



National Position Paper on Horizon 2020 Societal Challenges

MALDIVES

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1. Executive Summary

1.1. Background

The purpose of this paper is to present societal challenges in the Republic of Maldives, highlighted in Horizon 2020, under the EU's FP7 CASCADE Project towards identifying the required improvement in national policies and highlighting the research priorities within the country.

1.2. Methodology

Three approaches were used to gather information for the research carried out. First the national policies and development were evaluated in light of the statistics, to identify policy gaps and priorities for the Maldives. Secondly 28 semi-structured interviews were carried out with individuals who are experts in one or more areas of societal challenges identified. Finally 2 focus group discussions were conducted with total 11 experts who have the knowledge and experiences in one or more areas of societal challenges. . Finally all information was pooled together to obtain feedback on the research, keeping to the seven thematic challenge's identified under the EU's Horizon 2020 research program.

1.3. National priorities

Health, demographic change and wellbeing

- Expand and improve the quality of available health services & establish tertiary level health services at regional levels and ensure that all citizens have equitable access to comprehensive primary health care at island level.
- Establish sustainable health care financing and research, training and knowledge transfer activities & train professional people for sustainable and efficient health service delivery
- Improve access to medicines & Increasing access to essential, high-quality, effective and affordable medical products
- Establish regional level treatment facilities for drug addicts *and anti-social behaviourism*
- Increase public confidence in the National Health System.

Food security, sustainable agricultures, marine and maritime research and the bio-based economy

- Promote agriculture and fisheries as a means of investment and as an acceptable and feasible means of livelihood
- A national food security strategy must be formulated & Maldives should increase its effort to utilize untapped islands which can be developed into agricultural islands and increase own agricultural products.
- Introduce relevant technologies to improve harvests & establish regional food storage facilities to ensure food security among the population.
- Promote research, training and technical development in the marine, fisheries and agriculture sector & establish agriculture and fisheries financing and research for sustainability and efficiency
- Tap new fishery resources & promote marine research to improve use of marine resources.

Clean and efficient energy

- Foster Smart Cities and Communities and acquire Smart Grid and Sound Water Technologies suitable for small islands & encourage private sector involvement to ensure further development of the sector.
- Expand use of renewable technology in all sectors to reduce emissions by Encouraging private sector involvement to ensure further development of the sector.
- Strengthen a low emission development future and ensure the energy security for the Maldives
- Development of National Smart Power Grid and micrograms to ensure reliable resilient and efficient delivery of power & Utility modernization
- Promote research, training and technical development in Energy sector and deliver clean, reliable, affordable, accessible, environmentally appropriate and sustainable energy services to improve the quality of life.
- Developing suitable monitoring mechanisms, reviewing incentive mechanisms (such as subsidy) for the power sector and creating awareness programs to target demand side management are essential for improving the sector.

Smart, green and integrated transport

- Encourage regional economic development through efficient and affordable transport network.
- Facilitate private sector investments to develop transport related infrastructure.
- Establish suitable warehouses in the regional capitals.
- Encourage use of environmentally friendly, economical vehicles for transportation with Improve safety standards for all types of transport to establish better links between markets, services and people through efficient transport network.
- Achieve a balance shift towards environment friendly transport modes to bring about a sustainable transport and mobility to accomplish Carbon Neutral transport
- Encourage academia to research and understand vulnerabilities and adaptation measures in relation to transport and energy and promote research, training and technical development on Smart, green and integrated transport

Climate action, resource efficiency and raw materials

- Research on climate change impacts on Maldives ecosystems, promote technical development, harmonize the coordination and Strengthen the integration of sustainable development in economic, social and political development, ecological integrity Climate action, resource efficiency and raw materials
- Establish proper sewage and solid waste disposal systems for all communities across the country,
- Establish building codes for constructing climate resilient infrastructure.
- Develop a mechanism to ensure that climate change is integrated in all sectors of economic and social and ensure that the citizens of the Maldives respect for, and preservation of, the values, culture and traditions of Maldives
And Incorporate climate change information in the national curriculum.
- Foster sustainable development while ensuring security, economic sustainability and sovereignty from the negative consequences of changing climate.

