EMG Nexus Dialogue on Sustainable Infrastructure

26 February, 2019

OUTCOME STATEMENT

How integrated approaches can help deliver the 2030 Agenda

The coming decades will require large amounts of investment in new and existing infrastructure.[1] The OECD estimates that an annual average of USD 6.9 trillion in infrastructure investment until 2030 is required to support global development.[2] The bulk of this investment is taking place in developing countries, including fragile low-income economies and emerging economies, and is driven by a lack of development and infrastructure needed to meet the 2030 Agenda and the SDGs, population growth, increased income levels, and rapid urbanization in the context of growing inequality and climate change.

Infrastructure is linked to the achievement of all the Sustainable Development Goals (SDGs).[3] Infrastructure is mentioned explicitly in SDG 9, while quality, resilient, and sustainable infrastructure is also essential for achieving inclusive growth and sustainable development, eradicating poverty, enhancing resilience to risks from climate change and natural and human-made hazards, promoting societal well-being, and the realisation of all human rights and fundamental freedoms. Equitable access to energy and transport, for example, is central to better education; access to clean water and sanitation is a prerequisite for good health; and access to decent, affordable housing and infrastructure in both rural and urban areas is needed to build sustainable, safe, resilient cities and communities. All persons have human rights to access basic services such as water and sanitation, healthcare, and education, all of which are also critical for gender equality.

Furthermore, **investing in infrastructure provides opportunities for employment creation, income generation and economic growth**. The construction and maintenance of infrastructure creates employment directly, whilst the operation of infrastructure that is resilient and sustainable will improve access to services and produce sustained employment and trade opportunities. The targeted use of local labour and materials will have further backward and forward linkages, stimulating the local economy and contributing to poverty reduction and the use of safe and sustainable construction practices.

Infrastructure for transportation, waste management and sanitation, water, energy and ICT, as well as housing, industry, natural resource extraction, food, etc. have, however, major impacts on the environment. Indeed, if poorly conceived, and without assessing and addressing their potential environmental impacts early in the planning stage, such systems may undermine sustainable development. Approximately 70% of greenhouse gas emissions are linked to the construction and operation of infrastructure,[4] and the construction of new infrastructure also uses huge amounts of raw material inputs, such as organic materials, metals, and sand and gravel for concrete. About 90 billion tonnes of resources such as biomass, fossil fuels and non-metallic minerals were used in 2017, and this figure is likely to double by 2050.[5]

The direct, indirect, and cumulative impacts of poorly conceived and planned infrastructure projects can also lead to species loss and ecosystem degradation. New roads and ports, for example, can cause the fragmentation of habitats and often enable access to previously inaccessible areas, which can result in land

[1] Infrastructure provides the basic physical systems and structures that support society and the economy. These include systems for water and sanitation, transport, buildings, energy, food, telecommunications, resource use, and waste management. They also include natural infrastructure, i.e. the landscapes and ecosystems that provide services.

[2] OECD (2018). *Investing in Climate, Investing in Growth: A Synthesis.* p. 13. https://www.oecd.org/environment/cc/g20-climate/synthesis-investing-in-climate-investing-in-growth.pdf

[3] Thacker S, Adshead D, Morgan G, Crosskey S, Bajpai A, Ceppi P, Hall JW & O'Regan N. (2018). *Infrastructure: Underpinning Sustainable Development*. UNOPS, Copenhagen, Denmark.

[4] World Bank (2018). *Low-carbon Infrastructure: an essential solution to climate change?* http://blogs.worldbank.org/ppps/low-carbon-infrastructure-essential-solution-climate-change

[5] UNEP/ International Resource Panel (IRP) (2017), *Assessing Global Resource Use,* https://www.unenvironment.org/news-and-stories/press-release/resource-use-expected-double-2050-better-natural-resource-use

degradation and the conduct of illegal activities such as extraction, poaching and logging. Meanwhile, air and water pollutants from infrastructure construction are not confined by state borders.

Innovative approaches to financing and international cooperation are required in order to facilitate the large-scale infrastructure investments that developing countries will require to meet their development needs. In this context, attention should be paid to the risks of unsustainable levels of indebtedness.

