

5. Maldives

The Republic of Maldives is formed by two chains of 26 atolls in the Indian Ocean. The largest city and the administrative division of Maldives is in the city of Malé. Maldives has several geographically distinguishing features compared to the other countries in the region; it is the smallest Asian country both in terms of population and area, further with an average ground level of 1.5 meters from sea, Maldives is the lowest lying country in the world.

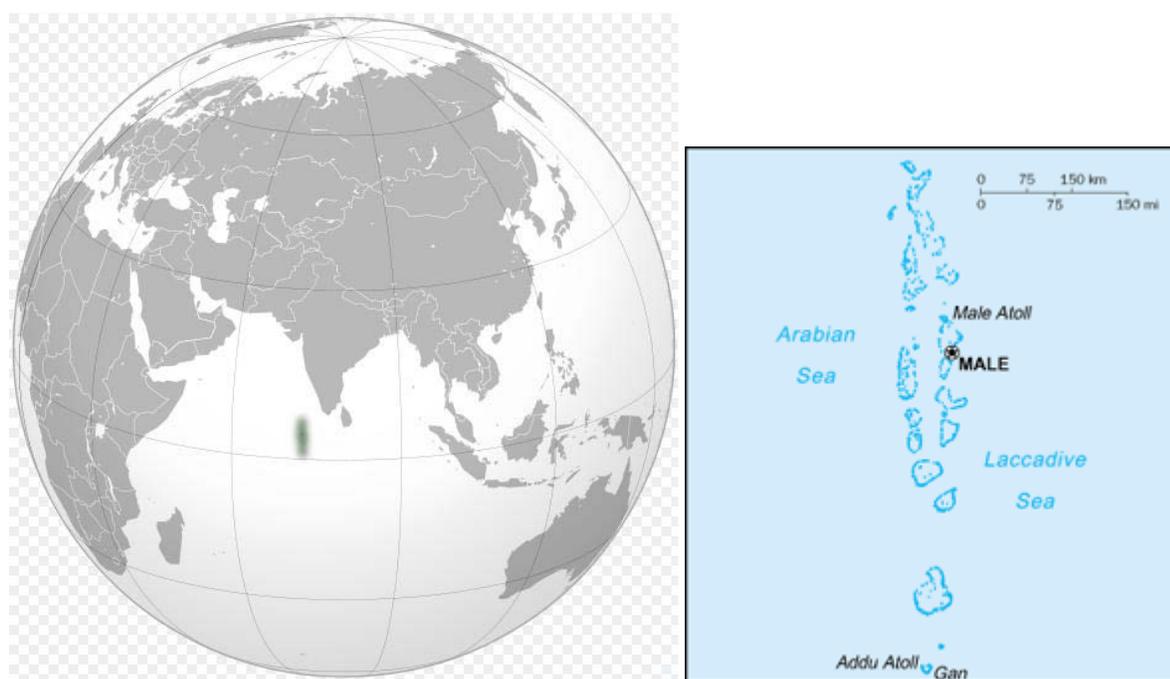


Figure 6: Map of Maldives

Source: www.wikipedia.org; www.cia.gov

The government of Maldives began the process of economic reform in 1989 by opening up the economy. Tourism is the largest industry in Maldives accounting for almost 28% of the GDP; fishing is the second largest industry. Agriculture and manufacturing have a lesser role in the economy of the country.

Some of the key demographic and economic indicators are given as follows:

Table 14: Key Demographic and Economic Indicators - Maldives

Parameter	Value	Year
Population	306,000	2007
Gross domestic growth (million US \$)	1,055	2007
GDP per capita (US \$)	3453.7	2007
Human development index ranking	95/182	2009
Population below poverty line	21%	2004

Source: <http://unstats.un.org>; www.cia.gov; <http://hdr.undp.org>

5.1. Background

The MoE is responsible for the overall administration of the education system in Maldives. There are a total of about 230 schools run primarily by the government, offering education at primary, secondary, and higher secondary levels. The MoE recognizes the opportunity provided by ICT in the education sector and to that end has initiated several schemes including making available one laptop for every teacher. Further, the Ministry has a distinct IT Services division under it which is responsible for planning and managing effective use of ICT, creating adequate ICT infrastructure, providing technical support for developing EMIS, and other applications across the sector and also maintaining the MoE Web site.