A changing world: inclusive, innovative and reflective societies

- Reduce vulnerability and poverty through human development and wider employment opportunities. Increase public confidence in the National Health System.
- Achieve development beyond pre-tsunami levels through rapid recovery and reconstruction.
- Promote good governance through strengthening legal, administrative and political institutions and civil society.
- Promote sustainable and equitable economic and social development through economic diversification and promotion of corporate social responsibility.
- Ensure that the values of the society are consistent with global sustainable developments and other international commitments.
- Create an entrepreneurial culture amongst young people and Promote healthy and responsible lifestyles amongst youth towards creating youth of high moral standard and conduct programs to building people's skills and capacities, especially those of young people to shape their character.

Secure societies: protecting freedom and security of the country and its citizens

- Ensure through legislative means the protections of national sovereignty, and make Maldivian society one in which the rule of law exists effectively, , crime rates are low, country is safe and drug-free and people care about one another
- Promote research, training and technical development in security and civic education to remove corruption and political influences in policing and judicial processes and to create equity among the citizens.
- Promote regionalization with Improve access to housing and health care and enhance well-being and providing services and opportunities to minimise migrating of people to the capital
- Change Building codes and strengthens the forecasting and disaster preparedness and makes the infrastructure of the country more resilient with a strong from the impacts of climate change and its response measures.
- Improve the capacity to respond to threats to the sovereignty and independence of the Maldives which in advance will pave way for the security of our neighbouring countries and EU.

1.4. Opportunities of mutual interest for collaboration with the EU

In all seven societal challenges thematic field of the horizon 2020, a variety of opportunities of mutual interest exist for collaboration to bring together key European players and Southeast Asian in partnership, especially in EU's technology, lesson learned in establishing public-private partnership and in development concepts.



Priority areas for mutual collaboration with the EU in challenge 01 ,the health sector could can help in achieving increased productivity and quality standards in Trans-boundary diseases which have the potential for very rapid spread irrespective of national borders, causing serious socio-economic and possibly public health consequences. So as in challenge 02, the food, agricultural & livestock sector, the EU can help in achieving increased productivity provide a means for direct intense interaction between biologists working on nutrition-related, quality aspects of European food to establish a new import market. Opportunities exist to establish an integrated, multidisciplinary European-based platform with initial focus on nutrition and health-related components, but which has tools appropriate for knowledge generation and decision management system with broad applicability. For EU mutual collaboration in challenge 03 which is the energy sector, priorities included research on power energy production cooperation and assistance from various donor agencies and countries to establish systems that could effectively use renewable energy sources such as solar and wind for generating electricity. In relation to challenge 04 which is the transport sector, for EU mutual collaboration priorities included achieving and finding ways for innovation cross-cutting ways to put challenge 04 into multiple societal challenge, specifically focusing on lesson learned from EU to make transport system in place by merging cost-effective and innovative climate change adaptation methodologies.

The priority for Maldives challenge 05 which is the climate change and environment sector is where the physical vulnerability of the Maldives is due to the country's extremely low elevation and flat topography where beach erosion is the most serious environmental issue. Hence the most significant area for future mutual collaboration with EU lays in climate change adaptation programs urgencies, introducing cost-effective and innovative climate change adaptation methodologies to establish an extensive outreach programme aimed at both science and society, where this shall enhance open access to the tools and knowledge generated and to effectively manage the newly generated knowledge of climate change in EU. In the innovative and secure society sector which is challenge 6 & 7, establish a strong security surveillance system and develop an efficient and affordable Criminal Justice System with emphasis on fairness, equity and accessibility for all which in respect can build strong communication for EU collaboration in security measures. Promote sustainable and equitable economic and social development through economic diversification, Regional development and population consolidation, Promote good governance, Investigate, gather evidence and solve crimes and prevent and reduce crime and anti-social, Modernise the Maldives Foreign Service and Strengthen public diplomacy are Areas for EU collaboration.



2. Introduction

This national position paper is a brief summary of Maldives policy and interests concerning the seven thematic societal challenges identified under the EU's Horizon 2020 research programme. The paper contains a clear statement of Maldives position on the topic and clear reasoning, also suggesting priorities for action concerning the issues under consideration.

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3. Context of this position paper

3.1. CASCADE project

This national position paper is an output of the CASCADE project (Collaborative Action towards Societal Challenges through Awareness, Development, and Education) that aims to provide the foundation for a future International Cooperation Network programme targeting South Asian Countries, which will promote bi-regional coordination of Science & Technology cooperation.

The EU, whilst representing only 7% of the world's population, is responsible for 24% of world expenditure on research, 32% of high impact publications and 32% of patent applications, making it a world leader in research and innovation. However, over the past few decades, new key players have emerged within the international landscape shifting the previously dominant position held by the EU towards emerging economies.

