

Innovation With Impact: Financing 21st Century Development

A report by Bill Gates to G20 leaders, Cannes Summit, November 2011

Executive Summary

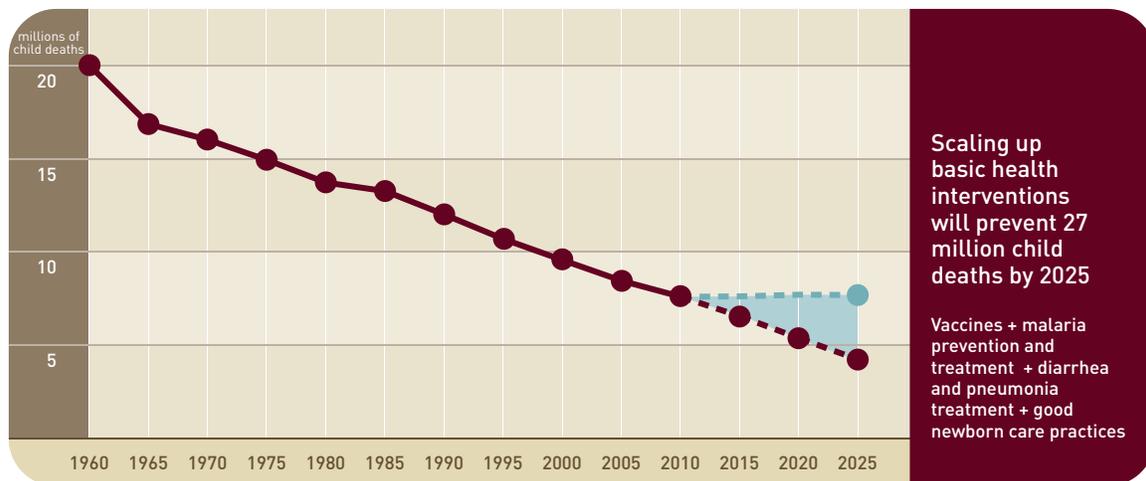
Leadership from the G20 is critically important right now. The global economic situation is as fragile as it has been at any time in the past 50 years. As leaders of the G20, you face a difficult challenge: How do you resolve the immediate crisis while continuing to make smart investments in long-term growth and improved living conditions?

During my lifetime, innovations in business, science, and technology have energized the global market economy in unprecedented ways. The world economy is 500 percent bigger than in 1960. Whole groups of countries that had been at the margins have become key drivers of growth. Their success is widely viewed as a miracle.

This progress has benefited everyone, not just the richest. You can see progress in the rising Gross Domestic Product (GDP) of many countries around the world. You can also see it in falling poverty rates and other quality-of-life indicators captured in the Millennium Development Goals (MDGs), established by world leaders in 2000 and agreed to by all G20 nations.

In the past 50 years, a billion people were saved from starvation by advances in agriculture. Health has improved in stunning ways, thanks to innovations like vaccines. In 1960, 20 million children under the age of 5 died. In 2010, fewer than 8 million children under 5 died. The world population more than doubled during this time, which means the rate of death has been cut by over 80 percent. Aid generosity has played an important role in these successes.

Aid Has Helped Reduce Child Deaths Dramatically, and Can Continue to Do So



Sources: Johns Hopkins Bloomberg School of Public Health, Bill & Melinda Gates Foundation estimates

Despite the current economic crisis, I am optimistic that we can build on the generosity and innovations that worked in the past. The group of countries able to contribute resources to development is larger than ever before. The number of people who can spur innovations is much greater than in the past. For these reasons, I am convinced we can create a new era in development.

In this report I talk about the long-term investments and partnerships I believe will keep us on the path of economic growth and increasing equity.

I begin the report by describing the paramount importance of innovation. Key innovations like new seeds and vaccines—and new ways to deliver them to the poorest—can multiply the impact of the resources we’re already devoting to development. We’ve made a big difference, but we can improve the basic tools of development by making them cheaper, easier to use, and more efficient—or by inventing wholly new tools.

One of the newest resources for development—and potentially one of the most transformative—is rapidly growing countries’ capacity for innovation. Countries like Brazil, China, India, and Mexico are in a great position to work closely with poor countries because they have recent experience in reducing poverty, as well as enormous technical capabilities. This unique combination gives them both the insights and the skills to create

Over Time Many Countries Have Become Less Dependent on Aid



Source: Organization for Economic Co-operation and Development

Assistance (ODA) has had a huge impact, and it will continue to play a pivotal role in development, alongside all the new resources I write about. Well-designed aid reduces poverty right now, and accelerates poor countries' progress toward the moment when they will no longer need it. There's a lot of pressure on aid budgets given economic conditions, but aid is a very small part of government expenditures. The world will not balance its books by cutting back on aid, but it will do irreparable damage to global stability, to the growth potential of the global economy, and to the livelihoods of millions of the poorest people. In the report, I include some tax proposals G20 countries should consider that could help them meet their aid commitments and eventually expand them.

Finally, I talk about ways to get the private sector much more involved in development. As a businessman, I believe the free market fuels growth. Unfortunately, the market often fails to address the needs of the poorest, but there are relatively simple things we can do to encourage private investment in development. For example, G20 countries could facilitate an infrastructure fund—with sovereign wealth funds as the backbone—that generates both development impact and financial returns. I also make recommendations about tapping into the goodwill of diaspora communities by issuing bonds, lowering the cost of remittances, and creating pull mechanisms to incentivize private investments in development.

