



OECD Reference Note on Environmental and Social Considerations in Quality Infrastructure

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This Reference Note considers how environmental and social considerations are relevant to the question of quality infrastructure. It provides examples of possible measures to strengthen environmental and social outcomes and rights as part of quality infrastructure investment. Countries are invited to consider these examples on a voluntary basis taking into consideration their national circumstances.

The Reference Note has been drafted by the OECD and has benefited from input from the World Bank.

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OECD Reference Note on Environmental and Social Considerations in Quality Infrastructure¹

This Reference Note examines the potential role for quality infrastructure in enhancing environmental and social outcomes and resilience, and considers how responsible business conduct might play a part. It aims to serve as reference material for the implementation of the G20 Principles for Quality Infrastructure Investment. Examples of possible measures to strengthen environmental and social outcomes and rights as part of quality infrastructure investment are proposed for consideration by G20 countries as relevant in view of country-specific conditions and priorities. Countries are invited to consider these examples on a voluntary basis, taking into account their national circumstances.

The Note has been drafted by the OECD and has benefited from input from the World Bank, drawing upon the World Bank's Environmental and Social Framework (ESF).

Infrastructure sits at the very centre of development pathways and is closely linked to economic growth, environmental outcomes and well-being. At the Hangzhou Summit in 2016, G20 leaders stressed the importance of quality infrastructure investment, ensuring economic efficiency, while addressing social and environmental impacts and aligning with economic and development strategies. This Reference note sets out possible measures to strengthen environmental and social outcomes and rights as part of quality infrastructure investment across a number of relevant dimensions (Figure 1), for voluntary consideration by G20 countries in view of country-specific conditions and priorities.

Environmental considerations are a core component of quality infrastructure and there is a clear economic case for promoting environmental principles in infrastructure investment (Annex 1). Investments in clean energy infrastructure will be vital for increasing energy access and security while addressing climate change. Rising water stress and increasing supply variability, flooding, inadequate access to safe drinking water and sanitation, and higher levels of water pollution are undermining economic growth and development, presenting a compelling case to invest in infrastructure for clean water and sanitation

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Decisions on the location, type, design and timing of infrastructure developments can have profound implications for the environment, with poor quality infrastructure contributing to air pollution, climate change, changes in water quality and quantity, biodiversity loss and the degradation of ecosystems. Integrating environmental considerations into the planning and design of infrastructure can help avoid, minimise and mitigate the risks posed by environmental hazards such as flooding, landslides, fires, earthquakes and heatwaves over the lifetime of the infrastructure asset, improving the reliability of service provision, increasing asset life and protecting asset returns.

Quality infrastructure investments also play a key role in strengthening social sustainability by helping to generate jobs, facilitating access to employment opportunities for local communities, and contributing to develop local economies. However, quality infrastructure must also avoid negative impacts on the health, safety, livelihoods and well-being of workers and communities, and protect the interests of displaced individuals and communities as well as vulnerable and underprivileged groups including Indigenous Peoples. The benefits of quality infrastructure should be inclusive and accessible to everyone, in particular underserved groups such as women and children, the elderly and people with disabilities.

Ensuring infrastructure investment is well-aligned with environmental and social objectives, including with nationally-determined contributions, is also fundamental to delivering on the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) and a number of other international agreements (Annex 2).

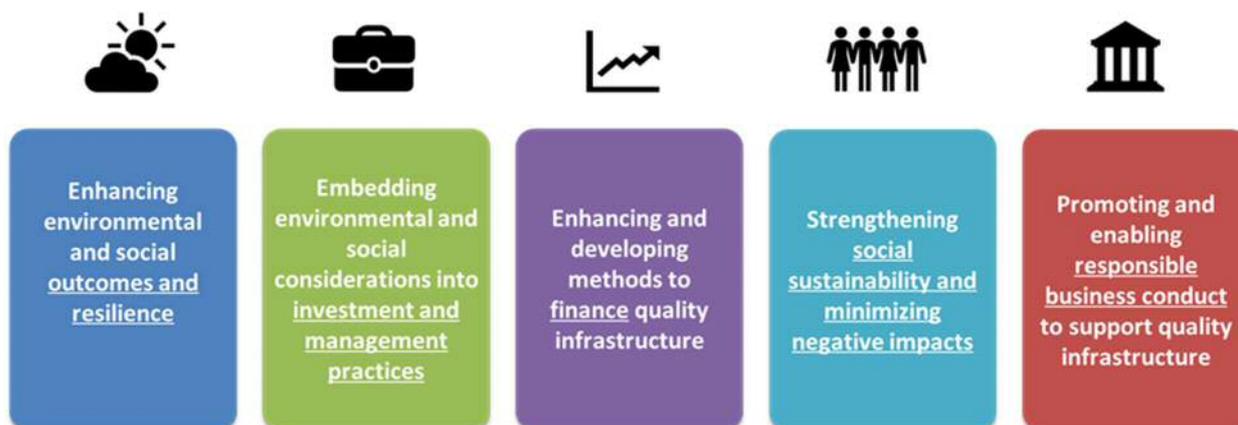


Figure 1: Integrating environmental and social considerations in quality infrastructure investments

1. Enhancing environmental and social outcomes and resilience

There are multiple ways in which quality infrastructure can play a role in enhancing environmental and social outcomes and resilience.

Avoiding lock-in of polluting, environmentally-harmful infrastructure, and stranded assets

Most existing infrastructure was designed and built for a world in which fossil fuels were cheap and abundant. Given the long lifespan of infrastructure, failure to invest in clean, sustainable and resilient infrastructure in the next 10 to 15 years while ensuring an inclusive transition and progress on energy access and affordability along the way would either lock countries into a greenhouse-gas-intensive development pathway or risk stranding many assets. It would also imply serious and probably irreversible risks, not only of

environmental damage, but also of financial instability that harms economic growth prospects.² Ensuring clarity on long-term, low-emission and climate-resilient development strategies can help avoid lock-in of polluting infrastructure and stranded assets.

Infrastructure also has potential impacts on biodiversity which may threaten the provision of ecosystems services (e.g. resilience). Mainstreaming biodiversity into infrastructure investment decisions can contribute to the achievement of biodiversity conservation.