The Ministry of Civil Aviation and Communication is responsible for pacing up the process of integrating ICT into education. It has worked toward establishing community-based telecentres in every inhabited island to help bridge the digital divide, to facilitate e-government, and empower the islanders to take the opportunities available through ICT connectivity.

Some of the key education indicators are given as follows:

Table 15: Education Parameters - Maldives

Education parameter		Value	Year
Adult literacy rate	Male	97.1	2000–2007
	Female	97.3	2000–2007
Youth literacy rate	Male	98	2000–2007
	Female	98	2000–2007
Gross enrollment ratio (%): Primary education	Male	118	2000–2007
	Female	114	2000–2007
Gross enrollment ratio (%): Secondary education	Male	80	2000–2007
	Female	86	2000–2007
Expenditure on education (% of GDP)		8	2003–2006

Source: www.unicef.org; www.cia.gov

Since 2001, both the government and the private sector in Maldives have exerted significant efforts to develop the ICT sector and to strengthen related institutions in order to modernize the country. The government of Maldives adopted an accelerated ICT development policy when it launched its first Telecommunications Policy in 2001.

There is considerable inequality in terms of access to ICT appliances and connectivity in Maldives. There is a problem of connectivity between islanders because of the distance between the islands. Most islands are economically dependent on the capital, Male', and people must travel by boat for many hours to get there. Traveling from different parts to fetch the ICT services is an expensive undertaking. Further, as there is less travel between islands, local trade and small businesses have little information about the available resources, products, services, and needs in other atolls and islands. Telephone calls between the islands are expensive. Internet connectivity is not readily available in the islands and even in Male' Internet prices can reach up to US\$ 3 an hour.

Some of the key ICT indicators for the country are given as follows:

Table 16: ICT Parameters - Maldives

ICT parameters	Value	Year
Internet users (per 100)	23.5	2008
Internet subscribers (per 100)	5.86	2008
Broadband subscribers (per 100)	5.15	2008
Mobile coverage (%)	103	2007
Mobile subscribers (per 100)	103	2007
Personal computers (per 100)	20.08	2006–2007
Internet affordability (US \$/month)	51	2007
Mobile affordability (US\$/month)	4	2007
Radio subscribers (per 1000)	100	
Households with TV (%)	92	

Source: www.itu.int; www.mdgs.un.org; World Development Indicators Database; www.cia.gov

5.2. Policy Framework and Delivery Mechanism

Maldives has achieved more than 80% penetration in terms of telephone and Internet penetration; this figure is relatively high compared to other South Asian countries. It is also among the top ten economies that have gained most (114%) in value on the “ICT access sub index” between 2002 and 2007 (International Telecommunication Union). This upward trend in ICT penetration can be attributed to the fact that the Government of Maldives appreciates and considers ICT a pivotal factor for a developing economy. An entire section in the Seventh National Development Plan by the Ministry of Planning and National Development is dedicated to expanding current ICT levels. Some of the key ICT policies pertaining to education in the Seventh National Development Plan are given below:

Access to Computers for All Students: To overcome “technophobia” among the children of Maldives, computers are made easily available to them in schools where they can use the computers to communicate with other students and teachers, gather information through the World Wide Web and conduct research for other courses taught at school.

Larger Pool of ICT Professionals: The government envisages a need to develop adequate human resources to match the market demand for ICT. Capacity building is given importance in this regard.

The Government of Maldives recently released the Strategic Action Plan (2009-2013) which also focuses on strengthening the ICT industry. To that extent it articulates policies and plans required to expand the ICT infrastructure and ensure affordability of ICT services to all citizens.

