2015 and Beyond: The role of innovation for health in a new development framework

The Global Health Technologies Coalition, Deutsche Stiftung Weltbevoelkerung (DSW), and Policy Cures call for the governments of the world to ensure that the critical role of global health research and development (R&D) is acknowledged in a post-2015 global development framework.

- New technologies for health will help propel progress towards health targets in the post-2015 era.
- Science, technology, and innovation are key drivers in economic growth, the creation of new jobs—and ultimately—poverty reduction.
- To promote an environment that truly enables the ability to achieve sustainable development goals, donors and national governments must invest in building systems that promote and sustain innovation capacity in low- and middle-income countries.

A history of health and development successes made possible by research

Previous investments in research to develop new vaccines, drugs, diagnostics, and other health tools have led to some of the greatest global health advances to date, saving countless lives and resulting in billions of dollars in cost savings. Successes such as new vaccines have contributed to decreased child mortality; new drugs have helped to combat tuberculosis (TB), neglected tropical diseases (NTDs), and malaria; and new HIV treatment and prevention technologies hold the potential to help reach an AIDS-free generation.

Advances made possible by research have created lifesaving health tools that have contributed to astounding public health successes. However, significant gaps remain. In addition, as epidemics evolve and new diseases are discovered, there is no guarantee that tools currently in use will continue to address health needs in the future. For instance, infectious diseases still claim the lives of nearly 9 million people each year, and global challenges such as drug resistance, the increased globalization of infectious pathogens, and structural barriers to access for proven technologies such as HIV/AIDS treatment and polio vaccines pose threats to human health across the globe. The next generation of health tools holds the potential to further prevent the spread of disease, increase treatment success rates, end epidemics and eradicate some diseases, as well as to address emerging threats.

R&D for new global health technologies through 2015 and beyond must continue to achieve, sustain, and build on global targets for disease control and elimination. Science, research, and innovation will be critical to realize new development goals while contributing to economic development through

THE NEED FOR NEW TECHNOLOGIES

Women in poorer countries can face a 1 in 17 risk of dying during pregnancy and childbirth. New technologies are needed to ensure clean and safe deliveries, prevent postpartum hemorrhage, and help women and newborns avoid life-threatening infections. In addition, through a proven cost-effective treatment has cured millions from TB, drug-resistant TB cases are rising worldwide. New TB drugs could significantly reduce the cost and timeframe of treatment and reduce transmission, while new vaccines could prevent childhood and adult forms of TB, prevent progression of latent TB infection to the active disease stage, and shorten drug treatment regimens or reduce the risk of relapse.

improved health and strengthened capacities for science, technology, and innovation.

Capitalizing on the fruits of science and innovation for health

Science, research, and innovation are necessary strategic components to the evolving global approach to health and development. Support for these issues contributes to the development goals and targets for the post-2015 agenda, potentially strengthens health and economic growth, and can foster an environment that ultimately enables the achievement of sustainable development goals by contributing to improved health outcomes and strengthened local innovation capacity to address health issues.

In order to fully realize the potential of science and innovation, it is crucial that the public sector increase its current investment in global health R&D. Additionally, national governments should integrate research into their strategic plans to achieve global health and development goals while also working to improve local innovation systems and capacity.

Earlier this year, a High Level Panel[1] (HLP) of eminent persons released a report outlining recommendations for the post-2015 development agenda, including twelve potential goal areas. We support the recommendations made by the HLP and calls on the governments of the world to ensure that innovation is embedded as a key component of the post-2015 agenda.

Maximizing health

The HLP established a fourth goal area to address health, called "Ensure healthy lives". This goal area called for the following components, with some indicators still to be defined by global stakeholders:

a. *End preventable infant and under-5 deaths*
b. *Increase by x* percent the proportion of children, adolescents, at-risk adults and older people that are fully vaccinated*
c. *Decrease the maternal mortality ratio to no more than x* per 100,000*
d. *Ensure universal sexual and reproductive health and rights*
e. *Reduce the burden of disease from HIV/AIDS, tuberculosis, malaria, neglected tropical diseases and priority non-communicable diseases*

**still to be defined*

New health technologies will help propel progress towards health targets and overall development in the post-2015 era; to ensure this is possible, innovation must be included as a component of any health goal. Specifically, official development assistance, as well as domestic investments by low- and middle-income countries must prioritize support for the development of new global health technologies. Additionally, all stakeholders involved in the development of new health tools must be accountable for ensuring timely and equitable access to new and effective technologies.

[1] Post-2015 HLP website. Available at: http://report.post2015hlp.org/. Accessed on December 2, 2013

Sustaining the investment

New health technologies to address major causes of disease burden are urgently required. Increased investments must be made in the R&D of new tools, as well as in the rapid expansion of access to maximize the impact of such lifesaving tools as soon as they are available. The public sector is consistently the largest overall funder of R&D for poverty-related and neglected diseases and conditions, accounting for almost two-thirds of the US$3,048 million spent in 2011.[2] Many low- and middle-income countries rely largely on external donors to fund health R&D, and make only modest domestic contributions to R&D. Governments must increase their investment in R&D which targets poverty-related and neglected diseases and related conditions.

Promoting equity and access

Products must be developed against diseases that are primarily endemic in the developing world, where patients and health providers may not be able to afford them. Products that are affordable, available, and accessible, especially to vulnerable populations, can contribute to more equitable health outcomes, ultimately ensuring that people are able to live healthy lives and reach their full potential. For example, point-of-care diagnostics and vaccines that remain viable outside of refrigeration can improve health in remote communities that often have little or intermittent access to health care. More affordable vaccines and treatments will make it possible for governments to protect more children and communities through wider distribution and delivery, and new preventive vaccines can reduce disease incidence while better enabling health systems to focus on treating existing patients.