Examples of possible measures to help minimise the environmental impacts of infrastructure and avoid lock-in include:

- Rethinking planning at all levels of governments to align current infrastructure project plans with long-term climate and development objectives, as well as biodiversity goals.
- Establishing a pipeline of infrastructure projects that are consistent with long-term, low-emission and climate-resilient development strategies, reconciling short-term action and long-term decarbonisation goals, as a means to shift investment to low-emissions, climate-resilient infrastructure.
- Analysing and studying different alternatives for the development of infrastructure investment projects to determine those that are environmentally viable, have lower costs, and have a greater returns and social benefits.
- Bridging data gaps on infrastructure projects and improving information on investment pipelines, including in the context of the work of the IWG and the Infrastructure Data Initiative (IDI), and building on the work and experience of existing initiatives such as SOURCE, as well as GEMS, GIH, GIF and the OECD.
- Facilitating channels for private investment in low-carbon, green infrastructure assets by encouraging new investment instruments (e.g. green bonds), institutions (e.g. green investment banks), partnerships, and capacity building in direct investment.
- Mitigating risks to green investment, for example through guarantees and insurance products, public stakes and other forms of credit enhancement, or enabling lower transaction costs through transaction enablers such as warehousing (pooling small transactions).
- Ensuring development finance institutions have the resources, mandates and incentives to deliver transformative climate action, attract new investors and sources of finance by using concessional finance strategically.
- Aligning incentives for quality infrastructure by advancing reform of fossil-fuel subsidy support, strengthening carbon pricing signals and making greater use of public procurement to invest in low-emission infrastructure.
- Using environmental assessment and management as part of planning, decision-making and *ex post* monitoring processes for all projects, plans and programmes having a potentially significant impact on the environment.

² The OECD projects that the average output loss for selected G20 economies of delaying climate action to 2025 would amount to 2% of GDP, with most of the loss incurred a year after the delayed transition starts. Losses would be particularly marked in net fossil fuel exporters, with a significant amount of additional stranded assets compared with a non-delayed scenario. The magnitude of additional economic losses triggered by financial instability from capital losses from stranded assets would depend on countries' reliance on fossil fuels and the extent of market capitalisation, with sizeable impacts occurring in the short term.

- Making the results of environmental assessment transparent to investors in compliance with local laws and regulations to further promote green financial markets.
- Ensuring spatial and land-use planning instruments are geared to minimise the environmental impacts of infrastructure, and help meet environmental objectives, including on biodiversity.

Strengthening resilience of infrastructure to environmental hazards

There is an urgent need to strengthen resilience to environmental hazards and climate change, not least because a certain level of climate impacts have already been locked-in.³ Hazards, including slow-onset events, are expected to accelerate over the coming decades with the effects of both climate change and changes in climate variability. The exposure of people and assets to climate and other environmental risks is also increasing as a result of economic development and urbanisation. The combination of increased hazards and exposure is projected to lead to growing losses over time.

Implementing the quality infrastructure agenda, with a focus on adaptation and disaster risk reduction, can help manage these increasing risks. In addition to investing in quality protective infrastructure, all new infrastructure needs to be well planned and designed, accounting for the impacts of climate change as appropriate. Investing in resilient infrastructure can deliver a number of benefits, including reduction of mortality and morbidity from climate-related events and natural disasters, and increased reliability of service provision, by reducing the frequency and severity of disruption ex post and by reducing the need for users to invest in backup measures ex ante (e.g. generators for businesses).

Examples of possible measures to strengthen resilience of infrastructure to environmental hazards include:

- Prioritising, planning, designing, building and operating new infrastructure assets to account for the climate changes that may occur over their lifetimes and build resilience to environmental disasters.
- Considering sound disaster risk management during the design phase of infrastructure systems.
- Assessing the need to retrofit or manage existing infrastructure differently, given climate change, such as raising the height of bridges or protecting or enhancing natural drainage systems.
- Assessing the need for additional infrastructure (traditional, such as hard defences, or natural, such as wetlands), to address the physical impacts of climate change.
- Reviewing infrastructure management measures and approaches to help build climate resilience, for example by changing maintenance schedules or adopting adaptive, forward-looking management approaches.
- Strengthening the enabling environment for development of climate-resilient infrastructure, including by prioritising high-quality information and data to inform planning under uncertainty and by using spatial planning frameworks, project and policy appraisals (e.g. Environmental Impact Assessment), and regulatory and economic standards to mainstream adaptation in investment decision-making.
- Ensuring relevant actors (including state-owned utilities, professional associations and regulators) have sufficient capacity to understand and manage climate risks, and facilitate partnerships between sectors to better understand and address infrastructure interdependencies.

³ Other important social and technological risks such as terrorism, cyber-terrorism and cyber-warfare are relevant considerations for governments, but beyond the scope of this paper.

- Considering and supporting the role of natural ecosystems such as wetlands, forests and coral reefs as providers of infrastructure services.
- Facilitating disaster risk financing and insurance mechanisms.
- Considering functional dependencies and interdependencies between assets and sectors, which can affect resilience to climate change and natural hazards, and create cascading impacts.
- Formulating appropriate standards for business continuity to manage risks to the operation and delivery of critical services, whose disruption can affect public safety, citizens well-being and business operations.

Creating sustainable and liveable cities

Cities are home to over half of the global population⁴ and account for over 80% of global GDP⁵. However, they also account for between 60 and 80% of global energy consumption and 70% of global greenhouse gas emissions. As urban populations are expected to account for over 70% of the world population by 2050, trillions of dollars will be needed to expand and renew urban infrastructure, particularly in clean energy, sustainable transport, green buildings, water and sanitation (Annex 1). Cities, due to their concentration of people and assets, also bear the brunt of natural disasters and require infrastructure investments that strengthen resilience.

Subnational governments have an important role to play being responsible for 64% of climate and environment-related investment (OECD, 2018).⁶ Investing in quality infrastructure at the sub-national level can play a major role in limiting potential environmental impacts, including increased greenhouse gas emissions, air pollution, harm to biodiversity and loss of environmental amenities, improving related human health outcomes, and providing for strong, inclusive urban development⁷. Encouraging all levels of government to take environmental and social outcomes and rights into account as an integral consideration in quality infrastructure investment will be important to accommodate dynamic economies and populations, and climate change.

Examples of possible measures which could be considered at all levels of government, including local levels, include:

- Ensuring the right framework conditions and adequate coordination mechanisms are in place to boost infrastructure investment towards climate objectives.
- At the city/region level, developing a green fiscal strategy and action plan, and integrate green priorities in budgeting.
- Promoting voluntary climate agreements and emission reduction commitments at the local government level within the framework of existing climate coalitions of local administrations.

