

Inputs from the Government of Maldives

Water for Climate, Resilience and Environment: Source to Sea, Biodiversity, Climate, Resilience and DRR

Overview of the challenge, current status and interlinkages

Human-induced climate change, including more frequent and intense extreme events, have caused widespread adverse impacts to nature and people, beyond natural climate variability. To combat the effects of climate change and minimize related losses and damages, countries have accelerated their development and adaptation efforts to reduce vulnerability. Across sectors and regions, the most vulnerable people and systems are observed to be disproportionately affected. The rise in weather and climate extremes has led to some irreversible impacts as natural and human systems are pushed beyond their ability to adapt. (IPCC, 2022: Summary for Policymakers)

Climate change has caused substantial damages, and increasingly irreversible losses, in terrestrial, freshwater, coastal and open ocean marine ecosystems. Risks in physical water availability is a factor of high confidence stated in the IPCC report. SIDS will face the effects of groundwater unavailability due to effects of climate change and the pressures of human actions.

The scattered and uneven distribution of the Maldives poses many challenges for the provision of water and sewerage. The freshwater aquifers are highly susceptible to land based pollution and saltwater intrusion, making it unsuitable for consumption. The 2004 Indian Ocean Tsunami caused the fresh-water lens to become saline. As a result, several islands were unable to use their primary water source for household and basic needs. This led to a local context of drought as islands faced potable water scarcity during the northeast monsoon (dry season) and led to water being transported from the Capital of Maldives; Male’.

Moreover, the unpredictable changes in climate has raised the concern of water security across the low-lying communities. The only alternative is desalination which is a costly process due to the high energy cost involved for desalination.

Climate change has also led to more unpredictable rain patterns and an increase in rainfall in a short period of time compared to the past 10 years. While climate change is impacting the island communities more by heightening their vulnerabilities, development of the key infrastructure systems including sanitation, water, health, transport, are also not accounted for while preparing for the changing climate conditions. There has been an increase in reporting of loss damages due to heavy rain and flooding.

Overview of opportunities for progress and transformative solutions

1. Financing

The Strategic Action Plan 2019 - 2023 of the Government of Maldives has clear indicators and goals that allows government agencies to work towards flood mitigation measures in the country. One such initiative is to give importance to islands that face frequent flooding events by establishing storm water systems. It is important to consolidate projects and develop a mechanism to plan and design such systems to relieve the financial burden on the state, by addressing the root causes of the issue at the development stage.

It is also important to ensure that disaster risk reduction measures are integrated and seen on the national budget for projects focusing on development of infrastructure resiliency and establishing early warning systems in the country. It is of utmost importance to protect critical infrastructure in cases of emergencies and disasters, hence, finance pooling for such projects is vital.

Financing towards efficiency and low cost, renewable energy driven technology is also an important area that would enhance to lower down the cost of service.

2. Data and information

Data and information gathering is an area of great challenge across all sectors. Even when it comes to climate change and disaster data, the same is applied as most sectors still work in silos. In the Maldives, there is no national framework to coordinate disaster data, no online portal to share data, no fixed templates, data to be shared is not defined and when it comes to local communities the island councils need more training on data management. However, we plan to:

1. Operationalize 'DesInventar' in the Maldives.
2. Use Google Spreadsheet for Data Collection
3. Publish Annual Report of Disaster Statistics of Maldives
4. Produce Biannual / quarterly infographics and statistics shared with the general public.

3. Capacity development

Efforts focusing on Disaster Risk Reduction and preparedness commenced following the aftermath of the 2004 Indian Ocean Tsunami in Maldives. Prior to this incident, Maldivians had little to no knowledge about the main hazards faced by the country and its effects on communities. It was apparent that efforts must be made to develop and sustain the work towards building resiliency in our small island communities.

One such initiative has been to strengthen institutional structures focusing on climate change and disaster management. This area in particular has seen steady development especially in recent years. The National Disaster Management Authority (NDMA) has the main mandate of working towards Disaster Risk Reduction and building resilient communities in the country. However, NDMA still lacks the human and financial capacity to conduct and implement programs at a community level. With a limited annual budget and an active workforce of only 25 staff, NDMA requires additional hands and monetary increments to improve services and reach a wider target audience.

