, under an environmental disaster scenario, rather than extreme poverty dropping to under 300 million in sub-Saharan Africa and to 80 million in South Asia, it would go up in those regions to 1 billion and 1.1 billion respectively[32]. The message is clear: the next 15-year agenda on human development must factor in environmental development. In short, it must properly embrace sustainable development. Failure to do so could lead to the 'overshoot and collapse of our environmental, social and economic systems', forecast as early as 1972 in *The Limits to Growth*[33] and reiterated in the Thirty-Year Update in 2004.

Thankfully, the need for a critical shift in thinking and action was recognised at the Rio+20 United Nations (UN) Conference on Sustainable Development in 2012, where a proposal to replace the MDGs with SDGs – sustainable development goals – was accepted and included in the official output document, *The Future We Want.* Specifically, there is a commitment by all member states to a process of developing the SDGs that 'will build upon the Millennium Development Goals and converge with the post 2015 development agenda'.

PREPARING FOR THE STORM
In order to succeed, the SDGs process will need to be built on a platform of minimum acceptable social conditions and maximum acceptable environmental impacts. The 'social floor' is characterised by Kate Raworth, a Senior Researcher at Oxfam, who proposed 11 fundamental building blocks for a social foundation of safety and justice[34].

On some of these – such as healthcare, education, water and nutrition – we are making significant progress, while others – including social equity, gender equality and resilience – leave the floor perilously riven, putting the poorest and most marginalised at even greater risk of disability, early death and disaster.

The environmental limits which we cannot exceed if we are to thrive as a species are reflected in the work of Johan Rockström and others at the Stockholm Resilience Institute. According to their analysis, there are nine main environmental limits, of which we have already exceeded three – biodiversity, the nitrogen cycle and climate change.

Of the others, phosphorous flows and ocean acidification are fast approaching the limit. Crossing these boundaries could generate abrupt or irreversible environmental changes, while respecting the boundaries reduces the risks to human society. The space between the environmental limits and the social floor are what Kate Raworth calls "the safe and just operating space for humanity".

If we were to accept these limits as the
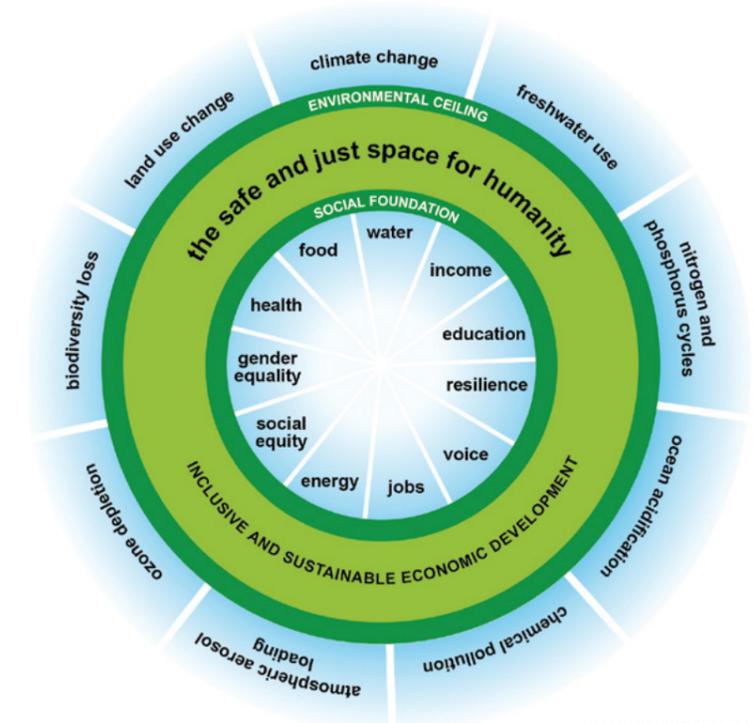
Lauded for its commitment to integrating human development and environmental sustainability, the UN's *The Future We Want* was also criticised for lacking legally-binding and time-bound targets.

It will be impossible not to respond to the 'perfect storm' of food shortages, scarce water and insufficient energy resources.

A SAFE AND JUST OPERATING SPACE FOR HUMANITY. © OXFAM

29. United Nations Development Programme (UNDP). (2013). *UNDP Human Development Report 2013.*

30. Organisation For Economic Cooperation And Development (OECD). (2012). *OECD Environmental Outlook to 2050.*

31. The Climate Institute and Environmental Justice Forum.

32. Pardee Centre for International Futures, cited in *UNDP Human Development Report 2013.*

33. Meadows, D.H., Meadows, D.I., Randers, J., Behrens W.W. (1972). *The Limits to Growth: A Report to The Club of Rome.* New York: Universe Books. See also page 48.