⁴ UNDESA, 2018

⁵ UN-Habitat, 2016

⁶ <http://www.oecd.org/cfe/Financing-Climate-Flyer.pdf>

⁷ Andy Gouldson et al. (2018[15]), *The Economic and Social Benefits of Low-Carbon Cities: A Systematic Review of the Evidence*, Coalition for Urban Transitions, London and Washington, DC, <http://newclimateeconomy.net/content/cities-working-papers>

- Promoting flexible, multi-purpose infrastructure solutions⁸ to help anticipate and accommodate shifting social and environmental parameters.
- Empowering sub-national governments by developing their capacity to more effectively plan and finance infrastructure that is resilient and aligned with climate objectives.
- Making use of new sources of funding in cities and regions such as land value capture tools to support climate and growth objectives.
- Providing formal incentives to foster cross-jurisdictional cooperation and make economies of scale, reducing the potential overlap in infrastructure investment. For instance, some financing instruments (e.g. congestion charges, eco-taxes) should be applied at the regional/metropolitan scale, not only in centre-cities.

2. Embedding environmental and social considerations into investment and management practices

As the development and financing of quality infrastructure requires the participation of a range of public and private investors and corporates, embedding environmental and social considerations in investment and management practices across all infrastructure assets, project phases and participating institutions is critical for the shared interest of project developers, sponsors, investors, and host communities. Both positive and negative impacts of infrastructure projects on ecosystems, biodiversity, climate, weather and the use of resources should be internalized by incorporating environmental considerations over the entire process of infrastructure investment, including by improving disclosure of environmental and climate information.

Embedding environmental and social considerations into corporate governance

Developers, sponsors, and financiers of infrastructure projects should embed environmental and social considerations into their corporate strategy and organizational culture. The boards and senior management of the participating institutions should exercise oversight of environmental and social risks and opportunities, set up robust systems, designate competent personnel, and maintain acute awareness of potential impacts of their investments and operations on climate, environment and society.

Understanding and addressing environmental and social risks

Environmental and social assessment of infrastructure projects will help ensure that projects are environmentally and socially sound and sustainable. It will inform the design of the project, identify mitigation measures and actions, and improve decision making. Environmental and social risks and impacts of the project should be managed throughout the project life-cycle in a systematic manner, proportionate to the nature and scale of the project and the potential risks and impacts.

Examples of possible actions which could be considered by the institutions involved in financing and developing infrastructure projects include:

- To better understand and comply with the environmental laws, regulations, and standards of the business sectors in which they operate as well as the cultural and social norms of the host countries.
- To identify, evaluate and manage the environmental and social risks and impacts of the project.

⁸ Infrastructure promoting renewable energy use, smart-grids, recycling facilities and infrastructural systems that connect several sectors and resources such as water, energy and waste.

- To adopt a mitigation hierarchy approach to:
 - (a) Anticipate and avoid risks and impacts;
 - (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels;
 - (c) Once risks and impacts have been minimized or reduced, mitigate their consequences; and
 - (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.
- To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.
- To promote improved environmental and social performance, in ways which recognize and enhance national capacity.

Disclosing environmental information

The environmental impact of infrastructure investment should be made transparent to all stakeholders in compliance with local laws and regulations. The institutions involved in financing and developing infrastructure projects could conduct analysis of the environmental impact of their investments and operations, which may cover energy consumption, greenhouse gas (GHG) emissions, pollutants discharge, water use and deforestation, impacts and dependencies on biodiversity, and explore ways to conduct environmental stress tests of investment decisions. They are encouraged to improve environmental/climate information disclosure and stakeholder information sharing mechanisms to improve communication with stakeholders, such as government departments, environmental protection organizations, the media, affected communities and civil society organizations.⁹

Adopting green supply chain management

The institutions involved in financing and developing infrastructure projects could seek to integrate environmental and social factors into supply chain management and utilize international best practices such as life cycle accounting on GHG emissions and water use, supplier whitelists, performance indices, information disclosure and data sharing, in their investment, procurement and operations.

3. Enhancing and developing methods to finance quality infrastructure

According to the Intergovernmental Panel on Climate Change (IPCC), investment in sustainable energy infrastructure alone will need to be scaled up by a multiple of seven to USD 2.4 trillion per year in order to meet the goals of countries signing the Paris Agreement. The amount of capital needed to meet the challenge is so large that banks alone cannot finance this required investment. Fortunately, there is a deep pool of capital

⁹ See also the Task-Force on Climate-Related Financial Disclosure, hosted by the Financial Stability Board (FSB).

in the hands of institutional investors who are the key participants in the USD 100 trillion bond markets. The G20 Sustainable Finance Study Group (SFSG) during the 2018 Argentinian Presidency looked at how sustainable securitisation and financial aggregation techniques can support this objective. Additionally, the SFSG looked at how digitalisation could make information around sustainable investments faster to access, less expensive to analyse and more accurate. Further, digital technology offers the opportunity to make sustainable finance more accessible to those who have the least access to the financial system, and thereby help mitigate inequality.

Making use of green financial instruments

A range of innovative financial instruments and vehicles have been developed to channel finance towards investments that support the transition to a low-carbon economy, improve efficiency in the use of natural resources, and reduce impacts on the environment. For instance, green bonds have increasingly been issued by corporates, national and subnational governments, and development banks to attract private finance for green projects. Although there is no universally agreed definition of “green”, efforts have been made by the industry and some countries and regions to establish standards for the market.

The institutions involved in financing and developing infrastructure projects could more actively consider the use of green financial instruments, such as green bonds, green asset backed securities (ABS), YieldCos, emission rights-based financing, and green investment funds, in financing green projects. They could also actively explore the utilization of green insurance, such as environmental liability insurance and catastrophe insurance, to mitigate the impact of environmental risks.

Ensuring sound environmental and social management systems within financial intermediaries

Strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction. However, for such growth to be sustainable, financial institutions should embrace sound environmental and social management systems to underpin their financial investment, and to thereby enhance the productive role of domestic capital and financial markets.

Examples of possible actions which could be considered by financial intermediaries involved in financing infrastructure projects include:

- To set out how the financial intermediary will assess and manage environmental and social risks and impacts associated with the subprojects it finances.
- To promote good environmental and social management practices in the subprojects the financial intermediary finances.
- To promote good environmental and sound human resources management within the financial intermediary.

Developing sustainable securitisation

Currently most infrastructure projects are funded by bank loans. Infrastructure projects require long-term financing which is sub-optimal from a risk-weighting perspective. Further, most banks are funded on short-term debt or on demand deposits thereby creating a maturity mismatch with longer-term projects. Therefore, a mechanism could be considered to move project loans from bank balance sheets to bond market investors who could be the natural long-term investors in sustainable infrastructure. The SFSG paper determined one

mechanism is securitisation, and more specifically for the purposes of infrastructure: the sustainable collateralised loan obligation (CLO), Asset-Backed Securities (ABS) and Real Estate Investment Trusts (REITs).

