



# SUSTAINABLE DEVELOPMENT BEGINS WITH EDUCATION

How education can contribute to the proposed post-2015 goals

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*Education is a fundamental right and the basis for progress in every country. Parents need information about health and nutrition if they are to give their children the start in life they deserve. Prosperous countries depend on skilled and educated workers. The challenges of conquering poverty, combatting climate change and achieving truly sustainable development in the coming decades compel us to work together. With partnership, leadership and wise investments in education, we can transform individual lives, national economies and our world.*

”

— BAN KI-MOON, UNITED NATIONS SECRETARY-GENERAL



United Nations  
Educational, Scientific and  
Cultural Organization



**Global Education First Initiative**

The UN Secretary-General's Global Initiative on Education

# Sustainable development post-2015 begins with education

For more than half a century the international community of nations has recognized education as a fundamental human right. In 2000, it agreed to the Millennium Development Goals, which acknowledged education as an indispensable means for people to realize their capabilities, and prioritized the completion of a primary school cycle.

Notwithstanding the centrality of education in treaties, covenants and agreements, the international community has yet to recognize the full potential of **education as a catalyst for development**. While many national governments have increased their commitment to and support for education since 2000, its emphasis among donors and in many countries remains vulnerable to shifting conditions — financial and otherwise.

In the coming months the international community will create a space to re-consider its commitments and obligations to the young and the marginalized in the world, whose voices are often muted. Working together it is imperative that all interested stakeholders recommit themselves to unlocking the transformative power of education.

An important step can be seen in the outcome document of the Open Working Group on **Sustainable Development Goals** (released in July 2014), which reiterates that education is not only an end in itself but also a means to achieving a broad global development agenda. This policy paper provides a succinct, evidence-based overview of the numerous ways in which education can advance the proposed post-2015 sustainable development goals. It underscores the notion that sustainable development for all countries is only truly possible through comprehensive cross-sector efforts that begin with education.

“ *The greatest transformations will not be achieved by one person alone, rather by committed leadership and communities standing side by side. This booklet serves as a reminder that only through genuine collaboration will we see real progress in the new global sustainable development goals. Midwives, teachers, politicians, economists and campaigners must find common ground in their quest to achieve groundbreaking and sustainable change.* ”

— AMINA J. MOHAMMED, Special Advisor to the United Nations Secretary-General on Post-2015 UN Development Planning

# POVERTY REDUCTION

## PROPOSED GOAL 1 > End poverty in all its forms everywhere

The proportion of the people living on less than US\$1.25 a day in developing countries fell from 47% in 1990 to 22% in 2010 and almost 1 billion people are still likely to be extremely poor in 2015. The Open Working Group is proposing the eradication of extreme poverty by 2030.

Education is among the strategies to achieve this goal. It does so indirectly by lowering fertility and the number of dependents per family. But schooling also directly equips people with competencies that increase their income.

**Education enables those in paid formal employment to earn higher wages.** Better-educated individuals in wage employment are paid more to reward them for their higher productivity. On average, one year of education is associated with a 10% increase in wage earnings. Returns to schooling are highest in sub-Saharan Africa, highlighting the need to invest in education in the region.

Education helps protect working men and women from exploitation by increasing their opportunities to obtain secure contracts. In El Salvador, only 5% of workers with less than primary education have an employment contract, leaving them noticeably vulnerable. By contrast, 47% of those with secondary education work under signed contracts.

**Education also offers better livelihoods for those in the non-formal sector.** Many of the poor work as daily labourers or run microenterprises. The more educated they are, the more likely it is that they will start a business and that their businesses will be profitable. In Uganda, owners of household enterprises who had completed primary education earned 36% more than those with no education, and those who had completed lower secondary education earned 56% more. In Thailand, a year of education increased returns to household assets by 7%, primarily because educated households tended to invest the profits.

**Education boosts the income of farmers.** In low income countries, most people do not earn regular wages but instead depend on agriculture. Educated farmers can better interpret and respond to new information, for example to better utilise fertilizers,

adopt soil conservation and erosion-control measures, cultivate cash crops or introduce new seed varieties.

Education also enables rural households to take up opportunities to diversify their income sources. In China, better-educated households during the opening of the economy from the late 1970s allocated more capital to non-agricultural activities.

### **Education is critical to escape chronic poverty.**

For some people, poverty is transitory. But the more vulnerable remain poor for long periods, even all their lives, passing on their poverty to their children. Education is a key way of reducing chronic poverty. Ethiopia has reduced poverty by half since 1995. Raising levels of education, which are particularly low in rural areas, has made a difference. Between 1994 and 2009, for example, rural households where the household head had completed primary education were 16% less likely to be chronically poor.

Getting at least as far as lower secondary school has a particularly strong effect, in a wide range of settings. Among households in rural Viet Nam, those whose heads had lower secondary education were 24% more likely not to be poor four years later than households with no schooling, while the likelihood for those with upper secondary education was 31% higher.

### **Education prevents the transmission of poverty between generations.**

In Guatemala, higher levels of education and cognitive skills among women increased the number of years their children spent in school. In turn, each grade completed raised the wages of these children once they became adults by 10%, while an increase in the reading comprehension test score from 14 points to the mean of 36 points raised their wages by 35%.

In Senegal, inheriting land or a house did not increase consumption, but children whose parents had some formal education were more likely to find off-farm employment and so escape poverty. In particular, the sons of educated mothers in rural areas were 27% more likely to find off-farm employment.

# NUTRITION IMPROVEMENT

## PROPOSED GOAL 2 > End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

The proportion of people who suffer from hunger fell from 23% in 1990/92 to 15% in 2010/12. Yet, one in four children under the age of 5 suffers from moderate or severe stunting, a sign of chronic malnutrition, the underlying cause in more than a third of child deaths globally. For those children who survive, poor nutrition affects their brain development and ability to learn.

But the solution is not just about growing more food. Education is also essential. In low income countries, 1.7 million fewer children would suffer from stunting if all women had completed primary education, rising to 12.2 million if all women had completed secondary education. In South Asia, 22 million fewer children would be stunted if all mothers reached secondary education.

### SCALING UP NUTRITION MOVEMENT

Launched in 2010, 41 countries have committed to the UN initiative, and US\$25 billion has been raised to help achieve its objectives. A roadmap provides the principles and direction for increased global support at the country level, enabling governments and their supporters to better achieve impact.