When you put all this together, I believe you begin to get a picture of why the G20 Summit is such an important place to be having a conversation about development. We can cast aside our old categories of aid, as distinct from private investment, as distinct from domestic spending. The G20 countries can pull all these levers at once, giving the world a more comprehensive and cooperative approach to improving the lives of the poor than we've ever had before.

breakthrough tools for development. I am particularly excited about the possibility of “triangular partnerships” among rapidly growing countries, traditional donors, and poor countries, because they exploit the comparative advantages of many different countries.

Ultimately, developing countries' domestic resources will be the largest source of funds for development. To maximize the impact of these resources, poor countries must raise more revenue; spend it on priorities like agriculture and health, which many have committed to do; and, following the lead of G20 countries that pioneered impact evaluation, measure the cost-effectiveness of their programs. One important way G20 countries can help poor countries raise more revenue is by passing legally binding transparency requirements for mining and oil companies listed on their stock exchanges, to ensure that natural resources are well-managed.

Meanwhile, traditional donors must take steps to meet their aid commitments and spend their aid strategically. If the countries that have made promises stick to them, it will generate an additional \$80 billion annually starting in 2015.

Over the years, Official Development

Introduction

The current economic environment is uncertain, and global prosperity is at risk. One way of measuring our success in navigating the crisis is global GDP. However, GDP does not capture everything that counts. It can increase without the poorest benefiting, and the poorest can improve their lives substantially with only modest GDP growth. Therefore, success must also be measured by progress toward the MDGs, the commitments world leaders made in 2000 to address key problems—from poverty to health to hunger—with a deadline of 2015.

Critics say the MDGs are overoptimistic, and they point to the fact that the world isn't on track to meet all the targets by the deadline. But the MDGs provide a clear way to measure progress for the poorest, and there has been incredible progress on all the key MDGs in countries across the globe. For example, between 1990 and 2008, maternal mortality fell by more than a fifth worldwide. While that's short of the official goal, it represents more than 1 million mothers who are alive today because of improving maternal health.

In fact, global growth is linked to the achievement of the MDGs. If poor countries can't feed, educate, and employ people, their problems will get worse and they will be a source of instability and deep suffering. To deal with these problems, we need robust economic growth. But progress on the MDGs will also help poor countries provide real opportunities for their citizens, so that over time these countries will become a key part of the global supply and demand equation. On the supply side, they will expand global production capacity and help increase the availability and lower the price of food and other vital commodities. On the demand side, they will become important markets for global trade, as their people live better, more productive lives. If we take an appropriately long view, achieving the MDGs in poor countries and increasing GDP within the G20 are not separate goals but complementary ones.

When it comes to the innovation that has been central to both GDP growth and progress on the MDGs, the trends are in our favor. The capacity to innovate is spreading beyond the richest countries into a larger set of rapidly growing economies. As the economies of many nations have been transformed, the binary model of the developed world on one hand and the developing world on the other has become irrelevant. There is incredible diversity inside what used to be called the developing world. We must think specifically about each country travelling the development path, so we can understand the unique assets they bring to the endeavor.

With its diverse and dynamic membership, the G20 is in a phenomenal position to help us all think about development in new ways. Ultimately, the goal is to combine the world's total resources—public, private, rich, poor, and in between—in ways that drive development forward. We need to find better ways to bring private investment into poor countries. We need to help donors keep their promises by looking for new sources of aid money. We need to reinforce the dynamism of poor countries, so they can lead their own development. Finally, we need to tap the rich experience and capacity for innovation of rapidly growing countries that have recently travelled the development path so successfully.

I am honored to have been invited to submit this report by the G20 heads of state at this summit in Cannes, and I want to thank France for keeping issues that matter to the poor at the top of the global agenda. I understand that I don't have the same responsibilities as the leaders of the G20 governments, but I try to be realistic about the challenges you face. I hope my perspective is a positive contribution to your dialogue on how the G20 provides leadership for the world economy.