Advancing digital applications for infrastructure

The SFSG in 2018 investigated how digitalisation could transform data and make it more available more quickly at lower costs with increasing transparency to all stakeholders. The IWG in 2018 focused on how infrastructure documentation could be better standardised. Digital contracts for standardised elements of infrastructure credit agreements and due diligence material could make analysis of key elements of quality infrastructure documentation instantaneously available to all stakeholders.

Through the implementation of digital smart contracts and digital due diligence documentation, greater social and environmental outcomes could be validated and advanced. A digital approach would expand transparency and speed of information for all of the stakeholders associated with quality infrastructure projects. Additionally, the use of digital tools and knowledge platforms, such as SOURCE, should be scaled-up in countries, especially in those with lack of expertise in developing quality infrastructure projects.¹⁰

4. Strengthening social sustainability and minimising the negative impacts of investments

Done properly, infrastructure investments can bring positive benefits to local communities as sources of good quality employment, new skills, and access to improved services. On the other hand, many infrastructure investments, by virtue of their size and scale, have the potential to generate sizeable negative impacts on the livelihoods, well-being and health of communities and workers, as well as the ecosystems and landscapes they depend on. Unless properly managed, and preferably avoided, these impacts can be detrimental, particularly for vulnerable and marginalised groups, including Indigenous Peoples, that have less of a voice. Quality infrastructure investments should therefore be respectful of the health, safety, rights and needs of workers that contribute to building the infrastructure, and to the communities that are affected by it (and not just those that it intends to benefit), including displaced individuals and communities. To this end, inclusive, open and transparent stakeholder engagement should be initiated at an early stage and ensured throughout the project life-cycle.

Moreover, infrastructure often overlooks the specific needs of different segments of the population, including women and girls. Quality infrastructure should enable the economic participation of all in order to foster inclusive growth by ensuring fair and equal access to everyone, particularly disadvantaged communities, and vulnerable and underserved groups such as women and children, people with disabilities, and the elderly.

Promoting good labour conditions and safe and healthy working environments

Employment creation and income generation is key in the pursuit of poverty reduction and inclusive economic growth. Quality infrastructure projects offer the opportunity for groups that are often under-represented in the labour market including women, people with disabilities and youth to find good quality employment.

Every year, more than 2.7 million people die as a result of occupational accidents or work-related diseases. Safe and healthy working conditions, as well as social dialogue are critical components of delivering quality infrastructure. Collective bargaining is an internationally recognised right (as enshrined in the core

¹⁰ See <https://public.sif-source.org/>. Other examples of initiatives which could be relevant in this respect include GIH, IRENA, EPEC, GIF, etc

International Labour Organization (ILO) standards), and quality infrastructure projects should therefore meet local and international standards for social dialogue. Furthermore, social dialogue over elements beyond wages, such as occupational health, can improve safety at work.

Examples of possible measures which could be considered to promote good labour and working conditions for infrastructure workers include:

- To adhere to international standards for Occupational Safety and Health, and promote health and safety in the workplace.
- To promote the fair treatment, non-discrimination and equal opportunity of project workers, with a particular attention to gender dimension.
- To protect project workers, including vulnerable workers such as women, persons with disabilities, children of working age and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.
- To prevent the use of all forms of forced labor and child labor.
- To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.
- To provide project workers with accessible means to raise workplace concerns.

Pursuing resource efficiency and pollution prevention and management

Economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable.

Examples of possible measures which could be considered to promote resource efficiency and pollution prevention and management include:

- To promote the sustainable use of resources, including energy, water and raw materials during the construction, operation and disposal phases of infrastructure projects.
- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To avoid or minimize project-related emissions of short and long-lived climate pollutants¹¹.
- To avoid or minimize generation of hazardous and non-hazardous waste.
- To minimize and manage the risks and impacts associated with pesticide use.

Conserving biodiversity and promoting the sustainable management of living natural resources

¹¹ This includes all GHGs and black carbon (BC).

Protecting and conserving biodiversity, and sustainably managing living natural resources, are fundamental to sustainable development and to life itself. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. When natural resources are harvested, it should be designed and managed to avoid or at least manage and mitigate harm to the environment and affected communities, and is done so in a sustainable manner.

Examples of possible measures which could be considered to conserve biodiversity and the sustainable management of living natural resources include:

- To protect and conserve biodiversity and habitats.
- To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.
- To promote the sustainable management of living natural resources.
- To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.

Contributing to community well-being and development

Due to its physical nature, infrastructure, even when contributing towards regional or national goals, is very much grounded in places and thus has real impacts on local communities. Infrastructure projects should therefore be designed and planned so as to minimize negative impacts on local communities, and, as far as possible, contribute to their well-being and development. For example, when infrastructure projects are located in regions where employment rates are low, or where most workers are low-skilled, infrastructure projects offer the possibility to give local communities a chance to get established in the formal labour market, and to develop skills that will persist and give their owners the opportunity for gainful employment even after the infrastructure project is completed. The provision of affordable and social housing infrastructure can be an effective community development tool, particularly for low-income households and youth, as long as it is developed in a way that avoids spatial segregation, and ensures access to good-quality infrastructure services, such as public transportation and schools, as well as commercial services. Infrastructure projects should not result in structures and services from which the local community is excluded. Open access to infrastructure services should be secured in a non-discriminatory manner for society. This is best achieved through meaningful consultation and inclusive decision-making with affected communities throughout the project life cycle, with a view to securing non-discriminatory access to users.

Examples of possible measures which could be considered to promote community well-being and development include:

- To meaningfully consult with communities from the inception of the project, in line with international standards.
- To draw on local labour forces to develop infrastructure projects.
- To ensure that local communities enjoy access to infrastructure services, and improve the community's service capacity by improving comprehensive service facilities and integrated service facilities for the daily convenience of local residents.
- To ensure that affordable social housing infrastructure is targeted at the groups that need it most in the tightest markets, and framed by rules that facilitate geographical and social mobility.

- To coordinate the development of housing and infrastructure services.

Protecting community health and safety

Low quality infrastructure also affects health outcomes. For example, many cities continue to struggle with air pollution, notably PM_{2.5}¹², in large part due to transit systems, which is recognised as a cause of cardiovascular diseases such as ischaemic heart disease and stroke, as well as cancer, respiratory infections and chronic obstructive pulmonary disease (COPD). Project activities, equipment, and infrastructure that are not properly designed and managed can increase community exposure to risks and impacts. In addition, communities that are or will be subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities.

