

Best policies that can be immediately scaled up (expected BCR higher than 15)

Family planning: (BCR of 94).

Family planning is beneficial to individuals, families, and societies alike, and investing in the expansion of family planning and reproductive health services has been recognized as an essential step to achieving many of the Sustainable Development Goals. It is estimated that 45 million women in Sub-Saharan Africa with an unmet need for family planning.

The total direct and indirect costs associated with expanding contraceptive coverage to 100% is \$27 per woman per year. In addition to the costs of providing family planning services, this number also includes all costs to the women from out-of-pocket expenses to costs related to the loss of time from seeking care, and management of contraceptive-related side effects.

The most immediate effect is the prevention of unwanted pregnancies and allowing women to space their children. This leads to the aversion of 230,000 maternal deaths and other negative health outcomes, conservatively estimated at 2 times the cost.¹

Better spacing of children will lead to higher levels of female education, increases in female labor force participation and earnings. Better spacing also means fewer children in each cohort, thus higher population percentage in the workforce. This leads to a demographic dividend, which increases economic growth in the coming decades. Essentially, reductions in fertility and population growth rates would result in sustained increases in GDP per capita over several decades. Discounting these future benefits at 5% reveals a present-day value of the demographic dividend at 86 times the cost of scaling up family planning services.

In addition to this dividend, a reduced fertility rate leads to major costs savings from reduced health, education, and other societal expenditures from increased populations. These savings further outweigh the family planning cost by 4 to 7 times.

Summing it up, benefits are worth a staggering \$573 billion per year for Sub-Saharan Africa can be achieved through scaling up family planning services.

Women empowerment collectives: (BCR of 58).

Voluntary groups of 15-25 women, also known as Self Help Groups (SHGs), who meet every week to save, start small business activities, and grant loans to one another. They have been used in a wide range of contexts, adapted for refugees, caregivers of orphans and vulnerable children, people living with HIV/AIDS, adolescents, as well as layered with maternal, neonatal, child, and sexual and reproductive health support.

The evidence base for the impact of these collectives is nascent but highly promising. Only one study estimates BCRs, while several rigorous evaluations have estimated cost-effectiveness.

A 2013 cost-benefit analysis of Self Help Groups in Ethiopia found that the intervention yielded benefits between \$58 and \$173 for every dollar spent.

Self Help Groups and Women's Empowerment Collectives are numerous and widespread but have received little visibility or investment. The intervention is already widespread and may be replicated at scale. However, the model is also founded in peer support, solidarity, and trust, and therefore there is a risk that these groups will fail if they are expanded rapidly or with

¹ Order of magnitude adjustment of the number presented in the authors' brief to make it more comparable with the other BCRs in this report: 5% discount rate and only valuing averted infant child deaths resulting in a living newborn, as opposed to

the result of an averted pregnancy (averted newborn deaths estimated as 90% of the total averted DALYs).

external financial incentives to achieve scale. Rather, a programmatic approach should focus on mapping and investing in the very large ecosystem of Self Help Groups that exist already, and facilitating investments in the systems that can support them to thrive.

Agricultural yield increase R&D: (BCR of 55).

Increasing agricultural productivity has been critical for reducing poverty and hunger globally. However, Africa has benefited less than other regions from past investments and continues to have low agricultural productivity by global standards.

Broad-based investments in agricultural R&D and rural infrastructure generate very large total economic benefits and big reductions in hunger in Africa. Because of the high cost of physical infrastructures such as roads, electricity, and irrigation, the BCR of a comprehensive package of these investments is lower than for increased investments in agricultural R&D, although it still has a substantial BCR of 10:1. Given the high impacts on economic growth, these investments warrant serious consideration as necessary complements to agricultural R&D and targeted investments in hunger and nutrition programs.

As a stand-alone investment program, increased spending on international agricultural R&D has a very high BCR of 52:1. This result indicates severe underinvestment in agricultural R&D in Africa and the need to substantially increase such investment.

In addition to public expenditures on agricultural R&D, private sector investment in agricultural R&D plays an important role in agricultural productivity growth. In much of the world, private sector investment in agricultural R&D has increased faster than public sector investment, but private sector investment in agricultural R&D remains low in Africa and other low-income regions.

The International Agricultural Research Centers of the CGIAR are well-placed to scale-up agricultural R&D investments in Africa, with research facilities and programs in place in

many countries and regional programs across Africa. A phased doubling of investments between 2015 and 2030 is highly feasible.

Vaccination against rotavirus: (BCR of 44).

To achieve healthy and well-nourished citizens, it is necessary to prevent or control diarrhea, which kills 330,000 children each year in Africa. Increased vaccination against rotavirus can save 26,000 children each year and avoid 140,000 hospitalizations. The cost per child vaccinated is just \$6, but the social benefits are 44 times higher. For Nigeria, the BCR is 126, and for Cameroon 64.

Tobacco control: (BCR of 23, range 5.6-120)

Half of lifetime smokers will die before they reach 70, losing an average of 10 years of life. There is no safe level of tobacco use. More than 1 billion people in the world smoke; 21% of the world's population. While smoking prevalence is still low in most African countries, it is rising in direct response to industry promotion of smoking. The optimal time to institute tobacco taxation is now, before tobacco prevalence increases. This will prevent uptake and prevent onset of diseases. Scaling the intervention to multiple countries in the sub-region is desirable to reinforce positive social norms and health behaviors and because illicit tobacco trade will be discouraged if the retail price levels of tobacco are roughly similar from country to country.