At the same time, climate related risks threaten infrastructure itself. Infrastructure planners should consider the balance between reducing impacts on the environment (sustainability) and withstanding the impacts from the environment (resilience). Resilience to natural hazards determines the sustainability of infrastructure in the most literal sense; non-resilient infrastructure will not function or perform in the way that it is intended to. Climate change is driving more frequent extreme weather events that can pose major threats to fixed infrastructure systems, whilst these same threats tend to disproportionately impact the most vulnerable members of societies. Management of these risks is therefore essential. Infrastructure investment that is not risk-informed can be counterproductive, and poorly planned, designed, and built infrastructure can have major impacts on human health and safety, both within and across country borders. While infrastructure investments continue to rise, by 2030 the world is expected to lose US$ 415 billion per year – or 7% of the required infrastructure investments – in disaster related losses in the built environment alone.[1] Such losses are preventable if investments are sensitive to climate and disaster hazards over the long term and include appropriate risk management. This continues to highlight the need for safe, sustainable, and climate-resilient infrastructure.

Infrastructure development can also have complex social impacts related to displacement, land rights, cultural heritage, indigenous peoples, gender equality, employment, public health, safety and security, sexual exploitation and abuse, among other issues. Rights-based social safeguards, inclusive dialogue, and risk management principles should be applied to infrastructure development to ensure that it benefits the poor, leaves no one behind, and respects human rights. Chief among these is the need for inclusive, effective, transparent, and ongoing stakeholder consultation and public participation to be built into all stages of the infrastructure planning processes. Infrastructure development should be based on free, active and meaningful participation in development, and fair distribution of its benefits in line with the UN Declaration on the Right to Development,[2] and free, prior and informed consent, in accordance with the UN Declaration on the Rights of Indigenous Peoples.[3]

Integrated approaches can increase the sustainability of infrastructure development. The impacts of infrastructure investment are context- and sector-specific, and influenced by initial conditions. In many instances, significant interconnectivities and interdependencies in terms of these impacts can be found to exist. Where this is the case, investments should be planned at strategic levels and in an integrated way as much as possible, taking into account these interconnectivities and particularly where they impact the environment and human health and welfare. Integrated approaches help to optimize outcomes by considering the interconnections between different infrastructure systems and sectors (including natural infrastructure such as landscapes and ecosystems), aspects of sustainability (social, environmental, and economic), spatial scales (national, regional, local), and governance frameworks (inter-ministerial coordination). Two prerequisites to the efficient and effective delivery of required infrastructure investment are the availability of information and adequate capacities at the individual, systems and organizational levels – as well as having a conducive enabling environment at the national, regional and international levels. Assessing and, as required, addressing such constraints in those areas should be integrated in the approach to infrastructure planning and development.

Designers and planners should apply a mitigation hierarchy that prioritises efforts to avoid negative environmental and social impacts, followed by minimisation, then restoration, with offsetting as a last resort. Decision-makers can better understand the attendant trade-offs between the economic, social and environmental impacts of infrastructure systems by adopting a 'whole of life' approach. Stronger mitigation measures should be applied if a project could impact key biodiversity areas, and impacts to all forms of

[1] Global Assessment Report on Disaster Risk Reduction (UNISDR, 2015)

[2] UNGA Resolution 41/128 (1986).

[3] IUCN (2016). Recommendation 6.012: Protected areas and other areas important for biodiversity in relation to environmentally damaging industrial activities and infrastructure development. https://portals.iucn.org/library/node/46519

protected areas, including sacred or natural sites, and territories and areas conserved by indigenous peoples and local communities, should be avoided.

