

Preliminary Benefit-Cost Assessment for 12th Session OWG Goals

In a world of limited resources, we can't do everything, so **which goals should we prioritize?** The Copenhagen Consensus Center provides information on which targets will do the most social good (measured in dollars, but also incorporating e.g. welfare, health and environmental protection), relative to their costs. Some of the world's top economists have assessed the targets from the 12th session Open Working Group document into one of five categories, based on economic evidence:

Phenomenal, **Good**, **Fair**, **Poor** and **not enough knowledge**

The final decision on choosing goals will definitely rest on a number of factors, not just economics - but knowing the costs and benefits provides an important piece of information. Given the short turnaround, the results should be considered informative, but preliminary. The Copenhagen Consensus will present full, peer-reviewed economic evidence over the coming half year.

Just think: if we could prioritize a goal that saves 10 lives for every \$250,000 spent, over another goal that saves 1 life for the same amount, we could do billions of dollars more good over the next 15 years!

This report builds upon the similar analysis Copenhagen Consensus Center conducted on the 11th OWG document. Extensions of analysis beyond the 11th session report include:

- Ratings for most new targets
- Ratings for Focus Area 9: Promote sustainable industrialization
- Ratings for Focus Area 10: Reduce inequality within and among nations
- Ratings for Focus Area 14: Attain conservation and sustainable use of marine resources, oceans and seas
- As requested, the report also contains more explanation on many targets rated poor and suggestions for better wording of many targets.

Summary statistics of 11th and 12th OWG documents:

| | 11 th OWG | 12 th OWG |
|---------------------|----------------------|----------------------|
| # total targets | 139 | 212 |
| # Phenomenal | 13 | 27 |
| # Poor | 10 | 23 |

The list of participating academics can be seen on the back.

Additional Background Notes to this Document

This document was put together over seven days after the targets for consideration at the 12th session of the OWG were released on 2 June 2014. It builds upon the information presented in a similar document Copenhagen Consensus Center released in the lead up to the 11th session of the OWG.

Given the short turnaround, the assessments should be considered preliminary, and much nuance explaining the rationales has been omitted. Nevertheless, we hope that the assessments are informative and will help focus the Open Working Group on the targets that will yield the most social benefit relative to cost.

The number of targets in 12th OWG draft is 212. To ensure that the final list of goals is limited in number, the OWG will need to prioritize targets. This decision will rest on a number of factors, not just economics - but knowing the costs and benefits provides an important piece of information. We hope that this information will help focus attention on where the global community can do most good relative to the cost.

The assessments were put together by interviewing 29 of the world's top economists in their respective fields. They were asked to provide an informed estimate of the economic costs and benefits associated with the strategies that would be available to implement the targets. As much as possible non-economic considerations such as rights based arguments and political considerations were ignored. This is not to imply that these other considerations are not important – only that the intention of this document is to focus purely on the costs and benefits. In many cases, the targets were not specific enough to assess a benefit and a cost, however we urged the economists to err on the side of providing a recommendation, even if it would not normally reach the very high confidence required of academic articles.

It should be noted that the benefits and costs do NOT solely reflect money. In line with standard welfare economics principles, all benefits and costs have been considered (such as improved health, environmental impacts) – which have subsequently been converted into a dollar value.

The key for assessments are:

PHENOMENAL – Robust evidence for benefits more than 15 times higher than costs

GOOD – Robust evidence of benefits between 5 to 15 times higher than costs

FAIR – Robust evidence of benefits between 1 to 5 times higher than costs

POOR – The benefits are smaller than costs or target poorly specified (e.g. internally inconsistent, incentivizes wrong activity)

UNCERTAIN – There is not enough knowledge of the policy options that could reach the target OR the costs and benefits of the actions to reach the target are not well known

We thank the participating economists for their valuable input, and we hope that the OWG finds these assessments useful as they continue their work in identifying transformative, sustainable development goals.

9 June 2014

Bjorn Lomborg on behalf of *The Copenhagen Consensus Center*

For more information on the Post 2015 Consensus project, including the content of this report, ways to be involved in this project and methods to support or donate to the work of the Copenhagen Consensus Center, please contact the project manager Brad Wong at brad@copenhagenconsensus.com

Legend: **PHENOMENAL** **GOOD** **FAIR** **POOR** **UNCERTAIN**

INTRODUCTION AND PROPOSED GOALS AND TARGETS ON SUSTAINABLE DEVELOPMENT FOR THE POST2015 DEVELOPMENT AGENDA

Poverty eradication is the greatest global challenge facing the world today and an indispensable requirement for sustainable development. We are therefore committed to freeing humanity from poverty and hunger as a matter of urgency.

We recognize that poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development.

We reaffirm our commitment to fully implement the Rio Declaration on Environment and Development, Agenda 21, the Programme for the Further Implementation of Agenda 21, the Plan of Implementation of the World Summit on Sustainable Development (Johannesburg Plan of Implementation) and the Johannesburg Declaration on Sustainable Development of the World Summit on Sustainable Development, the Programme of Action for the Sustainable Development of Small Island Developing States (Barbados Programme of Action) and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. We also reaffirm our commitment to the full implementation of the Programme of Action for the Least Developed Countries for the Decade 2011-2020 (Istanbul Programme of Action), the Almaty Programme of Action: Addressing the Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries, the political declaration on Africa's development needs, and the New Partnership for Africa's Development.

We reaffirm that we continue to be guided by the purposes and principles of the Charter of the United Nations, with full respect for international law and its principles. We further reaffirm the importance of freedom, peace and security, respect for all human rights, including the right to development and the right to an adequate standard of living, including the right to food, the rule of law, good governance, gender equality, women's empowerment and the overall commitment to just and democratic societies for development. We reaffirm the importance of the Universal Declaration of Human Rights, as well as other international instruments relating to human rights and international law.

We recognize that people are at the centre of sustainable development and, in this regard, we strive for a world that is just, equitable and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all.

We affirm that there are different approaches, visions, models and tools available to each country, in accordance with its national circumstances and priorities, to achieve sustainable development in its three dimensions.

We recognize that each country faces specific challenges to achieve sustainable development, and we underscore the special challenges facing the most vulnerable countries and, in particular, African countries, least developed countries, landlocked developing countries and small island developing States, as well as the specific challenges facing the middle-income countries. Countries in situations of conflict also need special attention.

We reaffirm all the principles of the Rio Declaration on Environment and Development, including, inter alia, the principle of common but differentiated responsibilities, as set out in principle 7 thereof.

We reaffirm our commitment to strengthen international cooperation to address the persistent challenges related to sustainable development for all, in particular in developing countries. Sustainable development can only be achieved with a broad alliance of people, governments, civil society and the private sector, all working together to secure the future we want for present and future generations.

We reaffirm that the means of implementation identified in Agenda 21, the Programme for the Further Implementation of Agenda 21, the Johannesburg Plan of Implementation, the Monterrey Consensus of the International Conference on Financing for Development and the Doha Declaration on Financing for Development are indispensable for achieving the full and effective translation of sustainable development commitments into tangible sustainable development outcomes. We reiterate that each country has primary responsibility for its own economic and social development and that the role of national policies, domestic resources and development strategies cannot be overemphasized. We reaffirm that developing countries need additional resources for sustainable development. We recognize the need for significant mobilization of resources from a variety of sources and the effective use of financing, in order to promote sustainable development. We acknowledge that good governance and the rule of law at the national and international levels are essential for sustained, inclusive and equitable economic growth, sustainable development and the eradication of poverty and hunger.

Sustainable Development Goals are accompanied by targets and will be further elaborated through indicators focused on measurable outcomes. They are action oriented, global in nature and universally applicable to all countries, while taking into account different national realities, capacities and levels of development and respecting national policies and priorities. They integrate economic, social and environmental aspects and recognize their interlinkages in achieving sustainable development in all its dimensions.

List of Proposed Sustainable Development Goals to be attained by 2030

- 1. End poverty in all its forms everywhere**
- 2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture**
- 3. Attain healthy life for all at all ages**
- 4. Provide equitable and inclusive quality education and life-long learning opportunities for all**
- 5. Attain gender equality, empower women and girls everywhere**
- 6. Secure water and sanitation for all for a sustainable world**
- 7. Ensure access to affordable, sustainable, and reliable modern energy services for all**
- 8. Promote strong, inclusive and sustainable economic growth and decent work for all**
- 9. Promote sustainable industrialization**
- 10. Reduce inequality within and among countries**
- 11. Build inclusive, safe and sustainable cities and human settlements**
- 12. Promote sustainable consumption and production patterns**
- 13. Promote actions at all levels to address climate change**
- 14. Attain conservation and sustainable use of marine resources, oceans and seas**
- 15. Protect and restore terrestrial ecosystems and halt all biodiversity loss**
- 16. Achieve peaceful and inclusive societies, rule of law, effective and capable institutions**
- 17. Strengthen and enhance the means of implementation and global partnership for sustainable development**

Proposed goal 1. End poverty in all its forms everywhere

- 1.1 by 2030, **eradicate** extreme poverty by bringing the number of people living on less than \$1.25 a day to **zero**
- 1.2 **reduce by at least x% the proportion of people living below national poverty lines by 2030**
- 1.3 **by 2030, fully implement nationally appropriate social protection measures including floors, with a focus on coverage of the poor, the most marginalized and people in vulnerable situations**
- 1.4 by 2030 achieve equal access to productive employment and decent work for all, including **the poor**, persons with disabilities, and other people in vulnerable situations **as well as women** and young people
- 1.5 by 2030 ensure development opportunities for all men and women, including secure rights to own land, property and other productive resources, and access to financial services, with particular focus on the poor, the most marginalized and people in vulnerable situations
- 1.6 by 2030 strengthen early warning and disaster risk reduction systems and related capacities with the aim of building resilience and protecting the poor and those in vulnerable situations from disasters and shocks, including climate-related extreme events
- 1.7 pursue sustained and inclusive economic growth as a key enabler for achieving poverty eradication
- 1.8 **integrate biodiversity conservation measures into national and local development strategies, planning processes and poverty reduction strategies**

Proposed goal 2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture

- 2.1 end hunger and ensure that all people have access to adequate, safe, affordable, and nutritious food all year round by 2030
- 2.2 **end malnutrition in all its forms, including undernutrition, micronutrient deficiencies and obesity and overweight, with special attention to reducing stunting by 40% and wasting to less than 5% in children less than 5 years of age by 2025, and address the nutritional needs of pregnant and lactating women**
- 2.3 by 2030, substantially increase small-scale food producers' incomes and productivity, including small family farmers, pastoralists and fishers, with a particular focus on women

- 2.4 by 2030 achieve access to adequate inputs, knowledge and productive resources, financial services and markets, especially for small and family farmers, pastoralists, and fishers, with a particular focus on women
- 2.5 by 2030, develop food systems that are more productive, sustainable, resilient and efficient, and minimize adverse human and environmental impacts without compromising food and nutrition security
- 2.6 by 2030 reduce by 50% global food waste at retail and consumer level
- 2.7 by 2030 reduce by 50% production and post-harvest food losses and those along food supply chains
- 2.8 by 2030, fully implement agricultural practices that strengthen resilience and adaptation to extreme weather, drought, climate change and natural disasters, in particular for small-scale farmers
- 2.9 achieve by 2030 protection and sustainable use of agricultural biodiversity, including through enhanced use and application of indigenous practices and local and traditional knowledge, and through agricultural research and development related to agrobiodiversity and diversity of food
- 2.10 improve effectiveness of addressing humanitarian food emergencies, including as appropriate through stockholding
- 2.11 by 2030 fully implement measures that curb excessive food price volatility and ensure proper functioning of markets.

Proposed goal 3. Attain healthy life for all at all ages

- 3.1 by 2030 reduce the maternal mortality ratio to less than 40 per 100,000 live births
- 3.2 by 2030 end preventable newborn, infant and under-five deaths
- 3.3 by 2030 end HIV/AIDS, tuberculosis, malaria, and neglected tropical diseases
- 3.4 by 2030 reduce by x% premature deaths from non-communicable diseases (NCDs), reduce deaths from injuries, including halving road traffic deaths, promote mental health and wellbeing, and strengthen prevention and treatment of narcotic drug and substance abuse
- 3.5 by 2030 increase healthy life expectancy for all by x%
- 3.6 achieve universal health coverage (UHC), including financial risk protection, with particular attention to the most marginalized and people in vulnerable situations
- 3.7 by 2030 ensure universal availability and access to safe, effective and quality affordable essential medicines, vaccines, and medical technologies for all

- 3.8 ensure universal access to sexual and reproductive health for all
- 3.9 by 2030 decrease by x% the number of deaths and illnesses from indoor and outdoor air pollution

Proposed goal 4. Provide equitable and inclusive quality education and life-long learning opportunities for all

- 4.1 by 2030 ensure all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
- 4.2 by 2030 ensure equal access for all to affordable quality tertiary education and life-long learning
- 4.3 by 2030 increase by x% the proportion of children able to access and complete inclusive quality pre-primary education and other early childhood development programmes
- 4.4 achieve universal youth literacy and basic numeracy and an increase by x% of adult literacy and basic numeracy by 2030
- 4.5 by 2030 increase by x% the number of young and adult women and men with the skills needed for employment, including vocational training, ICT, technical, engineering and scientific skills
- 4.6 by 2030 ensure that people in vulnerable situations and marginalized people including persons with disabilities and indigenous peoples have access to inclusive education, skills development and vocational training aligned with labour market needs
- 4.7 by 2030 integrate relevant knowledge and skills in education curricula and training programs, including education for sustainable development and awareness raising on culture's contribution to sustainable development
- 4.8 by 2030 ensure that all schools and other educational institutions provide safe, healthy, non-discriminatory and inclusive learning environments for all
- 4.9 by 2030 enhance the quality of teaching through promoting training for teachers

Proposed goal 5. Attain gender equality, empower women and girls everywhere

- 5.1 end all forms of discrimination against women and girls
- 5.2 eliminate all forms of violence against all women and girls in public and private spaces
- 5.3 eliminate all harmful practices, including child, early and forced marriage and female genital mutilations

- 5.4 ensure equal access to quality education and eliminate gender disparities at all levels of education and training
- 5.5 ensure women's equal access to full and productive employment and decent work, and equal pay for work of equal value
- 5.6 reduce and redistribute unpaid care and domestic work through shared responsibility
- 5.7 ensure women's equal access to, control and ownership of assets and natural and other productive resources, as well as non-discriminatory access to essential services and infrastructure, including financial services and ICT
- 5.8 ensure full, equal and effective participation and leadership of women at all levels of decision-making in the public and private spheres
- 5.9 ensure universal access to sexual and reproductive health and reproductive rights in accordance with the Programme of Action of the ICPD
- 5.10 promote the availability of gender disaggregated data to improve gender equality policies, including gender responsive budgeting
- 5.11 fully engage men and boys in efforts to promote and achieve gender equality and the empowerment of women and girls

Proposed goal 6. Secure water and sanitation for all for a sustainable world

- 6.1 by 2030, provide universal access to safe and affordable drinking water, adequate sanitation and hygiene for all
- 6.2 by 2030 provide universal access to safe and affordable sanitation and hygiene including at home, schools, health centers and refugee camps, paying special attention to the needs of women and girls
- 6.3 by 2030, improve water quality by significantly reducing pollution, eliminating dumping of toxic materials, and improving wastewater management by x%, recycling and reuse by y%
- 6.4 by 2030, improve water-use efficiency by x% across all sectors
- 6.5 implement integrated water resources management, including appropriate trans-boundary co-operation
- 6.6 ensure sustainable extraction and supply of fresh water, and by 2020 protect and restore ecosystems and aquifers that provide water-related services
- 6.7 by 2030 decrease by x% mortality, and decrease by y% economic losses caused by natural and human-induced water-related disasters
- 6.8 provide adequate facilities and infrastructure, both built and natural, for safe drinking water and sanitation systems, for productive uses of water resources and for mitigating the impacts of water-related disasters

Proposed goal 7. Ensure access to affordable, sustainable, and reliable modern energy services for all

- 7.1 by 2030 ensure universal access to sustainable modern energy services for all
- 7.2 double the share of renewable energy in the global energy mix by 2030
- 7.3 double the global rate of improvement in energy efficiency by 2030
- 7.4 by 2030 increase by x% globally the share of clean energy technologies, including sustainable biomass and advanced cookstoves
- 7.5 by 2030 phase out inefficient fossil fuel subsidies that encourage wasteful consumption, with solutions that aim to secure affordable energy for the poorest
- 7.6 by 2030 expand and upgrade as appropriate infrastructure for supply, transmission and distribution of modern and renewable energy services in rural and urban areas, including with a view to doubling primary energy supply per capita for LDCs

Proposed goal 8. Promote strong, inclusive and sustainable economic growth and decent work for all

