



The World Bank

MV: Digital Maldives for Adaptation, Decentralization and Diversification (P177040)

Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 16-Feb-2022 | Report No: PIDA33505

**BASIC INFORMATION****A. Basic Project Data**

Country Maldives	Project ID P177040	Project Name MV: Digital Maldives for Adaptation, Decentralization and Diversification	Parent Project ID (if any)
Region SOUTH ASIA	Estimated Appraisal Date 15-Apr-2022	Estimated Board Date 31-May-2022	Practice Area (Lead) Digital Development
Financing Instrument Investment Project Financing	Borrower(s) Republic of Maldives	Implementing Agency Ministry of Environment, Climate Change and Technology	

Proposed Development Objective(s)

To enhance the competitiveness of the broadband market, to improve identification for in-person and online service delivery, and to leverage digital technologies, data, and analytics for climate resilience

Components

- Component 1 - Enabling environment for improved digital connectivity and competitiveness
- Component 2 - Digital identification for improved online and in-person service delivery
- Component 3 - Digital technologies and data platform for climate resilience
- Component 4 - Project management and implementation support

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	10.00
Total Financing	10.00
of which IBRD/IDA	10.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**



International Development Association (IDA)	10.00
IDA Grant	10.00

Environmental and Social Risk Classification

Low

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Maldives is an island state comprising nearly 1,200 coral islands grouped into 26 atolls, spread across roughly 90,000 square kilometers of the Indian Ocean.** The Maldivian population, about 515,696 as of 2018, is widely dispersed across the islands, many of them remote and physically vulnerable to rising sea levels. Nearly 80 percent of the total land area of the country, which is less than 300 square kilometers, is lower than 1 meter above mean sea level. The country's exposure to natural hazards and climate variability poses a threat to lives and the economy. More than 30 percent of the population lives in the capital city, Malé, while the rest are distributed across 200 other inhabited islands. Basic human development indicators are high: Maldives ranks 101 out of 189 countries in the Human Development Index (HDI) for 2017, the second-highest HDI rank in South Asia after Sri Lanka.
2. **Economic growth has been steady over the last decade, although the COVID-19 pandemic brought a significant contraction and an uptick in poverty.** From being among the poorest countries in the world with a GDP per capita of \$268¹ in 1980, Maldives is on track to reach high-income status in the next decade. Maldives is classified as an upper-middle-income country (UMIC) with gross domestic product (GDP) per capita of \$10,331 in 2018. Real GDP grew by 5.3 percent in 2019 but is estimated to have contracted sharply in 2020 during the COVID-19 pandemic. Poverty increased from 3.8 percent in 2019 to 14.3 percent in 2020; this is expected to decline to 4.3 percent by 2023.
3. **The Maldives' unique geography poses important challenges for service delivery and economic development.** With over a third of the country's population residing in the capital Male', and the remainder scattered across 200 small islands, access to basic services is difficult and costly. The population, estimated at 557,426 in 2020, is dispersed widely, with many of the inhabited islands remote and unserved by regular public transportation and public services.
4. **The country faces multiple vulnerabilities due to its geography and the limited economic diversification.** Most critically, Maldives is highly vulnerable to climate change and to external shocks due to its fragile ecological profile and low elevation, combined with its economic dependence on fisheries

¹ All dollars are in United States dollars unless otherwise indicated.



and nature-based tourism. The country's exposure to natural hazards and climate change poses a threat to lives and the economy: nearly 80 percent of its land area lies less than one meter above mean sea level, and the country is at medium risk of inundation from rising sea levels, coastal storms, and flooding. Maldives is expected to suffer a total loss of GDP due to climate change of 2.3 percent by 2050, and 12.6 percent by 2100, the highest impact in South Asia. Second, the country depends on tourism as a driver of economic growth and a narrow range of exports and strategic imports such as food and fuel, and for a large proportion of the population on the climate-sensitive fishery sector. High dependence on tourism means that the economy is highly vulnerable to external shocks, such as the COVID-19 pandemic.

5. Responding to these vulnerabilities, the Government is keen to ensure adaptation to climate change, diversify its economy, and decentralize geographically. The government of Maldives has developed sound policies and plans to change its focus from a traditional reactive approach to a more comprehensive approach to manage climate and disaster risk². The 2015 Nationally Determined Contribution (NDC) updated in 2020 identified 10 priority areas for adaptation, including coastal protection, safeguarding reefs and biodiversity, infrastructure resilience, food security, water security, improving public health systems, tourism, fisheries, early warning, and systematic observation, as well as cross cutting issues. The NDC noted opportunities to support resilience for the most vulnerable communities through strengthening local institutions, improving access to basic services, and supporting livelihood resilience, and committed Maldives to reducing its GHG emissions by 26 percent by 2030 through increased use of renewable energy sources.