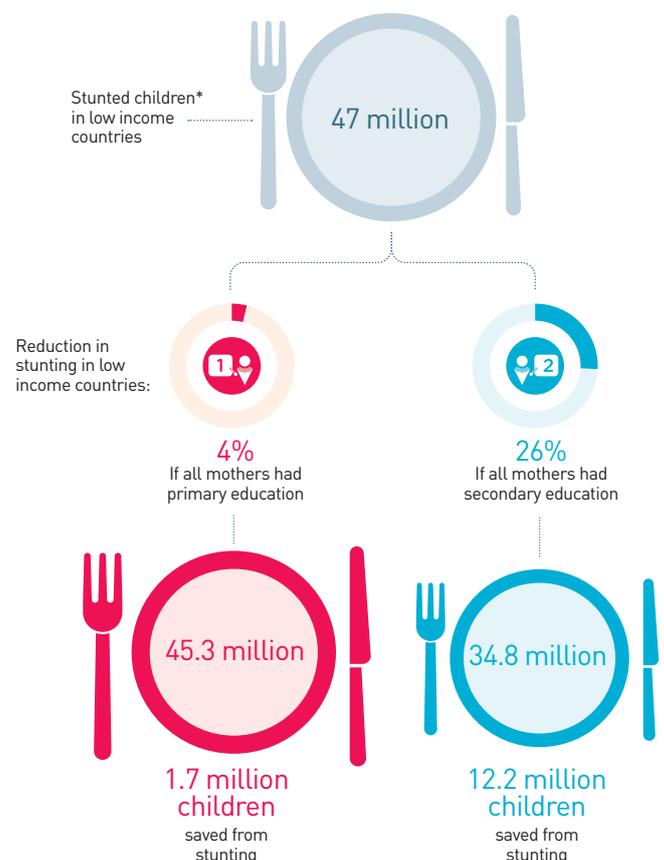
**Education leads parents to apply appropriate health and hygiene practices.** By age 1, when adverse effects of malnutrition on life prospects are likely to be irreversible, children whose mothers had reached lower secondary education were less likely to be stunted by 48% in Andhra Pradesh, India, and by 60% in Peru, compared with those whose mothers had no education, even after taking into account other factors linked to better nutrition, such as mother's height, breastfeeding practices, water and sanitation, and household wealth.

**Education helps ensure a varied diet that includes vital micronutrients.** Young children lacking vitamin A and iron are more likely to be malnourished and more prone to infections and anaemia. In Bangladesh, when both parents had some secondary education, diversity in the

family diet was 10% greater than when neither parent had any education. In Indonesia, only 51% of households where mothers had no education used iodized salt, compared with 95% of households where mothers had completed lower secondary education. Similarly, only 41% of households where mothers had no education provided vitamin A supplements to their children within the past half year, compared with 61% of households where mothers had completed lower secondary education.

**In high income countries, education helps reduce obesity.** A different manifestation of poor nutrition, obesity, has increased in many high-income countries, especially among children. Evidence from Australia, Canada, the Republic of Korea and the United Kingdom shows that education contributes to lower obesity levels. Receiving advice on healthy eating and weight control tends to be more effective with better-educated people.

### MOTHERS' EDUCATION IMPROVES CHILDREN'S NUTRITION



Source: EFA Global Monitoring Report team analysis, based on Demographic and Health Survey data from 2005-2011; UNICEF (2012a).

### ZERO HUNGER CHALLENGE

Launched at the Rio+20 Summit in June 2012, the UN initiative aims to step up efforts to end hunger for an estimated 1 billion people. It has five objectives: 100% access to adequate food for all, all year round; an end to stunting for children under the age of two years, sustainable food systems, doubling smallholder productivity and income, and the end of food waste.

# HEALTH GAINS

## PROPOSED GOAL 3 > Ensure healthy lives and promote well-being for all at all ages

Policy-makers focusing on health often neglect the fact that education is itself a health intervention. Educated people are better informed about specific diseases, so they can take measures to prevent them or act on early signs. They also tend to seek out and use health care services more often and more effectively. This is partly — but not only — because they can afford to spend more on health care, are less exposed to risky or stressful work and living environments, and imitate the good health-related habits of their peers. Education strengthens people's confidence and belief in their ability to achieve goals and make necessary changes to their life. Most of all, educated people tend to have healthier children.

**Mothers' education has saved millions of children's lives.** Between 1990 and 2012, the number of deaths of children under 5 fell from 12.6 to 6.6 million, of which 6.1 million were in low and lower middle income countries. Maternal education accounts for half of all lives saved through lower child mortality rates, while economic growth accounts for less than a tenth. To eliminate preventable child deaths by 2030 urgent action is needed, and education must be part of it. If all women in low and lower middle income countries completed secondary education, the under-5 mortality rate would fall by 49% — an annual saving of 3 million lives.

Educated mothers are more likely to give birth with the help of a midwife or other **skilled birth attendant**. Around 40% of all under-5 deaths occur within the first 28 days of life, the majority being due to complications during delivery. A literate mother is, on average, 23% more likely to have a skilled attendant at birth.

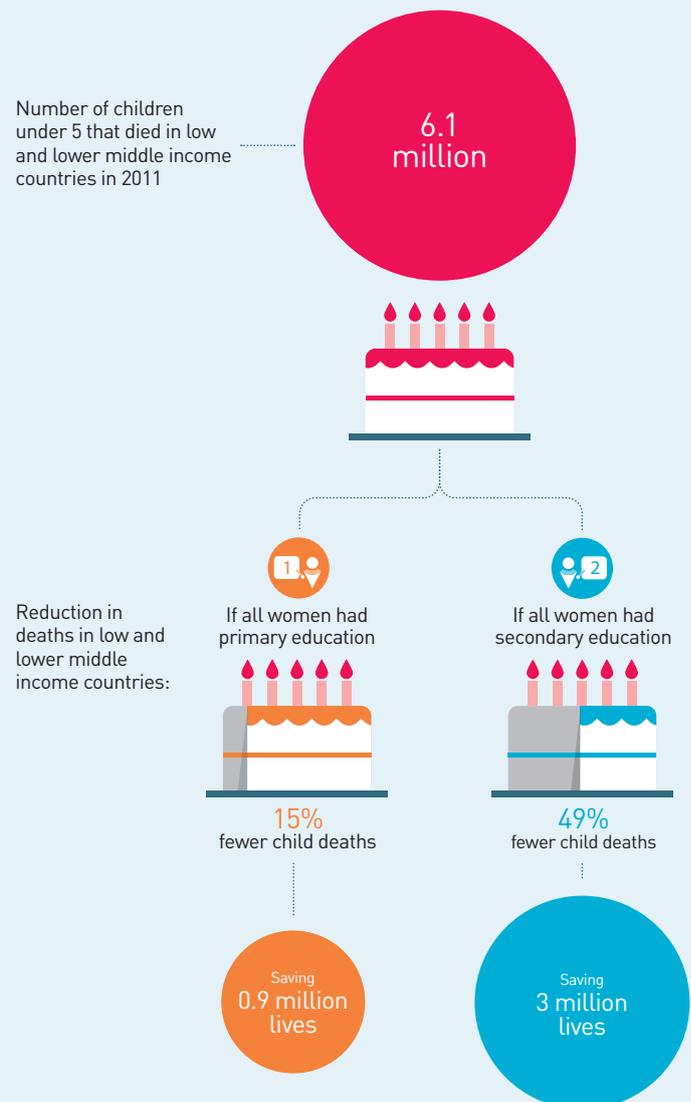
Educated mothers are also likely to ensure their children are **vaccinated**. For example, if all women in low and lower middle income countries had completed secondary education, the probability of a child receiving immunization against diphtheria, tetanus and whooping cough, would have increased by 43%, controlling for factors like household wealth or the average community education level.