The EU recognise a need to strengthen internationalisation through strategic policy action. The need for linkages with Asian countries has been highlighted given the region's rapidly growing research and innovation capacities and the urgency to address global challenges. South Asia in particular is home to more than 40% of the world's absolute poor, but will contribute nearly 40% of the growth in the world's working-age population in the coming decades.

CASCADE is an opportunity for raising awareness of the potential for EU-Southern Asia cooperation and stimulating regional and international participation. With the active contribution of South Asian countries, the endeavour will be to pave the way for more advanced, inclusive and innovative societies.

CASCADE is led by Professor Dilanthi Amaratunga at the Global Disaster Resilience Centre at the University of Huddersfield, UK. She can be contacted on d.amaratunga@hud.ac.uk for more information on the CASCADE project. Further details on the project can also be obtained by visiting the project web site: <http://www.cascade-inconet.eu>

3.2. Horizon 2020

The project coincides with the launch of Horizon 2020, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Running from 2014 to 2020 with a budget of just over €70 billion, the EU's new programme for research and innovation is part of the drive to tackle global societal challenges, and create new growth and jobs. International cooperation in research and innovation is an essential element for meeting the objectives of Europe 2020. Recognising the global nature of producing and using knowledge, Horizon 2020 builds on the success of international cooperation in previous framework programmes and is fully open to participation from third countries.

The 18 month CASCADE project is led by the University of Salford from the UK but targets and has the participation of all seven South Asian countries specified in the call: Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka.

During the project, the team will:

1. compile a regional position paper that identifies global challenges and research priorities
2. map and develop an inventory of national and regional stakeholders related to global challenges
3. raise awareness on research & innovation priorities for fostering cooperation and towards building mutual understanding on how to address common global societal challenges



3.3. Methodology

A mixed approach was used to analyse the information gathered during the interview/discussion. First the national policies and development were evaluated in light of the statistics, to identify policy gaps and priorities for the Maldives, adhering and keeping to the seven thematic challenges highlighted under the EU's Horizon 2020 research programme. Secondly 28 semi-structured interviews were carried out with individual's experts who have appropriate background and some with one or more areas identified in the project. From the 28 semi-structured interviews, 6 interviews were carried out over the telephone of which four were recorded. Face to face 19 interviews were carried out where 17 were recorded. And three interviews received by email, where required information was clarified over using face time and Skype. In total 80% of interviews are recorded. Finally 2 focus group discussions were conducted with several experts who have the knowledge and experiences in one or more areas of societal challenges. Participants were selected among those policy makers at various government ministries, NGOs and those who have served the country over a long period . All. The ideas shared by the participants through the interviews and focus group conducted analyzed and were pooled together to come up with the overall findings and included in the document of the project.

4. Thematic societal challenges

4.1. Health, demographic change and wellbeing

Background

Maldives comprises of 1190 coral islands that stretch 820km and having width of 120km. The population is spread across 187 islands. More than 40 of these islands are less than 25 hectares. The capital Male' is about 193 hectares and has a population density of more than 500 people per hectare. The islands are on average 1.5m above mean sea level and are often subjected to storm surges and erosion. The last census conducted in 2006 reported a population of 298,968 with 50.7% males and 49.3% females. The projected population for Maldives in 2014 is 341, 848¹. The population growth rate is at 1.69%. As of 2012, mortality rate is 7 deaths per 1000 births. Crude death rate is 3 deaths per 1000 population. Crude birth rate is 22 births per 1000 while in 2012 life expectancy at birth was 78 years². Maldives has a very high literacy rate (98%) among both males and females. There is universal access to both primary and secondary education across the country³.

Maldives has been successfully in reducing maternal mortality rates, infant mortality and in the meantime increased life expectancy. Immunization of children is very high at 92%. Maldives has also successfully eradicated or controlled most communicable diseases but health threats related to drug abuse have increased across the country. Non communicable diseases, with possible link to climate change, have become more frequent among communities. In 2010, the leading cause of death for the country was hypertensive diseases, which was 18% of the total deaths in 2011⁴. The top cause of death was heart diseases. Vector borne diseases such as Dengue and Chikungunya continue to be reported throughout the year⁵.