- 8.1 sustain per capita economic growth of at least x% per annum (with x being set at a level appropriate to national circumstances)
- 8.2 sustain income growth of the bottom 40% of the income distribution of each country of at least y (greater than x)% to reduce income inequalities by 2030
- 8.3 by 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities
- 8.4 by 2020 halve the number of youth not in employment, education or training
- 8.5 create a sound macroeconomic environment with strong fiscal and monetary policies
- 8.6 create an enabling environment for business with strong national economic institutions and policies that support investment and promote competition
- 8.7 create incentives for the development of sustainable tourism which takes into account community participation, local culture and local products
- 8.8 create enabling conditions for increased growth and productivity of micro-, small- and medium-scale enterprises (SMEs), including through policies that promote entrepreneurship, creativity and innovation, and through improved access to markets and financial services

- 8.9 increase the share of high productivity sectors and activities in the economy, and strengthen productive capacities through technological upgrading, greater value addition and product diversification, with a particular focus on LDCs
- 8.10 promote greater resource efficiency of economic activities, including through sustainable supply chains, according to national circumstances and capacities
- 8.11 support the development of quality, reliable, sustainable and resilient infrastructure for transport, energy, water and communications, in particular in developing countries with a focus on access for the rural and urban poor
- 8.12 improve regional and trans-border infrastructure to promote effective regional economic integration and facilitate trade
- 8.13 end child labour by 2030, protect the rights and ensure safe and secure working environments of all workers, including migrant workers and those in precarious employment
- 8.14 promote formalization of informal sector activities and employment
- 8.15 by 2030 lower the overall costs in migration processes and minimize transaction costs of remittances
- 8.16 explore the possibility of a broader system of capital accounting looking beyond GDP and incorporating social, human and environmental capital

Proposed goal 9. Promote sustainable industrialization

- 9.1 achieve structural transformation of economies towards progressively higher levels of productivity in all sectors and activities
- 9.2 respect national policy space and national circumstances for industrial development, particularly in developing countries
- 9.3 ensure a conducive policy environment for industrial development, including encouragement of industrial entrepreneurship and enterprise formation with inclusion of micro- and SMEs
- 9.4 significantly raise industry's share of employment and GDP in line with national strategies, including doubling manufacturing's share in LDCs by 2030
- 9.5 increase industrial diversification in developing countries, including through enhanced domestic processing of raw materials and commodities and through new product development
- 9.6 support the integration of developing country industrial enterprises, particularly in Africa and LDCs, into regional and global value chains
- 9.7 create decent industrial sector jobs and promote job-rich industrial development

- 9.8 promote industrial research, development and innovation, including raising the ratio of R&D workers per one million people by x% and the share of R&D spending in GDP by y%
- 9.9 upgrade the technological capabilities of industrial sectors in developing countries, including in middle income countries, and improve industrial resource efficiency by accelerating the development, transfer and adoption of environmentally sound technologies and processes
- 9.10 promote indigenous technology development and the growth of domestic innovation in developing countries
- 9.11 by 2030 retrofit x% of existing industries with clean technologies and environmentally sound industrial processes to achieve y% energy and z% resource-efficiency improvement, with all countries taking action, developed countries taking the lead and developing countries following a similar pattern taking into account their development needs and capabilities.
- 9.12 ensure small-scale industrial producers have affordable access to credit and financial services

Proposed goal 10. Reduce inequality within and among countries

Reduce inequality among social groups within countries:

- 10.1 by 2030 eliminate discriminatory laws, policies and practices
- 10.2 achieve and sustain income growth of the bottom 40% of the population that is higher than the national average through 2030
- 10.3 by 2030 reduce inequalities of opportunity and outcome among social groups, including economic, social, and environmental inequalities
- 10.4 work towards reversing the decline of the share of labour income in GDP where relevant
- 10.5 empower and promote the social and economic inclusion of the poor, the marginalized and people in vulnerable situations, including indigenous peoples, women, minorities, migrants, persons with disabilities, older persons, children and youth
- 10.6 promote and respect cultural diversity
- 10.7 ensure the availability of high-quality, timely and disaggregated data to ensure monitoring of progress for marginalized groups and people in vulnerable situations

International actions to reduce inequalities among nations:

- 10.8 establish measures at global level to reduce inequality among countries
- 10.9 promote strong international institutions, including through the conclusion of reforms for increasing effective and democratic participation of developing countries in international financial institutions
- 10.10 improve regulation of global financial markets and institutions and strengthen their implementation
- 10.11 facilitate greater international mobility of labour while mitigating brain drain
- 10.12 assist developing countries in attaining long term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring

Proposed goal 11. Build inclusive, safe and sustainable cities and human settlements

- 11.1 by 2030, ensure universal access to adequate and affordable housing and basic services for all, and eliminate slum-like conditions everywhere
- 11.2 by 2030, provide access to safe, affordable, accessible and sustainable transport for all, expand public transport and improve road safety
- 11.3 enhance capacities for integrated and sustainable human settlement planning and management for all, particularly developing countries
- 11.4 strengthen positive economic and social links between cities and peri-urban and rural areas
- 11.5 by 2030, reduce the environmental impacts of cities and improve the quality of environment in cities
- 11.6 by 2020, increase by x% the number of human settlements adopting and implementing policies and plans towards resilience and adaptation to climate change and natural disasters
- 11.7 enhance social cohesion and personal security, and ensure universal access to inclusive and safe public spaces
- 11.8 by 2030 ensure that all cities are accessible and offer opportunities to persons with disabilities
- 11.9 protect and safeguard the world's cultural and natural heritage

Proposed goal 12. Promote sustainable consumption and production patterns

- 12.1 Time-bound effective implementation of the 10-Year Framework of Programmes on sustainable consumption and production (10YFP)
- 12.2 by 2030 achieve sustainable management and efficient use of natural resources to enhance human welfare within the carrying capacity of ecosystems
- 12.3 significantly improve the resource efficiency of economic activities and decouple economic growth from environmental degradation, with all countries taking action, developed countries taking the lead, and developing countries following a similar pattern taking into account their development needs and capabilities
- 12.4 promote sound management of chemicals and hazardous waste in accordance with agreed international frameworks, and by 2030 significantly reduce the releases of chemicals and hazardous wastes to air, water and soil
- 12.5 by 2030 reduce by x% per capita waste through prevention, reduction, recycling and reuse
- 12.6 by 2030 at least halve per capita food waste at retail and consumer level, particularly in developed countries and countries with high per capita food waste
- 12.7 by 2030 redouble efforts to create a culture of sustainable lifestyles, including through education, awareness raising, sustainability information on products and services, policies and incentives
- 12.8 by 2020 create economic incentives and scientific and technological capacities that enable and promote sustainable consumption and a circular economy
- 12.9 by 2030 increase by x% the number of companies, especially publicly listed and large companies, reporting on corporate social and environmental responsibility, including integrated reporting
- 12.10 by 2030, increase the share of private sector actors incorporating sustainable development principles in their business practices, including sustainable supply chains, with due regard to the circumstances and capacity needs of micro- and SMEs
- 12.11 by 2030 increase the share of sustainable products and services in public procurement, including through competitive and transparent procurement processes

Proposed goal 13. Promote actions at all levels to address climate change / Build a climate change goal based on the outcome of COP21 of the UNFCCC

- 13.1 hold the increase in global average temperature below a x°C rise in accordance with international agreements
- 13.2 build resilience and adaptive capacity to climate induced hazards in all vulnerable countries
- 13.3 by 20xx integrate climate change adaptation and mitigation strategies into development plans and poverty reduction strategies
- 13.4 by 20xx introduce instruments and incentives for investments in low-carbon solutions in all relevant sectors
- 13.5 improve education, awareness raising and human and institutional capacity on climate change impact reduction and early warning

Proposed goal 14. Attain conservation and sustainable use of marine resources, oceans and seas

- 14.1 by 2030, reduce by x% marine pollution of all kinds, including from land-based activities
- 14.2 by 2020, sustainably manage, restore and protect marine ecosystems from destruction, including by strengthening their resilience, and support relevant scientific research
- 14.3 address and prevent further ocean acidification
- 14.4 by 2020, effectively regulate harvesting and end overfishing to restore by 2030 fish stocks to ecologically safe levels that can produce maximum sustainable yield
- 14.5 support sustainable small-scale fisheries and aquaculture, including by providing equitable access of small-scale and artisanal fishers to fisheries and markets
- 14.6 ensure the full implementation of existing regional and international regimes for managing oceans and seas by their state parties
- 14.7 by 2020, eliminate illegal, unreported and unregulated (IUU) fishing and destructive fishing practices

- 14.8 By 2020, conserve at least 10% of coastal and marine areas, including through establishing effectively managed marine protected areas, consistent with international law and based on best available scientific information
- 14.9 by 2020, eliminate subsidies which contribute to overcapacity and overfishing, and refrain from introducing new such subsidies, taking into account the need of developing countries, notably least developed countries and SIDS
- 14.10 by 2030, increase the economic returns to SIDS and LDCs from the sustainable development of coastal and marine resources from within their jurisdictions
- 14.11 implement integrated and participatory coastal management to increase resilience of coastal ecosystems

Proposed goal 15. Protect and restore terrestrial ecosystems and halt all biodiversity loss

- 15.1 by 2020 halt the loss of all biodiversity, and protect and prevent the extinction of threatened species
- 15.2 by 2020 ensure conservation and sustainable use of ecosystems, with particular attention to wetlands, including through restoration of at least 15 per cent of degraded ecosystems
- 15.3 maintain genetic diversity of both cultivated plants, farmed and domesticated animals and their wild relatives including through effective cooperation of national institutions
- 15.4 by 2030, ensure the implementation of sustainable management of all types of forests and of mountain ecosystems
- 15.5 by 2030 reverse the loss of and enhance forest cover worldwide, increase reforestation by x%, including by providing adequate incentives for developing countries
- 15.6 by 2030, halt and prevent land degradation, reclaim land affected by desertification and drought, and improve land productivity and soil quality
- 15.7 ensure fair and equitable sharing of benefits arising from the utilization of genetic resources
- 15.8 end poaching and trafficking of endangered species, and end demand and supply of illegal wildlife products

- 15.9 introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and by 2020 control or eliminate the priority invasive species
- 15.10 ensure free prior informed consent of indigenous peoples and local communities in decision making and natural resources management, and promote the use of their traditional knowledge
- 15.11 integrate natural resources and biodiversity values into national and local planning, development processes, and accounts

Proposed goal 16. Achieve peaceful and inclusive societies, rule of law, effective and capable institutions

Fostering peaceful and inclusive societies:

- 16.1 by 2030 reduce levels of violence and related death rate by x%
- 16.2 by 2030 end abuse, exploitation and violence against children
- 16.3 by 2030 reduce illicit financial flows by x% and reduce money laundering and all forms of organized crime including human trafficking and illicit trade in arms, drugs and wildlife
- 16.4 by 2030 increase inclusive, participatory and representative decision-making at all levels, taking into consideration the interests of present and future generations
- 16.5 by 2020 build necessary capacities of sub-national and local governments for fostering peaceful and inclusive societies
- 16.6 forge unity in diversity through democratic practices and mechanisms at the local, national and international levels
- 16.7 by 2020 provide information and education on a culture of non-violence
- 16.8 strengthen mechanisms for formal and non-formal dispute resolution at all levels
- 16.9 reduce the number of internally displaced persons and refugees
- 16.10 enhance the capacity, professionalism and accountability of the security forces, police and judiciary

Rule of law, effective and capable institutions:

- 16.11 develop effective, accountable and transparent public institutions at all levels
- 16.12 by 2030 provide equal access for all to independent, effective, and responsive justice systems that respect due-process rights, and equal access to legal aid
- 16.13 **by 2020 provide legal identity for all, including birth registrations**
- 16.14 by 2020 improve public access to information and government data, including on public finance management, public procurement and on the implementation of national development plans
- 16.15 by 2030 ensure that all laws are publicized and accessible by all
- 16.16 by 2030 establish and implement effective regimes to decrease and provide accountability for corruption and bribery in all its forms and at all levels
- 16.17 **promote freedom of media, association and speech**

Proposed goal 17. Strengthen and enhance the means of implementation and global partnership for sustainable development**Proposed goal 1. End poverty in all its forms everywhere**

- 17.1 develop and implement effective and targeted capacity building programmes in developing countries in support of national plans for implementing sustainable development goals
- 17.2 **realize timely implementation of duty-free quota-free market access, on a lasting basis for all least developed countries in accordance with WTO decisions and the Istanbul Programme of Action**
- 17.3 developed countries implement fully ODA commitments to provide 0.7% of GNI in ODA to developing countries of which 0.15-0.20% to least-developed countries on an agreed timeline based on internationally agreed principles
- 17.4 direct ODA and encourage financial flows to states where the need is greatest, in particular African countries, LDCs, SIDS, LLDCs, and vulnerable states
- 17.5 ensure that adequate policy space is given to developing countries by the international organizations to enable developing countries to establish and implement their policies for poverty eradication and sustainable development
- 17.6 support broad-based multi-stakeholder partnerships, including with civil society, the private sector, and multiple levels of government, that mobilize knowledge, expertise, technologies and financial resources to support achievement of sustainable development goals, particularly in developing countries

Proposed goal 2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture

- 17.7 **reduce distortions in international trade, including phasing out all forms of agricultural export subsidies as soon as possible in line with the objective set out by the WTO Ministers in the 2005 Hong Kong Ministerial Declaration**
- 17.8 improve regulation with strengthened implementation of financial institutions and financial markets, including food commodity markets, to ensure global financial stability and to help dampen food price volatility
- 17.9 increase investment in rural infrastructure, agricultural research, technology development, institutions and capacity building in developing countries to enhance agricultural productive capacity, particularly in countries that are net food importers

Proposed goal 3. Attain healthy life for all at all ages

- 17.10 **strengthen implementation of the Framework Convention on Tobacco Control in all countries who have ratified the Convention and urge countries that have not ratified it to ratify and implement it**
- 17.11 **support research and development of vaccines and medicines for the communicable diseases that primarily affect developing countries**
- 17.12 **in cooperation with pharmaceutical companies, provide access to affordable essential medicines in developing countries, and support developing countries' use of TRIPS flexibilities**
- 17.13 increase by 2030 the recruitment, development and training and retention of the health workforce by x% and teachers by y% in developing countries, especially in LDCs
- 17.14 increase the capacity for early warning, risk reduction, and management of national and global health risks

Proposed goal 4. Provide equitable and inclusive quality education and life-long learning opportunities for all

- 17.15 **by 2020 expand by x% globally the number of scholarships for students from developing countries to enrol in higher education programmes in developed countries and other developing countries, with a particular focus on science, engineering, health, economics, finance, management and sustainable development**

Proposed goal 5. Attain gender equality, empower women and girls everywhere

- 17.16 by 2030, achieve universal access to ICT for all women and men, including as a means of promoting women's empowerment
- 17.17 increase financial resources and services across all sectors to achieve gender equality, empowerment of women, and the realization and enjoyment of women's and girls' human rights

Proposed goal 6. Secure water and sanitation for all for a sustainable world

- 17.18 by 2030, expand international cooperation and support in water and sanitation related technologies, including water harvesting technologies and wastewater treatment, recycling and reuse technologies

Proposed goal 7. Ensure access to affordable, sustainable, and reliable modern energy services for all

- 17.19 enhance international cooperation to facilitate developing countries' access to clean energy technologies, including through appropriate partnerships
- 17.20 encourage public and private sector investment, in particular public-private partnerships, in energy infrastructure and cleaner energy technologies

Proposed goal 8. Promote strong, inclusive and sustainable economic growth and decent work for all

- 17.21 enhance global macroeconomic policy coordination and increase policy coherence in support of sustainable development
- 17.22 promote an open, rules-based, non-discriminatory and equitable multilateral trading system, including complying with the mandate for agriculture, services and non-agricultural products of the World Trade Organisation Doha Round and implementing the outcomes of the World Trade Organisation Bali Declaration
- 17.23 ensure a speedy conclusion of an ambitious, balanced, comprehensive and development-oriented outcome of the Doha Development Agenda of multilateral trade negotiations
- 17.24 improve market access for agricultural, fisheries and industrial exports of developing countries in particular African countries, Least Developed Countries, LLDCs and SIDS with a view to increasing their share of exports in global markets
- 17.25 increase trade-related capacity-building assistance to developing countries, including support for building their capacity to meet product regulations and standards, and enhance Aid for Trade initiatives including through the "Enhanced Integrated Framework"

- 17.26 promote regional and international collaboration on and access to science, technology, innovation, research and knowledge sharing, including through North-South, South-South and triangular cooperation
- 17.27 mobilize additional international financial resources for development from multiple sources
- 17.28 strengthen domestic resource mobilization of developing countries, providing international support to improving tax collection, tax and natural resource revenue transparency
- 17.29 facilitate investments in developing countries in infrastructure such as roads, railways, ports, water supply and treatment, and ICT
- 17.30 by 2030 countries progressively introduce broader measures of progress beyond GDP into national accounting, with supportive statistical capacity building in developing countries