Pneumonia is the largest cause of child deaths, accounting for 18% of the total worldwide. As little as one extra year of maternal education is associated with a 14% decrease in the **pneumonia** death rate, equivalent to 170,000 child lives saved every year.

Maternal education reduces all the factors that put children most at risk of dying from pneumonia, including failure to carry out measles vaccination or the use of traditional cooking stoves that give off harmful smoke and fine particles.

Likewise, educated mothers can prevent and treat childhood **diarrhoea**, the third biggest killer of children, accounting for 0.8 million or 11% of child deaths.

### A HIGHER LEVEL OF EDUCATION REDUCES PREVENTABLE CHILD DEATHS



Source: Gakidou (2013); Inter-agency Group for Child Mortality Estimation (2012).

If all women completed secondary education, the reported incidence of diarrhoea would fall by 30% in low and lower middle income countries. An educated mother whose child has symptoms of diarrhoea is more likely to administer oral rehydration solutions and continue feeding.

Apart from helping their children survive, education plays a major role in helping mothers themselves survive the risks of pregnancy and birth. Between 1990 and 2010, the **maternal mortality** ratio fell by 3.1% per year on average, well below the annual decline of 5.5% required to achieve the global goal. As of 2010, the maternal mortality ratio was 210 deaths per 100,000 live births and the post-2015 target is for this to fall to 70 by 2030. Educated women are more likely to adopt simple and low cost practices to maintain hygiene, to react to symptoms such as bleeding or high blood pressure, and to assess how and where to have an abortion. If all women had completed primary education, maternal mortality would have fallen from 210 to 71 deaths per 100,000 births, or by 66%.

## EVERY WOMAN EVERY CHILD

*Launched by UN Secretary-General Ban Ki-moon during the United Nations Millennium Development Goals Summit in September 2010, this initiative mobilizes and intensifies action to address the major health challenges facing women and children around the world. Beyond financial pledges, partners of the initiative have brought about innovative accountability for resources and results, increased access to cost-effective medicines, health commodities and revolutionary mobile phone solutions for health. They have increased action towards the eradication of preventable child deaths and equitable access to voluntary family planning and vaccines.*

### Education plays a major role in containing disease.

According to the World Health Survey, completing lower secondary school increased the odds of not reporting poor health by 18% compared with having no education or less than primary education.

**Malaria** is one of the world's deadliest but most preventable diseases. Improved access to education cannot replace the need for investment in drugs and in bed nets treated with insecticide — one of the most cost-effective ways to prevent malaria — but it has a crucial role to play in complementing these measures.

In the Democratic Republic of the Congo, where a fifth of the world's malaria-related deaths occur, the odds of bed net use increased by about 75% if the household head had completed primary education, even with other possible factors taken into account. An analysis of 11 sub-Saharan African countries showed that in areas of high transmission risk, the odds of malaria parasites in children were 22% lower when mothers had primary education and 36% lower when mothers had secondary education.

In the early phases of the **HIV/AIDS epidemic**, when knowledge about HIV was scarce, the better educated were more vulnerable to the virus. Since then, however, those with more education have tended to avoid risky behaviour because they understood its consequences better, and women have been able to exercise more control over their sexual relationships. In the later phases of the epidemic, the better educated have had a lower chance of being infected in 17 sub-Saharan African countries. Education helps explain the remarkably fast decline in HIV infection rates in Zimbabwe. As of 2010, 75% of women aged 15 to 24 in Zimbabwe had completed lower secondary school, and the HIV prevalence rate had fallen from its peak of 29% in 1997 to under 14%, declining four times faster than in Malawi and Zambia, where fewer than half of young women had completed lower secondary school.

According to the Global Burden of Disease 2010 study, ischaemic heart disease was the first or second cause of death in all regions except sub-Saharan Africa. Lung cancer was the fifth-highest cause for men and tenth for women. The global nature of this concern is reflected in the target to reduce pre-mature mortality from **non-communicable diseases** by one-third by 2030. Tobacco is the leading cause of preventable deaths worldwide but its consumption is increasing, especially in poorer countries.

Education is a powerful tool. In the United States, the more educated were more likely to smoke in the 1950s but they were the faster to change their behaviour when information about the harm caused by smoking was spread. By 2000, they were less likely to smoke than the less educated by at least 10 percentage points. The Global Adult Tobacco Survey showed that in Bangladesh, Egypt and the Philippines, the odds that those with less than secondary education would smoke were over twice as high as of those with tertiary education.

# EDUCATION PROVISION

## PROPOSED GOAL 4 > Ensure inclusive and equitable quality education and promote life-long learning opportunities for all

In addition to the unfinished priorities set forth in the Education for All goals, the overarching Sustainable Development Goal 4 encapsulates a more ambitious and transformative education agenda. This includes enabling all young people to complete a basic education cycle including quality pre-primary education; acquiring knowledge, skills and competencies for work, entrepreneurship and life; experiencing good quality teaching and inclusive classroom practices; and accessing educational opportunities based on equity, flexibility and adaptability. The targets outlined in this proposed Goal would not only guide the world towards progress across many education outcomes, but, in doing so, would also facilitate sustainable social and economic development for countries and communities.

### **When learning starts in infancy, achievement and attainment are greater in primary school and beyond.**

Stimulating children's cognitive development early has large positive effects on children's future trajectories. Twenty-one studies from Latin America, sub-Saharan Africa and South and South-east Asia showed consistent positive impacts on child development when children's cognitive development was stimulated. Good early childhood care and education has a more significant positive impact on children from disadvantaged groups, making it a sound investment, and linking it to long-term positive impacts on education outcomes. In Argentina, the effect of having attended pre-school on third grade test scores was twice as large for students from poor backgrounds as for students from non-poor backgrounds. In rural Bangladesh, a project run by local NGOs set up 1,800 pre-schools and provided them with better materials. Participating children performed better in speaking, reading, writing and mathematics by the second grade of primary school than those who did not attend pre-school.

### **If today's learners complete more years of schooling, the next generation will be even more educated.**

Parents who have attended or completed school are more likely to educate their children. Based on 142 Demographic and Health Surveys from 56 countries between 1990 and 2009, for each additional year of mother's education, the average child attained an extra 0.32 years of education, and for girls the benefit was larger. Across 24 European countries the relationship between parental education levels and the attainment of children has also been found to be strong.