Examples of possible measures which could be considered to promote community health and safety include:

- To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life-cycle from both routine and non-routine circumstances.
- To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.
- To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.
- To have in place effective measures to address emergency events.
- To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.

Land acquisition, restrictions on land use and involuntary resettlement

Project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. It may also cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), or both. Experience and research indicate that physical and economic displacement, if unmitigated, may give rise to severe economic, social and environmental risks. Involuntary resettlement should therefore be avoided as much as possible. Where involuntary resettlement is unavoidable, consultation with the local communities is relevant in order to avoid excessive stress, inequities, and damage to local cultures. Moreover, the amount of resettlement should be minimized as far as possible, and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) need to be carefully planned and implemented.

Examples of possible measures which could be considered to minimize the negative consequences of land acquisition and restrictions on land use include:

¹² Particulate matter with a diameter of less than 2.5 micrometres.

- To conduct meaningful consultation with affected communities.
- To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives.
- To avoid forced eviction.
- To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
- To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.
- To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.
- To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.

Protecting the rights and interests of Indigenous Peoples

Indigenous Peoples have identities and aspirations that are distinct from mainstream groups in national societies and often are disadvantaged by traditional models of development. In many instances, they are among the most economically marginalized and vulnerable segments of the population. The livelihoods, well-being and heritage of indigenous peoples often depend on access to land and other resources that are affected by infrastructure development. Their economic, social, and legal status frequently limits their capacity to defend their rights to, and interests in, land, territories and natural and cultural resources, and may restrict their ability to participate in and benefit from development projects. In many cases, they do not receive equitable access to project benefits, or benefits are not devised or delivered in a form that is culturally appropriate, and they may not always be adequately consulted about the design or implementation of projects that would profoundly affect their lives or communities. It is important to ensure that indigenous peoples are meaningfully consulted about, and have opportunities to participate in, infrastructure development to protect access to land and other resources necessary for their livelihood, well-being and cultural heritage.

Examples of possible measures which could be considered to protect the interests of Indigenous Peoples include:

- To ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples.
- To protect access to land and other resources necessary for the livelihoods, well-being and heritage of Indigenous Peoples.
- To avoid adverse impacts of projects on Indigenous Peoples, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.
- To promote sustainable development benefits and opportunities for Indigenous Peoples in a manner that is accessible, culturally appropriate and inclusive.

- To improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with the Indigenous Peoples affected by a project throughout the project's life-cycle.
- To obtain the Free, Prior, and Informed Consent (FPIC) of affected Indigenous Peoples in the project circumstances where Indigenous Peoples may be particularly vulnerable.¹³

Protecting cultural heritage

Cultural heritage provides continuity and value in tangible and/or intangible forms and helps connect communities to the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice.

Examples of possible measures which could be considered to protect cultural heritage include:

- To protect cultural heritage from the adverse impacts of project activities and support its preservation.
- To address cultural heritage as an integral aspect of sustainable development.
- To promote meaningful consultation with stakeholders regarding cultural heritage.
- To promote the equitable sharing of benefits from the use of cultural heritage.

Conducting effective and inclusive stakeholder engagement throughout the project life-cycle

Quality infrastructure should have the consent of local communities, including those which are poor or ethnically marginalised. Obtaining the consent of local communities is a sign that the benefits of infrastructure are intended to be shared appropriately, and that human rights are being respected. Meaningful, open and transparent engagement between the project proponent and project stakeholders is thus an essential element of good international practice. Effective and inclusive stakeholder engagement conducted throughout the project life-cycle can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. Stakeholder engagement is most effective when initiated at an early stage of the project development process. It should be an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts.

Examples of possible measures which could be considered in order to engage with communities and other affected stakeholders include:

- To establish a systematic approach to stakeholder engagement that will help identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.
- To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.

¹³ These circumstances exist where the project will: (a) have adverse impacts on land and natural resources subject to traditional ownership or under customary use or occupation; (b) cause relocation of Indigenous Peoples from land and natural resources subject to traditional ownership or under customary use or occupation; or (c) have significant impacts on Indigenous Peoples' cultural heritage that is material to the identity and/or cultural, ceremonial, or spiritual aspects of the affected Indigenous Peoples' lives.

- To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life-cycle on issues that could potentially affect them.
- To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and enable to respond to and manage such grievances.

Ensuring infrastructure benefits women and girls

It is often assumed that women will automatically benefit from new infrastructure projects in the same way as men do, without acknowledging possible distinct impacts on women and men according to their needs and social roles. For example, the risks of uncontrolled urbanisation, urban sprawl and slums are often greater for women as they are more likely to be targets of assaults and harassment.

Improved urban infrastructure with a gender perspective would involve public lighting, safe public spaces, and safe public transport to help mitigate safety-related risks that women have to face in their everyday life. There is also a need to address risks that arise in a digital environment, such as girls' and women's exposure to cyberbullying, sexual harassment and other forms of violence against women facilitated by online services.

Women are often also more important users of and contributors to social infrastructure such as education, health, childcare centres, and other social services, as well as public spaces such as parks and recreation centres. In low income countries, the gender challenges of infrastructure are compounded by inadequate access to basic services such as water, sanitation¹⁴ and energy, and the concomitant role of girls and women in collecting water and biofuel. Particular consideration should therefore be given to how infrastructure facilitates women's economic empowerment through equal access to jobs, including well-paying jobs, and opportunities created by infrastructure investments, as well as improved access to services that reduce time poverty and health risks. Women's rights should be respected in labour market participation and workplace requirements, including skills training and occupational safety and health policies.

Examples of possible measures which could be considered to ensure that infrastructure benefits women include:

- To integrate the gender dimension into infrastructure strategies, policies and projects, especially through regular gender-based analysis and gender budgeting.
- To develop a better understanding of women's needs and preferences, as well as trends, such as urbanisation, changes in women's participation in the labour force, the growth of part-time employment, the trend to single parent households, and migration.
- To ensure the participation of women in the design of infrastructure strategies and plans, and in implementation.
- To consider the well-being of female employees along infrastructure supply chains.
- To ensure that consultation processes engage women from different socio-economic backgrounds.

¹⁴ Inadequate access to sanitation facilities affects teenage girls school attendance because of stigmas associated to menstruation.

- To expand data collection in order to obtain a gender perspective of access to and use of infrastructure (broadly defined) across and within countries as well as on the implications of infrastructure development for women's health and the environment.
- To address risks of gender-based violence (GBV) on infrastructure projects, including those risks associated with project-induced labour influx and use of security forces.