Proposed goal 9. Promote sustainable industrialization

- 17.31 promote transfer and dissemination of clean and environmentally sound technologies to developing countries, including through the possible implementation of a UN global technology facilitation mechanism, and encourage the full use of TRIPs flexibilities
- 17.32 fully operationalize the Technology Bank and STI Capacity Building Mechanism for LDCs by 2017
- 17.33 build science, technology and innovation capacity in developing countries, including to undertake technology assessment and research, development and adaptation of clean and environmentally sound technologies

Proposed goal 10. Reduce inequality within and among countries

- 17.34 by 2030 reduce to 5% or below the transaction costs of migrants' remittances, including regulatory and administrative costs
- 17.35 enhance global cooperation to facilitate orderly, safe, responsible migration and mobility of people, including through implementation of planned and managed migration policies that facilitate migrants' contribution to sustainable development
- 17.36 by 2020, substantially strengthen capacities for data collection and statistical analysis relevant to sustainable development with a focus on generating timely and high-quality data disaggregated, as appropriate, by income, gender, age, race, ethnicity, and rural/urban location

Proposed goal 11. Build inclusive, safe and sustainable cities and human settlements

- 17.37 provide financial and technical support to least developed countries to build urban infrastructure including communications, sewerage, waste management, recycling and other basic services

Proposed goal 12. Promote sustainable consumption and production patterns

- 17.38 enhance international cooperation with developed countries taking the lead in implementing sustainable consumption and production patterns, including through strengthening developing countries' scientific and technological capacities to move towards more sustainable patterns of consumption and production
- 17.39 establish and effectively implement a multilateral code of conduct for multinational corporations to secure social and environmental responsibility and accountability

Proposed goal 13. Promote actions at all levels to address climate change / Build a climate change goal based on the outcome of COP21 of the UNFCCC

- 17.40 operationalize the Green Climate Fund as soon as possible

Proposed goal 14. Attain conservation and sustainable use of marine resources, oceans and seas

- 17.41 increase scientific knowledge, and develop research infrastructure and capacities to enhance the contribution of marine biodiversity to the development of developing countries, in particular of SIDS and LDCs

Proposed goal 15. Protect and restore terrestrial ecosystems and halt all biodiversity loss

Proposed goal 16. Achieve peaceful and inclusive societies, rule of law, effective and capable institutions

- 17.42 all countries should continue to act within the provisions of existing relevant international agreements
- 17.43 undertake regular monitoring and reporting of progress on SDGs within a shared accountability framework, including means of implementation, the global partnership among Member States and multi-stakeholder initiatives and partnerships
- 17.44 promote strong international institutions, including conclusion of reforms for increasing effective and democratic participation of developing countries in international financial institutions

- 17.45 cooperate globally to reduce substantially international tax evasion and avoidance
- 17.46 cooperate globally to combat illicit financial flows and transfers, recover stolen assets and return them to their countries of origin

Proposed goal 1. End poverty in all its forms everywhere

1.1 *by 2030, eradicate extreme poverty by bringing the number of people living on less than \$1.25 a day to zero*

RATING: As written this is **POOR (UNREALISTIC)** but if amended to an achievable, realistic stretch target then the rating is **GOOD**. There is evidence to suggest that the alleviation of extreme poverty will not proceed as successfully as it did from 1990 to present, based on historical growth rates and distributions of wealth in countries with current populations of extreme poor (Yoshia et al, 2014; Chandy, Ledlie and Pencikova, 2013; Ravallion, 2013; Karver, Kenny and Sumner 2011). Previous policies have tended to lift those at the margin of extreme poverty and as such, sustained progress against extreme poverty will be more difficult. For example, in Uganda there is evidence that the attainment of at least 5 years of primary education helps lift individuals out of extreme poverty. Going forward, however it will be more difficult (and costly) than in the past to target and lift the remaining extreme poor who may lack basic primary education.

Additionally, some or many of the extreme poor are not necessarily from the poorest countries. As countries move from mass poverty to much lower poverty rates the residual poverty is often in pockets of geographic or ethnic differences. The growth elasticity of poverty falls sharply as countries move from mass poverty to much lower poverty, so a range of other tools are needed. This makes the process of poverty alleviation not only an economic issue, but also a complex socio-economic and potentially political issue.

Notwithstanding the costs, the benefits of poverty alleviation are large both for the individual in question, as well as society in general. For example, rising wealth within a society is correlated with better health outcomes and lower crime. Additionally, non-poor individuals are less likely to regress to poverty, if surrounded by other non-poor.

Better wording: By 2030, reduce the proportion of people living on less than \$1.25 a day (PPP) to 3%

1.2 *reduce by at least x% the proportion of people living below national poverty lines by 2030*

RATING: FAIR For ~50% reduction in proportion of individuals living below national poverty line. For stronger targets, the rating is **UNCERTAIN** or **POOR**. The costs and benefits will depend on the ambition of the final target. For those at the cusp of national poverty lines, the costs are relatively low compared to benefits. However, pushing for very large reductions in nationally defined poverty rates would be more costly, with uncertain economic benefits.

Another issue with this target is that the setting of national poverty lines is not standard across countries. This makes it difficult to know precisely where to prioritize poverty reduction efforts. If a country X exhibits a larger % of its pop. below the national poverty line, relative to country Y – it is not straightforward to assert that country X has more relatively poor. The difference could partly arise from different definitions of national poverty lines.

Better wording: By 2030, reduce by at least x% the proportion of people living below national poverty lines “based on standardized, internationally consistent methodology to construct poverty lines”

1.3 by 2030, fully implement nationally appropriate social protection measures including floors, with a focus on coverage of the poor, the most marginalized and people in vulnerable situations

RATING: POOR The introduction of a social protection floor, while laudable, is difficult to achieve well (properly targeted at low cost). Additionally, the resources required to implement full social protection are large and it risks creating very large (even 100%) effective marginal tax rates for the poor with disincentives to increase income. Moreover, the emerging evidence from studies that account for the full, general equilibrium effects of social protection and cash transfer programs is that unintended consequences can harm non-target groups either because local prices are raised (Lehmann, 2013) or because of the distortion in employment choices with expanded social protection leading to more informal employment (Camacho et al, 2013).

1.4 by 2030 achieve equal access to productive employment and decent work for all, including the poor, persons with disabilities, and other people in vulnerable situations as well as women and young people

RATING: Depends on the social group in question. Increasing access to productive employment for the poor has a **FAIR** rating. It is likely that employment will play a role in future poverty reduction efforts. Targeting increased female participation in the workforce has **PHENOMENAL** benefits relative to costs. There is compelling evidence that the growth miracles of certain Asian economies were driven by low cost policies that allow and incentivize women to work. Increasing youth employment and those with disabilities is rated **UNCERTAIN** – because the evidence to achieve this is unclear.

Better wording: By 2030, reduce the barriers to productive employment for women

1.5 by 2030 ensure development opportunities for all men and women, including secure rights to own land, property and other productive resources, and access to financial services, with particular focus on the poor, the most marginalized and people in vulnerable situations

RATING: GOOD While the costs are not trivial, there are large, personal benefits through increasing economic opportunity for marginalized groups such as women particularly in rural settings (in urban settings the limited evidence suggests otherwise). Enforcement of property rights is an important enabler of economic growth – with again larger benefits for women. For example, there is evidence that if women were able to better enforce property rights they would have more incentives to increase the value and productivity of land they manage (if a crop or plot of land becomes valuable, there is the risk of appropriation by men in the household).

1.6 by 2030 strengthen early warning and disaster risk reduction systems and related capacities with the aim of building resilience and protecting the poor and those in vulnerable situations from disasters and shocks, including climate-related extreme events

RATING: GOOD Early warning systems have low absolute costs (around \$1B globally), and can provide benefits in terms of lives saved and economic losses avoided between 4 and 36 times the investment, depending on the assumptions (Hallegate, 2012).

1.7 pursue sustained and inclusive economic growth as a key enabler for achieving poverty eradication

RATING: UNCERTAIN Kraay (2006) shows that cross-country differences in growth experience account for most of the variation in cross-country differences in poverty reduction. **Growth is good for the poor.**

However, achieving sustained growth is already a policy objective of most, if not all governments of the world. Moreover, there is no known policies or set of policies that *guarantee* systematic economic growth. It would be better to focus on other goals that are more specific and actionable, and would incentivize effective interventions that might not otherwise be conducted.

Better wording: Better to include ambition to maintain economic growth in the preamble

1.8 integrate biodiversity conservation measures into national and local development strategies, planning processes and poverty reduction strategies

RATING: FAIR While there is sometimes a conflict between (short term) conservation and poverty reduction, it is often better to have localized decision making, as they are better able to assess tradeoffs.

Proposed goal 2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture

2.1 end hunger and ensure that all people have access to adequate, safe, affordable, and nutritious food all year round by 2030

RATING: UNCERTAIN Difficult to assess without more precise definition around adequate. This is a noble goal but the target of ‘all’ is unlikely to be met by 2030. This is a **GOOD** target if it is directed at a subset of the population who could be reached but are currently lacking sufficient calorific and micronutrient intake.

Better wording: Reduce the proportion of people suffering from hunger to x% (x set on stretch target and current)

2.2 end malnutrition in all its forms, including undernutrition, micronutrient deficiencies and obesity and overweight, with special attention to reducing stunting by 40% and wasting to less than 5% in children less than 5 years of age by 2025, and address the nutritional needs of pregnant and lactating women

RATING: PHENOMENAL – for the under-nutrition and micronutrient deficiencies part of the target. There is robust evidence that reducing stunting leads to lifetime of ongoing benefits, at very little cost (Hodinnott et al, 2012). Complete elimination of malnutrition by 2030 is optimistic.

There is robust evidence that addressing the needs of pregnant and lactating women is a **GOOD** target.

However, the obesity and overweight components of this target are rated **UNCERTAIN**. This is a growing problem across the world however, there is limited evidence about how to address it broadly. Dietary interventions, taxes on sugar are some suggestions, but implementation is difficult and evidence of effectiveness is not clear.

Better wording: By 2030, reduce stunting by x% and wasting by y% through the provision of micronutrients and nutrients to 0–2 years old infants.

2.3 by 2030, substantially increase small-scale food producers’ incomes and productivity, including small family farmers, pastoralists and fishers, with a particular focus on women

RATING: GOOD, though benefits and costs are driven by context specific factors. Generally, costs to increase small-holder production and income are modest (particularly with improved seed varieties) while benefits can be long and sustained. Increasing small-scale food producer income would benefit women in particular.

2.4 by 2030 achieve access to adequate inputs, knowledge and productive resources, financial services and markets, especially for small and family farmers, pastoralists, and fishers, with a particular focus on women

RATING: UNCERTAIN, but potentially **FAIR** payoff in certain circumstances, such as building infrastructure to link farmers to input suppliers. The issue with this target relates to measurement issues - to measure ‘access’ requires complex and costly survey data.

2.5 *by 2030, develop food systems that are more productive, sustainable, resilient and efficient, and minimize adverse human and environmental impacts without compromising food and nutrition security*

RATING: POOR This goal is poorly specified and calls for outcomes that are unrealistic and internally inconsistent. It is also too vague to be useful. It would be improved by focusing on key aspects where interventions are known to be effective. For example, improving resilience of crops through agricultural research and development has a **GOOD** rating.

Better wording: Increase spending on agricultural R&D by x% to promote resilient crop varieties

2.6 *by 2030 reduce by 50% global food waste at retail and consumer level*

RATING: UNCERTAIN There is some evidence that improving supply chains to super markets can improve waste at retail and consumer level but this evidence is limited.

2.7 *by 2030 reduce by 50% production and post-harvest food losses and those along food supply chains*

RATING: GOOD, but more analysis required, particularly in establishing adequate baselines of the current state of global food loss and waste

2.8 *by 2030, fully implement agricultural practices that strengthen resilience and adaptation to extreme weather, drought, climate change and natural disasters, in particular for small-scale farmers*

RATING: GOOD payoff when considering R&D into drought and flood-resistant crops. Other policies to reach this target include weather-based crop insurance (**FAIR**, but likely need significant financial subsidies), integrated fertility management and water quality improvements. These have a **FAIR** rating.

2.9 *achieve by 2030 protection and sustainable use of agricultural biodiversity, including through enhanced use and application of indigenous practices and local and traditional knowledge, and through agricultural research and development related to agro-biodiversity and diversity of food*

RATING: FAIR Evidence suggests that incorporating genetic diversity in varieties and utilizing multiple cropping systems does not necessarily lead to higher yields, but can improve the stability and reduce variability of yields over time.

2.10 *improve effectiveness of addressing humanitarian food emergencies, including as appropriate through stockholding*

RATING: As written, this target is **POOR** and too broad. The window for prevention of humanitarian food disasters is small and this needs to be explicitly measured in a target. It should be re-written in more concrete terms as below. The cost of responding to food emergencies is not trivial, but it is much smaller than the benefits of responding to food emergencies (i.e. the prevention of many deaths). If better written, this goal would be **PHENOMENAL**.

Better wording: The international community responds to food emergencies in less than two weeks of onset by providing 80% of affected people with food

2.11 *by 2030 fully implement measures that curb excessive food price volatility and ensure proper functioning of markets.*

RATING: FAIR Some evidence that food price volatility can contribute to food insecurity, especially for poor people

Better wording: Reduce food price volatility by x% through proper stockholding

What is missing?

There is limited focus on livestock, which is becoming an increasingly important and larger share of global diet. Goals focusing on improving meat production per level of input could have high benefits relative to costs.

Proposed goal 3. Attain healthy life for all at all ages

3.1 *by 2030 reduce the maternal mortality ratio to less than 40 per 100,000 live births*

RATING: As written this is an **unrealistic** target. The Commission for Investing in Health, 2013 (CIH) recommends a target of 94 maternal deaths per 100,000 live births by 2030 as a realistic, but ambitious stretch target for MMR. With more realistic targets for MMR this target would be rated **FAIR**. It is relatively cost-effective to reduce MMR in lower income countries through spread of basic health interventions. To reduce MMR beyond this requires more costly interventions such as improved health facilities and registered attendants at birth.

Better wording: By 2030 reduce the maternal mortality ratio to less than 94 per 100,000 live births

3.2 *by 2030 end preventable newborn, infant and under-five deaths*

RATING: It is very **unrealistic** to expect an end to preventable new-born, infant and child deaths in wealthy, developed nations, let alone lower and middle income countries by 2030. With realistic targets for reduction in child and newborn death rates (say 20 per 1,000 live births as recommended by CIH), the rating is **GOOD**. For children between 1-59 months, interventions are relatively cheap (e.g. basic health, vaccines, micronutrients) and have lifetime benefits. For neo-natal infants (less than 1 month), the rate of decline in deaths can continue in low and middle-income countries with relatively inexpensive interventions. However, at some point sustained reduction in neo-natal mortality rates will only occur with costly intensive care facilities.

Better wording: Reduce under 5-mortality rate to 20 per 1,000 live births and neo-natal mortality rate to 11 per 1000 live births

3.3 *by 2030 end HIV/AIDS, tuberculosis, malaria, and neglected tropical diseases*

RATING: As written this target is **POOR**, because the ambition of ending these diseases by 2030 is unrealistic.

Better wordings:

- Reverse the spread of HIV / AIDS and reduce annual AIDS deaths to 3 per 100,000 persons by 2030 – FAIR
- Reverse the spread of TB and reduce annual TB deaths to 4 per 100,000 persons by 2030 – PHENOMENAL
- Reverse the spread of malaria and reduce annual malaria deaths by 95% from 2010 to 2030 – PHENOMENAL

3.4 *by 2030 reduce by x% premature deaths from non-communicable diseases (NCDs), reduce deaths from injuries, including halving road traffic deaths, promote mental health and wellbeing, and strengthen prevention and treatment of narcotic drug and substance abuse*

RATING: Assuming realistic targets, and targeted interventions against specific NCDs where there are known means to reduce the burden of disease the rating is **PHENOMENAL** – for example, a tripling in tobacco tax worldwide is a highly effective intervention to prevent various NCDs including lung cancer (Jha

and Peto, 2014). For older generations, reducing burden of NCDs is rated as **FAIR** – managing the health of older people will be net benefit and particularly so for countries where population is ageing. However, older generation have less time to benefit from improved health outcomes.

For reducing injuries and halving road deaths, the rating is **FAIR**. The costs of preventing road traffic deaths are relatively high (for example significantly improved road infrastructure).

For a realistic target on reducing mental health problems the rating is **FAIR**. Some good benefit-to-cost interventions to ameliorate mental health related suicide, include restricting access to guns and pesticides.