### **Good quality is crucial for benefits to flow from education; this entails efficiency gains for societies and governments.**

Access to education is a necessary but not sufficient condition for education to positively impact development outcomes. Where children are not learning due to poor quality, they are more likely to repeat grades and ultimately drop out. In Ethiopia, India, Peru and Viet Nam children who achieved lower mathematics scores at age 12 were more likely to drop out by age 15 than those who achieved higher scores: nearly half of the poorer performers in Viet Nam had dropped out as compared to a fifth of the higher-achievers. It also makes financial sense to ensure the provision of good quality schools: the cost of those children currently in poor-quality primary schooling, where they are present but not learning, is \$129 billion per year.

### **Equity and inclusion in education are crucial for enabling the best possible learning outcomes.**

Results from the OECD's Programme for International Student Assessment show that the highest-performing school systems allocate educational resources more equitably to under-performing schools. Of 13 countries and economies that made significant gains in mathematics scores on PISA between 2003 and 2012, three increased equity in their systems while another nine maintained already high equity levels. Evidence across 26 countries shows that tracking or streaming students by ability is one contributing factor in greater levels of inequity in education, and in particular when students are tracked from earlier grades.

### **When non-formal and second-chance learning programmes are available, new opportunities open up to become educated and acquire skills.**

Socially marginalised young people are more likely to permanently leave the formal education system, thereby exacerbating patterns of entrenched poverty. In six Latin American countries many young people who participated in a second chance programme gained the skills they needed to overcome marginalisation. After completing the programme, 42% of the 19,600 participants were back in formal education — nearly doubling since the start of the programme.

Investing in education now, in a balanced way across levels and in equitable ways across population groups, will increase the effectiveness of education systems to deliver the anticipated benefits and will have a multiplier effect across the sustainable development agenda.

# GENDER EQUALITY AND EMPOWERMENT

## PROPOSED GOAL 5 > Achieve gender equality and empower all women and girls

Education can be part of a social transformation process involving men, women, boys and girls towards developing a more gender just society. Education can empower women to overcome forms of gender discrimination so they can make more informed choices about their lives. Such empowerment benefits women but also benefits the living conditions of their children and strengthens society.

**Education becomes a passport for women to enter the labour force.** When society becomes more accepting of women's work, women with more education are in a stronger position to get paid work. In Mexico, while 39% of women with primary education are employed, the proportion rises to 48% of those with secondary education.

**Education helps women have a voice.** In India, young women with at least secondary education are 30 percentage points more likely to have a say over their choice of spouse than women with no education.

**Women's education helps avert child marriage.** Around 2.9 million girls are married by the age of 15 in sub-Saharan Africa and South and West Asia, equivalent to one in eight girls in each region. If all girls had secondary education in these two regions, child marriage would fall by 64%, from almost 2.9 million to just over one million.

**Education gives women more control over when to have their first child.** As many as 3.4 million births occur before girls reach age 17 in sub-Saharan Africa and South and West Asia, affecting one in seven young women. In these two regions, early births would fall by 59% from 3.4 to 1.4 million if all women had secondary education.

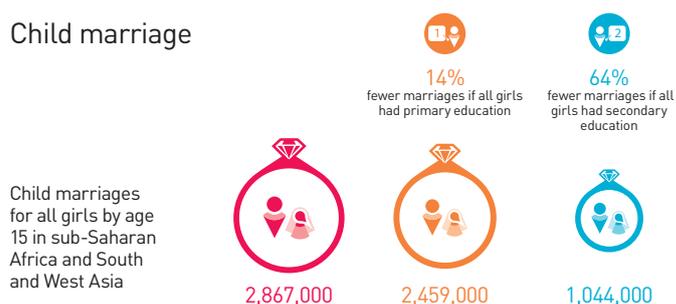
**Education can boost women's confidence and perception of their freedom.** In Sierra Leone, where the expansion of schooling opportunities in the aftermath of the civil war led to a steep increase in the amount of education completed by younger women, an additional year of schooling reduced women's tolerance of domestic violence from 36% to 26%.

**Education ultimately influences women's choice of family size.** In Pakistan, while only 30% of women with no education believe they can have a say over the number of their children, the share increases to 52% among women with primary education and to 63% among women with lower secondary education.

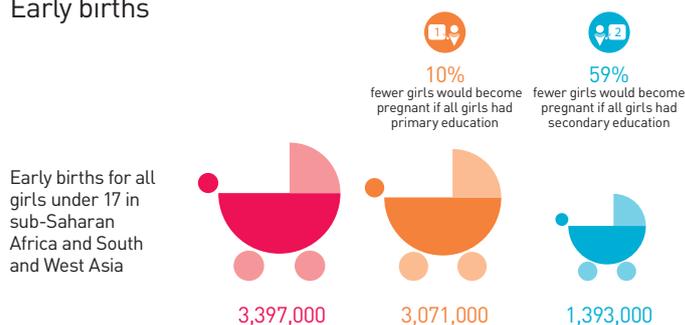
In some parts of the world, education has already been a key factor in bringing forward the transition from high rates of birth and mortality to lower rates. In Brazil, around 70% of the fertility decline during the 1960s and 1970s can be explained by improvements in schooling. The same could happen in sub-Saharan Africa. Women with no education in the region have 6.7 births, on average, compared with 5.8 for those with primary education, and 3.9 for those with secondary education. If all women had secondary education, births would fall by 37%, from 31 to 19 million.

### WOMEN WITH HIGHER LEVELS OF EDUCATION ARE LESS LIKELY TO GET MARRIED OR HAVE CHILDREN AT AN EARLY AGE

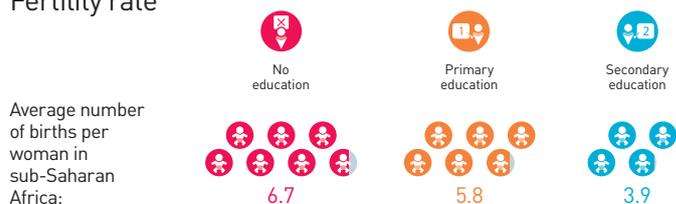
#### Child marriage



#### Early births



#### Fertility rate\*



\*Fertility rate is the average number of children that would be born to a woman over her lifetime.

Source: EFA Global Monitoring Report team calculations, based on Demographic and Health Survey data from 2005–2011. United Nations. 2011. World Population Prospects: The 2010 Revision. New York, United Nations, Department of Economic and Social Affairs, Population Division.

# WATER AND ENERGY SUSTAINABILITY

**PROPOSED GOAL 6** > Ensure availability and sustainable management of water and sanitation for all

**PROPOSED GOAL 7** > Ensure access to affordable, reliable, sustainable, and modern energy for all

The links between education and sustainable use of water and energy resources have not been studied in great detail and vary according to context. There has been instead a tendency to focus on the constraints that lack of access to water and energy places on children's opportunities to access to school (due to many hours spent on related chores) and to learn (for example, due to lack of electricity).

