Background Note – Workshop on Inclusive Infrastructure

INTRODUCTION

This background note aims to provide a starting point to guide discussions during the workshop by providing an initial potential identification of the challenges and opportunities related to inclusive infrastructure, as well as examples of recommendations for consideration.

BACKGROUND

Globally, there are large gaps in infrastructure service delivery and accessibility - around 2.2 billion people lack access to safe drinking water, 4.2 billion lack access to sanitation,1 940 million lack electricity, and 1 billion lack access to all-weather roads2. Economically disadvantaged people, women, children, the elderly and differently-abled (collectively referred to as "most vulnerable" groups) are, to varying degrees, typically underserved by infrastructure. When infrastructure services exist, prevailing socio-economic inequalities and poor design can inhibit vulnerable groups of society from accessing them. The burden of infrastructure service gaps falls disproportionately on these groups.

Similarly, the burden of environmentally unsustainable infrastructure development also falls on the poorest and most vulnerable. These groups are more susceptible to the adverse environmental effects of unsustainable infrastructure development, such as ecosystem degradation and biodiversity loss, pollution and waste, and climate-related and other natural hazards. The nexus between social and environmental dimensions of infrastructure, and the recognition that cross-over benefits can be achieved in both, is, therefore, important for ensuring that the benefits from infrastructure development are inclusive of all segments of society, and particularly the most vulnerable groups.

Inclusive infrastructure is defined as infrastructure that accounts for the needs of everyone, ensures equal access to quality services and enhances access to development opportunities for the broadest segments of society, especially vulnerable and marginalized groups.

Infrastructure enables development and is linked to the achievement of 92% of SDG targets.[3] It is the key driver of economic growth and enables access to the basic services and economic opportunities that are needed to improve livelihoods and wellbeing. However, not all infrastructure is inclusive. Measures are needed to ensure that infrastructure development addresses all end-users' needs and that it benefits all parts of society, especially the most vulnerable groups. Infrastructure development is complex and requires a sophisticated balancing exercise between positive and negative impacts across society, the environment, and the economy. For example, infrastructure development can improve access to services and improve wellbeing while placing pressure on limited natural resources or increasing the impacts of climate change.[4]

Infrastructure, furthermore, protects development gains. Infrastructure resilience is essential since infrastructure failure, following natural hazard events, costs around $18 bn a year in low and middle income countries.[5] The poorest and most

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[1] United Nations Children's Fund and World Health Organization (2019), 'Progress on household drinking water, sanitation and hygiene 2000-2017: Special focus on inequalities', UNICEF and WHO, New York https://data.unicef.org/resources/progress-drinking-water-sanitation-hygiene-2019/, accessed on 20 September 2019.

[2] The World Bank, 'Transport-Overview', www.worldbank.org/en/topic/transport/overview, accessed on 20 February 2019.

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

[4] For example, through extracting resources for construction or emitting large amounts of carbon into the atmosphere during operation.

[5] World Bank (2019), 'Climate Change', www.worldbank.org/en/topic/climatechange/overview, accessed on 31 October 2019

vulnerable are hit the hardest from the loss of these services post event and it is estimated that 100 million additional people could be pushed into poverty by 2030 if no action is taken.[6]

Infrastructure, as referred to in the workshop, includes networked infrastructure systems such as those for energy, transportation, waste, ICT and water, as well as non-networked infrastructure systems including hospitals, schools and industrial facilities. **These infrastructure systems do not exist in isolation and due to their interdependencies, a holistic approach should be taken considering them as a system of interacting systems**.[7] Given the interdependencies of infrastructure systems, inclusive infrastructure development in one sector can have a multiplier effect on other sectors. For instance, transport and ICT can improve social inclusion by improving connectivity to healthcare, schools, jobs, and other vital services.

The increasing global demand for infrastructure requires **massive infrastructure investments in the future**. The OECD, for example, has estimated that an annual average of US$6.9 trillion in infrastructure investment is required over the next decade to achieve the objectives of the 2030 Agenda.[8] The bulk of this investment is needed in developing countries, including fragile low-income and emerging economies, where infrastructure supply is failing to meet the demand generated by strong population growth, increased income levels, and rapid urbanization. It is, therefore, critical that this investment does not lock-in unequal development trends which further exclude those who need it most. We have the responsibility to develop new methods in order to ensure that this investment is done correctly the first time so that no one is left behind while ensuring limited negative and maximum positive impact on the environment and the economy.

CHALLENGES & RECOMMENDATIONS

This section provides an initial framework to articulate some of the challenges and recommendations identified by the conveners of this workshop. **It is meant as a starting point to facilitate the conversation around inclusive infrastructure and it is up to the participants of the workshop to confirm, reject, and/or add to this framework of initially identified challenges and recommendations.**

The decision to look at the challenges to inclusive infrastructure development across the infrastructure life cycle (planning, delivery and management) is based on the idea that countries face various challenges throughout this process when trying to achieve inclusive infrastructure service delivery. Therefore, key to supporting governments will be to identify where in the infrastructure lifecycle these key challenges are so that targeted solutions can be implemented to streamline the inclusion process.