34. Raworth, K. (2012). A Safe and Just Space for Humanity. Oxfam Discussion Paper.

Cambridge Programme for Sustainability Leadership believes businesses can show as much leadership as governments when it comes to sustainable development.

danger markers on the road to human development between 2015 and 2030, the question still remains as to whether we have the political, corporate and social will to navigate within these boundaries. John Beddington, Professor of Applied Population Biology at Imperial College London and former Chief Scientific Adviser to the UK government, warned in 2009 that we face a 'perfect storm' of food shortages, scarce water and insufficient energy resources, which threaten to unleash public unrest, cross-border conflicts and mass migration as people flee from the worst-affected regions. In his view, it will be impossible not to respond to these dramatic events as they unfold over the coming decades[35]. It will certainly be a major challenge to deliver the emerging 2015 sustainable development goals without addressing these challenges.

TRANSFORMING BUSINESS

Very few can doubt the significant role that the business community will need to play in addressing these challenges, working in collaboration with government and civil society in a variety of different ways.

Ultimately this will be driven by enlightened self-interest since companies are increasingly aware that they face their own perfect storm that will affect their competitiveness and viability faced by instability in its operating environment and insecure access to finance, natural and human capital.

On the other hand, those companies that transform their business strategies in the face of these global challenges stand to reap significant social and economic dividends. For the well-prepared and proactive vanguard, they can expect to enjoy enhanced trust and reputation, lucrative product innovation and overall improved competitiveness. Business and society should be under no illusions: this is a watershed moment.

Not all companies will survive the next 15 years – and yet there will be some who can turn challenge into opportunity and thrive on the uncertain road to sustainability.

THOSE COMPANIES THAT TRANSFORM THEIR BUSINESS STRATEGIES IN THE FACE OF THESE GLOBAL CHALLENGES STAND TO REAP SIGNIFICANT SOCIAL AND ECONOMIC DIVIDENDS

WAY FORWARD

Well-known, well-established, multinational businesses with multi-million pound turnovers are demonstrating how it is possible to take the lead in making sustainable development concerns integral to 'business as usual'. Unilever's Sustainable Living Plan (2010) and PUMA's Environmental Profit & Loss (EP&L) Accounting are two such examples.

UNILEVER'S SUSTAINABLE LIVING PLAN

Unilever CEO, Paul Polman, is convinced that businesses that do not embrace sustainable development will not have permission to grow in future. This thinking lies at the heart of the Unilever *Sustainable Living Plan*, launched in 2010, and their *Compass* vision of doubling the size of the business whilst reducing their environmental footprint and increasing their positive social impact.

To achieve the vision, Unilever has set clear goals to halve the environmental footprint of their products, to help more than 1 billion people take action to improve their health and well-being, to source 100% of agricultural raw materials sustainably and to enhance the livelihoods of people across their value chain. By 2012, significant progress had been made:

- 224 million people had been helped by Unilever to take action to improve their health and well-being.
- All US operations had moved to purchasing their energy from certified, renewable sources.
- More than half of the Unilever sites worldwide had achieved zero non-hazardous waste to landfill.
- Over a third of agricultural raw materials were sourced sustainably and all palm oil was covered by GreenPalm certificates.

"As the thinking becomes embedded in our business," concludes Polman, "there is increasing evidence that it is accelerating our growth in ways that contribute to positive change in people's lives."

PUMA'S ENVIRONMENTAL PROFIT & LOSS ACCOUNT

Jochen Zeitz, former Executive Chairman of PUMA, believes the unprecedented *PUMA Environmental Profit and Loss Account* (E P&L) has been indispensable for PUMA: "It makes us realise the immense value of nature's services that are currently being taken for granted but without which companies could not sustain themselves."

The E P&L was inspired by *The Economics of Ecosystems and Biodiversity* (TEEB) study that estimated annual economic impacts due to biodiversity loss and ecosystem degradation are between £1.2 trillion and £2.8 trillion annually. PUMA estimates their own environmental impacts at £122 million, including:

- £40 million each from the use of water and the generation of greenhouse gas emissions.
- £31 million from the conversion of land for agriculture for key raw materials such as leather, cotton and rubber.
- £9.3 million from other air pollution affecting acid rain and smog and £2.5 million from the impacts of waste.

"I sincerely hope that the PUMA E P&L and its results will open eyes in the corporate world," concludes Zeitz. "And make the point that the current economic model, which originated in the industrial revolution some 100 years ago, must be radically changed … to one that works *with* nature, not *against* it."