## CALL TO ACTION ON SANITATION

*Launched by the United Nations Deputy Secretary-General, this initiative aims to improve hygiene, change social norms, better manage human waste and waste-water, and by 2025, completely eliminate the practice of open defecation, which perpetuates the cycle of disease and entrenched poverty. UN-Water, is coordinating the work.*

However, education can have an impact on how people make use of these resources, especially in areas of resource scarcity. In semi-arid areas of China, for example, educated farmers were more likely to use rainwater harvesting and supplementary irrigation technology to alleviate water shortages.

Educated households are also more likely to use different methods of water purification through filtering or boiling. In urban India, the probability of purification increased by 9% when the most educated adult had completed primary education and by 22% when the most educated adult had completed secondary education, even once household wealth is accounted for.

By increasing awareness and concern, education can encourage people to reduce their impact on the environment by taking action such as using energy and water more efficiently. Such behaviour becomes increasingly important as people in high income countries are called upon to modify their consumption and take other measures that limit environmental harm. In the Netherlands, people with a higher level of education tend to use less energy in the home, even taking account of income. A study of households in 10 OECD countries found that those with more education tended to save water, and there have been similar findings in Spain.

## SUSTAINABLE ENERGY FOR ALL

*Launched by UN Secretary-General Ban Ki-moon in 2011, this initiative has three objectives to be achieved by 2030: universal access to modern energy services; doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix. So far, 80 countries have partnered with the initiative.*

“ Education is a foundation for sustainable development. Not only does quality education, especially for girls, help to improve health and livelihood outcomes, it also contributes to active and informed global citizens. Educating the next generation of leaders about the importance of protecting our environment and combating climate change is a key investment for a sustainable planet and future for us all. ”

— TED TURNER, Founder and Chairman, United Nations Foundation

# ECONOMIC GROWTH

**PROPOSED GOAL 8** > Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

**PROPOSED GOAL 9** > Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Economic growth is necessary, even if not sufficient, for poverty reduction. Education generates productivity gains that fuel economic growth. An increase in the average educational attainment of a country's population by one year increases annual per capita GDP growth from 2% to 2.5%. This is equivalent to increasing per capita income by 26% over a 45-year period, roughly the working lifespan of an individual. These estimates take into account factors such as the level of income at the beginning of the period, the share of the public sector in the economy and the degree of openness to trade.

Differences in initial education levels can help explain some of the differences in the pace of economic growth between regions. In 1965, the average level of schooling was 2.7 years higher in East Asia and the Pacific than sub-Saharan Africa. Over the following 45-year period, average annual growth in income per capita was 3.4% in East Asia and the Pacific. By contrast, it was only 0.8% in sub-Saharan Africa. The difference in initial education levels could help explain about half of the difference in growth rates.

Differences in progress made in education attainment can also help explain some of the differences in the pace of economic growth within regions. In Latin America and the Caribbean, the average number of years of schooling for adults rose from 3.6 in 1965 to 7.5 in 2005. This is estimated to have contributed two-thirds of the average annual growth rate in GDP per capita of 2.8% between 2005 and 2010. But not all countries in the region kept pace. In Guatemala, adults had just 3.6 years of schooling on average in 2005, and on average

schooling increased by only 2.3 years in the country from 1965 to 2005, the second lowest rate in the region. If Guatemala had matched the regional average, it could have more than doubled its average annual growth rate between 2005 and 2010, from 1.7% to 3.6%, equivalent to an additional US\$500 per person.

## Quality of education is vital for economic growth.

Spending more time in school, while important, is not enough. Children need to be learning. Some analysts have suggested that a proof of the economic effect of education would require measures of quality and learning outcomes. Countries need to monitor their students' learning over a sufficiently long period in order to assess the effects of education and quality on economic growth.

Such over-time data are scarce in low and middle income countries, but have become increasingly available in high income countries. Improvements in education quality, approximated by scores in learning achievement surveys, have been linked to increases in per capita income growth rates. This suggests that, where the quality of education is low, the skills base of the economy cannot become an engine of growth.

If Mexico could raise its mathematics score in PISA by 70 points, to reach the OECD average, this would have almost doubled its annual per capita growth rate between 1990 and 2010 from 1.5% to 2.9%. Thus, cost effective reforms that raise learning outcomes and improve quality can increase the economic returns to education and represent a sound investment.

“ *Every child should have the opportunity not only to go to school but to acquire the knowledge and skills she needs to lead a healthy, productive life, care for herself and her family, and become an empowered citizen. At the national level, countries need workforces with the skills and competencies required to keep farms and factories producing, create jobs, fuel innovation and competitiveness, and drive economic growth that benefits everyone.* ”

— DR. JIM YONG KIM, President of the World Bank Group

# INEQUALITY REDUCTION

## PROPOSED GOAL 10 > Reduce inequality within and among countries

In many contexts, the income distribution starts initially from a broadly equal basis, since all people are relatively poor. Inequality increases as the country develops and people move into non-agricultural sectors that pay higher wages. This process of increasing inequality gradually begins to reverse when a sufficiently large section of the population completes the transition out of agriculture.

Education plays a major role in this process. It facilitates the structural transformation of the economy and encourages educated workers to make the transition into the non-agricultural sector. A review of 64 studies confirms that a more equitable distribution of education opportunities reduces income inequality.

Expanding education, in particular ensuring that most people have completed secondary schooling, is an essential condition to reducing **inequality within countries**. Across several countries, income inequality fell when those with secondary education took over from those with primary education as the largest educational group in the population. In France, Malaysia and Brazil, income inequality, as captured by the Gini coefficient, fell by about seven percentage points over two decades as the share of population with secondary education grew.

In Malaysia, the share of adults with secondary education increased from 20% in 1980 to 48% in 2000; during this period, the Gini coefficient fell from 0.51 to 0.44 (see figure below).

While expanding access to and completion of secondary education is necessary for reducing income inequality within countries, it is not sufficient. The result also depends on the available labour market opportunities. Between 1990 and 2010, income inequality increased not only in high income but also in middle income countries, notably China and India, where demand for skills outpaced supply and those with the highest levels of education benefitted relatively more. Expanding post-primary schooling opportunities would have helped prevent inequality from growing.