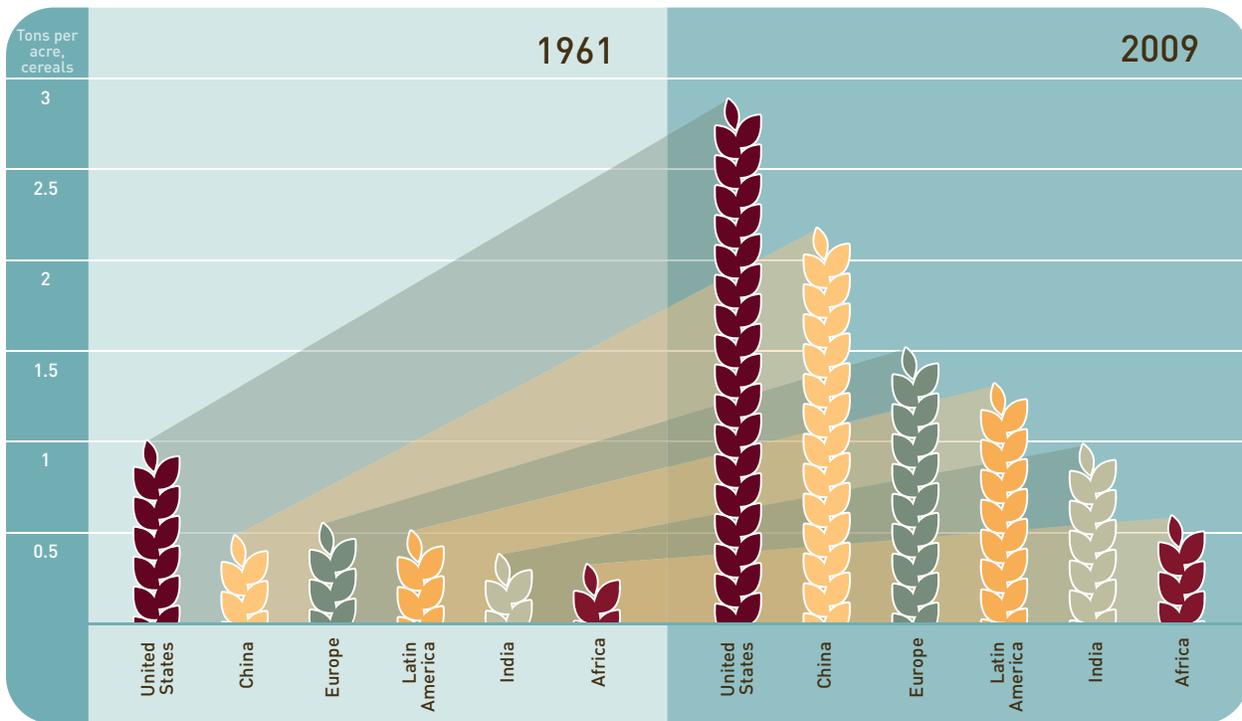
By focusing on underlying sources of strength, we can get through this crisis, continue the upward trajectory of living standards, continue to save millions of lives, and continue to lift billions of people out of poverty. We can shrink the number of impoverished countries until eventually there are zero.

The Paramount Importance of Innovation

I believe innovation is the most powerful force for change in the world. People who are pessimistic about the future tend to extrapolate from the present in a straight line. But innovation fundamentally shifts the trajectory of development.

Let me give two examples. For years, farmers in poor countries have lacked the tools to get the most out of their land, so their yields are very low compared to those in rich countries. But innovation can close that gap. A few months ago, I visited farmers in a flood-prone area of India where crops are regularly wiped out by standing water. When I visited, they were planting a new variety of rice that has been bred to survive underwater. When the rains came, the old variety was completely destroyed, while the new rice yielded more than double what the old variety yielded in a good harvest year. The demand for new seeds from this rice project has been even higher than expected. In the next six years, we predict 20 million farmers will plant the new varieties.

Africa's Opportunity to Increase Agricultural Productivity



Source: Food and Agriculture Organization

Just over a decade ago, malaria was tearing through poor countries, killing about 1 million children every year. The most common treatment, chloroquine, was no longer effective. Now, there are new drugs and new long-lasting, insecticide-treated bed nets. These innovations, combined with an influx of funding, have turned the tide against the disease. Malaria deaths are down 20 percent globally in just 10 years. We also have a malaria vaccine in late-stage trials. If and when it's approved, it will be the first-ever vaccine against a parasitic disease.

These are just two examples of the huge benefit of innovation in upstream research and development, and also in how to deliver these innovations to the people who can benefit most. Despite examples of success and the enormous potential, innovation has not played as big a role in development as it could have. Some innovations take hold in rich countries quickly but take decades to trickle down to poor countries. The pace of innovation specifically for the poor has been too slow. But I believe it can be sped up, and the rapidly growing countries of the G20 are especially well-positioned to drive this improvement.

Forging Innovative Partnerships

In the past several decades, a handful of G20 countries have seen growth rates rise and poverty rates fall sharply. In the past 20 years, China has grown at an incredible 9 percent annually and has slashed its poverty rate by 75 percent. In the past 30 years, Indonesia has grown at 5 percent annually, while halving the absolute number of poor people. Since 2000, Brazil has lifted 10 million people out of poverty. Since 1995, Mexico has cut its poverty rate from about 15 percent to less than 2 percent.

These rapidly growing countries provide direct development assistance. Countries outside the Organization for Economic Co-operation and Development (OECD) donate an estimated \$18 billion, and I urge them to maintain ODA as a percentage of Gross National Income (GNI) as they grow, and set a goal of increasing that percentage over time. South Korea has been a standout, pledging to almost triple its percentage of GNI devoted to ODA by 2015.

Aside from these growing financial contributions, these countries can make a huge impact by using their experience and skills to help solve the toughest problems facing the poor. Having navigated the development process successfully, these countries have a sophisticated understanding of what poor countries need and the technical capabilities to innovate to meet those needs. I am excited by the potential for these rapidly growing countries to form partnerships with poor countries to advance development.

Some of these will be triangular partnerships among rapidly growing countries, traditional donors, and poor countries. So far, these triangular partnerships have involved relatively small transfers of resources, but in the long run I believe they provide a model for how to deploy the world's combined resources to benefit the poorest. I urge the G20 to work together to forge more of these partnerships and devote significantly more funds to them over time.