6. The Government has also sought to leverage digital development to create diverse engines of growth and job creation in the economy. It seeks to use its geographic location in the middle of Southeast and South Asia, the Middle East, and Eastern Africa—all growing digital economies—to engage in the information technology (IT) services industry. And the government has finalized a National Spatial Plan (NSP), a 20-year roadmap for infrastructure, spatial development, and decentralization. The NSP aims to put people at the center of development, ensuring that no island, no person is left behind. The NSP envisages the decentralized development of regional hubs, sub-regional centers, and other islands, with a focus on reducing overcrowding and congestion in the capital, where approximately 300,000 people live in an area of 8.3 km². Such decentralization would need new modes of delivery of public and private services.

7. The COVID-19 pandemic has slowed progress towards the achievement of several goals in the government's Strategic Action Plan (SAP) for 2019-2023 and threatening important progress on many of the essential climate resilience goals and targets, while also surfacing new digital opportunities. Investments and policy objectives could be derailed or delayed due to current fiscal pressures. The severe disruption of global supply chains has had an impact on food security and exacerbated the impacts of climate vulnerabilities. At the same time, the pandemic has accelerated the digital transition already underway in Maldives, contributing to the emergence of new digital platforms and applications, including e-payment systems, telehealth, online education, and many others. Building on the momentum of these initiatives, Maldives can unlock new opportunities for growth and new avenues for climate resilience to truly 'build back greener' as it aims for adaptation, diversification, and decentralization.

² (i) the Disaster Management Act and the 7th National Disaster Management Plan; (ii) the National Emergency Operations Plan; (iii) the second National Environmental Action Plan; (iv) the National Adaptation Program of Action and Nationally Determined Contribution Implementation Plan; (v) the Climate Change Policy Framework; (vi) the Health Master Plan 2016-2025; (vii) the Construction Act; and (viii) the government's Telecom Policy that emphasizes an Emergency Communication Plan.



Sectoral and Institutional Context

8. **Responsibility for ICT lies primarily within the Ministry of Environment, Climate Change, and Technology (MoECCT), which is mandated to provide leadership for the development of digital government, digital economy/society, and to advance inclusive, sustainable, and resilient development.** The MoECCT aims to facilitate a transparent and predictable regulatory environment and to create an outstanding investment climate. The shared responsibility of climate change and ICT within the MoECCT is a unique institutional governance structure and provides opportunities for strong linkages between digital transformation and enhanced sustainability and climate change adaptation.

9. **The Government Strategic Action Plan (SAP) 2019-2023 outlines an ambitious agenda for digital development as a key step towards economic diversification.** The five policy priorities for Maldives' digital transformation are: (a) modernize the governance mechanism of the ICT sector to prepare Maldives for a digital economy; (b) establish digital infrastructure, platforms and ecosystems that are capable of providing ICT solutions that are more efficient, secure and consistent; (c) modernize government services through digitalization for data-driven policy making and efficient delivery of information and services; (d) encourage digital innovation and create a conducive environment for businesses to thrive in a digital economy; and (e) develop a digital-ready workforce and build human capacity in the ICT industry. Although there has been progress toward these objectives, the Maldives is looking for additional financing and technical support to address remaining gaps, including with respect to data- and ICT sector governance, digital identification, and digital platforms.

10. **Internet access and use has expanded over the past decade, however outer islands and atolls remain underserved.** In 2019, 63 percent of the population or 60 percent of households used the Internet; unique mobile subscribers constituted 57 percent of the population. LTE is available to almost all islands and close to 100% of the population and Fiber-to-the-home (FTTH) is available to 70+ islands and 80% of the population. However, 20% of the population lives on outer islands and atolls that lack fixed broadband, which constrains access to digital services, transactions, and economic opportunities. The reasons for this digital divide between Male' and the atolls and outer islands are multifaceted: limited coverage of high-capacity networks, the high prices of fixed broadband services, and limited digital literacy are all contributing factors.