35. Beddington, J. (2009). Food, Energy, Water and The Climate: A Perfect Storm of Global Events? *Lecture to Sustainable Development UK 2009 Conference.*

WAY FORWARD

BY PUTTING SUSTAINABILITY AT THE HEART OF INNOVATION

Businesses that are thinking about the future sustainability of their bottom line are taking the social, economic and environmental impact of their products and services into consideration. Cambridge-based Azuri Technologies, like any savvy business, has taken the lead in creating a new solar technology that is needed, wanted and affordable in its target market – in this case, sub-Saharan Africa. As well as generating solar power, it is also generating local jobs and social good.

Solar power systems can provide renewable energy in remote areas of the world not connected to the grid. However, the high upfront cost of such a system limits the number of people who can afford to buy one. Many people in large parts of Africa, for example, continue to rely on kerosene fuel instead, which is expensive, can cause fires and produces harmful smoke.

Azuri Technologies, based in Cambridge, has created 'Indigo', a pay-as-you-go system which combines solar and mobile technologies to solve these problems. A system, installed by a local Azuri dealer for a one-off installation fee of around £6.25, can power two LED lights for at least eight hours and charge a mobile phone. The customer buys weekly scratchcards for less than £1 to enable continued use of the system; a code printed on the scratchcard is sent to Azuri via SMS, and an activation code texted back. After about 80 payments, there is the option to permanently unlock the system or to upgrade to a larger one, allowing people to gradually increase the amount of energy they have access to, as and when they can afford to do so.

Paying less than £1 a week for the Indigo system is up to 50% cheaper than paying for kerosene and phone-charging elsewhere, and people can work during the time saved by not having to go to the market to charge a phone. The extra hours of light mean that people can also work later, and children are able to study in the evenings. Indigo also provides increased opportunities for employment; people can sell scratchcards, run a phone-charging business, or train to install the systems themselves.

The project has already had huge success; as of autumn 2013, there were 21,000 Indigo systems, either in the hands of customers or in the supply chain in rural areas of East, Southern and West Africa. In June 2013, the first customers in Kenya completed the pay-as-you-go journey and have unlocked their units forever.

Azuri's Indigo system shows that businesses in emerging markets can be successful while also having a hugely positive impact on people's standard of living; in this case enabling them to access cheaper, safer, greener energy, in an innovative and sustainable way.

SAMUEL KIMANI BLOWS OUT HIS KEROSENE LAMP, REPLACING IT WITH SUSTAINABLE INDIGO.
©AZURI TECHNOLOGIES

"WITH KEROSENE I COULDN'T READ COMFORTABLY, ALWAYS STRAINING. BUT IT WAS THE CHILDREN WHO SUFFERED MOST; WE USED TO RUN OUT OF KEROSENE FOUR OR FIVE TIMES A MONTH, AND WITH NO LIGHT THEY COULDN'T COMPLETE THEIR STUDIES.

"NOW WE HAVE CLEAN PERMANENT LIGHT, WE ARE SAVING MONEY, AND I AM SO HAPPY FOR ME AND MY FAMILY." SAMUEL KIMANI, FIRST INDIGO CUSTOMER

CHALLENGE

WAY FORWARD

IS IT POSSIBLE TO SIMULTANEOUSLY GENERATE MEANINGFUL JOBS, SOCIAL GOOD AND PROFIT AMONG THE POOREST FOUR BILLION PEOPLE?

It's not just innovators in developed countries who are working towards sustainable solutions to challenges facing the poor, and tapping into the £3 trillion market opportunity at the bottom of the pyramid[36] whilst doing so. Innovators all over the world are tapping into the spirit of 'jugaad': frugal, flexible thinking to solve problems in their local communities and make a profit while doing so. As Jaideep Prabhu discusses below, they do this by appealing specifically to the broad base of consumers with little individual spending power who nevertheless constitute a massive potential market for products that appropriately address their needs.

PROF JAIDEEP PRABHU, DIRECTOR, CENTRE FOR INDIA & GLOBAL BUSINESS. JUDGE BUSINESS SCHOOL, UNIVERSITY OF CAMBRIDGE

The World Resources Institute estimates that there are 4 billion people around the world who live on less than £6 a day[37]. Dubbed the "next 4 billion" these people face significant unmet needs in core areas such as health, education, energy, food and financial services. For years this very large part of the world's population was mainly the target of aid or was left to the mercy of governments. More recently, however, private sectors firms, both large and small, have begun to see the bottom of the pyramid as a market opportunity and have begun to design market-based solutions to meet their needs. The World Resources Institute estimates that the market opportunity is significant: in the vicinity of £3 trillion, or about the size of the Chinese economy.