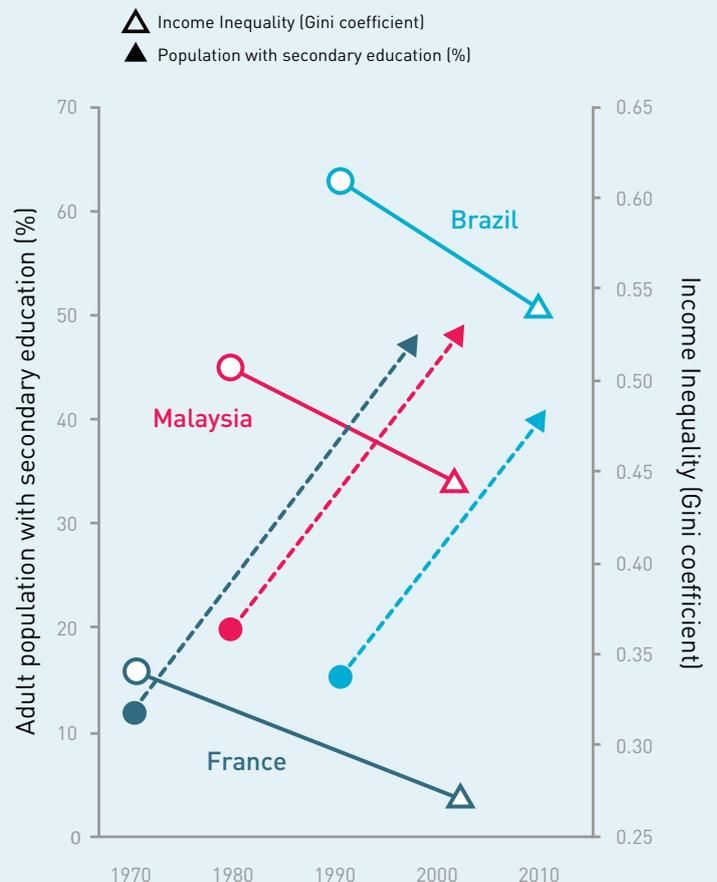
Despite the trend towards greater income inequality within many countries, there are some signs that global inequality — that is, **inequality among countries** — may be falling for the first time in two centuries, albeit

from unacceptably high levels. Between 2002 and 2008, the Gini coefficient of global income has fallen by 1.4 percentage points, to just below 0.70.

The expansion of education has played an important role in helping narrow global income inequality by reducing poverty and creating a middle class in middle income countries. However, such expansion has not reduced global income inequality as fast as it reduced income inequality within countries because, at a global level, education is still very unequally distributed among adults.

### EDUCATION EXPANSION CAN REDUCE INCOME INEQUALITY

*Population aged 25 years and above with secondary education and Gini coefficient of income inequality in France, Malaysia and Brazil, selected years*



Sources: (i) Distribution of population by education level: Barro and Lee (2013); (ii) Income inequality: UNU-WIDER (2008) (France), Malaysia Economic Planning Unit (2013) (Malaysia), and de Castro (2011) (Brazil).

# URBAN DEVELOPMENT

## PROPOSED GOAL 11 > Make cities and human settlements inclusive, safe, resilient and sustainable

The world is rapidly urbanizing, especially in developing countries. Worldwide the urban population exceeded the rural population for the first time in 2007; by 2030, dwellers of urban areas will reach 60% of the population (and almost 40% in low-income countries). While this movement of people into cities generates great opportunities, experience shows that it also brings major challenges. It is for this reason that the Open Working Group has identified ambitious targets for housing, transport and planning to be achieved by 2030.

Education has traditionally expanded earlier and more extensively in urban areas and thus acted as a motivating source for migration. The flourishing of education in cities also pulls in ambitious, risk inclined and talented individuals and can encourage vitality, innovation and creativity in the labour market. From a contrasting perspective, poor quality education in certain city districts have been a key driver of spatial inequality, sparking feelings of relative deprivation. Reducing inequalities in the delivery of quality education services is one policy response used to spearhead efforts at urban renewal.

**The concentration of educated populations in urban areas drives local economic development and innovation.** The benefits of education do not only accrue to individuals; a critical mass of knowledgeable and skilled individuals, often accelerated by the prevalence of higher education institutions, can spill over to benefit other workers too. Analysis of manufacturing from the United States indicates that a 1% increase in the proportion of tertiary education graduates living in a city was associated with a 0.5 percentage point increase in output. Further analysis shows that these productivity spillovers were higher between industries that were close in terms of the technology used and therefore more related to specific skills acquired in education. This suggests that the concentration of human capital in urban areas further sustains the generation and sharing of knowledge, a fact that has been observed also in urban technology hubs of poorer countries, for example in India.

### Education helps respond to the problems of urban life.

While education expansion fuels economic productivity, it can also have negative consequences. For example, the more educated in the world's fast growing cities are more likely to possess a private vehicle and less prepared to abandon its use despite the toll that traffic congestion and air pollution take on the environment. Among 42

cities in China which reported pollution statistics over the period 2001-2011, the higher the percentage of tertiary education students in the total population, the higher the air pollution index. On the other hand, over time, innovative approaches to sustainable urban development arise in cities that have established networks between research institutions and other knowledge clusters, including in places like Stockholm and Singapore. This demonstrates that education can give people the skills to work through challenges raised by urban expansion.

Crime is another negative and costly consequence associated with life in cities. Schooling increases the returns to work and therefore can reduce the incidence of crime by making illicit behaviour less attractive, especially if the penalty is certain imprisonment. In the United States, graduation from secondary school has been associated with a reduction in incarceration rates, particularly for serious crime cases, such as murder or assault. In the Netherlands, a higher level of education was associated with a stronger desire to enforce social norms in the case of small crimes.

**Equitable education service delivery is critical to tackle the roots of discontent in cities.** Threats to personal or family security are often the result of discontent that follows from widespread exclusion and high levels of intra-urban inequality. Segregated neighbourhoods and gated communities are often observed in cities with great disparities in how opportunities are apportioned. As poor rural (and often unregistered) migrants concentrate in unregulated areas, many governments are ambivalent towards providing the same water, sanitation, health and education services as to other urban residents. This is partly the result of administrative obstacles but often also of a flawed belief that improving conditions within such settlements may further accelerate urban migration.

The negligence of public authorities has sometimes resulted in substandard education provision in urban slums as compared to rural areas. For example, in Bangladesh the net secondary school attendance ratio was just 12% in metropolitan slum areas in 2006 as compared to 37% in rural areas and 46% in other metropolitan non-slum areas. Across developing countries, this has resulted in the emergence of non-government provision of education services in many urban slum areas. However, these are insufficient to close the gap.

# ENVIRONMENTAL PROTECTION/RESILIENCE

## PROPOSED GOALS 12, 13, 14 AND 15:

- > Ensure sustainable consumption and production patterns
- > Take urgent action to combat climate change and its impacts
- > Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- > Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

The multiple threats of environmental degradation and climate change have assumed an unprecedented urgency. By improving knowledge, instilling values, fostering beliefs and shifting attitudes, education has considerable power to change environmentally harmful lifestyles and behaviour. As it becomes increasingly clear how much human action has led to environmental degradation and climate change, especially through the release of greenhouse gases, attention turns to education and the need to tap its potential.

Increased levels of education do not automatically translate into more responsible behaviour towards the environment. But as the influential Stern Review on climate change noted: 'Governments can be a catalyst for dialogue through evidence, education, persuasion and discussion. Educating those currently at school about climate change will help to shape and sustain future policy-making, and a broad public and international debate will support today's policy-makers in taking strong action now'.

In fact, people who are more educated often have lifestyles that burden the environment. One reason is that the consequences of climate change are not yet perceptible to the vast majority of people, and many still see it as a distant threat. And yet when populations are confronted by major challenges, overcoming the inertia of past attitudes is possible — and people with more education typically respond first.