I think it would be inspirational if the G20 took steps to identify the highest-priority innovations for development. Our foundation would be happy to participate in this process. With a systematic list of innovations as a starting point, the G20 could help broker agreements in which member countries commit to work together on specific innovations. This approach could accelerate innovation in many key areas of development, including agriculture, health, education, governance, and infrastructure.

We already have some good examples of partnerships spearheaded by rapidly growing countries. For example, the Serum Institute of India recently developed a vaccine for meningitis A, the first-ever vaccine created specifically for poor countries. To manufacture it at the target price of 50 cents a dose, Serum obtained raw materials from a Dutch biotech company and arranged a technology transfer from the United States Food and Drug Administration. This process started when African leaders requested a better weapon against meningitis epidemics. The private and public sectors in industrialized and rapidly growing countries negotiated a mutually beneficial solution to address this challenge.

Brazil is working with Japan to help poor farmers in Mozambique grow soybeans, in a story that goes back 30 years. As part of a major technical assistance program in the 1980s, Japan helped adapt the soybean to Brazil's tropical savanna, the Cerrado. It became one of Brazil's most important crops. Now, with Japanese financial support, the Brazilians are helping Mozambiquan farmers in the Nacala corridor, an area with very similar climate and soil conditions. Meanwhile, the Japanese are looking to upgrade Mozambique's port and railroad infrastructure to make it easier for farmers to export the beans.

China, which has perhaps the world's leading rice research program, has recently launched the "Green Super Rice" partnership, along with several global research centers, to help develop adapted varieties of rice with 15 poor countries in Africa and South Asia. Africa already accounts for approximately one-third of global rice imports and demand is growing, so helping African farmers increase rice production is critical for food security on the continent. China also plans to sequence 10,000 varieties of rice to discover traits such as heat tolerance and disease resistance that are needed to adapt to climate change. This is a technical feat no other country can accomplish cost-effectively, and I believe the work the Chinese are doing in collaboration with global partners like the International Rice Research Institute will have a big impact.

In just the past month, our foundation has signed agreements with some G20 governments as part of our contribution to advance these triangular partnerships. We have formed partnerships with Brazil and China

Triangular Partnerships Leverage G20 Members' Comparative Advantages

1 In the 1980s, with help from Japan, Brazil became one of the world's largest soybean exporters.

2 Brazil's Cerrado features dry, acidic soil conditions similar to those in Mozambique's Nacala corridor, making it easier for Brazil and Mozambique to work together on agricultural development.

3 As Brazil shares agricultural technology with Mozambique, Japan is financing infrastructure that will help Mozambican farmers export crops.

Research Partners

National implementation partners

Some of China's thousands of rice scientists are working with two donor-funded Consultative Group on International Agricultural Research centers to develop new varieties of rice. This work will help the world meet demand for rice, which is expected to spike by 70 percent by 2025, and make many developing countries less dependent on rice imports.

Source: Brazilian Agency for Cooperation, Japan International Cooperation Agency, International Rice Research Institute, World Bank

in both agriculture and health. We'll work with the Chinese Ministry of Science and Technology and Chinese companies to make low-cost vaccines, drugs, and diagnostics available for developing countries.

We'll work with Brazil to share its expertise with African countries in areas like cassava, soybeans, livestock health, tropical disease, family health, and vaccines. We've also just become partners with the United Kingdom's Department for International Development in support of an innovation marketplace for African and Brazilian agricultural experts. African participants will identify problems relevant to their countries, and the Brazilians will work with them to devise solutions based on their experience.

Mobilizing Domestic Resources

By far the largest supply of financing for development will continue to come from developing countries themselves. Developing countries' domestic resources are already much greater than the ODA they receive, and domestic income is also growing much faster than ODA. Sub-Saharan Africa, for example, will almost double its GDP over the next 10 years if it maintains current growth rates.

It's important to keep these projections in perspective. African economic growth is uneven, both between and within countries, and even with rapid growth many countries will remain poor. Nevertheless, in many cases, domestic resources can pay for the cornerstones of development. Building rural roads, schools, and health infrastructure is a job for governments, and governments' ability to fund and manage these systems effectively will largely determine their citizens' quality of life.

The first key priority is for poor countries to raise more revenue. One major source is natural resources, but many billions of dollars are currently wasted because of poor information, mismanagement, and sometimes outright corruption.