Environmental and social safeguards should be applied as far upstream in the infrastructure development cycle as possible. The main stages of infrastructure development include: needs, capacity, and feasibility assessments; planning; design; financing; procurement; construction; operation and maintenance; and decommissioning. At each of these stages the social, human rights, environmental, and economic implications should be considered and accounted for through comprehensive analysis of the potential synergies and trade-offs across sectors, with safeguards applied at relevant points in the process. Stakeholder consultation and effective, inclusive and transparent public participation, within and across country borders, should also be built in to all stages of the infrastructure planning and development cycle. Management of environmental and social risks and application of the mitigation hierarchy is most effective at the earliest stages of planning, when avoidance and minimization options are most cost-effective and technically and politically feasible. Early-stage stakeholder consultation and public participation is essential as it helps to capture as many potential risks and impacts as possible, and thereby avoid potential conflicts during later phases of the development cycle.[1]

Nature-based solutions should also be favoured wherever possible. Natural infrastructure can provide substantial environmental, economic, and social benefits, as well as reduce dependence on built infrastructure, which has significant environmental impacts and is more expensive to build and maintain. In many cases, natural and built infrastructure approaches can be integrated to deliver optimal outcomes, and can help to achieve no net loss, and possibly net biodiversity gain, at the project level. Mangrove ecosystems, for example, can provide excellent flood, sea level, and storm surge protection. Such efforts need to be incentivized through conducive policies, and the recognition that natural ecosystems such as forests and mangroves play important ecological infrastructural functions needs to be given greater prominence. A proper valuation of natural ecosystems can contribute to their preservation, and thereby the maintenance of infrastructural services that they provide to society.

Considering these trends and opportunities, the participants in the Environment Management Group Nexus Dialogue on Sustainable Infrastructure have expressed interest in promoting integrated approaches to infrastructure development as a means of increasing the safety, sustainability, and resilience of infrastructure and accelerating the achievement of the SDGs and 2030 Agenda. Wherever relevant we will link sustainable infrastructure considerations to our respective or collaborative programmes; support the development, promotion and improvement of integrated infrastructure planning approaches, tools, guidelines, norms, and standards, and their application to upstream planning; and facilitate related knowledge sharing, human capacity building, and institutional arrangements. In addition, and where relevant, we will seek to link integrated approaches for planning sustainable infrastructure to the growing work on infrastructure financing, and look for ways to capture and incorporate the value of nature, as well as social considerations such as gender, into financing decisions.

We call on all stakeholders to support an integrated approach to the development of sustainable and resilient infrastructure. We call on policy makers to respect human rights, to incorporate environmental, social, and economic sustainability into policies, and to ensure their implementation, while simultaneously creating an enabling policy environment conducive to inclusive, transparent, resilient, risk-informed sustainable infrastructure investment, by removing fossil fuel subsidies and introducing other fiscal incentives. Infrastructure planners and designers are encouraged to work across sectors to maximize synergies and minimize negative externalities on a full-cost accounting basis. We call on financiers and contractors to invest in sustainable and resilient infrastructure and adhere to internationally recognized sustainability and quality standards. We call on infrastructure users to adopt sustainable lifestyles that prioritize resource efficiency to avoid damage and waste and thereby reduce the demand for additional infrastructure. Finally, where possible and appropriate, non-asset solutions should be sought.

We invite the Environment Management Group to follow up on this statement, and engage the UN system and other relevant partners through a network to promote integrated approaches to sustainable

[1] IDB (2017). Lessons from Four Decades of Infrastructure Project Related Conflicts in Latin America and the Caribbean. file:///Users/rowanpalmer/Downloads/Lessons-from-Four-Decades-of-Infrastructure-Project-Related-Conflicts-in-Latin-America-and-the-Caribbean%20(1).pdf

infrastructure, by raising the international visibility of sustainable infrastructure as a central and crosscutting component of the 2030 Agenda; by working to streamline and adapt existing safeguards, tools, guidelines, norms, and standards for use in support of integrated approaches; and by helping countries to build the technical and institutional capacity required to adopt integrated approaches to the planning and development of sustainable infrastructure.

This Outcome Statement reflects the discussions held during the Nexus Dialogue on sustainable infrastructure that was organized by the UN Environment Management Group and UN Environment's Sustainable Infrastructure Partnership. It has benefitted from the inputs of colleagues from Duke University, ETH Zurich, GGGI, GGKP, GLO, ILO, ITRC at the University of Oxford, IUCN, OECD, OHCHR, UNECE, UNEMG, UN Environment, UNEP-WCMC, UNDP, UNIDO, UNISDR, UNITAR, the University of Geneva, UNOPS, UN Women, and WWF.