Disaster Risk Management is still a very novel sector in the Maldives with limited technical and trained staff in the field. There is a requirement to train and build capacity in the field of Disaster Risk Reduction and Emergency Management with a specific focus on sustainable growth of the local workforce. This can be achieved by creating awareness about opportunities in this field among students, offering skill development and higher education opportunities as well as training for those who are in the sector. Capacity Development programs should consider increasing knowledge about social issues, health emergencies, climate adaptation, environmental management as well as gender. Disaster Management requires a holistic approach with a workforce of diverse expertise and knowledge.

In the Maldives, data needs are particularly challenging to meet from the technical point of view, given the high complexity of the social-ecological system. Mechanisms need to be established to collect timely disaggregated data. This is another area that capacity building is needed.

4. Innovation

Maldives is blessed with water all around us. However, we need to find innovative ways to turn these resources into useful and inexpensive methods of water sourcing as the percentage of potable water for residents are limited.

Reverse Osmosis (RO) technology is widely used in the Maldives to turn seawater into potable water. However, depending solely on RO technology is expensive and it can also be unreliable in cases of emergency since these processes can come to a halt due to human error or lack of electricity. Subsequently, with the effects of climate change, we are unable to depend on rainwater due to its unpredictability. We need to find holistic and integrated mechanisms to provide inexpensive water producing services to the local communities.

One such area of significance could be using stormwater to replenish the island's natural water lens to ensure water security. The Sustainable Development Goals (SDG) Target 6.4 is focused on increasing water-use efficiency across all sectors and ensuring sustainable withdrawals and supply of freshwater to address water scarcity whilst substantially reducing the number of people suffering from water scarcity by 2030. In a Maldivian context, the trend of using bottled water has increased significantly due to public perception about piped water. This coupled with the lack of rainwater harvesting efforts at a household and community level has in turn decreased the amount

of rainwater harvesting and its use. As a result, Maldives is now facing an environmental and social crisis in managing waste generated from single use plastics. This type of waste has also become a major component of waste dumped in all the waste management centers across the country. To tackle this issue, promotion of rainwater harvesting and its usage is vital along with promotion of piped water. Long term awareness and advocacy are crucial to bring about behavioral and perception change of the community. Moreover, looking into newer innovations and using local resources to integrate storm water into the island's water system is an important part of building resiliency and preparedness. However, with the limited technical knowledge in this field, Maldives requires the knowledge and lessons learned from similar countries on using new innovations and technology in water security and management of stormwater.

5. Governance

Climate change and Disaster Risk Management is a cross cutting issue that needs immediate action from all sectors. It is vital to include all relevant stakeholders in planning, implementation and monitoring of climate change projects and in ensuring integration of disaster risk reduction components in such aspects. With the changing climate, it is not possible to separate disaster risk reduction from climate change.

A special focus must be given to the principles of good governance such as ensuring transparency and accountability in project implementation as well as in handling climate finance. To achieve these goals, clear roles and responsibilities among sectors and effective coordination must be a priority. Furthermore, information sharing with the community is vital to ensure accountability of the government whilst using climate finances and monitoring the progress of projects. However, this comes together with the inclusion of citizens from different levels of the community ranging from young to old, women and men as well as the vulnerable communities such as Persons with Disabilities (PWDs).

It is also important to recognize the interlinkages between water, climate change and DRR. In this regard, multi-sectoral, multi-agency partnerships are crucial in achieving the water-related goals and targets with these interlinkages in mind.

Recommendations

- Sustainable development requires integrated water, weather and climate solutions
- Water information for saving lives is a global public good and must be freely accessible
- International and intersectoral cooperation creates co-benefits for more resilience
- Societal investment rationales will create action and ownership
- Strengthen roles of Women Development Committees to work more closely with the community to create awareness on Disaster Risk Reduction and early warning

- Knowledge and technology transfer is essential between Maldives and international parties
- Central data management systems and sophisticated local IT solutions for data sharing is a pressing need.
- Strengthening of monitoring and evaluation mechanisms to ensure accountability, transparency and sustainability
- International corporation to maximize CCA-DRR financing, knowledge transfer and capacity development.
- Conduct multi stakeholder trainings and awareness sessions for the local communities with special focus on inclusivity
- Explore alternative means for production and distribution of clean water in small islands
- Explore efficient and cost-effective means for addressing emergency water supply in small islands
- Explore opportunities for reclamation and reuse of flood water
- Establish a data collection mechanism at island level
- Build up the administrative registers/data mechanisms within the sectors at island level.
- Standardize the existing systems across all sectors and Harmonies the compilation process by adopting the international classifications across sectorial data mechanisms