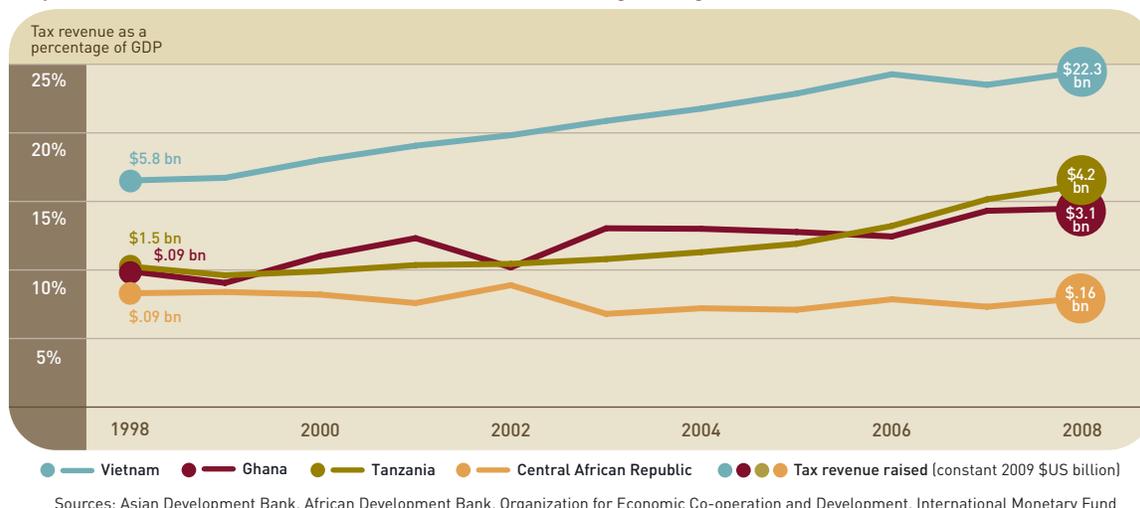
It is estimated that at peak production, oil reserves in Uganda would generate \$2 billion per year, compared to a national budget of \$3 billion. Thus, oil revenue should have a huge impact on the government's ability to address the needs of millions of poor Ugandans. However, we have no insight into the country's oil leasing arrangements, and, as a result, Ugandan citizens have no means to protect their interests.

The Extractives Industries Transparency Initiative (EITI) is a step in the right direction. In Ghana, for example, it was revealed through EITI that mining companies were paying an average royalty of just 3 percent. Civil society groups then worked with government leaders to set a 6 percent minimum royalty for new projects. The problem is that EITI is a voluntary initiative, and only five African countries are currently compliant, though more are working towards it.

I believe the G20 countries should endorse legally binding transparency requirements. The United States recently passed such legislation, and the European Union is considering it, but all G20 countries should require the mining and oil companies listed on their stock exchanges to disclose payments to governments. I also support the idea of a natural resource charter to bring more transparency into land, timber, and other natural resource-related deals.

Another major source of revenue is taxation, though it's important to design tax systems that don't interfere with overall economic growth. Simply collecting taxes more efficiently under existing systems would make a big difference. Tanzania, for example, increased its tax revenue from 10 percent to 16 percent of GDP between 1998 and 2008, generating an additional \$2.2 billion annually. According to the International Monetary Fund (IMF), basic tax reforms throughout Sub-Saharan Africa would raise at least \$20 billion a year at today's GDP.

Impressive Increases In Domestic Resources, Though Progress Remains Uneven



International organizations like the IMF provide technical assistance to help countries improve revenue systems, but the G20 can play an important role as well. One powerful example is the leadership of South Africa, in coordination with several neighboring countries, in creating the Collaborative African Budget Reform Initiative (CABRI). CABRI brings together senior budget officials from African ministries of finance, planning, and development to share knowledge.

These domestic resources will make the biggest difference if they are directed toward poverty-reducing priorities like agriculture and health.

I mention agriculture and health because they have proven development impact, and many developing countries have already promised to allocate spending for those sectors. According to the World Bank, growth in the agricultural sector reduces extreme poverty more than growth in any other sector. In 2003, African leaders signed the Maputo Declaration, pledging to increase spending on agriculture to 10 percent of national budgets as part of the Comprehensive Africa Agriculture Development Programme (CAADP). So far, eight countries have reached that benchmark.

Health is another obvious priority. The benefits of investments in health are incredibly far-reaching. Disease saps poor countries' greatest resource, the energy and talent of their people. And investments in health help parents provide more opportunities for their children. When parents know their children are likely to survive, they choose to have fewer children. As a result, they're better able to feed and educate them, which kicks off a virtuous cycle. In 2001, as part of the Abuja Declaration, the heads of state of the African Union countries promised to allocate at least 15 percent of their budgets to improving health. So far, only two countries have met their pledge.

In all areas of development, the data show that it is possible to achieve greater impact with money that's already being spent.

Governments can increase their impact per unit of expenditure by building the capacity to evaluate their development spending. G20 countries have been pioneers on this issue. Mexico, for example, has established a National Council for the Evaluation of Social Development Policy, called Coneval. Coneval publishes annual performance reviews for major government programs and measures progress toward national development targets. Similar bodies are taking shape in Argentina and India.

The G20 countries should extend their leadership in this area by forming a public-private partnership to help developing countries conduct cost-benefit analyses—real-world comparative studies about the most effective ways of tackling development issues. Given Mexico's leadership on this issue, I hope it is on the agenda for the next G20 meeting. A partnership modeled on Coneval could help address common methodological issues with cost-effectiveness studies and set benchmarks so that the findings would be more easily comparable across countries. Our foundation would be honored to work with G20 on a cost-effectiveness partnership.

As countries begin to finance a growing percentage of their own development, the world's ODA can be concentrated on the smaller and smaller number of issues and countries where it's needed most urgently.

The Vital Role of Development Assistance

Especially in hard times, some people will say rich countries should cut their ODA. They should not. Not only because they have made promises, but also because important pieces of the development agenda won't be addressed without assistance. ODA spurs innovation by funding pilot projects that poor countries would not undertake themselves. It also pays for global public goods like scientific research. Finally, people in very poor countries will continue to depend on assistance for their survival for the foreseeable future.