For prevention of narcotic drug and substance abuse the rating is **POOR** – The costs of policing substance abuse are very high with limited success.

3.5 *by 2030 increase healthy life expectancy for all by x%*

RATING: UNCERTAIN This target is achieved by the combined, nuanced interactions of the other targets in this focus area. The benefits and costs of this target depend strongly on the value of x%. The use of ‘for all’ implies increasing life expectancy even in developed countries. This would likely have low benefits and very high costs. This target should be age-adjusted.

3.6 *achieve universal health coverage (UHC), including financial risk protection, with particular attention to the most marginalized and people in vulnerable situations*

RATING: PHENOMENAL, assuming a gradual increase in coverage over time, focusing first on diseases where interventions have high benefits-to-costs.

3.7 *by 2030 ensure universal availability and access to safe, effective and quality affordable essential medicines, vaccines, and medical technologies for all*

RATING: UNCERTAIN for “affordable essential medicines” since it depends much on what is meant by “affordable” and “essential”. The cost structure of vaccines is typically cheaper with known benefits. The rating for these is therefore, **GOOD**.

3.8 *ensure universal access to sexual and reproductive health for all*

RATING: PHENOMENAL Family planning interventions are inexpensive with clear benefits (Kohler, 2012). However, this could be subsumed within a broader UHC goal.

3.9 *by 2030 decrease by x% the number of deaths and illnesses from indoor and outdoor air pollution*

RATING: FAIR, but with uncertainty. Previous research suggests interventions reducing indoor air pollution have a **FAIR** rating (e.g. Hutton et al, 2008). However, recently updated Global Burden of Disease figures suggest that deaths from indoor air pollution are much higher than expected. There are certain nuances within the exposure function that must be considered when assessing cost and benefits.

Regarding outdoor air pollution there again is evidence that reduction in outdoor air pollution through improved vehicle fuel standards, filtering of pollution at the source can have **GOOD** benefits.

Proposed goal 4. Provide equitable and inclusive quality education and life-long learning opportunities for all

4.1 by 2030 ensure all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

RATING: ‘GOOD’ for primary education and **‘FAIR’** for secondary education though it should be noted that goals promoting universal education have been promised since 1960s, and have all failed. That said, the prioritization should be for girls, over boys since girls tend to be further behind in education attainment and investment in girls education is associated with high social returns. ‘Free’ education for all should not be a policy goal, since the costs are disproportionate to the benefits for the upper levels of education and the sources of finance are uncertain. If anything, it should be free for those who cannot afford it. ‘Equitable’ education is another general term that should be avoided without specifying what it means, e.g. should all citizens achieve secondary education to 18 years? This does not even consider the costs of financing.

For improving the quality of education the rating is **FAIR** (Psacharopoulos, 2014) though the body of evidence on education quality is small. Among the few studies that report costs, a typical finding is that an increase of 1 standard deviation of test scores costs \$100 (Kremer et al., 2013). An estimate of average social rates of return to education quality interventions is 15%, which corresponds to a benefit cost ratio of 3 to 5.

Better wording: Increase access of girls to primary education

4.2 by 2030 ensure equal access for all to affordable quality tertiary education and life-long learning

RATING: POOR We have plenty of evidence that in all countries the poor pay for the higher education of the rich. This because the rich send more of their children to higher education relative to the taxes paid by the two groups. The solution is to introduce tuition fees for the rich and scholarships for the poor.

4.3 by 2030 increase by x% the proportion of children able to access and complete inclusive quality pre-primary education and other early childhood development programmes

Rating: PHENOMENAL, though depends on realistic stretch target that represents an **improvement** over present conditions in a given country or setting. Most evidence including that of Nobel laureate Heckman, shows that the benefits of acting early are very large, with relatively lower costs. Most of this evidence is from US studies, though there is little reason to believe that it would not also be the case in developing countries.

Better wording: Increase the proportion of children in pre-primary education and early childhood development programmes

4.4 achieve universal youth literacy and basic numeracy and an increase by x% of adult literacy and basic numeracy by 2030

RATING: GOOD regarding youth literacy, **FAIR** regarding adult literacy. However, youth literacy and basic literacy is already part of target 4.1 so it seems superfluous. Adult literacy is more costly to accomplish and the benefits last fewer years.

4.5 *by 2030 increase by x% the number of young and adult women and men with the skills needed for employment, including vocational training, ICT, technical, engineering and scientific skills*

RATING: POOR Literature suggests that vocational training does not provide large benefits relative to costs (Psacharopoulos, 2014). Regarding ICT skills, they should be part of the secondary education curriculum, and they are now in practically every education system. We do not have cost-benefit evidence on this component, and perhaps we do not need it. Regarding science and engineering there is mixed evidence which is not conclusive.

4.6 *by 2030 ensure that people in vulnerable situations and marginalized people including persons with disabilities and indigenous peoples have access to inclusive education, skills development and vocational training aligned with labour market needs*

RATING: FAIR While education attainment confers benefits, reaching marginalized groups would be expensive lowering the benefit-cost ratio.

Better wording: Target people in vulnerable situations in the provision of education and training

4.7 *by 2030 integrate relevant knowledge and skills in education curricula and training programs, including education for sustainable development and awareness raising on culture's contribution to sustainable development*

Rating: POOR First of all, the target contains too many diverse components each deserving a separate treatment and rating. Second, many of the components are nice-sounding keywords that are difficult to define: For example, what is “relevant” knowledge? What is “awareness raising on culture”? If these are not defined well then the target risks being ineffective. The target contains one substantive sub-component that could have a fair or better rating: Integrate skills in curricula. Regarding skills, there is evidence to indicate integrating skills in curricula ranks low when subjected to cost-benefit analysis. For example, based on cost-benefit evidence of such integration, the World Bank discontinued doing such projects. Skills can be obtained in a more efficient way outside the main school system, such as in specialized vocational schools or by training on the job.

4.8 *by 2030 ensure that all schools and other educational institutions provide safe, healthy, non-discriminatory and inclusive learning environments for all*

RATING: UNCERTAIN This is a prerequisite and difficult to subject to C-B analysis.

4.9 *by 2030 enhance the quality of teaching through promoting training for teachers*

RATING: GOOD It is important to train quality teachers. While we don't have extensive cost-benefit evidence intuitively, it would seem that the benefits would be GOOD.

Better wording: Enhance the provision and quality of teacher training

Proposed goal 5. Attain gender equality, empower women and girls everywhere

5.1 *end all forms of discrimination against women and girls*

RATING: UNCERTAIN It is unclear how to rate this goal, as the policy interventions to achieve it are not specified. Generally, as discrimination against women has yet to be ended even in the developed world, it is not clear how this could then be achieved at a global scale. Yet the goal itself is GOOD, as it helps to raise awareness of the need for encouraging gender equality and empowerment worldwide – and will probably have high BCR – however, there is currently no clear evidence of how this could actually be achieved.

5.2 *eliminate all forms of violence against all women and girls in public and private spaces*

RATING: UNCERTAIN As above, this is a goal which has yet to be achieved even in the developed world. Violence against women happens everywhere, and while we have some general ideas about how to help decrease it, there is a serious issue of measurement. In most cases, women do not report violence against them – and even if they start to report, it looks like there has been a spike in violence – when actually it is simply an increase in the number of *reported* but not *actual* cases. While economics cannot provide an answer for this with strong evidence, it is a GOOD goal that likely has a strong BCR, and should stay as an awareness raising measure.

5.3 *eliminate all harmful practices, including child, early and forced marriage and female genital mutilations*

RATING: GOOD. The benefits of later marriage are quite high, and different studies suggest a variety of ways to achieve this (e.g. campaigns, access to education). Benefits include better health (young mothers and their children are higher risk, and delayed marriage has positive correlations with education). The BCR ratio of this goal is therefore generally quite high, but there is still a need for more evidence. The goal wording also needs to be better clarified; e.g. definition of who is a ‘child’. Also, forced marriage is related more to violence so should be put in another category to define this goal better.

For ending FGM the rating is **UNCERTAIN** FGM is currently outlawed in 26 of 29 countries where it is prevalent. This shows that legislation to end FGM is an ineffective solution. The most common justification for the practice cited by men and women is social acceptability. This suggests interventions to end FGM will need to target changing cultural norms, which is difficult to accomplish. The study by Denison et al (2009) offers a systematic assessment of interventions designed to change attitudes and end the practice of FGM. They conclude that although the calculated effect sizes for the interventions were positive, the low quality of the study designs affects the interpretation of results and raises doubts about the validity of the findings (Fearon and Hoeffler, 2014) Campaigns and educational programs could be proven to be effective, but changing cultural norms is something that takes an enormous amount of time.

5.4 *ensure equal access to quality education and eliminate gender disparities at all levels of education and training*

RATING: PHENOMENAL. Women’s access to education has hugely positive effects on themselves and their communities. Studies have shown that the benefits are very large; improved education improves not only women’s health and livelihoods but also the health and lives of their children. While education was previously not on the HLP list under gender equality, it is very promising to see that it is now here and should be kept.

5.5 *ensure women's equal access to full and productive employment and decent work,...*

RATING: PHENOMENAL Targeting increased female participation in the workforce has **PHENOMENAL** benefits relative to costs. There is compelling evidence that the growth miracles of certain Asian economies were driven by low cost policies that allow and incentivize women to work

... and equal pay for work of equal value

UNCERTAIN This is something that is not even happening in developed countries – we still don't know how to achieve this properly. This goal overlaps strongly with inclusion of women's participation in economic life; first we should achieve their participation, and a secondary measure is ensuring equal opportunities. There are again no studies which provide economic evidence for this goal, but on an intuitive level the benefits are high so it is likely to be **GOOD**.

5.6 *reduce and redistribute unpaid care and domestic work through shared responsibility*

RATING: UNCERTAIN This is something that it is decided within each household, and due to efficiency considerations care and domestic work should only be shared among both partners if both of them are participating in the labor force. Changing attitudes towards who is the partner supposed to take care of these issues is not very easy. Caring for children is a different issue because children benefit from both maternal and paternal care.

5.7 *ensure women's equal access to, control and ownership of assets and natural and other productive resources, as well as non-discriminatory access to essential services and infrastructure, including financial services and ICT*

RATING: GOOD This goal is linked strongly to general development; the first step is to ensure women have opportunities to access assets and therefore gain income.

Additionally, there is evidence that improving property and ownership rights of women would increase aggregate economic benefits. For example, if women were able to better enforce property rights they would have more incentives to increase the value and productivity of land they manage (if a crop or plot of land becomes valuable, there is the risk of appropriation by men in the household).

Giving access to financial services is **PHENOMENAL**, especially if we take into account the success of microfinance in empowering women and getting them out of poverty. Giving them access to ICT services is probably **FAIR** (relatively higher cost), but it could be good if learning how to operate computers and the internet are valuable skills in the labor market, and if they can access information in the internet, which could empower women.

5.8 *ensure full, equal and effective participation and leadership of women at all levels of decision-making in the public and private spheres*

RATING: GOOD There have been various studies that show having female politicians affects health and education – and generally has a positive effect on policies and society, meaning that benefits of this goal are quite high. Costs, however, are very difficult to estimate (which doesn't allow it to get a phenomenal rating). Other benefits outside policy level interventions, also include women simply acting as a positive role model

for younger girls/women (based on studies in India). Further studies have shown that female politicians seem to be less corrupt than male politicians (therefore the costs are lower, increasing benefits). However, even if the cost of female politicians is equal to men – the benefits are still huge.

5.9 ensure universal access to sexual and reproductive health and reproductive rights in accordance with the Programme of Action of the ICPD

RATING: PHENOMENAL This is a very crucial goal: without having control of their own reproductive health, women would not receive the appropriate amount of education, and can suffer from serious negative health consequences due to early childbearing etc. Kohler, 2012 shows that this has a very high BCR (\$150 back on every dollar) and this is such a basic right of women that the benefits are undeniable. It should also be added here: access to basic health care/rights – which underlie sexual and reproductive health.

5.10 promote the availability of gender disaggregated data to improve gender equality policies, including gender responsive budgeting

RATING: POOR We already have sufficiently available gender disaggregated data, and there is no need for extra measures in this area. ‘Gender sensitive budgeting’ is a goal that just adds extra bureaucracy and costs to existing infrastructures that are not necessary. At the end of the day, helping women also helps men (through boys in their families), so it is impossible to truly ‘disaggregate’ this data into female-specific benefits. The costs are too high relative to any potential benefit.

Regarding availability of gender data: There is sufficient gender available data at the moment, and where it is absent, it will be difficult to extract. Most poverty, asset, expenditure data are all **household** data by survey design, and by practical necessity. To provide gendered indicators of say, access to land (on the basis of existing survey designs and social political conditions) would be asking of the numerator or the responder to divide land that belongs to extended households and parcel it into individual units. Or take assets: a household of one man, one woman, two grand parents and 4 children has 5 cows. What is the gendered asset index here?

Regarding gender-sensitive budgeting: While laudable as an idea, there are many budget categories which demarking by gender will be difficult, for example infrastructure, defense and administration. The most likely areas for gender sensitive budgeting are health and education, but even then, there are complexities (e.g. gender-sensitive budgets for teachers, hospitals). On balance, it is unlikely to be worth the difficulty. It is better to focus on other gender equality targets rated as phenomenal or good within this focus area where the benefits are more certain, and likely to exceed the costs by a large amount.

5.11 fully engage men and boys in efforts to promote and achieve gender equality and the empowerment of women and girls

RATING: UNCERTAIN Conducting campaigns involving men and boys could be successful in changing norms and cultural attitudes, but this is uncertain, because these campaigns could also produce backlash against women in some settings. Something that tends to be forgotten and it is also relevant when considering campaigns for boys and changing social norms is to remove “sexist” images (i.e. mother cleaning and father going to work) from school textbooks and advertisements.

Proposed goal 6. Secure water and sanitation for all for a sustainable world

6.1 by 2030, provide universal access to safe and affordable drinking water, adequate sanitation and hygiene for all

RATING: GOOD for sanitation and hygiene, and **FAIR** for water if focused on access within the household. The costs for basic options (pit latrine, pour flush, community well) are low, and the *quantifiable* benefits are considerable (time saved and health benefits). Additionally there are social benefits that cannot be quantified so these are potentially an underestimate. For more complex sanitation improvements such as providing piped water and sewer sanitation, the costs are naturally higher. Within this setting, the rating is **FAIR**. (see Hutton, 2012; Rijsberman and Zwane, 2012; Whittington et al. 2008)

6.2 by 2030 provide universal access to safe and affordable sanitation and hygiene including at home, schools, health centers and refugee camps, paying special attention to the needs of women and girls

RATING: UNCERTAIN This goal seems to encompass parts of 6.1 and should be merged. The economic evidence for provision of water, sanitation and hygiene outside the household, - schools, health facilities and refugee camps, the economic evidence is **UNCERTAIN**.

6.3 by 2030, improve water quality by significantly reducing pollution, eliminating dumping of toxic materials, and improving wastewater management by $x\%$, recycling and reuse by $y\%$

RATING: FAIR But depends on the interventions taken to improve 'water quality'. If it means installing capital-intensive secondary treatment facilities across the globe, then this is very unlikely to occur by 2030. However, there are localized, cheaper interventions that can be implemented to improve water quality such as filters. Significantly reducing pollution is an ambitious goal, but may be possible for dumping of toxic materials, since there are stronger incentives to remove toxicity versus less harmful (but still harmful) pollution.

For improving wastewater management, recycling and reuse - the limited evidence suggests **FAIR** BCR (Asian Development Bank, 2013; Aram and Malinova, 2003; Murray and Drechsel, 2011). A large part of the benefit is environmental which entails complex cost-benefit analyses that need more research and time to assess properly (Drechsel et al., 2014).

6.4 by 2030, improve water-use efficiency by $x\%$ across all sectors

RATING: FAIR There are identifiable technologies that could improve water efficiency (e.g. drip or sprinkler irrigation, leak detection mechanisms, low flush toilets) and would have BCRs greater than 1. In developing nations, agriculture takes a large proportion of water use, so focusing on agricultural water use – particularly moving away from traditional canal irrigation to drip / sprinkler irrigation – would be a **GOOD** priority. In a multi-sector environment where water is scarce, improving efficiency of water use in one sector has the benefit of freeing up water for use in another sector.

The likely impediment to the achievement of this target is changing the behavior of water users, which presents unique challenges. Governments around the world have set water-use efficiency targets, typically with mixed success e.g. California's 20% by 2020. On the other hand, increasing demographic and environmental pressures (such as climate change) may compel actors to improve water use efficiency.

6.5 *implement integrated water resources management, including appropriate trans-boundary co-operation*

RATING: FAIR This is a good first step in water resource management because, at the very least, it compels the collection of data and assessing a baseline of water usage within an area. The other positive about this target is that it requires relatively fewer actors to implement, with a corresponding reduction in complexity. The trans-boundary element of this target is however, difficult and would entail much higher costs.