5.3. Initiatives

The Government of Maldives has taken several initiatives to expand the current level of ICT access and awareness. Outlined in the following are some of the key initiatives related to the use of ICT in education.

Teacher Resource Center

Transport cost in Maldives is high; therefore, for children who do not have access to quality schools in their island, receiving quality education becomes expensive. Apart from students, teachers also find it difficult to travel to other islands to upgrade their skills; nearly 80% of teacher training costs are transport related. In response to this constraint, the MoE, Dhiraagu (National Telecom Service Provider), and UNICEF established Teacher Resource Centers (TRC) in 20 atolls in Maldives. Each TRC is equipped with modern technology such as “smart board” which is an interactive touch screen replacement for the traditional white board used in schools. The smart board also acts as a screen to enable students in different TRCs to see each other and discuss the curriculum. TRCs also include microwave relay and cable Internet equipment. Teachers can use the TRCs to browse the Internet and develop and download material for their lessons. Through the virtual learning environment developed for the Educational Development Centre by Cambridge International Examinations, up to 400 teachers can undergo training and interact with one another. The capital investment of this initiative was approximately \$ 3.5 million.

Electrical costs have soared in the Maldives in the wake of global fuel price hikes—compounded by the very high cost of fuel transportation to remote islands in the archipelago. We attempted to build photovoltaic renewable energy sources into the design of each TRC but the capital costs proved to be three times more expensive than the equivalent ten year operating costs using conventional diesel powered island power sources. Further innovation in the renewable energy sector should lead to diminished costs and this warrants serious further investigation as the recurrent power costs are a vulnerable element in the sustainability equation.

The choice of microwave relay for Internet services over VSAT link alternatives was made due to the high standard of service back-up offered by the Dhiraagu service provider. Line of site and range issues were carefully considered in the choice and siting of TRC units and relay antennas.

Ken Maskall, Special Advisor Asia-Pacific Shared Service Centre, UNICEF

Multipurpose Community Telecenter

To bridge the digital-divide and empower the islanders to take the opportunities available through ICT connectivity, MTC will be established which will be fully equipped with a variety of ICT services such as telephones, fax, voice mail, Internet, TV, and radio. MTC's could also be used by students to

access ICT services that are not available at school or by professionals who wish to expand their skills using online training programs.

Virtual University for Small States

The MoE has decided to participate in the Virtual University for Small States initiative, the invitation for which was extended by “The Commonwealth of Learning.” The benefit of the Virtual University is that participants would be able to take courses conducted in the universities of the Commonwealth nations through the Internet without paying any fees. Virtual University can help achieve the country’s goal of equitable access to all students, young and continuing adults.

A laptop for every Teacher

The main objective of this scheme is to provide opportunity and support to educate teachers and to instill teaching skills by means of utilizing resources of modern technology. Under this scheme a laptop will be provided to all teachers working as permanent teachers under the civil service, with the condition of paying a monthly charge in order to cover full cost of laptop within a two-year period. In this scheme, 500 laptops are to be provided each year.

Digitally Empowered Development in the Island Communities of Maldives

The purpose of this partnership project between MCST and the United Nations Development Programme (UNDP) is to empower and strengthen island communities by sharing knowledge and information among islands through a community portal. It will provide information about products and services of the islands to a much wider audience by establishing a community portal and Web sites in the local language, Dhivehi, as well as English. The project will give national and international exposure to local businesses, enhance access to markets and create awareness of ICT to improve their social and economical life. The project is an add-on to the National ICT Policy Project.

5.4. Constraints

A number of positive steps have been taken to implement ICT in education, however for further expansion and growth of the economy the government needs to identify and overcome all obstacles that hinder the efficient utilization of ICT in education. Some of the potential constraints are mentioned in the following:

Lack of competent teachers: There is a need to upgrade the skills and competencies of the teachers, only three faculty members have a doctorate qualification and 62% of the teachers have qualifications of either a first degree or less (UNESCO). There is a lack of motivation and technophobia among teachers. Steps will need to be taken to improve their IT and Internet skills before doing the same for students.