Realising this market opportunity is not, however, easy. Firms developing market solutions for the next 4 billion face significant challenges in meeting the needs of these large numbers in an economically viable way, both for themselves as well as their customers. The first significant challenge is affordability: the solutions need to be radically affordable to meet the low

purchasing power of the poor. The second challenge is accessibility: large numbers of the next 4 billion, especially in Asia and Africa, live in remote, inaccessible locations. Reaching them in an economically viable manner is a significant operational and economic challenge for firms intending to serve them. The final challenge is scale: in order to make these businesses work, firms have to be able to reach large numbers of customers quickly, and this is far from being a trivial challenge.

JUGAAD INNOVATION

Innovation thus becomes a central part of the puzzle. In order to achieve affordability, accessibility and scale, firms have begun to radically rethink how they innovate and market their solutions to low-income customers. These solutions often (but not always) involve leveraging ubiquitous technologies like mobile phones and frequently (if not always) involve treating low-income communities not only as consumers but also as co-producers or employees in the supply chain. Such private sector involvement in the bottom of the pyramid

Mobile phones have a strong economic impact in developing countries. They are also drivers of democracy, gender equality and education[38].

THE SELF-EXPANDING DIABETES CLINIC

After China, India has the dubious distinction of being the diabetes capital of the world. In many cases, rural patients don't know what diabetes is, let alone that they may be suffering from it. Even when they do know, the lack of rural healthcare means travelling to distant cities, taking time away from work, to get medical attention. Given that 70% of India's 1.2 billion people live in villages, this situation has the makings of a public health disaster.

Enter Dr Viswanathan Mohan, director of the Madras Diabetes Research Foundation and chairman of Dr Mohan's Diabetes Specialities Centre in Chennai, capital of the South Indian state of Tamil Nadu. Deeply concerned about the consequences of a looming public health crisis, and aware of India's socio-economic realities, Dr Mohan engaged in a typically frugal and flexible piece of thinking: what if physicians could remotely consult patients without either group having to travel?

After much trial and error, he brought to life a mobile clinic, housed in a satellite-enabled van, which visits some of the remotest parts of Tamil Nadu and links urban doctors to

rural patients and community health workers. The van has telemedicine technologies to conduct diagnostic tests and transmit them via satellite even from areas too remote for internet connectivity. From their offices in Chennai, Dr Mohan and colleagues can see and communicate remotely, in real time, with rural patients through video monitors, while tests such as retinal scans are transmitted within seconds for immediate evaluation.

To avoid straining the frugal business model required improvisations such as partnering with the Indian Space Research Organisation to obtain free satellite communications for his telemedicine service, and recruiting young volunteers from small towns to run most of the operations in his mobile clinic. The use of young volunteers who acquire skills and social capital through the process is an integral part of the solution, and one that not only serves health care needs but also generates meaningful work for low-income communities. Already Dr Mohan and colleagues have screened over 50,000 people across over 40 villages in Tamil Nadu and provided treatment to thousands of patients.

not only helps meet the unmet needs of the poor as consumers, but it also helps create jobs and livelihoods, thus improving skills, productivity and buying power.

Countries such as India are teeming with frugal and flexible innovators. In the nearly four years that my co-authors and I have been researching the

phenomenon of *jugaad* (a Hindi term that roughly translates as 'overcoming harsh constraints by improvising an effective solution using limited resources'), we encountered hundreds of entrepreneurs in resource-constrained circumstances worldwide, innovating in areas as diverse as health care, education, financial services, energy and entertainment[39].

36. The 'bottom of the pyramid' is a term often used in economics and business when describing market opportunities targeted at the poorest four billion people, living on under £1.50 per day.

37. Adjusted for purchasing power parity.

38. A 2013 Vodafone Institute Survey showed that rising mobile phone subscriptions will account for a corresponding ascent in India's per capita GDP by £30 per year between 2010 and 2020.

39. Radjou, N., Prabhu, J., & Ahuja, S. (2012). *Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth.* San Francisco: Jossey-Bass.

A UNIVERSAL SOLUTION TO UNIVERSAL CHALLENGES

The fruits of *jugaad* innovation include the £1,250 Tata Nano car, £30 Aakash tablet PC, 1 pence/minute mobile phone calls, £300 electrocardiography (ECG) machines (and 60 pence ECG scans), £15 water purifier, £45 fridge that runs on batteries, to name but a few.

In the course of our research we learned that the entrepreneurial spirit of *jugaad* is not limited to India. It is widely practiced in Argentina, Brazil, China, Costa Rica, India, Kenya, Mexico, the Philippines and other emerging economies. Brazilians call it *gambiarra*; the Chinese, *zizhu chuangxin*; and Kenyans, *jua kali*.