6.6 *ensure sustainable extraction and supply of fresh water, and by 2020 protect and restore ecosystems and aquifers that provide water-related services*

RATING: For water extraction the rating is **GOOD** – the technology is available (hydraulic infrastructure) to increase extraction where it lags behind demand and it is high on the agenda of governments. However it can be difficult to enforce because it requires authority and cooperation of water users.

Regarding ecosystem restoration, the rating is **FAIR** – the benefits are apparent. However, this is difficult to achieve because it requires (costly) monitoring or creating incentives to minimize ecosystem-destroying behavior. Since this is usually a negative externality of some personally beneficial activity, it complicates the achievement of the target.

6.7 *by 2030 decrease by $x\%$ mortality, and decrease by $y\%$ economic losses caused by natural and human-induced water-related disasters*

RATING: FAIR, but the costs and benefits of preventing water related disaster is context, location and disaster specific. Previous Copenhagen Consensus Center research (Kunreuther and Michel Kerjan, 2012) shows that installing flooding prevention measures (elevating houses and installing community walls) is costly, but can save some lives over a 50-year time frame. Early warning systems have much lower incremental absolute costs (around \$1B globally), and can provide benefits in terms of lives saved and economic losses avoided between 4 and 36 times the investment, depending on the assumptions (Hallegate, 2012).

The difficulty with this target is that deaths from natural disasters do not exhibit a trend over time (Hallegate, 2012), so reduction in mortality and injury needs to be standardized according to some measure (intensity of disaster, number of disasters). Finding the right measure to standardize on is a non-trivial exercise.

6.8 *provide adequate facilities and infrastructure, both built and natural, for safe drinking water and sanitation systems, for productive uses of water resources and for mitigating the impacts of water-related disasters*

RATING: FAIR Infrastructure is more costly than other forms of providing water, but the benefits are there if done. Difficulty will be in implementation – only 2 out of 54 African countries likely to meet WASH MDGs.

What is missing?

It would be worth exploring ways to create low-cost technologies for cleaning water in the home. The use of competitive prizes may be one inexpensive way to incentivize this R&D.

Proposed goal 7. Ensure access to affordable, sustainable, and reliable modern energy services for all

7.1 *by 2030 ensure universal access to sustainable modern energy services for all*

RATING: As written this target is **POOR**, because achieving universal access requires large infrastructure investment over a relatively short period of time which will likely be extremely costly. However, if the target is set more realistically – and the word ‘sustainable’ is qualified – then the rating is **PHENOMENAL**. Increasing access to modern energy has very large benefits from an economic, health and education perspective. The costs are not trivial, but the benefits are potentially enormous.

‘Sustainable’ should not only refer to renewable energy – this would be costly and unrealistic target by 2030. If sustainable were to include a suite of energy options such as nuclear and natural gas, then this justifies the phenomenal rating (Centurelli (2010)).

Better wording: By 2030 increase to x% the proportion of people able to access modern energy services

7.2 *double the share of renewable energy in the global energy mix by 2030*

RATING: POOR The costs to achieve this will be large and the impact on climate change will be very small, especially since total global energy consumption will increase in the future (increase in denominator).

Subsidies, and other inducements such as feed-in-tariffs (FITs) and renewable portfolio standards (RPSs), have been shown to be extremely cost ineffective and have not impacted emissions as hoped.

Krozer (2013) looks at the case of Europe’s renewables policies between 2002 and 2011 and considers benefits in terms of reductions of CO₂ emissions and fossil-fuel imports. He finds that benefits have been higher than the FIT costs for on-shore wind and small hydro during periods of high oil prices. However, the costs of solar photovoltaics have been significantly higher than the benefits and slightly higher in the case of solar thermoelectric (Krozer 2013).

Del Río and Gual (2007) look at the costs of public support for the Spanish RES-E (electricity from renewable energy sources) deployment granted through the feed-in-tariff system (FIT). They find that the total RES-E support costs outweigh the external costs avoided by RES-E deployment for all technologies. (Del Río and Gual 2007).

Fundamentally, goals that target the share of renewables have potential at the local level but are limited globally. CBAs could be quite high for select regions, but globally poor without significant technological breakthroughs to deal with the intermittency and non-dispatchability of renewables

This target should be reworked as “half the share of carbon based energy in the global energy mix by 2030”. This implies a reduction of fossil fuel based energy from 82% of the current mix to 65% by 2035. This is a 20.7% decrease versus the 8.5% decrease that is currently forecast to 2035. To meet this goal, the preferred renewable options are nuclear and hydro over wind and solar, given the cost profile and poor energy reliability of the latter. However, the former options are not without consequences (such as environmental externalities), which complicate the cost and benefit assessment for the target.

7.3 *double the global rate of improvement in energy efficiency by 2030*

RATING: GOOD Though this should be the focus for developed countries (for developing economies the focus should be accessing modern energy in the first place). This could be achieved through the implementation of governmental standards for energy use in the sectors mentioned.

7.4 *by 2030 increase by x% globally the share of clean energy technologies, including sustainable biomass and advanced cookstoves*

RATING: GOOD for clean cookstoves – The evidence suggests that advanced cookstoves can be provided cheaply and have large health benefits in the near term, mainly reduction of sickness from indoor air pollution.

7.5 *by 2030 phase out inefficient fossil fuel subsidies that encourage wasteful consumption, with solutions that aim to secure affordable energy for the poorest*

RATING: PHENOMENAL, if done on a coordinated, global scale (though it is more likely to be accomplished by around 2050). If uncoordinated, then rating is **FAIR** by 2030. While reducing subsidies will generate large efficiency benefits, there will be distributional consequences, particularly for the poor in developing countries. ‘Encouraging wasteful consumption’ is a vague and open term: it will be possible that actors use this phrase to justify limited or no reduction of fossil fuel subsidies.

7.6 *by 2030 expand and upgrade as appropriate infrastructure for supply, transmission and distribution of modern and renewable energy services in rural and urban areas, including with a view to doubling primary energy supply per capita for LDCs*

RATING: As written this is **POOR**. The goal is too broad in scope and lacks clear direction. As many LDCs are currently without energy infrastructure, it may be the case that this goal incentivizes unnecessary infrastructure development (i.e. transmission backbone vs. distributed generation systems). Specifying both modern *and* renewable energy services while conjoining rural and urban interests is too expansive and complex. Moreover, Brew-Hammond (2010) argues that significant changes at the institutional level will be required to increase modern energy access which has not been addressed. Although the notion of doubling per capita primary energy supply is laudable (improved health outcomes, strong correlation with GDP growth etc.), a more realistic target, i.e., providing energy systems to high-density communities, would be rated as **GOOD**

Better wording: Provide energy systems to high-density communities

Proposed goal 8. Promote strong, inclusive and sustainable economic growth and decent work for all

8.1 *sustain per capita economic growth of at least $x\%$ per annum (with x being set at a level appropriate to national circumstances)*

RATING: UNCERTAIN Economic growth is correlated to desired development outcomes such as better health outcomes, reduced poverty, lower crime, better governance so in theory it is a **GOOD or PHENOMENAL** policy objective. However, experience shows that meeting the ambition of sustained economic growth is not straightforward. There is no well-known set of policy options available to governments that guarantee growth over the short and medium term. Additionally, inserting this goal is unlikely to induce changes in behavior since this is the policy objective of most, if not all governments around the world. Given the desire for SDGs “limited in number”, perhaps it would be worth putting the sentiment behind this goal into the pre-amble.

Better wording: Include in pre-amble

8.2 *sustain income growth of the bottom 40% of the income distribution of each country of at least y (greater than x)% to reduce income inequalities by 2030*

RATING: UNCERTAIN Dollar, Kleineberg and Kraay (2014) show that growth in average income of the bottom 40% is the same as average income of the entire country. To suggest that income in the bottom 40% should grow faster than the average would require significant departures from historical trends, which we do not know how to accomplish.

8.3 *by 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities*

RATING: POOR This is a poorly specified goal. Some level of unemployment is necessary to generate efficient labor markets. Additionally, there is no tangible, well known policy response to achieve full, productive and decent employment for all. Moreover, what as defined as ‘decent work’ often leads to job protection rules that favor insiders over outsiders, contribute to high rates of youth unemployment and can bias firms choice of optimal size and increase poverty, as has been shown in the case of India (Besley and Burgess, 2014).

It would be better restated as ‘remove barriers to productive employment’. In particular, targeting increased female participation in the workforce has **PHENOMENAL** benefits relative to costs. There is compelling evidence that the growth miracles of certain Asian economies were driven by low cost policies that allow and incentivize women to work.

Better wording: Remove barriers to productive employment for women

8.4 *by 2020 halve the number of youth not in employment, education or training*

RATING: UNCERTAIN The evidence to achieve reductions in youth unemployment is unclear. For education, the rating is **FAIR**. For training the evidence is **UNCERTAIN**.

8.5 *create a sound macroeconomic environment with strong fiscal and monetary policies*

RATING: UNCERTAIN Again, like goal 8.1 this is a **GOOD** or **PHENOMENAL** outcome, but is difficult to execute well. It would be better to focus on other goals.

8.6 *create an enabling environment for business with strong national economic institutions and policies that support investment and promote competition*

RATING: UNCERTAIN Again, like goal 8.1 this is a **GOOD** or **PHENOMENAL** outcome, but is difficult to execute well. It would be better to focus on other goals.

8.7 *create incentives for the development of sustainable tourism which takes into account community participation, local culture and local products*

RATING: POOR This is an overly narrow focus. Most of the development and environmental impacts of tourism are local, and thus incentives are likely to exist already; tourism is a single sector, and a case would have to be made that it has sufficient leverage over global resource problems.

8.8 *create enabling conditions for increased growth and productivity of micro-, small- and medium-scale enterprises (SMEs), including through policies that promote entrepreneurship, creativity and innovation, and through improved access to markets and financial services*

RATING: UNCERTAIN what an ‘appropriate climate for SMEs, entrepreneurship and innovation’ means. However, early limited evidence suggests this may be in **GOOD** category but more research required. There have been randomized controlled trials that suggest certain interventions such as providing early stage risk capital, and improving basic skilling have high benefits, relative to costs. Evidence is not clear enough to provide more confident recommendation.

8.9 *increase the share of high productivity sectors and activities in the economy, and strengthen productive capacities through technological upgrading, greater value addition and product diversification, with a particular focus on LDCs*

RATING: UNCERTAIN, except for technological upgrading which is **GOOD**. The elements of this target are incorporated into targets within focus area 9 for example, 9.1 (higher productivity), 9.8 (technological innovation) 9.5 (diversification). See the specific targets there for ratings.

8.10 *promote greater resource efficiency of economic activities, including through sustainable supply chains, according to national circumstances and capacities*

RATING: UNCERTAIN Improving resource efficiency is self-evidently a valuable objective, however much depends on implementation.

8.11 *support the development of quality, reliable, sustainable and resilient infrastructure for transport, energy, water and communications, in particular in developing countries with a focus on access for the rural and urban poor*

RATING: FAIR The elements of this target are incorporated already in other targets – for example transport (11.2), energy (7.1), water (6.8) and communications (11.4) so there is a case for rationalising some of these. Focusing on access to rural poor will likely be least cost-effective, but it depends on context.

8.12 *improve regional and trans-border infrastructure to promote effective regional economic integration and facilitate trade*

RATING: PHENOMENAL

8.13 *end child labour by 2030, protect the rights and ensure safe and secure working environments of all workers, including migrant workers and those in precarious employment*

RATING: GOOD, though we are **UNCERTAIN** about how to ‘end’ child labor. A report from ILO shows that the benefit to cost of eliminating child labor by 2020 is 6.7 – see Dorman (2004). This rating is supported by GOOD and FAIR returns on investment in primary and secondary education – in effect, the opportunity costs of working as a child (there is a clear tradeoff between education and child labor, in that reducing child labor improves education outcomes of young people).

But there is a big caveat associated with this goal. Ending child labor has been as elusive as achieving universal primary education. For example, the ILO, UNICEF and the World Bank have been advocating for an end to child labor for some time yet in 2012 there are more than 250,000 children still in employment. The reason for this is that child labor is driven by poverty and child earnings are needed to supplement household income. So, although the goal is GOOD, one needs to be aware of the difficulty of ending the practice. Legislation prohibiting child labor, now in effect in all countries, has been unenforceable.

8.14 *promote formalization of informal sector activities and employment*

RATING: POOR Evidence shows that formalization of employment and enterprises does not necessarily confer benefits. Recent studies have found that the informal firms that have been induced to become formal by various interventions that subsidize the costs of formalizing have experienced little benefit on average from doing so (Bruhn and McKenzie, 2013). While the formalization of employment can confer advantages on a lucky few, the rigidities in labor markets that may be created act to reduce overall labor demand at the expense of the many.

8.15 *by 2030 lower the overall costs in migration processes and minimize transaction costs of remittances*

RATING: GOOD These targets work well together and provide benefits for both the receiving and originator country of the migrant. Lowering the costs of remittances helps increase benefits to the originator country.

8.16 *explore the possibility of a broader system of capital accounting looking beyond GDP and incorporating social, human and environmental capital*

RATING: Not assessed (This appears to be similar but somewhat distinct from target 17.30.)

Proposed goal 9. Promote sustainable industrialization

Overall message: There appears to be limited empirical support for an activist government industrialization policy.

Firstly, there has to be a compelling reason for a government to actively support an industry, if the private sector is not willing to enter that same space. Secondly, if a market failure does exist, there is limited empirical evidence that governments are good at addressing them at the right time, with the right policies without creating more or different problems. Thirdly, in LDCs with weak institutions, industrialization policies open up the possibility of rent-seeking behavior.

To be sure, industrialization policies can be beneficial if they are targeted. But broad, large scale industrial policies are unlikely to succeed. In the case of the SDGs, preference should be given to goals that support integration of LDCs into existing global manufacturing chains and policies that support entrepreneurship.

9.1 Achieve structural transformation of economies towards progressively higher levels of productivity in all sectors and activities

RATING: UNCERTAIN Increased productivity is an important and **GOOD** policy objective – which if done correctly confers numerous benefits. The difficulty is in implementation, particularly for structural transformations. Both the private sector and government have role to play, but typically private sector is better at driving productivity improvements.

9.2 respect national policy space and national circumstances for industrial development, particularly in developing countries

RATING: FAIR There is a trade-off that needs to be balanced. Countries should be able to work towards their national interests. However, there is clearly much interdependence between nations – and one nation's activities rarely affect only the nation itself.

9.3 ensure a conducive policy environment for industrial development, including encouragement of industrial entrepreneurship and enterprise formation with inclusion of micro- and SMEs

RATING: GOOD It is important to foster an environment for entrepreneurship – one in which individuals have access to capital and are rewarded for taking risks. Expanding opportunities for entrepreneurship is particularly important in the developing world where it has not just economic, but social benefits (life satisfaction, upward mobility).

9.4 significantly raise industry's share of employment and GDP in line with national strategies, including doubling manufacturing's share in LDCs by 2030

RATING: As written this is a **FAIR** goal. It is a reasonable objective but there is limited value in every LDC seeking the same type of manufacturing – some diversification is necessary. It is important for LDCs to think beyond a product-focused view of manufacturing. Rather they should consider the entirety of global value chains and target elements of the chain where they may have a comparative advantage. Integrating within an existing chain can be a valuable way to support manufacturing with benefits for both the domestic (more jobs)

and international economy (increased productivity, lower costs). Governments' role is to establish the conditions that attract foreign direct investment to link domestic enterprises to the global value chains. This target is similar to 9.6 and perhaps should be subsumed within that target.

Better wording: Support the integration of developing country industrial enterprises, particularly in Africa and LDCs, into regional and global value chains

9.5 increase industrial diversification in developing countries, including through enhanced domestic processing of raw materials and commodities and through new product development

RATING: FAIR Diversification is important. However, diversification should not be driven top down, for example governments picking a portfolio of industries to support. Rather it should be driven via a bottom-up approach, through supporting conditions for entrepreneurship, which can naturally diversify a country's industrial base. Regarding processing of raw material and commodities, there is a risk in pursuing only these types of industries in that the possibility for 'learning-by-doing' is small.

9.6 support the integration of developing country industrial enterprises, particularly in Africa and LDCs, into regional and global value chains

RATING: PHENOMENAL Integrating within an existing chain can be a valuable way to support manufacturing with benefits for both the domestic (more jobs) and international economy (increased productivity, lower costs). Governments' role is to establish the conditions that attract foreign direct investment to link domestic enterprises to the global value chains. This target is similar to 9.4 and perhaps should be subsumed within that target.

9.7 create decent industrial sector jobs and promote job-rich industrial development

RATING: POOR This goal risks governments taking an active role in creating industrial sector jobs, through the selected promotion of particular industries. It is better for governments to take a neutral stance and set conditions for creation of jobs by private sector. In countries with weak institutions, there is also the risk of active industrial policy leading to rent-seeking behavior.

