

Financing SDG3

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**Nuclear Technology for
the Sustainable Development Goals**



17 goals – 169 targets

- Sustainable Development Goals
- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5. Achieve gender equality and empower all women and girls
- Goal 6. Ensure availability and sustainable management of water and sanitation for all
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. Reduce inequality within and among countries
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. Ensure sustainable consumption and production patterns Goal 13. Take urgent action to combat climate change and its impacts*
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- 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
- Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Health targets

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
- 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
- 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
- 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol
- 3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents
- 3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes
- 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
- 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- 3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate
- 3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all
- 3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
- 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

Sizable investment funding (0.7% - 1% of global wealth)

Table 1. Summary of incremental SDG investment needs in low- and lower-middle-income countries (average for 2015 – 2030 in \$₂₀₁₃ billion)

Investment area	"Development" investment needs	Incremental climate mitigation and adaptation investment needs	Total investment needs	Private, commercial financing (%)	Private, commercial financing	Public financing
Health	68 - 87	1 - 1.4	69 - 89	0%	0	69 - 89
Education	194	0	194	0%	0	194
Social protection	?	?	?	?	?	?
Agriculture and food security	[125]	[22]	[148]	[51%]	[75]	[73]
Access to modern energy	257 - 278	51 - 55	308 - 333	[55 - 59%]	169 - 196	137 - 138
<i>Access to electricity and clean cooking fuels</i>	54 - 71	10 - 14	64 - 85	[40 - 50%]	26 - 42	38 - 42
<i>Power infrastructure</i>	[203 - 207]	[41]	[244 - 248]	[59 - 62%]	[144 - 154]	[94 - 100]
Access to water and sanitation	29	13 - 16	43 - 46	[5 - 26%]	2 - 12	34 - 40
<i>Basic water supply & adequate sanitation</i>	28	6	34	[0 - 20%]	0 - 7	27 - 34
<i>Water and sanitation infrastructure</i>	[1]	[8 - 11]	[9 - 12]	[24 - 44%]	[2 - 5]	[7]
Telecommunications infrastructure	[361]	[72]	[434]	[52 - 68%]	[225 - 295]	[139 - 208]
Transport infrastructure	[189]	[0]	[189]	[54 - 84%]	[102 - 159]	[30 - 87]
Ecosystems, incl. biodiversity	[21 - 28]	?	[21 - 28]	[15%]	[3 - 4]	[18 - 24]
Data for the SDGs	0.4	0	0.4	[0%]	0	0.4
Emergency response and humanitarian work*	8 - 23	?	[8 - 23]	[0%]	[0]	[8 - 23]
All SDG investment areas**	1253 - 1316	160 - 167	1413 - 1483	[41 - 50%]	577 - 741	743 - 836

Source: Author's calculations and sources identified in the paper.

Financing health care

- Low income countries cannot raise all the income themselves
- Requires transfer of 0.23 % of wealth to low from high income countries
- Daunting but in the health area considerable advances have been made and provides good examples

Requirements (easy to say difficult to implement)

- Take objectives seriously
 - Example - Achieved in health
- Estimate needs backward engineer to assess resource requirements
 - Example in health areas
 - Lancet Oncology Commission (Radiology, Surgery, Primary care)
 - Focus on reducing mortality
- Evaluate implementation
 - Again well known standards in health sector
 - Cost-effectiveness widely applied

Sustainable funding of health care: we also know what does not work

- Private Health Insurance does not work!
 - Leads to exclusion
 - Leads to inequality of access
- Co-payments
 - Historically common to raise revenue
 - Do not work (reduces utilisation and does not generate revenues)
 - Tax on the ill (and therefore commonly the poor)

Health provides examples Sustainable Funding of Health Care

- Current situation already has a high mix of public-private funding
 - Targeted private & charitable funding
 - (Global Fund, GAVI & Global Finance Facility)
- Sustainability linked to public sector financing not to "development aid"
- Growth helps
- High demand for public sector funded Universal Health Care Coverage
 - This should cover an essential basic package over both communicable & non-communicable disease
- Needs assessments & implementation of practices becoming well established
- Evaluation of impact growing in importance