11. **Tariffs are high and the effective fixed broadband speed is low due to relatively low data volume quota on fixed broadband.** Internet access was markedly less affordable in Maldives than in neighboring countries such as Sri Lanka and India in 2019 (Table below). The high costs of broadband too, has been a longstanding concern, which was heightened during the COVID-19 crisis. The government enforced a price ceiling on fixed broadband prices, effective 1 July 2021, which was expected to reduce prices by 28 to 30%³.

Indicator	Performance		Benchmark in South Asia	
	% of GNI per capita	Rank (all countries)	Country	% of GNI per capita
Fixed broadband basket	3.9%	89 of 178	Sri Lanka	0.89%

³ <https://corporatemaldives.com/news/maldives-government-unveils-new-reduced-internet-prices-and-speed/>



Indicator	Performance		Benchmark in South Asia	
	% of GNI per capita	Rank (all countries)	Country	% of GNI per capita
Mobile data	1.83%	100 of 188	Sri Lanka	0.28%
Mobile and data – high usage basket	3.05%	104 of 188	Sri Lanka	0.77%
Mobile and data– low usage basket	1.5%	77 of 188	Sri Lanka	0.41%

Source: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2019/ITU_ICTpriceTrends_2019.pdf

Following a recent Government intervention, the data quota on fixed broadband packages has been increased to 2 Mbps (from 1 Mbps) on the entry level package and 5 Mbps on mainstream packages. These still fall well below typical fixed broadband usage patterns and subscribers are throttled down to a low speed after consuming their monthly quota. Although mobile Internet throughput is relatively high, in the global ranking for fixed broadband throughput Maldives ranks 140th out of 178 countries.

12. Weak institutional frameworks and limited competition play and important role in the challenges associated with accessible, quality Internet service provision. Currently, Dhiraagu and Ooredoo Maldives are the largest operators of telecommunications services in the country, with some small ISPs holding minimal market shares. While this market structure is typical for most SIDS due to their small size, by strengthening the regulatory framework and enhancing the capacity of the telecommunications regulatory agency, the Communications Authority of the Maldives (CAM), there are opportunities to boost competitive pressure and improve affordability.⁴ Lower prices would also contribute toward bridging current usage gaps, enabling more remote and poorer segments of the population to participate in the digital economy and take advantage of new modes of service delivery.

13. Potential regulatory measures to address perceived market failures in the fixed broadband market. A preliminary regulatory assessment provided a list of potential regulatory measures that may be adopted to address competitive concerns in the Maldives broadband services market. This assessment is presented in a framework based on three different markets within the broadband value chain, namely (i) the retail fixed broadband market; (ii) the wholesale international capacity market and (iii) the wholesale national inter-island capacity market. For each market segment, the table below presents a snapshot of the current market structure; the perceived competitive issues; potential regulatory remedies and preliminary comments relating to the application of the potential remedy.

Relevant market	Market structure	Perceived market failure	Potential regulatory remedies
Retail broadband access at a fixed location – mass market	<ul style="list-style-type: none"> Three licensed providers and multiple “distributors”, but limited competition Duopoly market structure in practice with Dhiraagu and Ooredoo companies jointly serving ~99% of subscribers 	<ul style="list-style-type: none"> Relative high prices Limited quality of service 	<ul style="list-style-type: none"> Retail price caps Minimum speed requirements QoS regulation and monitoring

⁴ The country is categorized by ITU at a G2 level of regulation, indicating that it is missing development opportunities and running the risk of remaining disconnected from global digitization.



	<ul style="list-style-type: none">Widespread deployment of FTTH covering ~80% of the population		
Wholesale international capacity market	<ul style="list-style-type: none">Three submarine cable systems connecting Maldives to Sri Lanka/India, owned/controlled by Dhiraagu and OoredooLimited competition; duopoly marketAdditional systems planned with expected RFS 2023	<ul style="list-style-type: none">High prices	<ul style="list-style-type: none">Access obligationWholesale price regulation
Wholesale national inter-island capacity market	<ul style="list-style-type: none">Monopoly/duopoly structure for submarine fiber connecting 9 islandsInter-island microwave links mostly deployed by MNOs; limited competition from ISPs and “distributors” using unlicensed spectrum	<ul style="list-style-type: none">No functioning market for capacity on domestic submarine cables – Dhiraagu and Ooredoo swap capacity, but do not sell to third partiesReportedly, all spectrum planned for microwave use has been assigned to Dhiraagu and Ooredoo	<ul style="list-style-type: none">Access obligationWholesale price regulationSpectrum planning measures to free up microwave spectrum or identify additional spectrum for microwave links