Maldives has a very low prevalence rate of HIV/AIDS. Malaria has been eradicated and the prevalence of TB is very low. Diabetes is at 9.28% while 81.5% of children below 5 years still suffer from anaemia. Thalassaemia (carrier rate 18-20% - 724 cases registered at National level) is a huge public concern in the Maldives. However In general, the country is in transition to a higher burden of NCDs from the communicable diseases burden. Renal diseases are other chronic disease concerns⁶. Dengue, scrub typhus and toxoplasmosis have surfaced due to environmental and climate changes

¹ Ministry of Planning and National Development, Population and housing census of Maldives, 2006

² <http://data.worldbank.org/country/maldives>

³ Republic of Maldives, Department of National Planning. Statistical yearbook of Maldives 2012. 2012

⁴ WHO Country cooperation strategy, Republic of Maldives, 2013-2017, 2013

⁵ Statistical Yearbook for Asia and the Pacific 2012 – ESCA

⁶ Republic of Maldives, Ministry of Health, Maldives health statistics 2012, 2012

Nearly 1/3 of the Maldives population is residing in the capital Male' region. The uneven population distribution within the archipelago gives rise to a range of housing and shelter problems. Malé, the capital island, is barely 1 km wide and 2 km long but has a density of 58 500 persons per 2 km (one of the highest in the world) and, with 14 107 households, has an average household size of 7.4 persons. In order to address the problem of very high population density and the environmental impact in the capital island Malé, a land reclamation project has been launched in a lagoon near the capital.⁷ This has increased social problems among the people living in Male'. Over congested roads, lack of suitable housing, drugs related issues, unhealthy eating and lifestyle are some of the problems facing the citizens. Unemployment among the youth population is high and has led to high percentage of drug abuse. Existing of gangs groups within the country has increased the crime rate immensely. Although the prevalence of HIV/AIDS is low, certain risk behaviours such as sex work and intravenous drug use, which are seen to be increasing, pose increased risk of contracting HIV in these at-risk populations. Severe overcrowding is not confined to Male'. Three other islands have even higher population densities while lacking much of Male's infrastructure and services. Strengthening the Communicable Diseases (CDs) control program in the country focusing on common risk factors and appropriate care is important. In addition globalisation, urbanisation and changes in lifestyle have also contributed to deterioration of human health. The extreme level of overcrowding places people at great risk of infections from communicable diseases.

Changes in temperature and rainfall regimes are causing higher incidence of vector-borne diseases. There is evidence that dengue outbreaks are becoming more frequent and it appears that there is an association with ENSO events⁸. The vulnerability to climate change related health risks is further compounded by local characteristics such as the high level of malnutrition in children, accessibility and quality of healthcare, high population congestion and low income levels.

Current position

Over the past decades, the country made significant progress in its health status and development indicators. However Decentralizing health care has been a challenge in Maldives due to lack of trained staff and facilities. In addition to sparse distribution of population in some regions, access and high transport costs has hindered the poor and vulnerable from obtaining tertiary health services provided by the hospitals located at the central level in the capital, Male'.

Air pollution from dust, smoke and vehicles with increased noise pollution are affecting the citizens of Male' and other congested areas. Poor disposal waste and sewage is one of the major issues affecting the ecosystems and the communities across the Maldives⁹. *“Unequal distribution of resources, facilities and opportunities has forced people from across Maldives to migrate to the capita Male'. This has resulted in overcrowding in this region leading to an increase in social, health and drug related problems in Male'¹⁰.* Lack of suitable space such as parks for relaxing and stress is also affecting the people living in Male, the capital.

⁷WHO Country Cooperation Strategy Republic of Maldives, 2013–2017, 2013.

⁸ Adapted from Climate Change Vulnerabilities of the Maldives, 2007

⁹ The National Solid Waste Management Policy (2008), Male Republic of Maldives

¹⁰ Hon. Abdulla Kamalludheen Independent consultant, Expertise in Secure society, Previous Minister of Home Affairs Rep. of Maldives.

Use of chemicals for both commercial and domestic uses is expanding throughout Maldives. New farming techniques have expanded use of pesticides by communities across the country. Unregulated use of these chemicals is affecting organisms at various levels of the food chain. In addition use of chemicals has expanded in the boat building industry as the number of fibreglass boats have increased in the recent years. Use of chemicals without proper monitoring and precautions is having significant implications on human health.