Increasing research to address the needs of vulnerable populations—such as women and girls—can also help tackle issues of inequality in accessing appropriate health care and can contribute to improvements in gender equality. Specifically, some products under development can be empowering to vulnerable populations—for example, products such as HIV-blocking microbicides that women can initiate, rather than having to negotiate with partners, to protect their own health.

Contributing to economic growth

The HLP established an eighth goal area called "Create jobs, sustainable livelihoods, and equitable growth". This goal area called for the following components, with some indicators still to be defined by global stakeholders:

a. *Increase the number of good and decent jobs and livelihoods by x**
b. *Decrease the number of young people not in education, employment or training by x percent*
c. *Strengthen productive capacity by providing universal access to financial services and infrastructure, such as transportation and ICT*
d. *Increase new start-ups by x* and value added from new products by y through creating an enabling business environment and boosting entrepreneurship*

**still to be defined*

Science, technology, and innovation are key drivers in economic growth, the creation of new jobs, and ultimately, poverty reduction. Donors and national governments must prioritize scientific capacity building and strengthening local health innovation systems when investing in development programs.

Supporting scientific capacity building

Sustained investments in global health R&D can contribute to strengthened local capacities for science, technology, and innovation, resulting in a more skilled workforce, as well as the creation of new jobs in the innovation sector. Such outcomes contribute to local economic growth and poverty reduction. Strengthening health-related science and research capacities among developing country partners is crucial to economic growth, and can help develop capacities that are transferable to other sectors, such as climate change technology, food security and hunger reduction, and safe water and improved sanitation.

R&D may help provide opportunities for sustainable academic growth and professional development, contributing to improved education outcomes at

[2] *Neglected Disease Research and Development: A Five-year Review*. Sydney and London: Policy Cures; 2012. Available at: http://www.policycures.org/downloads/GF2012_Report.pdf

the tertiary and vocational levels. Partnerships to develop new global health technologies often bridge academic connections between high- and low-income countries.

Enhancing local innovation systems

Building R&D capacity contributes to improved ability to address domestic health issues with domestic capacity. Additionally, a robust investment in R&D can contribute to strengthened growth and employment by increasing local biopharmaceutical presence and capacity and leading to increased employment opportunities in the science, technology, and innovation fields.

Technology transfer has been successfully used to build the skills, knowledge, and capacity of low- and middle-income countries. By partnering on product development, many businesses in developing countries have acquired skillsets that have helped them meet international standards and reach new markets with their products. Several health product manufacturers have transitioned from producing generic versions of licensed products to fully developing novel products that generate more revenues and profits. Researchers and clinical investigators that have partnered on product development have utilized equipment and training from those trials to meet the health needs of the communities in which they are located.

Creating an enabling environment for health and development

The HLP established a twelfth goal area called "Create a global enabling environment and catalyze long-term financing." This goal area called for a number of important components, among them the promotion of "collaboration on and access to science, technology, innovation, and development data."

Donors and national governments must invest in building systems that promote and sustain innovation capacity in low- and middle-income countries to promote a truly enabling environment for achieving sustainable development goals. This includes investing in global R&D partnerships, improving health and regulatory systems, and creating national science, technology, and innovation policies.

Although a clear public health need or gap may exist, a lack of a perceived commercial market for a new health technology may translate into a lack of demand. Unique partnership mechanisms are important to solve this market challenge and bring together diverse stakeholders, including those from the private sector. Nonprofit product developers, including product development partnerships (PDPs), were created to help respond to this need. These groups facilitate global innovation-themed partnerships that harness the expertise, resources, and investments of the public, philanthropic, and private sectors. Such collaboration allows partners to share risks and costs and drive R&D efforts toward highly focused, well-defined goals, and engage the most appropriate partners with relevant expertise. These partnerships have held the keys to many global health successes. For instance, as of 2013, nonprofit product developers and their partners contributed to the development, evaluation, and/or introduction of 42 global health products.[3] Their work extends beyond R&D and also encompasses relationship and portfolio management, research and manufacturing capacity building, and advocacy.

System challenges, such as weak and disjointed regulatory systems, can cause major barriers to health outcomes by delaying the availability and compromising the safety of new and existing health products. By improving governments' availability to introduce, deliver, and scale up these new technologies, key gains in strengthening health systems can be achieved—for example, through improved ability to forecast demand, plan and budget for the introduction of a new product, and strengthened regulatory capacity for testing, licensure and introduction of new technologies.

Although many low- and middle-income countries have national science or research plans, these plans do not always explicitly link to the achievement of health and development goals. When creating

[3] *New products hold the key to health improvement worldwide*. Washington, DC: Global Health Technologies Coalition; 2013. Available at: http://ghtcoalition.org/files/pipelinefactsheet_final.pdf

strategies to meet sustainable development goals, national governments must integrate the use of science, research, and innovation in their plans.

Recommendations for UN Member States

As United Nations (UN) Member States convene to determine a final post-2015 development framework, governments must ensure that the critical role of global health R&D is acknowledged in a post-2015 global development framework. Specifically:

- Official development assistance, as well as domestic investments by low-and middle-income countries must prioritize support for the development of new global health technologies.
- All stakeholders involved in the development of new health tools must be accountable for ensuring timely and equitable access to new and effective technologies.
- Donors and national governments must prioritize scientific capacity building and strengthening local health innovation systems when investing in development programs.
- Donors and national governments must invest in building systems that promote and sustain innovation capacity in low- and middle-income countries to promote a truly enabling environment for achieving sustainable development goals. This includes investing in global R&D partnerships, improving health and regulatory systems, and creating national science, technology, and innovation policies.