14. **The pandemic has accelerated demand for new digital applications and remote service delivery, however their roll-out has been constrained by limited interoperability and limited digital capabilities of core public platforms.** Although Maldives has shown steady progress in digitizing back-office functions, the efficient, broad-based adoption of digital services is impeded by the lack of effective data governance frameworks, including the absence of cross-governmental data standards and infrastructure for data exchange. These gaps also limit the ability to deploy advanced monitoring and analytics systems to collect and process data that would support Maldives in planning and implementing climate adaptation measures. Bigger businesses have embraced digital technologies, but there is still ample room for growth and for boosting digital entrepreneurship as well. Fostering digital literacy among all Maldivians will also be critical to reap the benefits of the digital world.

15. **The government has valuable data assets and cross-cutting digital systems to build on, including a national population register and a nascent digital ID system.** Maldives has a high-coverage foundational ID system, managed by the Department of National Registration (DNR). The national identity card is the primary document used for identification in service delivery, however the assurance it provides is constrained as it does not have a QR code or other feature that would enable digital verification or authentication for in-person and offline transactions. To enable authentication for online transactions, the National Centre for Information Technology (NCIT) introduced the “eFaas” Single Sign On authentication in 2012. Through eFaas, residents can already access several online services and transactions, however its use has been relatively modest up until 2020. EFaas and the foundational ID system - together with existing social protection payment systems, pensions, and tax systems - have played an important role in enabling remote applications and identity verification for the roll-out of emergency COVID-19 assistance. At the same time, gaps remain across both the foundational and digital



ID (eco)systems, including with respect to facilitating secure online authentication for private sector service providers, enabling higher-assurance identity verification for face-to-face transactions, and strengthening consent and people's oversight and control over their identity data.

16. There are opportunities to greatly strengthen data collection and analytics to allow for agile policymaking and optimize service delivery in the public and private sector, including to support effective climate adaptation and mitigation. For example, MoECCT draws on relevant data from multiple sources for disaster response and climate adaptation, but these data are not integrated into a central repository and are therefore not readily available for analysis, monitoring, forecasting, and early warning / disaster risk management. There are also important data gaps which contribute to the constraints for effective planning and decision-making. The Government has identified the need for a shared data platform, leveraging data from multiple public and private sector sources, to address these limitations and to support the implementation of the NDC, improve reporting on the State of the Environment, and to support other linked development objectives across sectors.

17. MoECCT is looking to expand its use for emerging technologies to enable better data collection and analytics, with climate change adaptation as an initial priority area. Potential technology solutions to be explored include drones (aerial and under-water) - i.e., to support the monitoring the health of the coral reefs ecosystems -, high-resolution satellite imagery, localized environmental sensors, and digital ground data collection (such as Geo-enabling for Monitoring and Supervision). The deployment of new technologies is to be accompanied by sandboxing and hackathons where external partners and citizens can experiment and co-create development of services using open environmental data.

18. Investment in digital technologies and the establishment of digital and data platforms can enhance the implementation of Maldives' NDC, enable diversification, and become a game changer for the country's growth. Digital services can help overcome many of the constraints posed by the country's limited land mass and dispersed population. Accelerating Maldives' digital transformation will require investments in infrastructure, data platforms, and services as well as investments in human capital. Tackling gender gaps in digital access and skills and promoting a safe and inclusive interactions across cyberspace will also be critical to ensure that digital dividends will benefit all. In Maldives, a gender gap of 10% was observed in Internet use amongst the population aged 15-49 in 2016/2017, with 80% of women and 89% of men in the age group having used the internet⁵. A significant increase in cyber harassment against women and girls was experienced across South Asia during the Covid Pandemic⁶.

19. Strengthening legal and institutional enablers and safeguards for data will also be critical to support inclusive growth in digital services and the digital economy. Although the right to privacy is protected under the Constitution, Maldives has not yet enacted comprehensive data protection legislation or other broadly applicable guidance in this sphere. In terms of cybersecurity, a national cybersecurity policy and strategy as well as legislative framework are yet to be adopted and relevant institutions and capabilities, such as a national-level Computer Emergency Response Team and crisis management unit, have not yet been put in place. There is also no comprehensive legislation governing identification – whether for in-person transactions or for remote, online contexts. The Government is in the process of drafting legislation to fill these gaps and is looking to introduce them in Parliament before the end of 2022.