Sustainable financing requires a great reliance on internal funds

Mechanism	Description	Revenues raised	Funding purpose/beneficiaries
Solidarity Levy on Airline Tickets	A coordinated tax on airline ticket sales. Launched in 2006.	US\$ 1 billion between 2006 and 2011	Collects funds for UNITAID and IFFIm (HIV and AIDS, tuberculosis and malaria and several other communicable diseases)
International Finance Facility for Immunization (IFFIm)	Raises funds by issuing bonds in international capital markets. Repays bondholders with the long-term ODA commitments of donor governments.	US\$ 3.4 billion between 2006 and 2011	IFFIm funds are channelled to the GAVI Alliance
Advance Market Commitments (AMC) for a pneumococcal vaccine	Donors commit funds to guarantee the price of pneumococcal vaccines. These financial commitments provide incentives to vaccine manufacturers to develop a product and to manufacture it at scale.	US\$ 1.5 billion donor commitment in total	Pneumococcal vaccine
2% share from the sale of Certified Emissions Reductions (CERs)	A 2% levy on carbon credits generated through the Clean Development Mechanism is channelled to the Adaptation Fund, which finances climate adaptation projects and programmes in developing countries.	US\$ 70 million	Climate adaptation projects
Financial Transaction Tax (FTT)	A tax on specific types of financial transactions such as currencies, shares, bonds and derivatives. Numerous countries implement FTTs at the national level. 12 countries of the EU plan to implement a coordinated FTT from 2014.	<i>Proposed. Estimates range from US\$ 33 billion to US\$ 650 billion per year at the global level</i>	Domestic purposes. No funds committed to international development (except France with a commitment to allocate 10% of revenues raised)
Carbon taxes	A tax on the carbon content of fossil fuels (such as coal, oil and gas) designed to provide businesses and individuals with an incentive to curb activities that produce CO ₂ emissions while also raising revenues.	<i>Proposed. Estimates range from US\$ 48 billion to US\$ 250 billion each year</i>	
Special Drawing Rights (SDRs)	The SDR is an international reserve asset created by the IMF to supplement its member countries' official reserves. SDRs are created by the Executive Board of the IMF and can be allocated to member countries in proportion to IMF quotas.	US\$ 250 billion in SDRs was created in August 2009. Allocated to members in proportion to IMF quotas	Direct budget support. A Green Fund capitalized in part with SDRs has also been suggested (IMF, 2010)

- Direct & Indirect tax will play a major role for internal financing
 - Predictable
 - More responsive
- “Activity” taxes
 - Financial transactions
 - Carbon emission
- Still requires some targeted finance

Having raised resources make sure spending is optimal

- Uplift in data on treatment costs and outcomes
- Establish the “opportunity cost” of health care spending
 - If \$ spent on this disease that \$ is lost to other disease spending
- Establish the desired outcome
 - Years of life saved (LYS) through different treatments
 - Quality of years of lives save (QALYs or DALYs)
- Establish the (opportunity) cost per LYS/QALY gained for each treatment
- Establish a “threshold” limit for the cost per LYS/QALY gained
 - Fund every treatment up to the threshold and nothing above it
 - IF goals not achieved find subsidies

Sustainability also requires skills, training, R&D...

More resources are needed to bridge the knowledge divide and to create endogenous science and technology capabilities in developing countries.

Economic disparities and the knowledge divide (2007 or most recent year)

Indicator	Values and ratios		
	A) OECD countries	(B) LICs	Ratio (A)/(B)
GDP per capita (constant 2000 US\$)	24,645.6	351.7	70.0
Gross capital formation per capita (constant 2000 US\$)	4,577.6	87.1	52.5
Trade per capita (imports + exports of goods and services) (constant 2000 US\$)	13,286.5	171.8	77.3
Scientific output: scientific publications per 100,000 inhabitants	501	0.2	2505
Technological output: patent applications by residents per 100,000 inhabitants	66.7	0.03	2223.3
Production output: high-technology exports per capita	961.1	0.1	9611.0

Source: World Bank Global Indicators (LICs, as defined by the World Bank, with an average income per capita of less than US\$ 1,005 in 2010).

Source: Sagasti (2004; 2012).

- Education & training of the workforce
- Improving skill levels
- Ensuring “development” improves and invests
 - Another health example is radiotherapy for cancer therapy/prevention
 - Both improves health and skills in the workforce

Sustainable Health Care Funding

- Incentives/regulate R&D in a manner that targets SDG3 goals
- Move to universal coverage of health care funded through direct & indirect taxation (targeting “bads” in particular)
- Set up explicit rationing rules (based on cost per QALY/DALY with imposed country specific thresholds)
 - Will move resources to child/youth care
 - May not achieve all goals (requires outside subsidies to bring down treatment costs to below threshold levels in high cost areas)

Thank you!

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