**Education increases environmental awareness and concern.** One vital role education can play is in improving understanding of the science behind climate change and other environmental issues. Students who scored higher in environmental science across the 57 countries participating in the 2006 PISA also reported being more aware of complex environmental issues. For example, in the 30 OECD countries that took part in the survey, an increase of one unit of the awareness index was associated with an increase of 35 points in the environmental science performance index.

In 47 countries covered by the 2005–2008 World Values Survey, the higher a person's level of education, the more likely she was to express concern for the environment. Furthermore in the 2010–2012 World Values Survey, when forced to choose between protecting the environment versus boosting the economy, those respondents with secondary education favored the environment more than those with less than secondary education.

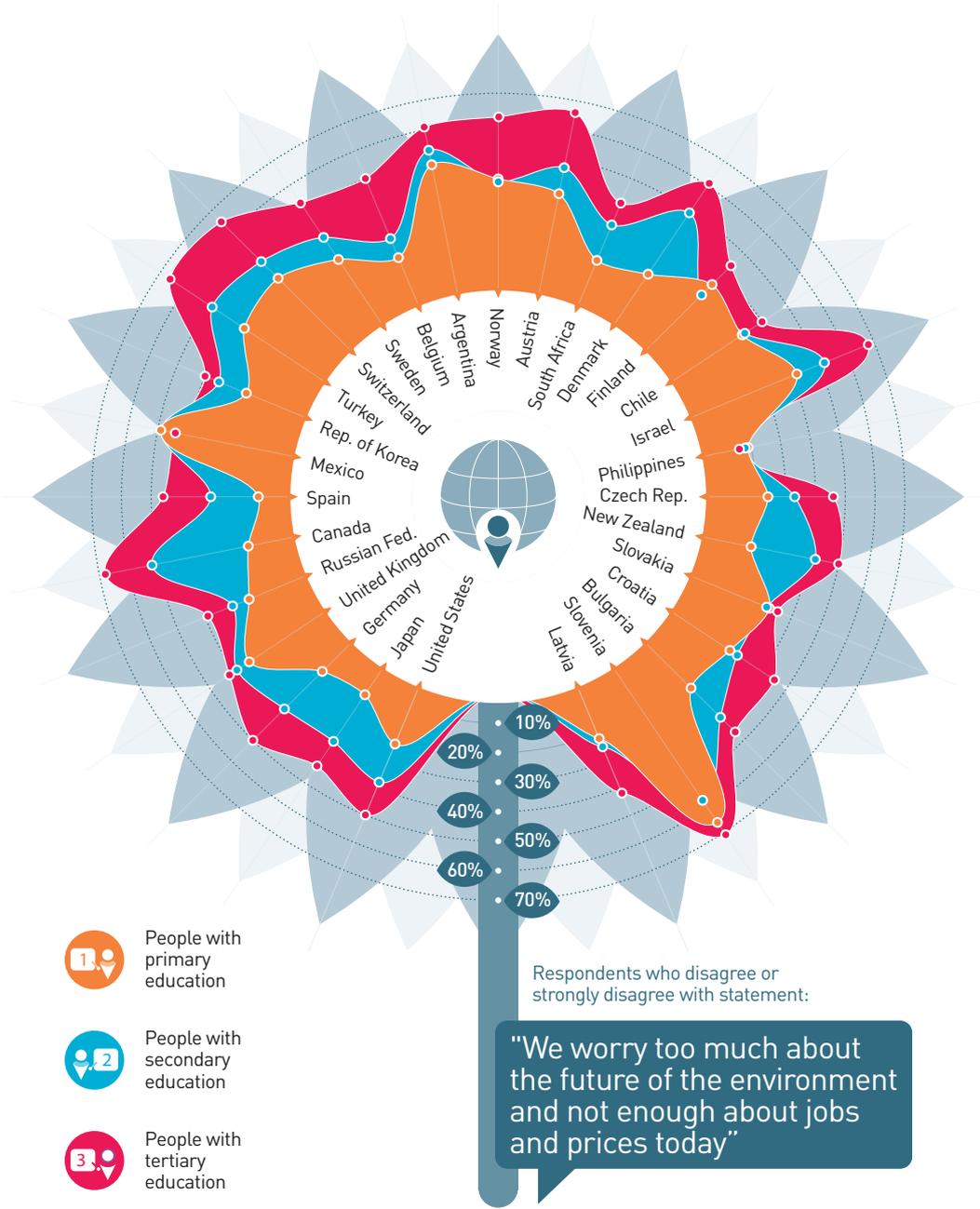
Data from the International Social Survey Programme on 29 mostly high income countries similarly showed that the share of those disagreeing that people worry too much about the environment rose from 25% of those with less than secondary education to 46% of people with tertiary education.

**Education helps change behaviour by making citizens more engaged.** People with more education tend not only to be more concerned about the environment, but also to engage in activism that promotes and supports political decisions that protect the environment. Such pressure is a vital way of pushing governments towards the type of binding agreement that is needed to control emission levels.

In almost all countries participating in the 2010 International Social Survey Programme, respondents with more education were more likely to have signed a petition, given money or taken part in a protest or demonstration, in relation to the environment, over the past five years. In Germany, while 12% of respondents with less than secondary education had taken such political action, the share rose to 26% of those with secondary education and 46% of those with tertiary education.

An analysis of the Global Warming Citizen Survey in the United States also showed that the higher the education level of respondents, the greater their activism in terms of policy support, environmental political participation and environment-friendly behaviour.

HIGHER LEVELS OF EDUCATION LEAD TO MORE CONCERN FOR THE ENVIRONMENT



Source: National Centre for Social Research (2013), based on the 2010 International Social Survey Programme data.

**Education also helps people adapt to the consequences of climate change.** The need for adaptation is becoming increasingly urgent for many populations confronted with increasing temperatures, rising sea levels and more frequent extreme weather events. Adaptation is especially important for poorer countries, where the capacity of governments to act is more limited and threats to livelihoods will be felt most strongly. Farmers in low income countries are especially vulnerable to climate change, as they depend heavily on rain-fed agriculture. A survey of farmers in Burkina Faso, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Niger,

Senegal, South Africa and Zambia showed that those with education were more likely to make at least one adaptation: a year of education reduced the probability of no adaptation by 1.6%.

While evidence is difficult to bring to bear, education helps build resilience and reduce vulnerability in the face of climate change impacts. In that respect, strategies to mitigate natural and other forms of disaster must include education as a way to improving people's understanding of the risks, of the need to adapt and of measures that could reduce its impact on livelihoods.

# PEACEFUL, JUST AND INCLUSIVE SOCIETIES

**PROPOSED GOAL 16** > Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Education's vital role in promoting human rights and the rule of law is enshrined in the Universal Declaration of Human Rights. It states that 'every individual and every organ of society ... shall strive by teaching and education to promote respect for these rights and freedoms'. Good quality education enables people to make informed judgements about issues that concern them and engage more actively and constructively in national and local political debates. In many parts of the world, however, unfair elections, corrupt officials, and weak justice systems jeopardize human rights and citizens' confidence in government. When disenfranchised groups feel they have no means to voice their concerns, such failures can lead to conflict.