Accommodating differences in age and people with disabilities

Across G20 countries, people with disabilities experience lower employment ratios¹⁵ and barriers to accessing public services. While many countries have quotas or guidelines on the employment of people with disabilities, these are rarely enforced in a rigorous way, or can be avoided legally by paying a levy. By applying these guidelines, infrastructure projects can promote labour market inclusion of people with disabilities. Furthermore, infrastructure development should follow, as far as possible, the principle of universal design, whereby products and environments are designed to be usable by all people to the greatest extent possible without the need for adaptation or specialised design.¹⁶ It is also essential to consult and involve people from different age groups and those with disabilities, alongside other users and key stakeholders in the planning and design of infrastructure. Their perspectives, combined with an understanding of the technical issues can help ensure cost-effective and practical solutions.

Examples of possible measures which could be considered to ensure that infrastructure benefits people of different age groups and people with disabilities include:

- To enforce quotas or guidelines with regard to the employment of people with disabilities on infrastructure projects.
- To apply universal design principles to ensure that infrastructure is usable for people of all ages and abilities.
- To ensure that consultation processes engage people of different age groups and people with disabilities.
- To apply the concept of universal access to the services provided through infrastructure, such as education, health and transportation services, for users with disabilities.

5. Promoting and enabling responsible business conduct to support quality infrastructure

International responsible business conduct (RBC) standards such as the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles for Business and Human Rights, emphasise both the positive contribution businesses can make to sustainable development, and the need to identify and address potential and actual negative impacts associated with business activities. In the context of infrastructure, these negative impacts can range from conflicts with communities over land, water, and resettlement, to unsafe working conditions during construction or significant environmental impacts during operation.

¹⁵ ILO OECD (2018), Labour Market Inclusion of People with Disabilities, <http://www.g20.utoronto.ca/2018/2018-09-07-employment.html#annex4>

¹⁶ The intent of universal design is to simplify life for people of all ages and abilities by making products, communications, and the built environment more usable for as many people as possible at little or no extra cost. See Anjlee Agarwal and André Steele (2016), Disability considerations for Infrastructure Programmes, Evidence on Demand.

As governments are increasingly pursuing more private sector participation in all aspects of the infrastructure life cycle, integrating RBC standards in this process is a way for governments to balance economic, social and environmental objectives during the preparation, financing and delivery of infrastructure, and for private or public sector participants to know and show they are addressing their most significant impacts on communities and the environment. Experience shows that a broad and balanced view of all sustainable development dimensions, including environmental, social, and governance dimensions, along with economic ones, is needed to limit the risks to infrastructure projects themselves, as well as for communities and the environment.¹⁷

Infrastructure projects are complex, with long supply chains and potentially affecting – both positively and negatively - many stakeholders. Integrating RBC considerations can significantly improve project a) quality, b) bankability, and c) efficiency in risk pricing by suppliers.¹⁸ RBC in this context can help with arriving at a more comprehensive picture of risk and impact, and meaningfully manage relationships with communities and impacted people. It can also support the design of better public-private partnerships (PPPs) and private sector participation strategies that follow international standards, and prioritise the most severe environmental and social risks. Furthermore, RBC provides a basis for dynamic, ongoing, and responsive risk management. In addition, public procurement can serve as an effective lever for incentivizing the adoption RBC. Finally, the adoption of RBC by the financial sector and investors can improve the bankability of projects and the long-term stability of assets by creating a common understanding on how to assess social and environmental risks, and helping to avoid financial and reputational risks.

Examples of possible measures to enhance responsible business conduct and manage environmental and social impacts at all stages of the process, from project conception to delivery include:

- Requiring RBC due diligence and ensuring meaningful stakeholder engagement with communities and impacted peoples from the inception of projects
- Integrating RBC due diligence in the financing of infrastructure, including in procurement processes.
- Facilitating a more comprehensive assessment of environmental and social risk – often underestimated in infrastructure projects – by requiring private participants and state-owned enterprises to follow internationally-accepted RBC standards.
- Ensuring the availability of effective, secure, adequately funded and publicly accessible remedy processes, including judicial and non-judicial mechanisms for conflict resolution, for communities that may be negatively impacted by infrastructure projects.

¹⁷ The social license to operate is an often underestimated risk in the context of infrastructure. High-profile cases abound. For example, Inter-American Development Bank (2017) analysed 200 conflict-affected infrastructure projects across six sectors in Latin America and the Caribbean with strong opposition by local communities and found that a lack of multi-dimensional and balanced approach in project planning, design, and delivery is seriously detrimental for companies, investors, and national governments - 36 out of the 200 projects were cancelled; 162 faced delays; and 116 faced cost overruns. On the other hand, land-intensive industries still remain one of the deadliest for human rights defenders according to the 2018 report by the UN Special Rapporteur on the Situation of Human Rights Defenders.

¹⁸ Supported by recent research by the International Transport Forum. See ITF (2018), *Private Investment in Transport Infrastructure: Dealing with Uncertainty in Contracts*, International Transport Forum, Paris.

Annex 1. The economic case for environmental and social rights being a core component of quality infrastructure

Infrastructure sits at the very centre of development pathways and is closely linked to economic growth, productivity and well-being. However, infrastructure has suffered from chronic underinvestment for decades, in developed as well as developing economies. The OECD estimates that around USD 95 trillion of investments will be needed between 2016 and 2030 in energy, transport, water and telecommunications infrastructure to sustain growth, or around USD 6.3 trillion per year, even if governments take no further action on climate (OECD, 2017).¹⁹ At the Hangzhou Summit in 2016, G20 leaders stressed the importance of quality infrastructure investment, ensuring economic efficiency, while addressing social and environmental impacts and aligning with economic and development strategies. As countries seek to scale up investment in the retrofitting, upgrading and construction of infrastructure, they have a unique opportunity to promote “quality” infrastructure that can deliver strong, sustainable and inclusive growth.

Environmental considerations are a core component of quality infrastructure:

- Infrastructure can deliver critical services such as clean water and sanitation, access to clean energy and transportation, and protective services. In some instances, natural infrastructure (ecosystems) can provide services that serve as a cost-effective alternative or complement to those provided by hard infrastructure. Restoring wetlands and protecting watersheds, for example, can help filter water and regulate water flow, ensuring continued access to clean water and protecting communities and infrastructure from flooding.
- Infrastructure assets and networks may be exposed to a number of environmental hazards such as flooding, landslides, fires, earthquakes and heatwaves. Integrating environmental considerations into the planning and design of infrastructure can help avoid, minimise and mitigate the risks posed by these hazards over the lifetime of the infrastructure asset. This, in turn, can improve the reliability of service provision, increase asset life and protect asset returns.
- Decisions on the location, type, design and timing of infrastructure developments can have profound implications for the environment. Poor quality infrastructure can contribute to air pollution, climate change, changes in water quality and quantity, biodiversity loss and the degradation of ecosystems. For example, current energy, transport, building and water infrastructure are responsible for more than 60% of global greenhouse gas emissions, and are thus a major driver of climate change. These environmental impacts, in turn, magnify the environmental risks facing infrastructure and ultimately undermine human health, well-being, and sustainable development.