⁵ <http://statisticsmaldives.gov.mv/nbs/wp-content/uploads/2020/08/Housing-2-100.jpg>

⁶ <https://blog.ipledgers.in/online-harassment-faced-by-women-while-seeking-for-help-online-during-the-pandemic/>

⁷ https://reliefweb.int/sites/reliefweb.int/files/resources/PI_STC_BecauseWeMatterPolicyBrief-FINAL.pdf



C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

To enhance the enabling environment for the digital economy in Maldives, to improve government service delivery, and to leverage data and analytics for a green, resilient, and inclusive development

Key Results

The achievement of the PDO will be measured through the following indicators:

- (a) Improve competitiveness and Regulatory Oversight for Telecommunications
 - Decrease of IP Transit Wholesale Cost (\$/Mbps/month at landing station in Male')
 - Increase of competitiveness in broadband retail market (ISP Herfindahl-Hirschman index)
- (b) Improved identification for in-person and remote service delivery
 - Number of people using the new digital ID platform to access government services remotely
 - Of which % female
 - Number of people who have been issued with a new, digitally enabled ID card
 - Of which % female
 - Of which are people residing outside Male'
- (c) Improved availability of data and analytics for green and resilient development
 - Number of indicators related to the state of the environment exhibited on the data platform
 - Number of datasets integrated into the new, share data repository for environmental and climate-relevant data
 - A dedicated public web portal as part of the data platform for distribution of weather and disaster risk information.

D. Project Description

20. **The proposed Project aims to support Maldives' intentions to use digital technologies to decentralize, diversify and to adapt to climate change.** It is designed around two components and the proposed activities are conceived following the country's priorities and funding needs in the medium term: (a) to develop the enabling environment for a digital economy; (b) to use digital technologies and shared data platforms to enhance and accelerate adaptation, economic diversification, and decentralization strategies and measures.

The list of Project Component is specified in the Table below.



Activity Component	Title	Amount (\$1,000)
Component 1	Enabling Environment for Digital Connectivity, Data, and Services	2,500
Subcomponent 1.1. Strengthening the legal and regulatory framework for the digital economy	<ul style="list-style-type: none">Regulatory tools, technical assistance and capacity building for the regulation of digital infrastructure marketTA & capacity building to support the establishment & operationalization of a comprehensive legal and regulatory framework for improved data governance and trust (e.g., data protection, privacy, electronic transactions, digital identification)TA to address digital gender divide and gender-based violence, including design of a framework for the collection of data, support to design and adopt approaches to include gender-specific measures and policies in sector-related strategies.	1,000
Subcomponent 1.2. Establishing and empowering public institutions: CAM and NCIT	<ul style="list-style-type: none">Support in the restructuring of NCIT as an independent statutory body – Government Digital ServicesSupport in the creation of an Internet Exchange Point and local area networkRegulatory Assessment and Strengthening and support to CAM	1,500
Component 2	Digital Solutions and Data for Service Delivery and Green, Resilient Development	7,000
Subcomponent 2.1. Digital identification for improved remote and in-person service delivery	<ul style="list-style-type: none">Modernization of DNR's identity management system and introduction of a new, digitally enabled ID credential to strengthen identity verification and safeguard privacy for in-person service deliveryOperationalization of a new digital ID platform to enable secure, consent-driven authentication for remote, online transactions and services across the public and private sectors	4,000
Subcomponent 2.2. Shared data platform for climate resilience and agile climate action	<ul style="list-style-type: none">Establishing a shared data platform for climate change with data, analytics and services, incl. equipment/licenses for data storage, data collection/processing/analytics as well as platform designTA for market assessment, data assessment and functional requirements for the portal and TA for sandboxing capabilities.	3,000
Component 3	Project Management and Implementation Unit	0,500



	Total	10,000
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(a) COMPONENT 1 - Enabling Environment for Digital Connectivity, Data, and Services

21. **To foster the Maldives' digital transformation, solid legal and regulatory foundations are needed to create trust in digital services and promote more affordable Internet access.** This component will support the government in building robust foundations for the digital economy and digital service delivery through a stronger legal, regulatory, and institutional environment that can foster trust in digital transactions and services and promote a more competitive telecommunications market that is conducive to the delivery of high-quality and affordable Internet services.