A resource-constrained and unpredictable environment makes frugal and flexible innovation necessary, even vital. Specifically, *jugaad* entrepreneurs are resilient, frugal, adaptable, inclusive, empathetic and passionate. The last three traits in particular mean that their solutions not only meet the unmet needs of the bottom of the pyramid, but they also help provide meaningful jobs and livelihoods for the poor.

For firms and governments around the world struggling to deal with scarcity and complexity, our research suggests that *jugaad* and the emerging markets it comes from offer frugal solutions to the unmet needs at the bottom of the pyramid while simultaneously creating meaningful jobs for the poor. Innovators like Dr Mohan, and his relentless pursuit of frugal and flexible solutions, could be just what the world needs to grow while improving the working lives of the poor.

JUGAAD ENTREPRENEURS' SOLUTIONS NOT ONLY MEET THE UNMET NEEDS OF THE BOTTOM OF THE PYRAMID, BUT THEY ALSO HELP PROVIDE MEANINGFUL JOBS AND LIVELIHOODS FOR THE POOR

WAY FORWARD

'YES', SAY VENTURE CAPITALISTS WHO INVEST IN UNCONVENTIONAL MARKETS: VACCINES AND DRUGS FOR THE VERY POOR

"WORKING FOR THE GHIF FEELS LIKE A CONTINUATION OF MY PHD. THE GOAL HAS NOT CHANGED – TO COMMERCIALISE GLOBAL HEALTH DRUGS AND VACCINES – BUT THE REALM HAS SHIFTED FROM THEORY TO PRACTICE."

DR JULIA FAN LI,
DIRECTOR, LION'S HEAD
GLOBAL PARTNERS

So you have a background in private-sector accounting and you want to revolutionise global health? You never know when a unique combination of skills and experience can lead to something entirely new. Take Julia Fan Li, for example ...

Julia Fan Li wrapped up her Cambridge PhD in 2012, and by 2013 had become the Director of the Global Health Investment Fund (GHIF), a pioneering catalytic impact fund that helps advance the most promising interventions to fight challenges in low-income countries such as malaria, tuberculosis, HIV/AIDS and maternal and infant mortality.

Li had a background in finance and immunology, but most importantly, she had persistence. Her idea for a social venture capital fund to finance global health research and development (R&D) was inspired by a global health entrepreneur she met during her Masters in Bioscience Course in 2009.

She not only went on to pursue a PhD in innovative financing for global health with the help of a Gates Scholarship but also sought to build the networks and knowledge she needed to actualise the project.

She wrote blogs, organised conferences, took a secondment at the World Health Organisation – and did everything short of knocking on the door at the Gates Foundation to pitch her idea (no, she did that too!).

In 2012 at the conclusion of her PhD, she organised a conference on global health and finance[40], bringing stakeholders working in the area together, including the Wellcome Trust and member state representatives from Brazil and Rwanda. She had good relationships with the Rwandan delegates because she worked there between her MPhil and PhD and maintains her connection with the country through the African Innovation Prize[41].

Since she first was inspired by the role of social venture capital in 2009, she has worked hard through PhD research to develop theory. Now that the Global Health Investment Fund is a reality, she can get down to operational and hands-on matters.

40. The Humanitarian Centre was proud to support Julia's conference as part of our Global Health Year. www.bit.ly/ghcfroundtable

41. The African Innovation Prize, started by Julia Fan Li and supported by the Humanitarian Centre, helps budding entrepreneurs in Rwanda bring social innovation to fruition.

YOU!

TAKE ACTION!

SOCIAL NETWORKERS:

Give more than money. Two new social networking platforms being developed in Cambridge – Crowd Exchange and Impossible.com – are re-imagining what 'exchange' looks like beyond handing cash over for services. Social networks like these can empower everyone to make a contribution to alleviating poverty and hardship by giving what you can, whether that's an outlet for charging a phone in an emergency situation, a used textbook, or simply friendship.

SHOPPERS:

Vote with your wallet. You can let companies know how you feel about their ethical and environmental practices by supporting the ones that are doing well by doing good. Oxfam's *Behind the Brands* report helps consumers to track the impact of their favourite food products on community development all around the world.

CAUSE-SEEKERS:

Get online. It has never been easier to contribute directly to something you are passionate about, by voting or making a financial donation. Change.org for online petitions and Indiegogo for fundraising are only two examples of this.

© SEED PROJECT

CONCLUSION

The last chapter in this report calls us to take individual and collective action for more equitable and sustainable development in the most appropriate, effective way we can. But the story doesn't end here. We would like to conclude the report by returning to the beginning – to critical self-reflection, respectful listening and appropriate engagement. As we have seen in working towards achieving the Millennium Development Goals (MDGs), an intention set into motion does not necessarily hit the target goal. And goals are only ever as good as the information available, and stakeholder involvement possible, at the time they are set. Development is not a trajectory; it's a process. Moreover it's a process that is often more circular in nature than linear. As Lord Nigel Crisp pointed out in the 2012 Cambridge International Development report, it is the 'developed' nations of the world that often have the least flexibility to learn, to innovate – to truly develop – as they are entrenched in their own vested interests.