The economic case for promoting environmental principles in infrastructure investment is clear. The costs of environmental pollution and degradation, to which infrastructure is a major contributor, are significant. For example, the OECD projects that in the absence of further action to tackle climate change, the combined negative effect on global annual GDP could be between 1.0% and 3.3% by 2060, and as much as 10% by the end of the century²⁰. Ambient air pollution in OECD and BRIICS countries is estimated to have cost a total of USD 4.76 trillion in 2015²¹.

¹⁹ OECD (2017), *Investing in Climate, Investing in Growth*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264273528-en>.

²⁰ OECD (2015), *The Economic Consequences of Climate Change*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264235410-en>.

²¹ Roy, R. and N. Braathen (2017), "The Rising Cost of Ambient Air Pollution thus far in the 21st Century: Results from the BRIICS and the OECD Countries", *OECD Environment Working Papers*, No. 124, OECD Publishing, Paris, <https://doi.org/10.1787/d1b2b844-en>.

Further, integrating environmental concerns into infrastructure developments need not come with a high price tag. *Investing in Climate, Investing in Growth (2017)* estimates that USD 6.3 trillion of infrastructure investment is needed per year to meet development goals. To make this infrastructure consistent with the goal of countries signing the Paris Agreement of “holding the increase in the global average temperature to well below 2°C above pre-industrial levels” would require an increase in overall investment of 10% (a total of USD 6.9 billion per year). The incremental cost is likely to be offset by fuel-savings from low-emissions technologies and infrastructure of up to USD 1.7 trillion per year through 2030.

The value of physical infrastructure is only part of its impact on the wider economy. Quality infrastructure can help develop local economies and generate jobs.²² To the extent that these new opportunities can benefit those who otherwise may struggle to find good quality jobs, the benefits can be even greater, potentially reducing inequalities and poverty, and increasing opportunities for social mobility for those who otherwise may feel that the prevailing economic system is not acting in their interests. Quality infrastructure includes essential elements related to community well-being, health and safety while gender and disabilities issues are also at the core of its approach.

Strengthening quality infrastructure investment is an opportunity for subnational governments as well for national governments. Subnational governments are at the forefront of public infrastructure investment in OECD countries and around the world. Subnational investment represents around 57% of total public investment on average in OECD countries and 40% at a global level. Subnational governments are responsible for key policy areas linked to infrastructure impacted by megatrends such as transports, energy, education, housing, water and sanitation.²³

Quality infrastructure also provides enhanced services and well-being for communities. Investing in the retrofitting, upgrading and construction of quality infrastructure can promote environmental protection while also enhancing infrastructure services that are critical for human health and well-being. Because the world is changing from population growth, economic dynamics, and climate change, it will be important for investments to align short and long-term social, economic and environmental goals, and to promote flexible, multi-purpose infrastructure solutions. Investments decisions should take into account the upstream and the downstream social, economic and environmental impacts. A non-exhaustive list of examples of the services provided by quality infrastructure is found below:

Access to affordable, clean and renewable energy

- Investments in clean energy infrastructure will be vital for increasing energy access and security while addressing climate change. To achieve the goals of countries signing the Paris Agreement, current energy systems will need to see a substantial reduction in demand through energy efficiency, a decline in carbon intensity of electricity and an increase in electrification of energy uses. In a pathway consistent with 1.5°C warming, renewables supply 70-85% of electricity in 2050, while coal disappears from the electricity mix by 2050²⁴. Renewables currently supply only 10.4% of global energy²⁵. Investments in renewable energy infrastructure and in smart grids that enable sustainable energy would contribute to reducing both energy consumption and GHG emissions from cities.
- An estimated 1.1 billion people – 14% of the global population – do not have access to electricity²⁶. Many more suffer from supply that is of a poor quality. Around 84% of those without electricity

²² Infrastructure can generate jobs during construction and operation, but also by stimulating the economy and therefore demand for jobs.

²³ Cities, for example, are responsible for 70% of greenhouse gases globally and two thirds of energy global consumption.

²⁴ IPCC (2018), Special Report on 1.5 degrees

²⁵ Source: IEA (2018), *Renewables 2018: Analysis and Forecasts to 2023*, IEA, Paris, https://doi.org/10.1787/re_mar-2018-en.

²⁶ IEA (2017), Energy Access Outlook 2017 <https://www.iea.org/energyaccess/database/>

access reside in rural areas and more than 95% of those living without electricity are in countries in sub-Saharan Africa and developing Asia. Inadequate access to energy has a disproportionate impact on women, with time lost to collecting biofuel and negative health impacts from indoor air pollution from traditional stoves.

- The number of people without access to clean cooking facilities has been gradually declining, but still amounted to 2.7 billion people globally in 2017²⁷. Each year, close to 4 million people die prematurely from illness attributable to household air pollution from inefficient cooking practices using polluting stoves paired with solid fuels and kerosene²⁸.

Water supply and sanitation

- Rising water stress and increasing supply variability, flooding, inadequate access to safe drinking water and sanitation, and higher levels of water pollution are undermining economic growth and development. There is an urgent need and a compelling case for investing in infrastructure for clean water and sanitation (e.g. wells, sewage pipes, sustainable urban drainage systems, sanitation facilities and water purifying systems):
 - As of 2015, 2.1 billion people lacked access to safely managed water services and 4.5 billion lacked access to sanitation compatible with the SDG6 objectives²⁹.
 - Poor sanitation, water and hygiene lead to about 675,000 premature deaths annually and estimated annual losses of up to 7% of GDP in some countries³⁰.
 - Global economic losses related to water insecurity are estimated to cost USD 260 billion per year³¹.

Transport

- Directing investment towards clean public transport and greater vehicle efficiency could create up to 23 million additional jobs a year and tackle congestion, cutting the wasted hours spent sitting in traffic by up to 30%. It could reduce by over 80% the 1.3 million transport-related deaths and 78 million transport-related injuries worldwide each year.
- Investing in city cycling infrastructure could save five times the cost of this investment by improving public health and reducing traffic congestion. Extrapolating across Europe, the health benefits from cycling could be worth USD35-136 billion annually.