**Education strengthens inclusive, participatory and representative decision-making.** Analysis of public opinion surveys in 36 countries in Africa, Asia and Latin America shows that education is associated with higher rates of voting. This relationship is stronger in countries where average levels of education are lower, for example — in the case of Latin America — in El Salvador, Guatemala or Paraguay, rather than in countries with higher average levels of education such as Argentina or Chile.

Participation in decision-making is not just about voting. In India, education also had a positive effect on the probability of campaigning, discussing electoral issues, attending rallies and establishing contacts with local government officials in the states of Madhya Pradesh and Rajasthan. In the state of West Bengal the higher the level of household education, the more likely people were to attend the biannual village forum, and to ask questions.

**Education is a key mechanism promoting tolerance to diversity.** In Latin America, people with secondary education were less likely than those with primary education to express intolerance for people of different race (by 47%). In the Arab States, people with secondary education were 14% less likely than those with only primary education to express intolerance

towards people of a different religion. In sub-Saharan Africa, compared with those who had not completed primary school, secondary school completers were 23% less likely to express intolerance towards people with HIV infection. In Central and Eastern Europe, those who had completed secondary education were 16% less likely to express such intolerance towards immigrants than those who had not.

Education does not just alter attitudes. In India only about 4% of all candidates for state assembly elections were female, and the mean vote share of female candidates has been about 5%. Halving the gender literacy gap would likely increase the share of female candidates by 21% and the share of votes obtained by women candidates by 17%.

**Education helps prevent conflict and heal its consequences.** While a low level of education does not automatically lead to conflict, it is an important risk factor: if the male secondary school enrolment ratio were 10 percentage points higher than average, the risk of war would decline by a quarter. The expected risk of conflict is highest in countries that have both low male education levels and a large youth population. In a country with a high ratio of youth to adult population at 38%, doubling the percentage of youth with secondary education, from 30% to 60%, would halve the risk of conflict.

Perceived unfairness in access to education can reinforce disillusionment with central authority. A study of 55 low and middle income countries over the period 1986–2003 showed that if the level of educational inequality doubled, the probability of conflict more than doubled, from 3.8% to 9.5%.

The same is true of other forms of violence. An increase in the percentage of the male youth population with secondary education in 55 major cities in sub-Saharan Africa and Asia over the period 1960–2006 was linked to a reduction in the number of lethal events.



Credit: UNESCO/Hugo Infante

“ At this school we teach children to respect people from other countries because we have Peruvians and also children from Bolivia and Colombia. We teach them not to discriminate against others. ”

— LILIAN, Teacher from Chile

More can be done to tap into education’s power to bring change. Lebanon is a diverse country riven by deep sectarian divisions. At the end of the civil war in 1990, large-scale reforms were introduced in curriculum, textbooks and teacher education as a means to reconciliation. However, most secondary schools continue to be segregated. Even in public secondary schools, the teaching of civic education remains subject-based, while the classroom and school environment is authoritarian and hierarchical. Twice as many grade 11 students trusted sectarian parties in schools with a passive approach to civic education compared with those in schools using an active approach.

#### **Education helps reduce political corruption.**

Education fosters support for the institutional checks and balances that are necessary to detect and punish abuses of office, and lowers tolerance towards corruption. In Brazil, for example, while 53% of voters with no education said they would support a corrupt but competent politician, only 25% of respondents with at least some college education agreed.

Better-educated citizens are more likely to stand up to corruption by complaining to government agencies, primarily because they have information about how to complain and defend themselves. In 31 countries

that took part in the World Justice Project survey of 2009–2011, those with secondary education were one-sixth more likely than average to complain about deficient government services, and those with tertiary education one-third more likely to do so.

#### **Education is essential for the justice system to function.**

More educated people are more likely to claim their rights and not be excluded from the legal system. In Sierra Leone, many people with little education cannot use the formal court system because it operates in English. Translators sometimes interpret into Krio, the lingua franca, but some people only speak local languages, for which interpreters are not available. Accused persons who are less educated can easily be isolated by a system that should support them.

Education systems are critical as they ultimately train justice professionals. Even non-formal courts intended to improve less educated people’s access to the justice system are burdened by illiteracy. In Eritrea, village courts were set up to help settle cases amicably, as the lowest tier of the court system, but several of the elders appointed as judges were illiterate and lacked basic legal training. The result is that many decisions fell between the two systems, being based neither on customary law nor on national laws.

# Conclusion

Education can accelerate progress towards the achievement of each of the proposed sustainable development goals for 2015 and beyond in a multiplicity of ways. Not only is education a basic human right but, as this paper has shown, it is vital for development. Education enables individuals, especially women, to live and aspire to healthy, meaningful, creative and resilient lives. It strengthens their voices in community, national and global affairs. It opens up new work opportunities and sources of social mobility. In short, the effects of education are significant across many development sectors. Education deserves to be a prominent cornerstone in the post-2015 development framework. The political and financial commitments to education by countries and donors need to be secured and renewed. There is a pressing need for closer collaboration across sectors to enable these synergies to take shape and take root.

“ Even the best schools and teachers cannot accomplish their goals if children remain absent or too hungry to learn. School feeding is an essential tool to provide children with the energy they need to learn and concentrate, and to motivate parents to send their children, especially girls, to class. The joint initiative between UNESCO, UNICEF and WFP, entitled *Nourishing Bodies, Nourishing Minds*, is an excellent example of how we can work holistically together to achieve education for all post 2015. ”

— ERTHARIN COUSIN, Executive Director of the World Food Programme

## GLOBAL EDUCATION FIRST INITIATIVE

*Launched by the United Nations Secretary-General in September 2012, this initiative aims to accelerate progress towards the Education for All goals and the education-related Millennium Development Goals. The Initiative focuses on three priorities: putting every child in school, improving the quality of learning, and fostering global citizenship. It is a multi-stakeholder advocacy effort and rallying point for partners to make commitments and mobilise resources to support global education efforts. It also leverages engagement at the highest political level and counts on 16 Champion Countries to lead by example and catalyse political and financial support for education among governments.*

“ Educated girls have children later and smaller families overall. They are less likely to die during pregnancy or birth, and their offspring are more likely to survive past the age of five and go on to thrive at school and in life. Women who attended school are better equipped to protect themselves and their children from malnutrition, deadly diseases, trafficking and sexual exploitation. ”

— ERNA SOLBERG, Prime Minister of Norway and GRAÇA MACHEL, President, Foundation for Community Development & Founder, Graça Machel Trust

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*Mother's education has saved millions of children's lives*

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— IRINA BOKOVA, DIRECTOR-GENERAL, UNESCO



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