The economic benefits of reducing tobacco consumption through increased taxation are substantial. By raising the tobacco tax to 75% of the retail price, we expect smoking prevalence to drop by 20%. The total health and productivity from reduced smoking are valued at USD 331 million over 15 years for our example country, while cumulative discounted costs are USD 2 million. The result is a BCR of 120.

Raising taxes incurs some costs and benefits beyond the direct administrative and enforcement costs included in this model and the improved health and productivity measured. First, traditional economics

literature includes the purported social welfare costs of “coercing” smokers to pay more for their desired product or stop purchasing it. This concept, called “deadweight loss”, is relevant to situations where consumer sovereignty is being sacrificed for social gain and is a premise behind the rationale economic model. Incorporating this cost into the analysis lowers the BCR to a range between 5.6 to 23 depending on the methodology used to valuing the smokers’ loss. However, in regard to addictive substances such as tobacco, the existence and amount of DWL is debated among economists. The arguments against including deadweight loss are that smokers are time inconsistent causing them to act against their own interest in not smoking.

Facilitating trade within ACFTA: (BCR of 20).

With the signing of the African Continental Free Trade Area in March 2018, Africa can increase its trade and capture economic gains. But the continent still has more than 3,000 so-called non-tariff measures (NTMs) that hinder growth. The policy proposal will extend the UNCTAD/African Union crowdsourced regional database on NTMs. This will make it easier for traders to trade and though the information it will help national trade facilitation committees and the annual ministerial meetings of the corridor authorities to push for easing or elimination of NTMs. It will help increase trade and over the next 10 years grow Africa’s GDP about \$5 billion per year. The information collection will cost a trivial \$15m, but as with any trade increase, there will be some shorter-term adjustment costs. Even under a high-end estimate of costs for adjusting to increased trade at \$250m, the benefits will outweigh the total costs 20-to-1.

Increased access to bednets: (BCR of 16).

Much progress has been made in the fight against malaria in sub-Saharan Africa (SSA). Incidence rates (the number of cases/1000 population) have dropped from 278 (2010) to 219 (2016 and 2017). Though, in comparison to the global malaria incidence rate (59), there is still some work to be done.

Long-lasting insecticide-treated nets (LLIN) are generally considered the most cost-effective control. Despite bednets being distributed en masse and often for free, in 2017 175 million LLINs were distributed, the percentage of the population with access to an LLIN is estimated at only 56%.

Owning a bednet does not necessarily mean you sleep under one, the ownership to usage ratio is around 0.89, nevertheless, most bednets are used, and the cost is less than \$5 per distributed bednet. However, increasing access to 75% in high-malaria-burden regions of Western and Central SSA would need an additional 55 million bednets at a cost of \$268 million. However, the payoffs in terms of averted death and disability, and lowered malaria treatment expenses are huge, in total worth \$4.4 billion. The social yield is on average 16 times the investment.

Scaling up preschool: (BCR of 16).

Only about a third of Sub-Saharan Africa children are enrolled in preschool. Yet, theoretically, preschool is one of the best education investments, because early schooling has higher impacts over a longer time while being cheaper to deliver.

The policy proposes to scale-up two-year preschool across Africa. It assumes an average cost of \$119 per student per year, based on estimates from Nigeria.

It is expected that more preschool will lead to higher wages in adulthood. However, there are no long-term studies from Africa following children with and without preschool to adulthood, comparing their earnings. Hence, the brief assumes a 16% wage increase from preschool, based on an average from two long-term studies of preschool-to-adulthood wages in Jamaica (finding 25% earnings increase) and in the US (7%).

Assuming labor earning of \$1258, conservatively based on 80% of the average income in Sub-Saharan Africa, that means that preschool will increase the average wage by \$201 per year. Of course, the policy will have

costs now, whereas the benefits of increased wages will only occur when the child becomes 20, and continue until age 65. It is assumed the wages will grow with the productivity growth of the economy. All benefits are discounted back to today.

Preschool will cost society two times \$119 but create a higher social growth stream 17 years later, first worth \$301 (\$201 with the productivity growth of 17 years), ending in 2079 being worth \$875. Discounted till today, the cost is \$221, and the benefits worth almost \$3,500. Each dollar spent on preschool will deliver \$16 of social benefits.

Breastfeeding promotion: (BCR of 15)

More than 2.5 million children under the age of five years die every year in sub-Saharan Africa from preventable causes (UNICEF, 2019a). Increasing exclusive breastfeeding prevalence from the continent's 46% baseline to 95% can avert help avert thousands of deaths. Approximately US\$1.9 billion can be gained every year in terms of health benefits and treatment and care seeking costs averted.

Training; supervision; salaries; transportation; information, education and communication (IEC) materials; materials and supplies for community health workers. Several costing studies have been undertaken to estimate the costs of community interventions promoting breastfeeding, with estimated costs ranging between US\$139 to US\$230 per mother. The estimated benefit-cost ratio is 14.50.