(i) Subcomponent 1.1. Strengthening the legal and regulatory framework for digital transformation

22. **This sub-component will finance technical assistance to strengthen the legal and regulatory frameworks in such areas as data protection, cybersecurity and cybercrime, electronic transactions, identification (ID) and civil registration (CR) and provide support for their operationalization via bolstering institutional capacity and the development of relevant roadmaps, strategies, and other tools and guidance.** Supporting the development of relevant regulations, standards, and other instruments for the secure and privacy-enhancing processing of personal data, including biometric data, will be a priority focus area under this component.

23. **Activities will be implemented with special attention to the gendered aspects of digital transformation, including with respect to gendered differences in accessing and using digital services and in exposure to risks.** Despite the higher-level political commitment to gender parity in the constitution, most sectoral strategies in Maldives lack gender-specific action plans. Very few measures, if any, are facilitating digital uptake and digital economic opportunities among women. This sub-component will support the government to adopt approaches on strategic levels which will focus on eliminating gender digital divide and granting women full access as well as relevant protections to realize digital dividends.

(ii) Subcomponent 1.2. Establishing and empowering public institutions: CAM and NCIT

24. Through subcomponent 1.2, the project will help strengthen public institutions and build digital, regulatory, and enforcement capacity through:

- **Supporting in the establishment of the Government Digital Service (GDS).** The National Centre for Information Technology (NCIT) will be restructured as an independent statutory body. GDS will act as the lead agency entrusted with the government digital transformation and Purchase of equipment for the local network.
- **Supporting the establishment of an Internet Exchange Point (IXP)** where all the local service providers can exchange traffic which can stay domestic. The Government will connect to the IXP to provide better connectivity for citizens to the Government services.



- **Strengthening regulation and enforcement of government policy for more affordable, quality Internet services by empowering CAM.** To support more affordable Internet access, the subcomponent will provide support for strengthening the governance of the wholesale and retail market segments to ensure open access and fair competition (e.g., review of current market structure and dynamics, infrastructure sharing, assignment of spectrum, open access to the domestic submarine cables, and improvements of Quality of Service). This would include: (i) open access on the domestic submarine cables to ensure other providers can get access at fair and reasonable terms and prices to deliver their services to the islands beyond Male, (ii) spectrum policy, especially fair access to microwave spectrum for inter-island links, and (iii) options to regulate fair and reasonable terms for access to the International submarine cables.

(b) COMPONENT 2 – Digital Solutions and Data for Service Delivery and Climate Change Adaptation

This component will support the modernization and scale-up of existing digital assets to improve service delivery and the use of new digital solutions to leverage data more effectively for climate change adaptation and beyond.

(i) Subcomponent 2.1. Digital identification for improved remote and in-person service delivery

25. **Subcomponent 2.1 will help enhance trust and efficiency in both in-person and online transactions and service delivery through a two-pronged approach,** which includes (a) the modernization of existing identity management software and hardware and the introduction of a new digitally enabled ID credential, issued by the Department of National Registration, and (b) operationalization of a digital ID system to enable secure data sharing and authentication in remote, online contexts.

26. **The new digital ID platform will facilitate remote service delivery by enabling people to securely prove who they are with a high level of assurance from anywhere, any time.** The system will draw on multiple authoritative sources of data, including the existing civil registration and ID system and registries of permanent residents and permit holders, and provide an authentication and consent layer on top of these systems. This authentication layer will allow authorized service providers in both the public and private sectors to securely verify the identities of their beneficiaries and customers. The platform will also offer a user-friendly digital identification app, which will include a virtual version of a person's ID card – with the capability to store additional trusted credentials, such as the driver's license – and through which people will be able to consent to data sharing and authentication requests by service providers in real-time. These features will help enhance digital government-to-citizen communication and people's oversight over their data.

27. **The digital identification platform will be complemented by a strengthened foundational ID system and credentials to meet the growing demand for secure authentication for in-person and offline transactions.** This will be achieved through an upgrade of DNR's existing identity management system and improvements to current registration processes, including the deployment of new software and hardware for data capture and processing, the introduction of fully digitized, ICAO/ISO-compliant photo and fingerprint capture, and the issuance of new physical ID credentials, which will support secure electronic identity verification and authentication in offline contexts.