One stark way of looking at it is to consider the death toll from AIDS. It costs approximately \$450 per year to treat a person for AIDS. A donation of \$450 to the Global Fund to Fight AIDS, Tuberculosis, and Malaria, for example, keeps somebody alive for a year and helps prevent the disease from spreading. Conversely, every \$450 that isn't forthcoming represents a person the world is willing to let die from a treatable disease. Sometimes, it's a simple question of money.

It is common to say that, given the economic crisis, countries cannot be expected to budget for increases in ODA. As the founder of a company that has weathered several recessions, I understand the need for belt tightening in downturns. But the fact is aid accounts for about 1 percent of public spending in most donor countries. That amount of money isn't causing the world's fiscal problems, and cutting back on ODA isn't going to solve them. Aid is a small investment that generates a huge return. Those are precisely the investments we should spare when it's time to make cuts.

Many donor nations have established targets for ODA. Most notably, 15 European countries pledged to spend 0.7 percent of their GNI on development assistance by 2015. I urge wealthy countries that have not pledged to the 0.7 percent threshold to adopt this standard and start budgeting for small increases to get there.

The United Kingdom has charted a course to reach its 0.7 percent pledge. Australia has also increased its aid significantly during the crisis, and a number of northern European donors have reached—and some have surpassed—0.7 percent. Clearly, it is possible for countries to meet their commitments with the right leadership. The deadline for these pledges is 2015, so there is still time. I urge donor countries to develop plans to hit their targets.

If donor countries that made aid promises keep them, it will generate an additional \$80 billion for development each year by 2015. If all donor countries achieve the 0.7 percent target, it will generate an additional \$170 billion.

It's also essential to get serious about maximizing aid's effectiveness. In recent years, as Cold War habits have receded, countries have increasingly focused their aid on MDG-related goals. The development community has gotten more efficient, but we still have a long way to go. The key multilateral institutions that focus on development priorities have an important role to play. Some of the strongest results in recent years have come from pooling funding for general development purposes (through the World Bank's International Development Association, for example) or for specific issues (through the Global Fund, for example). These bodies should concentrate on the highest-impact interventions, and they must be given adequate resources to do their best work. In some key areas prioritized by the G20, such as food security, revitalizing these institutions is especially urgent.

The basic principles behind effective aid for rich countries are similar to those behind effective budgeting for poor countries.

The goals should be to:

- Focus on the types of programs that contribute to the achievement of the MDGs, and on the countries that most need assistance.
- Provide easy-to-understand, real-time information about programs so that the development community can do a thorough analysis.
- Devote resources to evaluating the impact of development programs, so we can sort through various approaches and gradually get better at the entire enterprise.

There are major development programs that meet these criteria. Earlier this year, a number of donors stepped up to meet the fundraising goal set by the GAVI Alliance, the organization responsible for helping poor countries buy and deliver vaccines. It was one of the most inspiring moments in my career at our foundation. Vaccines are phenomenally cost-effective. And because of GAVI, the world will bring the newest vaccine technology to almost all children right away, rather than making the poor wait, and die, for 20 years before the innovation trickles down. The number of lives saved, as impressive as it will be, doesn't capture the full benefits of vaccination, because disease disables many more children than it kills. Take the example of diarrhea. It kills about 1.5 million children every year, but it affects hundreds of millions more. Frequent bouts of diarrhea make it harder for children to absorb nutrition, which interferes with their mental development. There is now a vaccine for rotavirus, the leading cause of diarrhea, and GAVI will make sure it is given to hundreds of millions of children. This is a model of aid effectiveness.

Bringing The Private Sector In

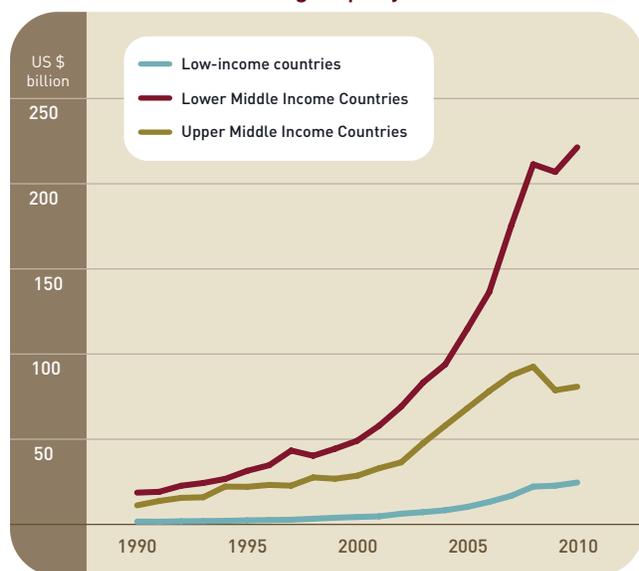
So far, I have focused mostly on what governments can do to foster development. However, when it comes to innovation, the real expertise lies with the private sector. And the private sector is the primary driver of economic growth. We must harness private investment so that it has greater development impact, and G20 governments can help establish conditions to encourage that.

Private capital is already a growing source of funds for development through many different channels. The philanthropic sector is getting larger in almost every country, and its reach is increasingly international. Through our work on the Giving Pledge, Melinda and I have talked with many philanthropists interested in applying their wealth to development problems.