Exceptionally Expensive Internet Access: The price basket for Internet service is USD 15 per month which is almost 85% more expensive than other South Asian regions. While schools can

afford to install computers, the high cost of Internet access will discourage them from providing students with Internet facilities. This could be a major constraint in ensuring quality implementation of ICT in schools as computers are only useful for basic tools such as word and worksheets, Internet could help students communicate and share ideas with students in other atolls particularly since transport costs are high.

Income Disparity and Language: Income disparity remains high in Maldives particularly between the capital and distant islands. If equal access to ICT services is not insured, the income gap could widen considerably. Another challenge could be language difficulties since most ICT-related software and contents are in English, even though Maldives has English language in primary and secondary schools, Dhivehi still remains the local language.

5.5. Insights

Maldives is an example of a country which can reap great benefits from ICT implementation particularly because of its geographical make up and the government initiatives. Inhabitants of the many islands and atolls are isolated from one another because of the distance and sea between them and physical travel is an expensive undertaking. ICT expansion can help them to virtually reduce the geographical separation and take advantage of the education and training facilities available in other islands particularly the capital Male’.

ICT expansion has definitely been an integral part of the policy framework in Maldives; significant improvement has been seen in terms of its penetration and usage. Maldives has been able to achieve high literacy rates and has also accomplished its commitments as per the Millennium Development Goal of Universal Primary Education with a 100% enrollment rate in the primary sector. The challenge lies in harnessing ICT in education, particularly in training and motivating teachers to use ICT services. The establishment of Teacher Resource Centers is definitely a positive step toward expanding skills of teachers although more centers need to be established and more courses to be tailored for the capacity building of the trainers.

There is also a need to strengthen the delivery mechanism for policies pertaining to reduction of ICT costs; in this regard efforts will have to be made to introduce competition in the ICT industry. Maldives can gain enormous benefits by focusing on content development and curricular reform for overall improvements in the quality of education since the basic infrastructure is already in place

5.6. Select Bibliography

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www.moe.gov.mv/downloads/aid_to_pre-school.pdf. Male’, Maldives: Ministry of Education
- Iiyas Ahmed.2004. “Statistics and Indicators on ICTs in Maldives.” Maldives Telecommunication Authority. www.itu.int/ITU-D/ict/mexico04/doc/doc/42_mdv_e.pdf. Prepared for Global Indicators Workshop on Community Access to ICTs Mexico City.
- “Millennium Development Goals, Maldives Country Report.” 2007.
www.planning.gov.mv/en/content/view/82/34/Male’, Maldives: Ministry of Planning and National Development.
- Multipurpose Community Tele-centres (MCT) Project, Government of Maldives;
www.unescobkk.org/education/ict/themes/non-formal-education/regional-and-country-examples/maldives/
- Guidebook for the establishment of multi-purpose community tele-centres In the Maldives;
www.ncit.gov.mv/downloads/Guidebook.pdf

Links to Initiatives

Government Links

- Educational Development Centre: www.edc.edu.mv/
- Maldives School Statistics 2007: www.moe.gov.mv/statistics/school_statistics_2007.pdf

Schools and Education Institutions

- Maldives College of Higher Education: www.mhce.edu.mv/

Other Important Links

- UNESCO – Teacher Resource Centres:
www.portal.unesco.org/geography/en/files/10906/12353684495Maldives/Maldives
- Maldives Teacher Resource: www.edconline.edu.mv/
- Common Wealth of Learning (COL) – Virtual University for Small States:
www.col.org/progServ/programmes/Pages/VUSSC.aspx
- Education Development Centre – Maldives Teacher Resource: www.edconline.edu.mv/