Drawing on lessons learned since the MDGs were implemented in the year 2000, agreement will be reached in setting the Sustainable Development Goals (SDGs) to replace them in 2015. This report is a starting point for the Humanitarian Centre's engagement with the SDGs. We look forward to providing opportunities for everyone who interacts with us to make a real contribution to shaping our common development futures. We all need to get better at 1) listening to and learning from those most affected by poverty; 2) understanding and working in our increasingly complex world; 3) adding value to successful initiatives, and innovating when there are none; 4) taking individual and collective action in whatever way we can; and, lastly, 5) committing to continuous reflection and the agility to shift course based on what is working, and what is not. The better we get at doing these things, the more likely we are to be able to adjust our goals along the path to achieving a more equitable and sustainable world.

AFTERWORD: EACH ONE OF US, TOGETHER, CAN MAKE 'MASSIVE SMALL CHANGE'

ANDREW LAMB,
FIRST & FOUNDING CEO,
ENGINEERS WITHOUT
BORDERS UK

Cambridge International Development reports are both inspiring and intimidating. I think the reports make us feel both big and small at the same time: big because we are associated with these incredible people through the Humanitarian Centre network; and small because it is sometimes so very hard to see how we can make a difference too, or because they lead us to question what we are doing already.

With a topic as big as the key challenges for global development for the next 15 years, and with the contributors that the Humanitarian Centre has gathered for this particular report, I think we can feel more inspired and more intimidated than ever.

As we the members of the Humanitarian Centre network look to accept the challenge that Professor Borysiewicz has given us in his foreword, the question we ask ourselves is 'how are we going to do this?'.

The question of 'how' is an important one because it considers the way we do something. And in public discourse on international development, 'how' something is done is not yet given the same level of attention as 'what' is done.

Engineers Without Borders UK (EWB-UK) is an organisation that was started by students in Cambridge and has been incubated by the Humanitarian Centre and the University of Cambridge. EWB-UK wants to have a big impact because it is unhappy with the way the world is and wants to change it. And it wants to remain a small organisation so that it fully empowers its volunteers and so that people are valued. Its new strategy considers the way EWB-UK does its work and so commits to a philosophy called 'massive small change'.

Ten ideas designed by our members and partners for EWB-UK drive the massive small change philosophy:

- Do everything in partnership with others.
- Only do things that scale by a factor of six.
- We don't do technology, we do engineering.
- People for projects, not projects for people.
- We believe in the spirit of volunteering.
- Convergence of interest, not conflict of interest.
- Empower everyone.
- Openness is how we grow.
- Grow influence, not authority.
- Consider everything in context.

We have found that what really matters is the strategic disposition of an organisation towards its work in international development, and these ideas help us to guide our collaborations.

I think that concept of massive small change is valuable beyond EWB-UK because it helps to re-frame how things are done in development more generally. Examples of massive small change in action can be seen throughout this report…

The concept of massive small change helps the appropriate technology movement move from the old industrial paradigm and into the network age; we have seen that Azuri Technologies are supplying electricity without the need for a grid connection or a bank account (a small solar kit and mobile phone will do), and so can reach massive numbers of people for the first time.

The concept helps to identify decentralised and distributed solutions that are rooted in context; we have seen how *Africa's Voices* can include massive numbers of people in conversations on local issues, with the results analysed in Cambridge, at the Centre for Governance and Human Rights.

It shows us a new path of development where we can begin to overcome the tensions between poverty reduction and environmental protection; we have seen that a small decision by Unilever to send zero non-hazardous waste to landfill has had a global impact because of the sheer scale of the company.

And it can even help us change institutions by identifying common opportunities that scale; such as the bold Stat.io initiative that is trying to improve accountability around the world by aggregating the world's government data for easy access.

So as the Humanitarian Centre network moves towards Professor Borysiewicz's challenge and tries to find ways of matching universities' skills and motivations with the world's development needs… let's first consider not what we are going to do, but how we are going to do it.

Far more opportunities and ideas will begin to emerge to create sustainable human development over the next 15 years. And we will feel much more inspired, and much less intimidated.