9.8 promote industrial research, development and innovation, including raising the ratio of R&D workers per one million people by x% and the share of R&D spending in GDP by y%

RATING: GOOD Generally, R&D has high benefits relative to costs, though the difficulty in this target is obtaining the funds, resources and human capital to support innovation. Part of this will be developing the right conditions for innovation, and strengthening the innovation value chain to attract resources and talent.

9.9 upgrade the technological capabilities of industrial sectors in developing countries, including in middle income countries, and improve industrial resource efficiency by accelerating the development, transfer and adoption of environmentally sound technologies and processes

RATING: FAIR It is important to curb environmental externalities in a cost-effective manner however implementation is not clear. That said, given the environmental problems such as air pollution and climate change affect such a large number of people in developing countries now and in the future, there is a compelling case to incentivize actors to use technology to mitigate these problems.

9.10 *promote indigenous technology development and the growth of domestic innovation in developing countries*

RATING: GOOD Strengthening systems and incentivizing R&D and innovation is the key to productivity. It can also confer benefits beyond domestic market. This target is quite similar to 9.8.

9.11 *by 2030 retrofit $x\%$ of existing industries with clean technologies and environmentally sound industrial processes to achieve $y\%$ energy and $z\%$ resource-efficiency improvement, with all countries taking action, developed countries taking the lead and developing countries following a similar pattern taking into account their development needs and capabilities.*

RATING: UNCERTAIN While it is important to deal with environmental externalities, the success (and benefit-cost analysis) will depend on the incentives and the ambition of the targets used to encourage retro-fitting of clean technologies. Another difficult issue is financing of this policy. Overall it is difficult to assess a benefit-cost ratio for this target.

9.12 *ensure small-scale industrial producers have affordable access to credit and financial services*

RATING: PHENOMENAL Access to credit for small scale producers is very important. It encourages entrepreneurship and allows businesses to expand. This is a key target that is likely to yield economic and social benefits.

Proposed goal 10. Reduce inequality within and among countries

Reduce inequality among social groups within countries:

10.1 *by 2030 eliminate discriminatory laws, policies and practices*

RATING: UNCERTAIN Changes in laws do not always result in changes in practices. For example, out the 29 countries for which female genital mutilation is most prevalent, 26 have outlawed the practice.

10.2 *achieve and sustain income growth of the bottom 40% of the population that is higher than the national average through 2030*

RATING: UNCERTAIN Dollar, Kleineberg and Kraay (2014) show that growth in average income of the bottom 40% is the same as average income of the entire country. To suggest that income in the bottom 40% should grow faster than the average would require significant departures from historical trends which we do not know how to accomplish.

10.3 *by 2030 reduce inequalities of opportunity and outcome among social groups, including economic, social, and environmental inequalities*

RATING: The economic arguments about this target are **UNCERTAIN** – The economic evidence suggests that increased economic growth and supporting outcomes of the poorest are not in opposition – both can happen at the same time. There is some evidence that targeting the most marginalized will yield higher benefits than targeting non-marginalized because typically, they are coming from a lower base. However costs, including political and non-economic, will be likely be higher for this group.

The rights argument for this target however, is strong and arguably, a more decisive factor than the economics. The important factor here is identifying the right indicators that will actually measure reductions in inequality – and in this regard indicators that measure relative progress between social groups are likely to be best.

10.4 *work towards reversing the decline of the share of labour income in GDP where relevant*

RATING: UNCERTAIN Whether this should be used as an indicator for inequality depends whether one believes this is correlated with actual inequality. There is some evidence for this but perhaps it would be better to use a standard inequality indicator such as a GINI or palma.

10.5 *empower and promote the social and economic inclusion of the poor, the marginalized and people in vulnerable situations, including indigenous peoples, women, minorities, migrants, persons with disabilities, older persons, children and youth*

RATING: This is closely related to 10.3 in that this is the desired input to achieve 10.3. It does not necessarily need to be a separate target.

10.6 *promote and respect cultural diversity*

RATING: From an economic perspective this goal is **UNCERTAIN**, though as with 10.3, the rights arguments probably dominate. One point to make is that it is easier to support cultural diversity if the value of cultural diversity is identified, measured and made clear to all

10.7 *ensure the availability of high-quality, timely and disaggregated data to ensure monitoring of progress for marginalized groups and people in vulnerable situations*

RATING: FAIR Providing this type of data requires significant strengthening of statistical capacity in developing countries i.e. personnel and technical assistance, which represents a non-trivial cost, especially for certain countries where ability to analyse (as opposed to collect). The benefits can be large, but 'high-quality' is hard to define.

International actions to reduce inequalities among nations:

10.8 *establish measures at global level to reduce inequality among countries*

RATING: UNCERTAIN The measures required to achieve this are not without significant political and non-economic costs. Moreover, the target would be achieved with growth in the bottom or recessions in the top – clearly only one of these outcomes is favorable.

10.9 *promote strong international institutions, including through the conclusion of reforms for increasing effective and democratic participation of developing countries in international financial institutions*

RATING: UNCERTAIN

10.10 *improve regulation of global financial markets and institutions and strengthen their implementation*

RATING: Not assessed

10.11 *facilitate greater international mobility of labour while mitigating brain drain*

RATING: This is a contradictory goal. Improving international mobility has **GOOD** benefit cost ratio. It increases opportunities for individuals and provides benefits for both the host and originator country (remittances). Mitigating brain drain seeks the opposite policy response and by reasoning must be rendered **POOR**.

10.12 *assist developing countries in attaining long term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring*

RATING: Not assessed

Proposed goal 11. Build inclusive, safe and sustainable cities and human settlements

Overall message: When individuals agglomerate in cities, the increased density provides numerous benefits – for example lower per capita environmental impact and energy use, improved livelihood opportunities and lower per unit costs of providing services and infrastructure. There is a tradeoff, particularly in the developing world, between encouraging more people to move to a city, and controlling the way in which the individuals in the city are accommodated. Put differently, it is beneficial for more people to move to a city, but if regulation and city planning are overly restrictive, this could discourage or prevent people from moving to the city in the first place.

The priorities for cities should be (most important, first): water quality, natural disaster prevention, crime / security, and congestion.

11.1 by 2030, ensure universal access to adequate and affordable housing and basic services for all, and eliminate slum-like conditions everywhere

RATING: FAIR The focus should be on providing affordable, mass produced, temporary housing to those that wish to move to cities in the developing world to 2030. The benefits are large, and the costs are relatively low. Housing does not need to be permanent because wealth in developing nations will increase over the medium term, and preferences for the type of housing are likely to change. Regarding slums, from an economic perspective, it can be preferable to accommodate more individuals in cities, even in unstructured housing, than to have planned housing but less people in cities.

11.2 by 2030, provide access to safe, affordable, accessible and sustainable transport for all, expand public transport and improve road safety

RATING: FAIR Transport is important, but lower on the priority list relative to other concerns such as water quality, disaster prevention and crime.

11.3 enhance capacities for integrated and sustainable human settlement planning and management for all, particularly developing countries

RATING: FAIR It is important to integrate land use and transport planning, but it is difficult to do this well.

11.4 strengthen positive economic and social links between cities and peri-urban and rural areas

RATING: FAIR The costs of connecting cities and peri-urban and rural areas is likely to be large, mainly because the construction and maintenance of infrastructure (roads and ICT) presents significant cost. However, the benefits can be larger and include job growth, linking of farmers to markets, better supply chains, better access to information and numerous intangible social benefits.

11.5 by 2030, reduce the environmental impacts of cities and improve the quality of environment in cities

RATING: UNCERTAIN Developing indicators for this target will be difficult. Additionally, it is important that this target does not unnecessarily shrink urbanization (and the benefits associated with high density living). For example, it is likely to be preferable, from an environmental standpoint, for many people to live in a

high-density apartment than for the equivalent amount of people to be spread out in a low density suburban housing – though the former may appear less ‘environmental’.

That said, in selected urban environments, such as cities in China, introducing congestion taxes for cars will have very high payoffs in terms of air quality and congestion at relatively low cost with benefits in the **PHENOMENAL** range.

11.6 by 2020, increase by x% the number of human settlements adopting and implementing policies and plans towards resilience and adaptation to climate change and natural disasters

RATING: GOOD Due to the increased density of living, the impact of natural disasters in cities can be high. It is therefore cost beneficial to implement plans against disaster. The focus should be on identifying ‘high risk’ cities and ensuring a large percentage of these implement disaster mitigation strategies (as opposed to x% of all cities).

Better wording: By 2030, increase by x% the number of human settlements that are prone to disasters adopting and implementing policies and plans towards resilience and adaptation to climate change and natural disasters

11.7 enhance social cohesion and personal security, and ensure universal access to inclusive and safe public spaces

RATING: As written this target is **UNCERTAIN**, given that social cohesion is difficult to measure. However, more specific phrasing around reducing homicide rates and reducing vulnerability to crime would make this a **FAIR** or **GOOD** target. Reducing crime can be difficult and costly – however, there have been cases where reduction in crime has led to (or is correlated with) increased economic benefits.

11.8 by 2030 ensure that all cities are accessible and offer opportunities to persons with disabilities

RATING: UNCERTAIN It can be a complex exercise to retrofit a whole city for disability access. Depending on the development of the city, there may be other, more beneficial investments that would provide benefits for the disabled, other minority groups and the general population (e.g. improving disaster resilience). The question of improving disability access should be made on a city-by-city basis.

11.9 protect and safeguard the world’s cultural and natural heritage

RATING: UNCERTAIN Developing indicators for this target will be difficult. As with target 11.5 it is important that this does not unnecessarily shrink urbanization (and the associated benefits).

Proposed goal 12. Promote sustainable consumption and production patterns

12.1 *Time-bound effective implementation of the 10-Year Framework of Programmes on sustainable consumption and production (10YFP)*

RATING: Not assessed

12.2 *by 2030 achieve sustainable management and efficient use of natural resources to enhance human welfare within the carrying capacity of ecosystems*

RATING: UNCERTAIN This target is not specific enough to assess costs and benefits.

12.3 *significantly improve the resource efficiency of economic activities and decouple economic growth from environmental degradation, with all countries taking action, developed countries taking the lead, and developing countries following a similar pattern taking into account their development needs and capabilities*

RATING: UNCERTAIN Improving resource efficiency is self-evidently a valuable objective, however much depends on implementation. The extent to which economic growth can be decoupled from environmental degradation is uncertain.

12.4 *promote sound management of chemicals and hazardous waste in accordance with agreed international frameworks, and by 2030 significantly reduce the releases of chemicals and hazardous wastes to air, water and soil*

RATING: GOOD While it can be costly to manage chemicals and hazardous waste, the release of these substances into the environment can create significant health and environmental problems. There is a solid economic case to restrict the release of such substances into air, water and soil.

12.5 *by 2030 reduce by x% per capita waste through prevention, reduction, recycling and reuse*

RATING: UNCERTAIN Likely to be some values of x where the benefits would exceed the costs and the rating could be **FAIR** or **GOOD**. However, more specificity is required around this target.

12.6 *by 2030 at least halve per capita food waste at retail and consumer level, particularly in developed countries and countries with high per capita food waste*

RATING: UNCERTAIN There is some evidence that improving supply chains to super markets can improve waste at retail and consumer level but this evidence is limited. This is very similar goal to 2.6 and should be merged or removed.

12.7 *by 2030 redouble efforts to create a culture of sustainable lifestyles, including through education, awareness raising, sustainability information on products and services, policies and incentives*

RATING: FAIR Improving information quality and availability is unlikely to be harmful; consumers will undoubtedly benefit, and markets may then create incentives to improve along sustainability measures, although the environmental benefits are speculative and likely modest. The benefit to cost ratio will depend on the nature of the information requirements (compulsory or voluntary, the adequacy of the metrics, and the extent

of the reporting burden), the ability of the consumers to understand the information, and the ability of the information to change behavior.

12.8 by 2020 create economic incentives and scientific and technological capacities that enable and promote sustainable consumption and a circular economy

RATING: GOOD Using economic incentives to drive behavior can be beneficial, and, if done properly can yield favorable BCRs. Examples include a small levy on plastic bags, surcharges on inefficient appliances, or a carbon price. Using technological capacities to drive behavior is more speculative – and is rated **UNCERTAIN**.

12.9 by 2030 increase by x% the number of companies, especially publicly listed and large companies, reporting on corporate social and environmental responsibility, including integrated reporting

RATING: FAIR The costs are unlikely to be very high, particularly for large companies that are already reporting financial information – though it will depend on the regulatory burden. Regarding benefits, the impact of corporate social and environmental responsibility programs enacted by companies is highly variable – so it is uncertain to what extent reporting on these programs adds value. That said, a strong argument in favor of this target is that it would generate increased transparency, particularly in countries with low levels of corporate reporting - which could yield large, but uncertain benefits.

12.10 by 2030, increase the share of private sector actors incorporating sustainable development principles in their business practices, including sustainable supply chains, with due regard to the circumstances and capacity needs of micro- and SMEs

RATING: UNCERTAIN

12.11 by 2030 increase the share of sustainable products and services in public procurement, including through competitive and transparent procurement processes

Rating: Not assessed

What is missing?

Promoting improved water quality in cities can have a **PHENOMENAL** benefit to cost ratio. The infrastructure required is expensive, but the benefits accrue to many individuals. Also improved water quality can prevent water borne diseases, which can be very damaging if an outbreak of disease were to occur in high density, urban environments.

Proposed goal 13. Promote actions at all levels to address climate change
/ Build a climate change goal based on the outcome of COP21 of the UNFCCC

13.1 *hold the increase in global average temperature below a $x^{\circ}\text{C}$ rise in accordance with international agreements*

Rating: POOR (assuming $x=2$) We can consider two mechanisms to reach this target - emission reduction targets and/or emission intensity targets - both of which yield costs greater than benefits.

The target of stabilizing global temperature rise at less than 2°C above pre-industrial levels can be translated into atmospheric GHG concentrations and further into yearly emission allowances (Meinshausen, Meinshausen et al. 2009). Targets of 450 and 550 ppm CO_2e require substantial reduction of CO_2 emissions from fossil fuel use and industry compared to baseline levels (Blanford, Kriegler et al. 2013). Tol (2013) finds that cost-effective emission reduction would set the world on a path to 625 ppm CO_2e and that targets such as the 2°C , 450ppm or 550ppm would not be supported by benefit-cost analyses.

Regarding emission intensity targets, China and India have pledged a reduction of carbon intensity (i.e., emissions/gross domestic product (GDP)) between 40 and 45% and 20 and 25% respectively by 2020 with respect to 2005 (Steckel et al., 2011; Zhang, 2011; Yuan et al., 2012; Cao, 2010b; Government of India, 2012). These goals are similar to the emission reduction targets with a business as usual baseline as opposed to a historical year baseline. The benefit-cost ratios of these targets are likely to be less than <1 .

Interestingly, models that successfully achieve the 450 , 500 or even 550 ppm targets allow for overshooting the target in the near term and then rely on negative emissions through either advanced carbon capture and storage or BECCS in the latter half of the century. Lemoine and McJeon (2013) use the technology-rich GCAM integrated assessment model to assess the implications of 450 and 500ppm carbon targets. They find that the 500ppm target provides net benefits across some futures, but the 450 ppm target provides net benefits only when impacts are large, low-carbon technological breakthroughs abound, and with low discount rates. Blanford, Kriegler et al. (2013) show that models that find a feasible solution for the 450 ppm CO_2e target, have added a technological option for negative emissions, in most cases BECCS (Bio-energy with carbon capture and storage) in the electric sector. This suggests rapid advances in technology are a key requirement of meeting emission reduction or intensity targets.

13.2 *build resilience and adaptive capacity to climate induced hazards in all vulnerable countries*

RATING: PHENOMENAL Benefits are large in terms of avoided economic damage, while costs are manageable (Kull, Rojas et al., UNFCCC 2009, UNFCCC 2011). Tends to be evaluated on a specific case by case basis. Examples in “ASSESSING THE COSTS AND BENEFITS OF ADAPTATION OPTIONS AN OVERVIEW OF APPROACHES” find BCAs between 1 and 5 with a 10% discount rate. Will be much higher with a lower discount rate.

13.3 *by 20xx integrate climate change adaptation and mitigation strategies into development plans and poverty reduction strategies*

RATING: FAIR from a global perspective, though individual countries might face GOOD or PHENOMENAL benefit-to-cost ratios depending on their circumstances. Certain countries may be able to draw in in-

creased development financing by integrating climate change into poverty reduction strategies, which can help accelerate development outcomes (e.g. NAMAs), (Bassi et al, 2013; Tomkins et al 2013).