28. **Specific activities to be financed under this sub-component include:**

- Technical advisory the design and implementation of the upgrades to the foundational ID system and the digital ID system, including:
 - Guidance on the design and specifications of the new digitally enabled ID cards
 - Guidance on facilitating secure biometric authentication and de-duplication leveraging multiple data sources
 - Guidance on international standards and good practices for secure biographic and biometric data capture
- Modernization of civil registration and identity management, including the necessary hardware, software, system integration- and consultancy services to enable more efficient and secure registration, data sharing, and authentication
- Issuance of new digitally-enabled ID credentials, including the necessary hardware and software to enable customization, printing, and delivery
- Establishment of a digital ID platform, including the necessary software and system integration services to develop an authentication layer, an API gateway, and a mobile application to enable secure authentication for online transactions and services
- Communications related to enhancements of the foundational and digital ID systems to promote awareness about the systems' new features and to build trust between the government (as identity provider) and the people (the users/primary beneficiaries of the system).

29. **The foundational ID system and the new digital identification platform will support more efficient service delivery across a wide range of sectors, including health, social protection, and financial services.** In the health sector, the new identity credentials and stronger authentication and consent mechanisms will support improved patient management. This includes preventing impersonation for health insurance purposes or medical check-ups for obtaining work permits, making relevant health and insurance information available at patients' fingertips, while also enabling people to minimize and control how health-related data is shared. In the financial sector, the proposed ID system modernization will allow for people to open accounts and complete financial transactions remotely (enabling electronic Know-Your-Customer - or eKYC - processes) and thus contribute to greater financial inclusion. By enabling people and businesses to transact and access more services online, the digital identification platform is also expected to reduce the need for in-person visits and thus generate saving in terms of time, transportation, office maintenance costs, and related emissions.

30. **The updates to the ID system will follow a people-centric and privacy-conscious approach, in alignment with the Principles on Identification for Sustainable Development⁸.** In addition, the system(s) will be designed and built using international standards and leverage multi-vendor and open-source solutions, to the extent possible, to strengthen operational and financial sustainability and reduce the risk of vendor- and technology lock-in.

(ii) Subcomponent 2.2. Shared data platform for climate resilience and agile climate action

⁸ <https://www.idprinciples.org/>.



31. Subcomponent 2.2 will support the establishment a shared data platform to enhance data-driven policymaking and more responsive service delivery through the improved availability of data and analytics for climate-relevant and environmental indicators and trends. The data platform will directly contribute to the implementation of adaptation and mitigation measures in the NDC and enable government and businesses to adapt operations and service delivery more rapidly and effectively to changing conditions. Activities will focus on establishing the necessary data infrastructure for a data repository and gathering and migrating existing data within the MoECCT to the platform, to be complemented with data collected by different public and private sector entities and with data collected through novel approaches to be piloted by MoECCT. The platform will include an analytics layer, including a GIS system, and a user interface layer in the form of a portal and a dashboard for distributing services, analytics, and data. Core indicators to be collected and analyzed will include meteorological and other biodata related to climate adaptation and mitigation.

32. The data platform will be complemented by a ‘proof of concept’ for using cutting-edge digital technologies to collect and analyze data related to one of the 10 priority areas for adaptation in the Maldives’ NDC. The NDC covers 10 priority areas for adaptation - such as coastal protection, safeguarding reefs and biodiversity, infrastructure resilience, food security, tourism, and fisheries - and improved data and analytics can benefit almost all areas in terms of the speed, quality, and efficiency of their implementation. Emerging technologies such as aerial drones, under water drones, robotics, satellite imagery and analytics offer opportunities for cost effective collection of data across extended areas that with AI and advanced analytics can produce actionable knowledge for government and the private sector. MoECCT noted that monitoring the health of the coral ecosystems is a particular area of interest for the proof of concepts since the coral reefs are a critical asset for tourism and fisheries. Improved data and analytics on the state of the corals are important for decisions on preservation and to support sustainable economic activities.

33. The platform will be designed with scaling and interoperability at the forefront. The platform will be part of the larger government digital infrastructure and will be set up to work seamlessly with other government systems and software, including the planned cloud infrastructure, the API gateway and the technology stack.