ENGINEERS WITHOUT BORDERS UK, LOUGHBOROUGH UNIVERSITY AND PRACTICAL ACTION HAVE LAUNCHED A PARTNERSHIP WITH NGOS AND UNIVERSITIES AROUND THE WORLD TO IMPROVE ACCESS TO RESOURCES AND DEVELOP BEST PRACTICE FOR ENGINEERING TEACHERS IN HIGHER EDUCATION, AND LAUNCHED AN ANNUAL AWARD TO ENCOURAGE ACADEMICS TO PARTICIPATE. © EWB UK

ORGANISATIONS THAT APPEAR
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www.africaahead.org

African Futures Institute (page 10)
www.iag-agi.org

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www.csap.cam.ac.uk

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World Resources Institute (page 60)
www.wri.org

HUMANITARIAN CENTRE
MEMBER ORGANISATIONS

The Humanitarian Centre is a unique network that tackles some of the most complex aspects of global poverty. It does this by creating cross-fertilisations between Cambridge's world-class minds, harnessing the expertise of our community. It brings together otherwise disparate specialists in technology and business with development practitioners in the field and students – to come up with effective solutions. No other organisation does this.

The Centre also supports over 50 member organisations, through training in marketing, volunteer management and monitoring and evaluation. The power of the Humanitarian Centre is in its energy and ability to inspire, empower and equip Cambridge's international development community. To find out how to become a member of the network and benefit from a range of services, please visit www.humanitariancentre.org

Addenbrooke's Abroad
www.addenbrookesabroad.org.uk
Exchanging skills and experience with hospitals abroad

African Innovation Prize
www.africaninnovationprize.org
Encouraging university entrepreneurship in Rwanda and Sierra Leone

Afrinspire
www.afrinspire.org.uk
Supporting indigenous African initiatives in development

Aiducation
www.aiducation.org
Giving bright students in developing countries access to education

Aptivate
www.aptivate.org
IT services for International Development

Bridges to Belarus
www.bridgestobelarus.org.uk
Supporting children and families affected by the Chernobyl disaster

Cambridge Crystallographic Data Centre
www.ccdc.cam.ac.uk
Enabling structural chemistry understanding, discovery and development worldwide

Cambridge Development Initiative
www.cdi.soc.srcf.net
Student development consultancy focusing on entrepreneurship, public services and education

Cambridge Fairtrade Steering Group
www.fairtradecambridge.wordpress.com
Promoting and encouraging fairtrade

Cambridge International Arts
www.cambridgeinternationalarts.org
Celebrating the international identity of Cambridge through the arts

Cambridge to Africa
www.cambridgetoafrica.org
A collaborative network

Cambridge University English Language Studies for Tibetans Society
www.himalayan.soc.srcf.net
Supports and coordinates volunteer teaching projects in Asia

CAMVOL
www.camvol.org
Developing volunteer opportunities in India for Cambridge students

CBM-UK
www.cbmuk.org.uk
Improving the quality of life for persons with disabilities

Concordis International
concordis-international.org
Building relationships for sustainable peace

Cambridge University Save the Children Society
www.cusavethechildren.wordpress.com
Raising awareness of domestic and global issues and supporting fundraising

Cambridge University International Development Society
www.cuid.org
Raising awareness on international development issues

Cambridge University Southern African Fund for Education
http://www.srcf.ucam.org/cusafe
Fundraising for education projects for development in Sub-Saharan Africa

Education Partnerships Africa
www.epafrica.org
Improving secondary school education for young people in rural Kenya

The Eco House Initiative
www.ecohouseinitiative.org
Introducing affordable sustainable housing systems for the urban poor

Engineers Without Borders Cambridge
www.ewb-cam.org
Removing barriers to development through engineering

Engineers Without Borders UK
www.ewb-uk.org
Removing barriers to development through engineering

English Language Studies for Tibetans
http://www.himalayan.soc.srcf.net
Advancing education among Tibetan and Himalayan communities

Global Poverty Project, Cambridge
www.globalpovertyproject.com
Invigorating the global movement to take effective action on poverty

Global Thinking
www.global-thinking.org.uk
Supporting the global dimension in education within East England

HoverAid
www.hoveraid.org
Reaching the unreachable: using hovercraft to enable development in inaccessible areas

Independent Film Trust
www.independentfilmtrust.org
UK charity acting to advance the cause of independent film-making

Khandel Light
www.khandel-light.co.uk
Improving the lives of vulnerable families in rural Rajasthan

LaNYT Theatre
www.lanyttheatre.org
Empowering and creating positive change through theatre and performing arts.