There is also growing interest in generating development impact through private investments. Despite questions about how "impact investments" will work, evidence suggests that social enterprises such as private health clinics and schools have the potential to pay back the original capital invested—and sometimes provide market rates of return. It's important to keep experimenting with new business models, as many organizations in India are doing, because impact investors could eventually bring a great deal of money into development.

One area where we know investment has the potential to generate both development impact and profits is infrastructure. A road is a fantastic thing—for the small farmer moving crops to market, the pregnant woman able

Remittances are Growing Rapidly



Source: World Bank

to make it to the clinic for a safe delivery, and the landlocked country connecting to its neighbors and the world economy. But poor countries have too few roads, huge rivers but not enough power or irrigation, and fast-growing urban populations that are overwhelming municipal facilities and services.

Within the G20, the rapidly growing countries have a large source of funds that has yet to be tapped: sovereign wealth funds (SWFs). I join others in proposing that some of this capital be made available for infrastructure investments in poor countries. An infrastructure fund financed by just 1 percent of SWF assets would start at \$40 billion or more, and could reach \$100 billion or more with projected SWF growth over this decade. Given the scale of the infrastructure needs in poor countries (the African Development Bank estimates \$93 billion per year in Sub-Saharan Africa), there is a compelling reason to mobilize this pool of savings for development.

An infrastructure fund needs to offer a market-related return while providing financing for poor countries on concessional terms. As a result, donors and multilateral development banks need to find creative ways, through guarantees, co-financing, and the like, to bridge the gap between the return sovereign investors expect and the lower interest rates and extended maturities borrowers need. I believe sovereign wealth funds can provide a core of financing to spur private investment in infrastructure, in line with the recommendations of the high-level panel that is reporting to this meeting of G20 leaders.

Another major source of private capital for development is diaspora communities, which already contribute in the form of remittances. Last year, remittances to developing countries were worth \$325 billion. We must continue lowering the transaction costs of remittances, so that this growing pool of money has as big an impact as possible on the poorest. Reducing these costs to an average of 5 percent (compared to the current average, which is roughly twice that) would save \$15 billion. This work dovetails with the mission of the G20's Global Partnership on Financial Inclusion, which builds on the recent progress in countries like Mexico to increase access to financial services for the poor.

Diaspora communities can also invest in bonds that finance infrastructure projects. Israel and India have already issued tens of billions of dollars of these diaspora bonds, and now Nigeria, Kenya, and the Philippines are considering issuing their own. The African Diaspora alone is sitting on an estimated \$50 billion in savings that could be invested in bonds. There may be ways for aid agencies and development finance institutions in migrants' host countries to help make these bonds more attractive, such as by forming partnerships with banks from investors' home countries.

Finally, there are ways to use public capital to incentivize research and development on new products. Several years ago, our foundation worked with partners to help create something called an Advance Market Commitment for a pneumonia vaccine. The vaccine didn't exist yet, but we guaranteed buyers for one as soon as it was developed. This commitment pulled in private sector expertise, allowing a vaccine to be available much earlier. It's now being rolled out in 37 countries.

The theory behind the Advance Market Commitment—that the right incentives can speed the development of products where there has been a market failure—is not new. The Orteig Prize motivated Lindbergh's flight across the Atlantic and kicked off a flurry of research on aviation. More recently, the creation of the first nongovernmental reusable space craft was a response to the Ansari X Prize. Both prizes led to private sector R&D spending far outweighing the value of the prize itself.

I believe this concept of pull mechanisms has real promise in the agricultural sector. At the last G20 summit, you agreed to explore pull mechanisms to encourage innovation in agricultural technologies. I understand that after a great deal of work, there will be an announcement on this effort in Cannes. I applaud Canada's leadership on this initiative.

I am excited by the prospects for private sector investment in development, but I am convinced of the need for countries to keep investing in ODA. There are many ways to be creative about finding new sources of public funds. In this report, I consider three innovative tax recommendations: a tobacco tax, a financial transaction tax, and an aviation and bunker fuel tax.

Among the revenue proposals I have examined, tobacco taxes are especially attractive because they encourage smokers to quit and discourage people from starting to smoke, as well as generate significant revenues. It's a win-win for global health.

Tobacco taxes are already ubiquitous. Ninety percent of countries have some form of them. And they work. In Thailand, as cigarette taxes rose from 1994 to 2007, revenues doubled even though the number of smokers went down significantly.

The World Health Organization (WHO) recommends tobacco excise taxes of at least 70 percent of the pack price. Although some countries have total tobacco taxes in excess of 70 percent, the average excise tax in G20 and European Union (EU) countries is approximately 55 percent.

WHO has developed the idea of a global Solidarity Tobacco Contribution (STC), under which countries would raise their tobacco excise taxes and allocate a portion of the increased revenues to global health.

High-income countries could allocate \$0.10 per pack of cigarettes sold to global health, middle-income countries could allocate \$0.06, and low-income countries could allocate \$0.02.

If this tax is implemented by G20 countries and other members of the EU and allocated as outlined above, it would generate approximately \$10.8 billion for global health. This would be in addition to the health benefits of reduced smoking that would result from increasing tobacco taxes.