34. Specific activities to be financed under this sub-component include:

- Technical assistance / studies for the design of the shared data platform:
 - An assessment of existing data within the MoECCT that covers data availability, data quality, data formats.
 - An assessment of data needs in the short and medium term in support of the NDC project pipeline, SOE report and if relevant other priority projects.
 - A market assessment of data, analytics and platform technology solutions for a hybrid model architecture.
- Procurement of relevant software and hardware for the operationalization of the data platform, including to support secure data sharing, data analytics, data visualization, and data dissemination/ re-use via an interactive user interface
- Implementation of a proof of concept using cutting-edge digital technologies for data collection with focus on a priority NDC area, such as coral reef ecosystems

**(c) COMPONENT 3. Project Management and Implementation Support (\$0.5 million)**

35. **The Project will support the creation of a dedicated Project Management Unit (PMU) in MoECCT.** The MoECCT has already established a Special Project Management Unit to expedite the implementation of the Digital Development Action Plan in line with the National Resilience and Recovery Plan. The PMU will be responsible for overall project management and coordination, procurement, financial management, citizen engagement and Interactive Beneficiary Mechanism (IBM), environmental and social safeguards, monitoring and evaluation, and communication. This component would also provide support to finance project management related issues including project coordination, financial management, and citizen engagement, and will provide support through office equipment, incremental operating costs, and audits. The project will emphasize gender equity in recruitment and retention by ensuring inclusion of women in all decision-making bodies under the project.

Legal Operational Policies**Triggered?**

Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

The project is classified to have 'low risks' at the concept stage from both the Environmental and Social sides. Post considering, in an integrated manner the project location, types of activities the project will support, which are mainly TA and soft interventions, and the scale and magnitude of potential impacts, at the concept stage. Specifically, the project will finance strengthening the enabling legal, policy, and regulatory environment and the institutional capacity for the design, implementation, and evaluation of policies in support of digital transformation and emergence of the digital economy in the Maldives and institutional and capacity building. The project also brings a number of positive benefits to the METCC by helping the digitization and management of environment-related data which will promote the efficiency of the functionality of departments, including those that work on Environmental Management within the ministry. Based on the project components identified at the concept stage, the overall risks of the project are expected to be low. The project will not involve construction or other activities that involve physical interventions to the environment to be undertaken via the use of project financing. Activities proposed under component 2 under the project include purchasing and/or replacement of IT hardware and drones and will support web and cloud-based solutions. The procurement of this equipment will lead to the generation of E-waste over the useful lifetime of their use. which may result in the generation of electronic waste at the end of the useful lifecycle of these products. Associated environmental impacts will involve, during the operational and decommissioning phase where e-waste can be generated and minimal risks of potential fire hazards that will have to be managed via strict protocols and arrangements to ensure that sound management is undertaken over the lifetime use of these products in line with the regulations of the Maldives Waste Management Department and Environmental Protection Agency and in line with international best practice guidance.



E. Implementation

Institutional and Implementation Arrangements

36. The MoECCT will be responsible for leading the overall implementation of this project, specifically through the NCIT, which reports to the MoECCT. The PMU in the MoECCT, which is currently providing fiduciary services and implementation support to most of the ongoing World Bank-financed projects, will be responsible for all fiduciary matters as well as M&E and safeguards.

While the MoECCT, through the PMU, will be leading the overall project implementation, other government agencies (beneficiaries) will be actively involved in the implementation of specific subcomponents in close collaboration with the NCIT. More specifically, CAM will be an implementing partner for Component 1.1, and DNR an implementing partner for Subcomponents 2.1. Each digital public service to be improved under Component 2 will be represented by a focal point, which will work directly with the NCIT to ensure quality, user friendliness, and appropriateness of platform capabilities. At the same time, NCIT will provide product management to ensure user-centricity by applying iterative development to prioritize user needs and learn what works as quickly as possible.

37. A Project Steering Committee (PSC) chaired by the Minister of Finance will be established to carry out high-level monitoring of the project implementation. The PSC will advise on project implementation. The PSC will have a composition acceptable to the World Bank, including the MTIT, PMU MOF and the Prime Minister Office. The mandate of the PSC will include (i) responsibility for review of project progress, (ii) provision of strategic guidance and recommendations over project implementation, and (iii) coordination of the involvement of the relevant PA agencies in the project.

38. The PMU is already created under the main implementing agency - MoECCT. MoECCT has expertise in World Bank-financed project management. The PMU will have a project director, procurement and fiduciary management specialists, environment and social specialists, project coordinators and specialists specific to the project components. The overall approach to the PMU staffing will be to use existing capacities and human resources at the government agencies at the maximum capacity.

39. Assessment of the implementing agency is underway. The PMU will have designated account and will undergo procurement and FM risk assessments. Once PPSD for the PMU is ready, the procurement plan and Project Operational Manual will be prepared.

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