Cambridge University Student Advocates International
www.cusu.cam.ac.uk/societies/directory/cusai
Advancing the Rule of Law worldwide and protecting the integrity of legal processes in all nations

Managing for Development
www.managing4development.com
Management science researchers passionate about addressing global poverty

ManufacturingChange.org
www.manufacturingchange.org
Online volunteers supporting organisations that use manufacturing to create social change

MedSIN Cambridge
www.srcf.ucam.org/~medsin
Campaigning for political change towards equality in global health

Menelik Partnership
www.menelikpartnership.org
Improving the future for people in DRC through development projects

Momentum Arts
www.momentumarts.org.uk
Engaging artists and diverse communities to create innovative art projects

Mountain Trust
www.mountain-trust.org
Innovative interventions in education, health and human rights in Nepal

Nakuru Environmental and Conservation Trust
www.nectuk.org
Engaging UK and Kenyan Youth with their environment

Oxfam Cambridge
www.cambridgeoxfam.wordpress.com
A global movement to overcome poverty and suffering

PHG Foundation
www.phgfoundation.org
Strives to make advances in biomedicine and genomics universally available

PLOS (Public Library of Science)
www.plos.org
Making scientific and medical literature a freely available resource

Rama Foundation
www.ramafoundation.org.uk
Grass-roots initiatives for change in disadvantaged communities in Rishikesh, India

RedR Cambridge Group
www.ewb-uk.org/redr-cambridge
Preparation for applying engineering in development & disaster relief work

RESULTS UK
www.results.org.uk
An international advocacy organisation working to end global poverty

Seed Project
www.seed-project.org
Promotes sustainable development by empowering disadvantaged communities in Southern Africa

Shelter Centre
www.sheltercentre.org
Supporting the humanitarian community in post-conflict and disaster shelter

TASTE –The African Science Truck Experience
www.tasteforscience.org
Bringing practical scientific experiments to underprivileged children in Uganda

Touch of Africa
www.touch-of-africa.co.uk
Brings ethically produced African clothing to the Western markets

Transforming Business
www.transformingbusiness.net
Analysing and catalysing enterprise solutions to poverty

Village Ways Partnership
www.villageways.com
Sustainable, responsible tourism benefiting communities in India, Nepal & Ethiopia

VSO Cambridge
www.vso.org.uk/act/supporter-groups/cambridge.asp
Working through volunteers to fight poverty in developing countries

Water Aid Cambridge
www.wateraid.org/uk
Making safe water, hygiene and sanitation accessible in poor communities

World Development Movement Cambridge
www.groups.wdm.org.uk/cambridge
Campaigns and lobbying against the underlying causes of poverty

HOW TO GET INVOLVED WITH
THE HUMANITARIAN CENTRE

■ Become a member of the Humanitarian Centre. Join a dynamic network of individuals and organisations working to reduce global poverty and inequality, access our Resource Centre, and gain reduced entry to training, networking and learning events. For more information, please visit **www.humanitariancentre.org.**

■ Sign up for regular updates on development-related events and activities in Cambridge, including the Humanitarian Centre's training, networking and learning events. To subscribe to our mailing list, visit **www.humanitariancentre.org.** You can also find out what the Humanitarian Centre and our members are up to on Linkedin, Facebook and Twitter.

■ Volunteer or provide expertise. The Humanitarian Centre welcomes donations of time and expertise. If you would like to find out more about volunteering opportunities, or offer pro-bono services, please contact **info@humanitariancentre.org.**

■ Donate or become a corporate sponsor. The Humanitarian Centre is a registered charity. Your donations help us to more effectively address the root cause of poverty and inequality. To make a donation, please go to **www.humanitariancentre.org/support.** To learn about corporate sponsorship opportunities, contact **info@humanitariancentre.org.**

About this report
You can find an online version of this report at **www.humanitariancentre.org/publications.**

This is the fourth *Cambridge International Development* report published by the Humanitarian Centre. You can see our previous reports on Innovation, ICT4D and Global Health at **www.humanitariancentre.org/publications.** If you have comments about this report, please send feedback to **info@humanitariancentre.org.**

the humanitarian centre

The Humanitarian Centre is a unique network that tackles some of the most complex aspects of global poverty. It does this by creating cross-fertilisations between Cambridge's world-class minds, harnessing the expertise of our community. It brings together otherwise disparate specialists in technology and business with development practitioners in the field and students – to come up with effective solutions. No other organisation does this.

The Centre also supports over 50 member organisations, through training in marketing, volunteer management and monitoring and evaluation. The power of the Humanitarian Centre is in its energy and ability to inspire, empower and equip Cambridge's international development community.

The Humanitarian Centre was founded in 2006 and is a small, independent charity that relies on funding from individuals, trusts and corporate sponsors. ideaSpace currently provides its office space. Our Patron is Lord Wilson of Dinton, former Master of Emmanuel College, Cambridge.

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Cover image:
The audience at Khandel Light's Women's Empowerment Day in Rajasthan, India.
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