13.4 *by 20xx introduce instruments and incentives for investments in low-carbon solutions in all relevant sectors*

RATING: UNCERTAIN The rating for this target depends on the instruments and incentives. Implementing a very low carbon tax (\$5/tonne) to fund R&D has a **PHENOMENAL** rating though high carbon taxes and feed-in tariffs have a **POOR** rating. Regulations such as fuel standards can have phenomenal ratings as well, if the required technologies to achieve these standards exist.

13.5 improve education, awareness raising and human and institutional capacity on climate change impact reduction and early warning

RATING: UNCERTAIN But the BCR could be quite large given costs of education and awareness are typically modest. That said, improving institutional capacity is more expensive. There is limited economic evidence to assess, moreover the benefits although greater than the costs would likely also be modest.

What is missing?

A target on increasing % share of GDP going into R&D for new, low-carbon technologies.

An additional target could be ‘Reduce coal’s share of gross power generation from 41% to 25% by 2030’. This is a highly ambitious goal but with the current state and progress of natural gas extraction technologies could still maintain GOOD benefit cost ratios

Proposed goal 14. Attain conservation and sustainable use of marine resources, oceans and seas

14.1 *by 2030, reduce by x% marine pollution of all kinds, including from land-based activities*

RATING: UNCERTAIN Very hard to judge and depends on the value of x%. The ocean has a large capacity to assimilate pollution, but reduction of marine pollution is likely to be beneficial.

14.2 *by 2020, sustainably manage, restore and protect marine ecosystems from destruction, including by strengthening their resilience, and support relevant scientific research*

RATING: GOOD Protecting marine ecosystems ensures maintenance and basic functioning of a key component of the natural environment. Ocean acidification is a much newer area of research, and the potential benefits and costs of mitigation or adaptation are not well known.

14.3 *address and prevent further ocean acidification*

RATING: UNCERTAIN Brander et al. (2012), estimate the economic impacts of ocean acidification on coral reef systems and find that the potential costs of increased OA (and therefore benefits from reducing OA) to this part of the ecosystem are ~0.15% of GDP by 2100. They do not examine other parts of the marine ecosystem such as marine life. In terms of the costs of mitigating or adapting to OA, these are not well known and are complicated by the fact that OA is primarily driven by increases in CO₂ only and not all greenhouse gases.

14.4 *by 2020, effectively regulate harvesting and end overfishing to restore by 2030 fish stocks to ecologically safe levels that can produce maximum sustainable yield*

RATING: PHENOMENAL for restoring fish stocks to maximum sustainable yield, but **UNCERTAIN** for small-scale fisheries. Maintaining sustainable yields could be achieved through a system of transferable quotas, bought and sold between boats and fishing companies. This would be non-trivial cost to implement but the benefits are likely to be large, especially in the long run.

14.5 *support sustainable small-scale fisheries and aquaculture, including by providing equitable access of small-scale and artisanal fishers to fisheries and markets*

RATING: UNCERTAIN

14.6 *ensure the full implementation of existing regional and international regimes for managing oceans and seas by their state parties*

RATING: Not assessed

14.7 *by 2020, eliminate illegal, unreported and unregulated (IUU) fishing and destructive fishing practices*

RATING: FAIR The benefits are likely to be substantial, however the costs of monitoring and policing overfishing are also likely to be large.

14.8 *By 2020, conserve at least 10% of coastal and marine areas, including through establishing effectively managed marine protected areas, consistent with international law and based on best available scientific information*

RATING: FAIR This target depends on which areas are protected. Focus should be on protecting marine areas where there is a high degree of biodiversity and eco-system services are large for example coral reefs, or areas with valuable sea grasses.

14.9 *by 2020, eliminate subsidies which contribute to overcapacity and overfishing, and refrain from introducing new such subsidies, taking into account the need of developing countries, notably least developed countries and SIDS*

RATING: PHENOMENAL Limited costs to reduce subsidies, but large benefits, particularly in the long run from replenishing fish stocks. See Arnarson, Kelleher and Willman (2008) – The Sunken Billions report

14.10 *by 2030, increase the economic returns to SIDS and LDCs from the sustainable development of coastal and marine resources from within their jurisdictions*

RATING: Not assessed

14.11 *implement integrated and participatory coastal management to increase resilience of coastal ecosystems*

RATING: POOR The guidelines on integrated coastal zone management have been developed, and the results of implementation are either neutral or not convincing. On balance this should be considered a low priority, with limited benefit for biodiversity.

Proposed goal 15. Protect and restore terrestrial ecosystems and halt all biodiversity loss

15.1 *by 2020 halt the loss of all biodiversity, and protect and prevent the extinction of threatened species*

RATING: UNCERTAIN Very difficult to do a benefit cost assessment. Halting all of loss of biodiversity by 2020 seems optimistic given similar previous pledges, for example by EU by 2010, which were not met.

15.2 *by 2020 ensure conservation and sustainable use of ecosystems, with particular attention to wetlands, including through restoration of at least 15 per cent of degraded ecosystems*

RATING: GOOD Overall it is unlikely the target of sustainable use of ecosystems can be met. But if focus is on restoration of degraded critical ecosystems then the target may be achievable and the benefit to cost ratios should be favorable. The focus on wetlands is welcomed. They provide numerous biodiversity and service benefits (regulation services, food, genetic, medicinal and habitat services). Some effective policies include various kinds of payment schemes for ecological services (PES), international donor support for ecosystems with significant global environmental benefits etc.

15.3 *maintain genetic diversity of both cultivated plants, farmed and domesticated animals and their wild relatives including through effective cooperation of national institutions*

RATING: FAIR There is evidence that maintaining genetic diversity of farmed species is beneficial, particularly in valuable industries e.g. maintaining diversity in grape varieties to prevent disease – and the costs of doing so are likely to be low. Maintaining genetic diversity of wild species is a less certain proposition: estimated values for pharmaceutical uses for example do not come up with large values.

15.4 *by 2030, ensure the implementation of sustainable management of all types of forests and of mountain ecosystems*

RATING: GOOD Forests and mountains provide numerous ecosystem and service benefits and there is value in managing them sustainably. However the target could be better specified to focus on improving forest cover, or % reforestation as in target 15.5.

15.5 *by 2030 reverse the loss of and enhance forest cover worldwide, increase reforestation by x%, including by providing adequate incentives for developing countries*

RATING: GOOD, if focus on forests and reforestation target is for example on all dense forests. Studies show benefit to cost ratios of between 7 and 20. Provides biodiversity and other important benefits, such as carbon storing.

15.6 *by 2030, halt and prevent land degradation, reclaim land affected by desertification and drought, and improve land productivity and soil quality*

RATING: UNCERTAIN Land degradation is a problem and has a high cost but the term is general and it covers all kind of use. Policy responses to achieve this target are not clear

15.7 *ensure fair and equitable sharing of benefits arising from the utilization of genetic resources*

RATING: UNCERTAIN Equitable sharing does not necessarily increase aggregate benefits unless there is value placed on distribution of benefits or unless the beneficiaries of equitable sharing are more inclined to protect natural assets. The latter may be the case but is not always clear. The target is difficult to assess.

15.8 *end poaching and trafficking of endangered species, and end demand and supply of illegal wildlife products*

RATING: FAIR Certain interventions can be effective such as multiple countries reaching agreements on trade restrictions in endangered and illegal wildlife products. However, other policies such as increased policing are resource intensive and often less effective. The inclusion of ‘end demand and supply...’ seems somewhat superfluous. Moreover, reducing demand for illegal products can be difficult to do, especially if demand is related to cultural norms, which are hard to change.

15.9 *introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and by 2020 control or eliminate the priority invasive species*

RATING: FAIR It is clear that alien invasive species do significant damage to ecosystems and we should take action. Difficulty is in knowing how to curtail invasive species effectively. Elimination is unlikely, but some effective policies include coordinated action to identify and control the spread, through trade and travel, of potentially harmful species. It also requires the generation and dissemination of information on invasive species risks and strengthening the capacity of the weakest countries to handle the movement of species through transport systems.

15.10 *ensure free prior informed consent of indigenous peoples and local communities in decision making and natural resources management, and promote the use of their traditional knowledge*

RATING: UNCERTAIN It is desirable to consult and inform individuals who might be affected by decisions. Furthermore, traditional knowledge is important and can be beneficial. However, there is limited economic evidence on the benefits from such a target and measures to promote it are less clear. Overall the effect on biodiversity from this target is not clear.

15.11 *integrate natural resources and biodiversity values into national and local planning, development processes, and accounts*

RATING: GOOD to make informed tradeoffs between development, economic and biodiversity outcomes, it is necessary to research, understand and embed the value of biodiversity into decision making processes. There are several initiatives currently underway in this regard e.g. TEEB (The Economics of Ecosystems and Biodiversity).

Proposed goal 16. Achieve peaceful and inclusive societies, rule of law, effective and capable institutions

Fostering peaceful and inclusive societies:

16.1 *by 2030 reduce levels of violence and related death rate by x%*

RATING: UNCERTAIN, but the potential benefits are very high – the focus should be on violence since it is much more prevalent than violence related death (homicide). For example up to 16% of children are punished by very violent methods and up to 30% of all partnered women experience inter-personal violence in their lifetime. While eliminating some small fraction of this violence would have very large absolute benefits, there is limited evidence for interventions that could successfully reduce violence – and most of these studies come from high-income countries. Fearon and Hoeffler (2014)

16.2 *by 2030 end abuse, exploitation and violence against children*

RATING: UNCERTAIN The ambition to end violence is an excellent aspiration, but this is clearly not a feasible zero target for the next 15 years (or perhaps ever if taken literally). The costs of abuse, exploitation and violence against children are large – Fearon and Hoeffler (2014) estimate that largest cost to children is violence within the home, with sexual abuse and homicide somewhat lower in prevalence and cost. There is limited evidence for interventions that could successfully reduce violence – and most of these studies come from high-income countries.

16.3 *by 2030 reduce illicit financial flows by x% and reduce money laundering and all forms of organized crime including human trafficking and illicit trade in arms, drugs and wildlife*

RATING: UNCERTAIN There are several targets that address illicit financial flows and the mechanisms to reduce them in this document (16.3, 17.28, 17.45 and 17.46). These should be combined in a final SDG list because the set of policies that underlie them are closely related and it does not make sense to talk to one without the other. Better wording for this target is below from Cobham (2014), which focuses on key transparency mechanisms nations could adopt to reduce IFF. Given the uncertain but likely large sums of IFF involved, and the low cost of these policies these would have a rating of at least **FAIR**, but potentially **PHENOMENAL**.

Better wording:

- i. Reduce to zero the legal persons and arrangements for which beneficial ownership info is not publicly available;
- ii. reduce to zero the cross-border trade and investment relationships between jurisdictions for which there is no bilateral automatic exchange of tax information; and
- iii. reduce to zero the number of multinational businesses that do not report publicly on a country-by-country basis.

16.4 *by 2030 increase inclusive, participatory and representative decision-making at all levels, taking into consideration the interests of present and future generations*

RATING: UNCERTAIN This target is based on the assumption that decentralized decision making is beneficial and desired, which in many cases it can be, but it adds complexity. Increasing participation in deci-

sion-making, does not by default, lead to better outcomes. However, this is perhaps a better formulation of target 16.6, which avoids the use of the political term ‘democratic’.

16.5 by 2020 build necessary capacities of sub-national and local governments for fostering peaceful and inclusive societies

RATING: Not assessed

16.6 forge unity in diversity through democratic practices and mechanisms at the local, national and international levels

RATING: POOR The conditions in every country are so different that it is hard to imagine indicators for this target being developed that would be applicable to all circumstances.

16.7 by 2020 provide information and education on a culture of non-violence

RATING: UNCERTAIN, but the BCR could be very high, since the costs of information are low and the potential benefits, large.

16.8 strengthen mechanisms for formal and non-formal dispute resolution at all levels

RATING: Not assessed

16.9 reduce the number of internally displaced persons and refugees

RATING: Not assessed

16.10 enhance the capacity, professionalism and accountability of the security forces, police and judiciary

RATING: Not assessed

Rule of law, effective and capable institutions:

Overall message: Good governance is not only important as an enabler of development outcomes, but also, arguably, inherently valuable. Yet experience with institutional reform has been disappointing and the success of external pressure to improve governance particularly difficult. The economic evidence for specific governance interventions is small, and where it is available, it focuses on specific case studies that may lack applicability in different contexts. The evidence does not concern how to enact large, transformational reform that improves overall governance and promotes effective institutions. *As such, we do not rate the rule of law and capable institutions targets according to the economic categories, but provide qualitative assessments.*

In general, appropriate governance targets should focus on outcomes and measure how well institutions function, and not the form those institutions should take, which will vary across countries and contexts. Targets need to be carefully crafted and concrete, and should measure meaningful change toward better governance in specific areas, rather than broad goals.

16.11 *develop effective, accountable and transparent public institutions at all levels*

These are important broad goals and values, but as targets are too general, and unrealistic. Identifying more specific targets and indicators that are meaningful, measurable, and realistic is the challenge. It may be possible to a limited extent, especially for effectiveness and transparency.

16.12 *by 2030 provide equal access for all to independent, effective, and responsive justice systems that respect due-process rights, and equal access to legal aid*

This includes 6 different goals (equal access, independence, effectiveness, responsiveness, protection of due-process rights equal access to legal aid), each of which is difficult to measure and find indicators for. These are ideals for justice systems and stated in these general ways, unrealistic. Most concerning from an indicator perspective is equal access “for all” – this is unrealistic in implementation and in measurement. Having six areas does not make clear which ones of these should be prioritized.

16.13 *by 2020 provide legal identity for all, including birth registrations*

Legal identity provision can be a good, simple indicator of how well a government is functioning. It will be more useful as an indicator of government effectiveness than of providing public services, which is too generally stated to be helpful. This is the best target out of all the governance targets in this draft because it is clear, definable and measurable – and is likely to correlate to actual improvements in governance and the functioning of institutions.

16.14 *by 2020 improve public access to information and government data, including on public finance management, public procurement and on the implementation of national development plans*

Access to quality information can be an important indicator of effective governance and institutions. It is likely to be relatively inexpensive to implement with large benefits, however only when the political cost of providing information is low and when the ability of both government and civil society to make productive use of the information is sufficient.

16.15 *by 2030 ensure that all laws are publicized and accessible by all*

As a target that stands alone, this would not be effective to provide transparency and accountability. “Laws” are often long and complex documents—sometimes inches thick and full of technicalities. While it is desirable for them to be available for scrutiny, this target alone would let governments off the hook for other kinds of openness that might be more meaningful. (And laws are only one part of government policy and procedures.) However, if this target is paired with requirements for other kinds of access to public information, it could be more effective. This would be less difficult technically and less costly financially than most other governance targets; the question has more to do with how individuals are able to use the information made transparent. It should definitely not be stated alone, but possibly be part of a set of other related targets on access to information.

16.16 *by 2030 establish and implement effective regimes to decrease and provide accountability for corruption and bribery in all its forms and at all levels*

There are several ways to reduce corruption – introduce anti-corruption bodies, increase transparency, greater enforcement, changing expectations and norms and reducing bureaucracy. Unfortunately, the evidence for the effectiveness of these interventions is not conclusive. Furthermore, indicators that actually measure reduction in corruption are not entirely satisfactory.

Aiming to reduce corruption and bribery “in all its forms and at all levels” is immense and very general. There are some measures of some relevant outcomes, but not generally very concrete. At least some pieces of this may be possible, but not as stated.

16.17 *promote freedom of media, association and speech*

This target is highly political and as such, unlikely to be effective. It will be a challenge to state a target in a way that would be acceptable to a wide range of countries and to find measures that would be viewed as objective and neutral.

Proposed goal 17. Strengthen and enhance the means of implementation and global partnership for sustainable development

Proposed goal 1. End poverty in all its forms everywhere

17.1 *develop and implement effective and targeted capacity building programmes in developing countries in support of national plans for implementing sustainable development goals*

RATING: Not assessed

17.2 *realize timely implementation of duty-free quota-free market access, on a lasting basis for all least developed countries in accordance with WTO decisions and the Istanbul Programme of Action*

RATING: GOOD It is not phenomenal, since there might be some unintended trade diversion from countries that are not categorized as LDCs

17.3 *developed countries implement fully ODA commitments to provide 0.7% of GNI in ODA to developing countries of which 0.15–0.20% to least-developed countries on an agreed timeline based on internationally agreed principles*

RATING: Not assessed This is a financing issue which cannot be subject to cost-benefit analysis

17.4 *direct ODA and encourage financial flows to states where the need is greatest, in particular African countries, LDCs, SIDS, LLDCs, and vulnerable states*

RATING: Not assessed

17.5 *ensure that adequate policy space is given to developing countries by the international organizations to enable developing countries to establish and implement their policies for poverty eradication and sustainable development*

RATING: Not assessed

17.6 *support broad-based multi-stakeholder partnerships, including with civil society, the private sector, and multiple levels of government, that mobilize knowledge, expertise, technologies and financial resources to support achievement of sustainable development goals, particularly in developing countries*

RATING: Not assessed

Proposed goal 2. End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture

17.7 *reduce distortions in international trade, including phasing out all forms of agricultural export subsidies as soon as possible in line with the objective set out by the WTO Ministers in the 2005 Hong Kong Ministerial Declaration*

RATING: PHENOMENAL It is well established that increased trade has very large benefits, with low costs (e.g. Anderson, 2008). The inclusion of the agricultural export subsidies is crucial, since as much as 60% of the gains from liberalizing merchandise trade globally would come from agricultural policy reforms.