Construction

- Cities can benefit from circular economy solutions aiming at using natural resources in an efficient and sustainable way. Overall, there is a potential for more sustainable building construction, green infrastructure and nature-based solutions.

²⁷ IEA (2018), World Energy Outlook

²⁸ <http://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>.

²⁹ WHO-UNICEF (2017), Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines.

³⁰ The World Bank (2016), "Water Overview"

³¹ Sadoff C. et al. (2015), *Securing Water, Sustaining Growth, report on the GWP-OECD Task Force on water security and sustainable growth*, University of Oxford, UK.

Annex 2. Fulfilling international obligations by adhering economies

To deliver on the 2030 Agenda for Sustainable Development and achieve the Sustainable Development Goals (SDGs), developed, emerging and developing economies will need to scale up investment in infrastructure and ensure that it is well aligned with environmental and social objectives. This is also fundamental to a number of other international agreements e.g. the Sendai Framework for Disaster Risk Reduction, the Paris Agreement and the Convention on Biological Diversity with its 20 Aichi Targets.

- **2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals:** Infrastructure investment is the explicit focus of *SDG 9 Build resilient infrastructure, promote industrialization and foster innovation* but it is also fundamental to the achievement of many of the other SDGs, such as *SDG 6 Clean Water and Sanitation; SDG 7 Affordable and Clean Energy; SDG 8 on Decent Work and Economic Growth and SDG 11 Sustainable Cities and Communities*. At the same time infrastructure can undermine efforts to achieve other SDGs, for example, environmental SDGs such as *Goal 13 Climate Action, Goal 14 Life Below Water and Goal 15 Life on Land*.
- **Sendai Framework for Disaster Risk Reduction (2015-2030):** The Sendai Framework endorsed by the UN General Assembly in 2015 has as its goal: *The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries*. The framework comprises seven targets and four priorities for action. One of the targets is to “Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030”.
- **Paris Climate Change Agreement:** With the adoption of Paris Agreement in 2015 countries agreed to: (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. The type of infrastructure investments made by countries will, to a large extent, determine whether countries deliver on their Nationally Determined Contributions and the Paris goals.
- **Convention on Biological Diversity (CBD) and the Aichi Biodiversity Targets:** On the one hand, infrastructure depends on biodiversity and the ecosystem services that it underpins (e.g. resilience). On the other hand, infrastructure has potential impacts on biodiversity which may threaten the provision of ecosystems services. Mainstreaming biodiversity into infrastructure investment decisions will contribute to the achievement of the overall goal of the CBD to conserve biodiversity, and also help countries to progress towards several Aichi Targets including 5, 14 and 15. Mainstreaming biodiversity into infrastructure was a focus of the CBD COP14 in Sharm El-Sheikh in 2018³².
- **G20 leaders** affirmed the essential elements of quality infrastructure investment at the G20 Hangzhou summit, in which they stressed the importance of quality infrastructure investment aiming to ensure economic efficiency, while addressing social and environmental impacts and aligning with economic and development strategies. The G20 continued to recognize the

³² Decision is forthcoming and text can be updated.

importance of quality infrastructure through a Roadmap to Infrastructure as an Asset Class, which sets the stage for future G20 work on infrastructure financing and investing.

- **Human Rights obligations:** infrastructure projects can have manifold impact on human rights as enshrined, inter alia, in the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights and the Convention on the Elimination of All Forms of Discrimination against Women.
- **ILO standards:** International labour standards (Conventions and recommendations) drawn up by the ILO, setting out basic principles and rights at work, are relevant, affording, for example, protection on occupational health and safety risks and outlining requirements on social dialogue.
- **Responsible business conduct standards:** G20 Labour Ministers in 2017³³ acknowledged the importance of sharing the benefits of globalisation and committed to foster “the implementation of labour, social and environmental standards and human rights in line with internationally recognised frameworks.” They also expressed support for access to remedy and non-judicial grievance mechanisms and underlined the responsibility of businesses to exercise due diligence in the context of their operations. In 2016, G20 Trade Ministers agreed on G20 Guiding Principles for Global Investment Policymaking, including that “investment policies should promote and facilitate the observance by investors of international best practices and applicable instruments of responsible business conduct and corporate governance”.

Other MDBs guidelines³⁴ and reports on investment which have increasingly stressed the importance of social issues deserve also to be considered. For example the World Bank Sustainable Infrastructure Action Plan specifies that sustainable infrastructure must include social sustainability³⁵. The Bank’s Environmental and Social Framework (ESF), applicable to WB financed infrastructure projects since 1 October 2018, will support country focus on the identification and management of environmental and social risks.³⁶ The recent Inter-American Development Bank report on Sustainable Infrastructure (IDB 2018) identifies four dimensions of infrastructure sustainability – economic and financial; environmental; institutional; and social.³⁷ Other examples include the Asian Development Bank’s (ADB) Safeguard Policy Statement (SPS),³⁸ the Asian Infrastructure Investment Bank’s Environmental and Social Framework³⁹ and the Integrated Safeguards System - Policy Statement and Operational Safeguards⁴⁰ of the African Development Bank.

³³ http://www.bmas.de/SharedDocs/Downloads/DE/PDF-Pressemitteilungen/2017/g20-ministerial-declaration.pdf?__blob=publicationFile&v=2

³⁴ Most of these guidelines have now been integrated into the multilateral platform SOURCE.

³⁵ <http://documents.worldbank.org/curated/en/442391468316130724/World-Bank-Group-sustainable-infrastructure-action-plan-FY09-011>

³⁶ The key environmental and social considerations that should be taken into account in undertaking quality infrastructure investment under the ESF include Assessment and Management of Environmental and Social Risks and Impacts: Labor and Working Conditions, Resource Efficiency and Pollution Prevention and Management, Community Health and Safety, Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, Biodiversity Conservation and Sustainable Management of Living Natural Resources, Indigenous Peoples, Cultural Heritage, Financial Intermediaries and Stakeholder Engagement and Information Disclosure.

³⁷ IDBG 2018 “Framework for Planning, Preparing, and Financing Sustainable Infrastructure Projects: IDB Sustainable Infrastructure Platform” <http://dx.doi.org/10.18235/0001037>

³⁸ <https://www.adb.org/documents/safeguard-policy-statement>

³⁹ www.aiib.org/en/policies-strategies/_download/environment-framework/20160226043633542.pdf

⁴⁰ www.afdb.org/en/documents/document/afdb-integrated-safeguards-system-policy-statement-and-operational-safeguards-34993