

## **Abstract: Assessment Rubric for Adaptation: Sustainable Cities Goal 11**

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Climate change directly and indirectly impacts populations worldwide. Flooding from rising sea levels and drought from temperature increases are only two potential risks. Such environmental changes ultimately affect human health and culture in the form of increased communicable disease and forced migration. Ecosystem services and biodiversity are also jeopardized by climate change, which in turn threatens individuals and the very foundation of human society. Consequently, it is important for humanity to adjust our current lifestyles through adaptation efforts. The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as follows: "Adaptation refers to adjustments in ecological, social or economic systems in response to actual or expected climate stimuli and their effects of impacts. It refers to changes in processes, practices and structures to moderate potential damages to benefit from opportunities associated with climate change." Though there are few systematic monitoring and evaluation processes for adaptation, the Sustainable Development Goals (SDG's) present a reliable framework around which to build solid monitoring and evaluation strategies.

The SDGs are a set of goals and targets agreed upon by the United Nations, attempting to end extreme poverty, promote equitable economic development, and combat climate change on a global level. The SDGs offer major improvements on the Millennium Development Goals (MDGs), but they address key systemic barriers to sustainable development that were neglected by the MDGs. These barriers include inequality, unsustainable consumption patterns, weak institutional capacity, and environmental degradation (ICSU 7). The SDGs have been proposed as part of a new development program aimed at continuing progress towards worldwide adaptation and sustainability for a growing population while battling a changing climate. In December of 2015, the United Nations hosted the COP21/CMP11 convention in Paris, France to discuss and negotiate the final version of the goals and targets. The current SDGs contain 17 goals encompassing an extensive range of sustainable development issues. The SDGs contains 17 goals with 169 targets encompassing an extensive range of sustainable development issues. These issues include ending poverty in all its forms worldwide, making cities and human settlements inclusive, safe, resilient, and sustainable, and also conserving and protecting oceans, the environment, and all biodiversity with an overall focus on adaptation.

While COP21 in Paris yielded a new climate agreement that has renewed global optimism surrounding greenhouse gas emissions reductions and, more generally, climate change mitigation, it is nonetheless important to recognize and address the impacts of climate change that are already locked in due to past and current emissions. A wide array of climate adaptation strategies will be necessary to protect communities and ecosystems from the worst impacts of climate change, including rising

temperatures, rising sea levels, increased frequency of severe weather events, drought, and reduced air quality. Despite the growing importance of adaptation, there is no existing universal standardized framework for assessing the efficacy of existing and future adaptation projects. Coming to an internationally agreed upon set of indicators and monitoring and evaluation strategies for adaptation should be a priority in the coming years. It is likely that incorporating adaptation into an existing global framework may yield the best results for achieving standardized adaptation assessments in a timely manner.

This report aims to analyze Sustainable Development Goal 11: Sustainable Cities, and incorporate climate change adaptation into the language of the targets as well as suggest indicators and monitoring and evaluation strategies that would both achieve the Goal's targets and increase the success and prominence of climate change adaptation. Nine of the ten targets proposed for Goal 11 are included in this report. Within each target, the relevant types of adaptation strategies are outlined, and existing indicators and monitoring and evaluation strategies are listed and described. The report then discusses the current shortcomings within the field of assessing climate change adaptation, and makes concrete and applicable suggestions to improve adaptation assessments. These suggestions come in multiple forms: the rewording or alteration of existing indicators, the proposal of new indicators, changes to existing monitoring and evaluation strategies, the proposal of new monitoring and evaluation strategies, and the repurposing of successful monitoring and evaluation strategies from other fields. Other fields with robust strategies include climate change mitigation, public health, economics, and biodiversity studies. Our suggestions for each target, as well as existing best practices, are outlined in charts that should function as a rubric for assessing climate change adaptations.

Within our research, we found several recurring factors that inhibit the success of adaptation projects. Those factors include lack of project funding, lack of political will and corruption, lack of data transparency and availability, and lack of cooperation between city and national governments. Although these challenges are complex, we have attempted to outline ways of reducing them. We have also put forth new indicators, which track the allocation of funding and resources, and could push countries to increase their investment in adaptation. Additionally, the Green Climate Fund has the potential to raise funds at the international level, if countries are held accountable for their commitments and a certain proportion of the funding is set aside for adaptation. By tracking the presence of gang lords and local authorities within slums and low socioeconomic areas, nations will be held accountable at the international level for intervening to decrease corruption that hinders adaptation. Data availability can be improved through the use of new technologies including cellular phones and satellite imagery. Not only would this make data more publicly available, it would also provide a streamlined data platform in which organizations could have access to important data in real time. To address the issue of poor cooperation and communication between varying levels of power, we hope that this assessment rubric for climate change adaptation will serve as a framework for standardizing the approach to adaptation and reduce conflicting or inconsistent regulations surrounding adaptation.

Despite the existing challenges that hinder climate change adaptation, it will become increasingly critical in the coming years to ensure that communities are protected against climate change. These challenges can, and must, be overcome. This report is intended as a first step in bringing adaptation to the forefront of the discussion by incorporating it into the United Nation's Sustainable Development Goals.