Planning Stage	
Challenges	**Recommendations**

[6] Ibid.

[7] Hall JW, Tran M, Hickford AJ, Nicholls RJ. 2016. The Future of National Infrastructure: A System of Systems Approach. Cambridge University Press, Cambridge.

[8] OECD. (2018). Investing in Climate, Investing in Growth: A Synthesis.

Governments sometimes lack updated and credible data or evidence on who is excluded from infrastructure and services and the specific barriers causing their exclusion.	Develop tools and methodologies to support governments to collect, manage and update data on inequalities in infrastructure access to inform project prioritization and budgeting. Require that end-user needs assessments and stakeholder engagements are completed to gather evidence for planning, delivery and management.
With limited financial resources in the context of developing countries, there are competing priorities driving infrastructure planning and investment decisions, and reducing inequality as a priority can often be poorly understood and prioritized.	Governments should create ways to measure the social and environmental returns, along with economic returns on infrastructure investment. High level assessment tools, such as strategic impact assessment, should be used to anticipate both costs and benefits. Governments should use this information, along with systems thinking and analysis, during infrastructure planning to prioritize future projects and programs to ensure that public resources are utilized on projects which have a positive social and environmental impact. A broad scope cost benefit analysis is one tool that can be used for this purpose.
Non-availability of affordable land for development spatially marginalizes vulnerable groups of the population to hazard-prone locations that increase their vulnerability to climate change impacts and limit their access to basic services.	Governments should adopt pro-poor land management practices that ensure sufficient land allocation in non-hazardous and non-remote locations for new settlements and for developing infrastructure for remote, disconnected or marginalized communities.
Design and Delivery Stage	
There is a lack of adoption and enforcement of inclusive and universal design principles and standards in many countries. These are standards to ensure the design of assets or products can be accessed by all people (women, disabled, etc), to the greatest extent possible, without the need for adaptation.[9]	Ensure that universal design principles and standards are in place and enforced through appropriate mechanisms.

[9] Centre for Excellence in Universal Design, 'What is Universal Design, CEUD, <http://universaldesign.ie/What-is-Universal-Design/>, accessed on 06 November 2019

Infrastructure designers do not propose solutions that cater to diverse user needs. There is inability or unwillingness (time / cost issues) to carry out a needs assessment exercise and apply its outcome to project design.	Create guidance that adheres to universal design principles and standards. Build the capacity of design professionals to develop design solutions that drive down project lifecycle costs and environmental impact whilst ensuring that diverse needs are included. Support universities and technical training programs to develop curriculums that teach universal design principles (see previous definition above).
Standard forms of design and delivery contracts do not contain clauses that clearly define requirements for inclusivity and universal access.	Adopt and require the use of inclusive procurement policies and practices by incorporating universal design requirements in design and delivery procurement processes, including their incorporation into terms of reference, expressions of interest, tender documents and standard forms of contract.
Lack of knowledge or appreciation among clients on the benefits of using universal design principles.	Create a campaign to educate key stakeholders on the benefits of inclusive design.
Management Stage	
Governments often lack the capacity - in terms of tools, workforce, financial resources, and a suitable set of indicators - to monitor the actual usage and social and environmental impacts of infrastructure.	Governments should carry out effective monitoring and evaluation to determine social and environmental impacts of implemented infrastructure against predetermined indicators. Projects should develop and adhere to inclusivity KPIs. Develop tools to measure impacts in order to build accountability of public and private sector actors involved in implementation as well as for future planning.
Public infrastructure services can be unaffordable for certain groups of the population during their operation, thus excluding vulnerable groups of the population from their usage.	If certain groups of the population are excluded from the usage of infrastructure services due to affordability, assess the willingness-to-pay of all potential end users and adopt equitable and innovative pricing structures. Additionally, opt for infrastructure solutions that have low O&M costs and are affordable and accessible during operations. If the private sector is involved in the delivery of the public service, then the government should create and enforce operational performance regulation that regulate how the private sector prices their services to ensure they are affordable for all.

CONCLUSION

The workshop will serve as a platform of interaction for participants, with backgrounds in social inclusion, economic empowerment, environmental protection and the built environment, to address the need for inclusive infrastructure and discuss how physical and social barriers can be removed so that vulnerable and marginalized groups can access basic services and development opportunities. The discussions held during the workshop will be on the challenges and solutions described in the previous section and will include some of the following guiding questions:

- What are some of the most important steps and approaches that governments can take in order to try to enable inclusive infrastructure and include social, environmental and economic sustainability considerations?
- How does the nexus of inclusivity and environmental sustainability provide unique challenges and/or opportunities for developing sustainable infrastructure?
- Can you share any best practice cases with us where all sustainability dimensions were relatively well integrated within infrastructure planning and development?
- What can be identified as key components in the approaches of these best practice cases?
- Even when including sustainability considerations in infrastructure planning and development, which challenges do governments and corporations face when trying to deliver these projects? How can these challenges be resolved?

The final objective of the workshop will be to produce a series of recommendations for the group to take forward. This would be in the form of creating a policy brief, guidance material or completing additional research and other outputs that the groups identify as useful and have agreed.