There has been a lot of discussion lately about introducing new financial sector taxes to raise revenue for various purposes, as well as to discourage excessive risk-taking. Ideas include taxes on financial assets, combined profits and remuneration, and financial transactions. A financial transaction tax (FTT) has been widely advocated as a good way of raising additional resources for development.

FTTs already exist in many countries, where they generate significant revenue, so they are clearly technically feasible. According to the IMF, 15 G20 countries have some form of securities transaction tax. In the seven countries where the IMF estimates revenue, these taxes raise an estimated \$15 billion per year.

The general recommendation for an efficient tax is a low rate on a large base. This broadly holds true for FTTs as well. Across different instruments, the tax could be sized to reduce potential economic distortions, so that the tax on equities would be slightly higher than the tax on long-dated bonds, short-dated bonds, swaps, and futures.

Some modeling suggests that even a small tax of 10 basis points on equities and two basis points on bonds would yield about \$48 billion on a G20-wide basis, or \$9 billion if it were confined to larger European economies. Other FTT proposals offer substantially larger estimates, in the \$100 billion to \$250 billion range, especially if derivatives are included.

The G20 countries will continue discussing the FTT. For those that choose to adopt it, I urge you not to use all of the proceeds as general revenue. It is critical that a portion of the money raised be reserved for investments in development.

I agree with the IMF and World Bank that over time, markets and governments should price carbon more explicitly through taxes or other means. This is important not just because it will raise money, but also because it will reduce climate impact in the long run. That impact will disproportionately affect poor people. We can use the carbon price differentials between rich and poor countries to help them adapt to harsher conditions.

In the meantime, the IMF and World Bank proposals to tax shipping and aviation fuels can help countries start making the necessary adjustments. To respond to the climate crisis, poor countries need to take decisive steps to adapt and expand basic investments in areas like food production, water management, and coastal protection. The World Bank and IMF indicate that this adaptation investment will cost around \$17 billion a year each for South Asia and Sub-Saharan Africa.

Every year, such shipping and aviation fuel taxes could yield \$37 billion and \$27 billion, respectively. If a modest portion of these revenues were devoted to helping poor countries adapt to climate change, it would protect the livelihoods of millions of very poor people.

Development and climate change are closely related. The tools that will help small farmers cope with climate change will also help them be more productive in the short term. Drought resistant maize seeds and micro-irrigation technologies are good for farmers now, but they're extra good for those farmers who will be facing climate-related constraints in the years to come. Especially when it comes to agriculture, there is no bright line separating the overarching development agenda and the climate change adaptation agenda.

In the long term, the key to solving the problem of climate change will be innovation. If there is one shortcoming in our current response, it would be the gross underinvestment in research and development on energy innovations. People often present two timeframes when they set goals for reducing CO₂ emissions: a 30 percent reduction by 2020 and an 80 percent reduction by 2050. Since the 30 percent goal and 2020 deadline are easier for people to grasp, we have done a lot of thinking about how to increase efficiencies in the current system to reach shorter-term targets. But the 80 percent reduction by 2050 is the one that really matters for the future of the world, and to reach that one we're going to have to create entirely new approaches to generating power.

Climate change has gradually shifted from a trend that only experts worried about to a very real issue for governments and their citizens. That's a positive development. However, the world still hasn't made the kinds of investments it is going to take to address climate change. We finally understand the problem, but we aren't yet committed to the solution.

Innovation will be transformative when it comes to climate change and energy, but so far the world has been distracted from what counts on this issue in a dangerous way.

Conclusion

The world is facing urgent short-term and long-term challenges. I hope we focus on the assets we have always relied upon in difficult times. In particular, I hope we emphasize innovation.

Scientific and technological innovations will allow us to solve problems that cause significant misery and hold societies back. A malaria vaccine, for example, would change the economic outlook for Sub-Saharan Africa. Better seeds for the crops that poor people rely on—cassava, maize, millet, rice, and sorghum—would feed billions, improve nutrition, and guarantee food security for the world.

Another kind of innovation—a fundamental shift in the way we think about development—will provide amazing opportunities.

It used to be that the world was, roughly speaking, one-third rich and two-thirds poor. Now, the absolute number and the proportion of dynamic, healthy, highly educated countries are much higher. That has been good for everybody, because it means a more prosperous and stable world. It also means that there are now more countries that have more to give to development. When I see the mix of countries around the G20 table, I am excited about our ability to capitalize on this.

We need to make sure that G20 leaders continue the conversation about how we can do this together—both in Cannes and in the months ahead as we look toward the next meeting in Mexico. We can do much more to promote innovation for development.

- We can help rapidly growing countries apply their unique expertise through innovative partnerships.
- We can build the capacity of developing countries to raise more money and spend it in ways that help improve the lives of their citizens.
- We can work with donors to help them meet their pledges and continue improving the effectiveness of their aid.
- We can create a hospitable enabling environment and develop creative incentives to encourage the private sector to engage more deeply on development challenges.

The world has made so much positive progress, and there is a clear path to making it better still for those who have been left out. We cannot waste this opportunity by retreating now. As long as we are creative and stay committed, we will spur growth, lift people out of poverty, and reinforce the sources of strength that have already generated so much progress.

Options for Development Financing and Spending



Sources: World Bank, United Nations, International Monetary Fund, African Development Bank, World Health Organization, International Food Policy Research Institute, Bill & Melinda Gates Foundation estimates