17.8 *improve regulation with strengthened implementation of financial institutions and financial markets, including food commodity markets, to ensure global financial stability and to help dampen food price volatility*

RATING: UNCERTAIN This target is already subsumed within targets 2.11 and 10.10

17.9 *increase investment in rural infrastructure, agricultural research, technology development, institutions and capacity building in developing countries to enhance agricultural productive capacity, particularly in countries that are net food importers*

RATING: GOOD A notable problem in agricultural research is lack of local institutions that are able to modify local varieties to local conditions.

Proposed goal 3. Attain healthy life for all at all ages

17.10 *strengthen implementation of the Framework Convention on Tobacco Control in all countries who have ratified the Convention and urge countries that have not ratified it to ratify and implement it*

RATING: PHENOMENAL Increasing tobacco tax worldwide (a core requirement of the Convention) is a highly effective intervention to prevent various NCDs including lung cancer (Jha and Peto, 2014)

17.11 *support research and development of vaccines and medicines for the communicable diseases that primarily affect developing countries*

RATING: PHENOMENAL There are considerable costs to undertake this research but the benefits are enormous.

17.12 *in cooperation with pharmaceutical companies, provide access to affordable essential medicines in developing countries, and support developing countries' use of TRIPS flexibilities*

RATING: FAIR Pharmaceutical companies have provided concessional price access for diseases in developing countries (e.g. HIV) which are not as prevalent as in the developed world. However, there is little appetite to do the same for diseases that are common globally (such as heart disease). Additionally, pharmaceutical companies have not been readily willing to commit to patent pools. In the absence of pharmaceutical cooperation, large costly mechanisms are required to improve affordability for developing world individuals, which can be difficult to finance. The benefit-cost profile depends on the disease and treatment in question. Subsidising combination treatments of artemisinin for malaria via the “Affordable Medicines Facility” for example has a **PHENOMENAL** benefit to cost ratio (Jamison et al, 2012).

17.13 *increase by 2030 the recruitment, development and training and retention of the health workforce by $x\%$ and teachers by $y\%$ in developing countries, especially in LDCs*

RATING: UNCERTAIN There is no cost-benefit evidence on the above targets. Also, setting exact numerical % targets for all LDCs does not make sense.

17.14 *increase the capacity for early warning, risk reduction, and management of national and global health risks*

RATING: Not assessed

Proposed goal 4. Provide equitable and inclusive quality education and life-long learning opportunities for all

17.15 *by 2020 expand by x% globally the number of scholarships for students from developing countries to enrol in higher education programmes in developed countries and other developing countries, with a particular focus on science, engineering, health, economics, finance, management and sustainable development*

RATING: GOOD Evidence is emerging that doctoral students are effective channels of technology transfer when they return home, so there could be large gains from expanding those flows through scholarships and fellowships. Such extensions for undergraduate and MA-level training would likely involve much larger costs for small benefit gains. The returns (for both the student and the originating country) will be greater if students are offered scholarships to academic institutions that exhibit better learning outcomes (often in developed countries), than the ones available in their domestic country.

Proposed goal 5. Attain gender equality, empower women and girls everywhere

17.16 *by 2030, achieve universal access to ICT for all women and men, including as a means of promoting women's empowerment*

RATING: FAIR, but universal access to ICT is too ambitious and would be very costly. However, there are easier options than others. One good example of how this can be attained is mobile phones, where coverage is large even in remote parts of developing countries. Computers, on the other hand, would be more expensive and difficult to maintain.

17.17 *increase financial resources and services across all sectors to achieve gender equality, empowerment of women, and the realization and enjoyment of women's and girls' human rights*

RATING: POOR This is poorly worded and does not seem feasible. Having equal access to financial resources and services *for women* would be a sufficient and profound first step. Increasing financial resources and services to third party actors to provide gender equality does not make sense. However, the sentiment behind the goal is noble. The idea behind this target is better encapsulated by goal 5.7

Proposed goal 6. Secure water and sanitation for all for a sustainable world

17.18 *by 2030, expand international cooperation and support in water and sanitation related technologies, including water harvesting technologies and wastewater treatment, recycling and reuse technologies*

RATING: PHENOMENAL International cooperation on water related technology has been occurring for many years and there is growing international recognition of the importance of distributing WASH technologies. The costs of cooperation are low and the benefits tangible and much larger than costs. For example, municipalities from all over the world have been sharing technologies on how to treat and extract water and energy from fecal sludge, which, with the use of private sector capital and involvement, has provided large resource benefits.

Proposed goal 7. Ensure access to affordable, sustainable, and reliable modern energy services for all

17.19 *enhance international cooperation to facilitate developing countries' access to clean energy technologies, including through appropriate partnerships*

RATING: UNCERTAIN Given the goal as presented there is insufficient information to ascertain the size of the benefits relative to the cost, which is also unknown. Without a metric to measure progress, or to determine whether goal was achieved, the end result may be few benefits (if any) at a high cost. The converse is possible, but not without additional information on what actions will be devoted to meeting this objective. That said, the kind of international cooperation that would work is at the level of sharing scientific information (scientists and universities) which would have a **GOOD** rating. Providing funds to subsidize technology exchange is **FAIR**. Using patent pools would be **POOR**.

17.20 *encourage public and private sector investment, in particular public-private partnerships, in energy infrastructure and cleaner energy technologies*

RATING: UNCERTAIN The goal as written is nebulous, compounded by the fact that no indicators of progress or any specific outcome is prescribed. At present, there are a number of existing organizations that are aimed at improving P3 (public and private partnerships) with respect to infrastructure and clean energy technologies in developing countries e.g., Norwegian Agency for Development Cooperation and GGGI. The comparative term “cleaner” as it relates to energy technologies is not well-defined within the context of this goal i.e., what is the baseline value? However, if specific investment targets with clear indicators of progress and/or success are identified, and a concrete budget is developed, a higher rating for this objective would be possible.

Proposed goal 8. Promote strong, inclusive and sustainable economic growth and decent work for all

17.21 *enhance global macroeconomic policy coordination and increase policy coherence in support of sustainable development*

RATING: Not assessed

17.22 *promote an open, rules-based, non-discriminatory and equitable multilateral trading system, including complying with the mandate for agriculture, services and non-agricultural products of the World Trade Organisation Doha Round and implementing the outcomes of the World Trade Organisation Bali Declaration*

RATING: PHENOMENAL It is well established that increased trade has very large benefits, with low costs (e.g. Anderson, 2008). The inclusion of the agricultural mandate is crucial, since as much as 60% of the gains from liberalizing merchandise trade globally would come from agricultural policy reforms, particularly reducing import restrictions and agricultural subsidies (but also, in the case of countries such as Argentina, from reducing agricultural export taxes).

17.23 *ensure a speedy conclusion of an ambitious, balanced, comprehensive and development-oriented outcome of the Doha Development Agenda of multilateral trade negotiations*

RATING: This is subsumed within target 17.22

17.24 *improve market access for agricultural, fisheries and industrial exports of developing countries in particular African countries, Least Developed Countries, LLDCs and SIDS with a view to increasing their share of exports in global markets*

RATING: This is subsumed within target 17.22

17.25 *increase trade-related capacity-building assistance to developing countries, including support for building their capacity to meet product regulations and standards, and enhance Aid for Trade initiatives including through the “Enhanced Integrated Framework”*

RATING: PHENOMENAL This has a specific and important focus, but broad reaching impact

17.26 *promote regional and international collaboration on and access to science, technology, innovation, research and knowledge sharing, including through North-South, South-South and triangular cooperation*

RATING: PHENOMENAL A focus on capacity building, increasing connectivity between scientific institutions globally, interchange of knowledge and scientists between regions is possible at relatively low cost, but with significant benefits. The costs should be relatively low because much of the communication infrastructure is already laid, though it could be improved in many developing countries. The large benefits would stem from linking scientists to research teams, grant funding, and knowledge sources (e.g. journals) in advanced countries, with consequent learning impacts on behalf of local personnel and greater access of local firms to technical innovations.

17.27 *mobilize additional international financial resources for development from multiple sources*

RATING: Not assessed. This is a pure financing issue that cannot be subject to cost-benefit analysis.

17.28 *strengthen domestic resource mobilization of developing countries, providing international support to improving tax collection, tax and natural resource revenue transparency*

RATING: There are several targets that address illicit financial flows and the mechanisms to reduce them in this document (16.3, 17.28, 17.45 and 17.46). These should be combined in a final SDG list because the set of policies that underlie them are closely related and it does not make sense to talk to one without the other. Better wording for this target is below from Cobham (2014) (see target 16.3), which focuses on key transparency mechanisms nations could adopt to reduce IFF. Given the uncertain but likely large sums of IFF involved, and the low cost of these policies these would have a rating of at least **FAIR**, but potentially **PHENOMENAL**.

17.29 *facilitate investments in developing countries in infrastructure such as roads, railways, ports, water supply and treatment, and ICT*

RATING: FAIR (Similar to target 8.11.)

17.30 *by 2030 countries progressively introduce broader measures of progress beyond GDP into national accounting, with supportive statistical capacity building in developing countries*

RATING: UNCERTAIN The purpose of the post-2015 process is to identify and incorporate broader

measures of progress beyond GDP into national plans. This target in a sense, is already being accomplished by the process and is not required.

Proposed goal 9. Promote sustainable industrialization

17.31 *promote transfer and dissemination of clean and environmentally sound technologies to developing countries, including through the possible implementation of a UN global technology facilitation mechanism, and encourage the full use of TRIPs flexibilities*

RATING: FAIR There is already strong encouragement to fully use TRIPs flexibilities, so this part of the target is somewhat redundant. There is **UNCERTAIN** knowledge about the effectiveness of the UN global technology facilitation mechanism.

17.32 *fully operationalize the Technology Bank and STI Capacity Building Mechanism for LDCs by 2017*

RATING: POOR Incentives would need to exist for private-sector firms to participate in sharing technologies, which has a limited record of success in advanced countries. If access to such technologies were to be bought (patent licensing rights) the costs would need to be subsidized with public funds, likely a high cost.

17.33 *build science, technology and innovation capacity in developing countries, including to undertake technology assessment and research, development and adaptation of clean and environmentally sound technologies*

RATING: GOOD This is a valuable target because one of the largest impediments to effective technology dissemination in clean technologies is the high cost of implementation and adaptation to local needs, which requires scarce technical expertise.

Proposed goal 10. Reduce inequality within and among countries

17.34 *by 2030 reduce to 5% or below the transaction costs of migrants' remittances, including regulatory and administrative costs*

RATING: GOOD

17.35 *enhance global cooperation to facilitate orderly, safe, responsible migration and mobility of people, including through implementation of planned and managed migration policies that facilitate migrants' contribution to sustainable development*

RATING: GOOD Increased migration confers benefits to originating and receiving country

17.36 *by 2020, substantially strengthen capacities for data collection and statistical analysis relevant to sustainable development with a focus on generating timely and high-quality data disaggregated, as appropriate, by income, gender, age, race, ethnicity, and rural/urban location*

RATING: FAIR Strengthening statistical capacity requires personnel and technical assistance, which represents a non-trivial cost, especially for certain countries where ability to analyse may be low (as opposed to collect). The benefits can be large, but 'high-quality' is hard to define.

Proposed goal 11. Build inclusive, safe and sustainable cities and human settlements

17.37 *provide financial and technical support to least developed countries to build urban infrastructure including communications, sewerage, waste management, recycling and other basic services*

RATING: GOOD

Proposed goal 12. Promote sustainable consumption and production patterns

17.38 *enhance international cooperation with developed countries taking the lead in implementing sustainable consumption and production patterns, including through strengthening developing countries' scientific and technological capacities to move towards more sustainable patterns of consumption and production*

RATING: POOR This is vague and does not easily point to what could be implemented. In general, these type of targets risk being poorly executed, with high costs and unknown benefits. If this target is primarily about specifically putting cooperating mechanisms for science and technology in developing countries then the rating is **FAIR**.

17.39 *establish and effectively implement a multilateral code of conduct for multinational corporations to secure social and environmental responsibility and accountability*

RATING: Not assessed

Proposed goal 13. Promote actions at all levels to address climate change / Build a climate change goal based on the outcome of COP21 of the UNFCCC

17.40 *operationalize the Green Climate Fund as soon as possible*

RATING: This target is rated as **UNCERTAIN**. Currently, LDCs are struggling with the general mechanisms of how the UNGCF would operate. Without clarifying how the fund will function at a practical level (e.g. managing LDC concerns such as geographical concentrations) and without the \$100 billion of funding in place, the risk of operationalizing the UN GCF quickly could be an expensive and ineffective undertaking. At this time, the benefits of achieving the goal as stated are not well known. If the fund is used to promote R&D then rating would be **PHENOMENAL**. If the fund is used to rollout projects with inappropriate technologies then the rating would be **POOR**.

Proposed goal 14. Attain conservation and sustainable use of marine resources, oceans and seas

17.41 *increase scientific knowledge, and develop research infrastructure and capacities to enhance the contribution of marine biodiversity to the development of developing countries, in particular of SIDS and LDCs*

RATING: GOOD However, this is a sector specific version of 17.26

Proposed goal 15. Protect and restore terrestrial ecosystems and halt all biodiversity loss

Proposed goal 16. Achieve peaceful and inclusive societies, rule of law, effective and capable institutions

17.42 *all countries should continue to act within the provisions of existing relevant international agreements*

RATING: This appears to be a technical clause that suggests that the SDGs do not override existing governance agreements (i.e. nations are still bound by what came before). If that is the case this could be put in the preamble rather than being a separate target.

17.43 *undertake regular monitoring and reporting of progress on SDGs within a shared accountability framework, including means of implementation, the global partnership among Member States and multi-stakeholder initiatives and partnerships*

RATING: There is clearly a need to monitor and report on the final SDGs. However, the costs depend on the size and type of targets and indicators on the final list, which is an **UNCERTAIN** proposition right now. For many statistical offices in the developing world, measuring indicators implied by this current draft would require significant capacity building.

17.44 *promote strong international institutions, including conclusion of reforms for increasing effective and democratic participation of developing countries in international financial institutions*

RATING: UNCERTAIN

17.45 *cooperate globally to reduce substantially international tax evasion and avoidance*

RATING: There are several targets that address illicit financial flows and the mechanisms to reduce them in this document (16.3, 17.28, 17.45 and 17.46). These should be combined in a final SDG list because the set of policies that underlie them are closely related and it does not make sense to talk to one without the other. Better wording for this target is below from Cobham (2014) (see target 16.3), which focuses on key transparency mechanisms nations could adopt to reduce IFF. Given the uncertain but likely large sums of IFF involved, and the low cost of these policies these would have a rating of at least **FAIR**, but potentially **PHENOMENAL**.

17.46 *cooperate globally to combat illicit financial flows and transfers, recover stolen assets and return them to their countries of origin*

RATING: There are several targets that address illicit financial flows and the mechanisms to reduce them in this document (16.3, 17.28, 17.45 and 17.46). These should be combined in a final SDG list because the set of policies that underlie them are closely related and it does not make sense to talk to one without the other. Better wording for this target is below from Cobham (2014) (see target 16.3), which focuses on key transparency mechanisms nations could adopt to reduce IFF. Given the uncertain but likely large sums of IFF involved, and the low cost of these policies these would have a rating of at least **FAIR**, but potentially **PHENOMENAL**.

What is missing?

A target focusing on improving patent transparency – for example via the implementation of a searchable, global database on patents would promote information sharing and would likely have GOOD or PHENOMENAL.

At least double the number of work visas issued by participant countries within “innovation zones” (the larger the country coverage the better), where these visas would last for 10 years and permit free mobility among countries within the zones. The economic costs would be small (though political constraints could be high) and gains in terms of technology transfer and information diffusion should be substantial.

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Post-2015 Consensus brings together more than 60 top economists, NGOs, international agencies and businesses to identify the goals with the greatest benefit-to-cost ratio for the next set of UN goals. The project will publish peer-reviewed research on 19 key areas over 2014, and together with Nobel Laureates help the UN get information on costs and benefits for the top global goals. Together with UN missions and governments we will ensure that the best evidence can effect the important choice of what will do the most good by 2030.

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