“Universal services, such as health visitors and children’s youth centres, play a vital role in identifying where children and their parents need specialist help. Adequately resourced family support is then needed to deal with issues such as domestic abuse, mental health, substance misuse and children’s behavioural problems. Family-based prevention is not just about the early years and there is strong evidence for the effectiveness of family-based therapies in preventing or reducing youth crime and anti-social behaviour Drug abuse is affecting communities across the¹¹”.-Maldives. It is threatening social, political and economic health of youth resulting in an increase in drugs related crimes and social problems-

The main challenge now is to sustain this progress as well as the achievements made by the country in improving the health and nutrition of the Maldivian population, by ensuring universal access to quality preventive and curative services and medical technologies through strengthened health systems¹².

Actions taken by the Government

The Maldives government has taken initiatives to ensure that population acquire adequate knowledge and behaviours to protect and promote their health. It encourages creation of safe and supportive environments to promote and protect health and wellbeing of its people hence improving the quality of life. It is also working towards ensuring equitable access to comprehensive primary health care for all its citizens.¹³. Efforts are also underway to establish a competent and professional health care workforce.

Due to the smallness and remoteness of the islands, access to medicines is a major challenge. Lack of equipment and facilities at regional health centres is a concern¹⁴. With this systematic policy change the introduction of contracting and accounting procedures may lead to an increase in administrative and management cost. However the government foresee that the overall activities will grow faster than the resources ensuring greater overall efficiency to the national health system. Hence to cater better for the curative aspect of healthcare services government has introduced sea ambulance and has started the establishment of pharmacies in all the islands. Further with the new focus, number of health facilities and related services demands increasing, *“Maldivian’s always wants the best service and the best medicines with the best brands¹⁵”*, which pressures the government to keep to the actual demand of the people. Though government caters to the pressure, Lifestyle risk factors are prevalent in the country and the disparity between the atolls and Male’ has increased over the past 10 years. Non-communicable diseases

11 Commissioner of police Hussain Waheed, Republic of Maldives, Junu 2014

12 WHO Country Cooperation Strategy Republic of Maldives, 2013–2017, 2013.

13 Shaheeda Adam, Director General, Ministry of Environment, Energy and water, Republic of Maldives

14 Maldives National Strategy for sustainable development (April 2009)

15 Hirantha Dias Bandaranayake, Manager New Channel Development, Business development Expert, Abbot Representative for Maldives.



(NCDs) accounted for more than 70% of all deaths and disease burden.¹⁶ It becomes more challenging for the state as we depend on the outer world without the proper transport system in place.

Government has taken initiatives to assist drug victims to reintegrate them into mainstream society by providing users access to treatment and rehabilitation facilities¹⁷.

The revised curriculum promotes life-skills, civic education and values among the youth through formal schooling. Additional course and apprentice programs are conducted by both government and private sector for school leavers to encourage youth employment

Recommendations

- Expand and improve the quality of available health services & establish tertiary level health services at regional levels and ensure that all citizens have equitable access to comprehensive primary health care at island level & provide easier access to healthcare with the help of modern resources.
- Establish sustainable health care financing and research, training and knowledge transfer activities & train professional people for sustainable and efficient health service delivery
- Improve access to medicines & Increasing access to essential, high-quality, effective and affordable medical products
- Establish regional level treatment facilities for drug addicts *and anti-social behaviourism*
- Address the social, economic and environmental determinants of health as a means of reducing health inequities within the countries
- Implement partnership with UN partners, other government sectors and civil society at national and subnational levels
- Strengthen technological infrastructure of health delivery system to properly maintain the patient records, mobilise resources & establish a mechanism to cut down patients the waiting time.
- For prevention actions of NCD, make “*sports the best school of life*”¹⁸ by making sports and recreational activity mandatory in the school curriculum & Increase awareness among the public on healthy lifestyle choices.
- Increase awareness on proper use of chemicals for minimising health risks
- Increase public confidence in the National Health System.

¹⁶ WHO Country Cooperation Strategy Republic of Maldives, 2013–2017, 2013.

¹⁷ Drug Act 17/2011

¹⁸ His Excellency President Abdulla Yameen Abdulla , Speech on Sports , 11th Aug 2014

4.2. Food security, sustainable agricultures, marine and maritime research and the bio-based economy

Background

Maldives consists of small islands that are sparsely spread over Indian Ocean covering a territorial area of 90,000 km². About 99% of this territory is sea and the population is spread across 187 islands. The socio-economic status of the population has improved significantly since 1975 due to the rapid growth of tourism and fisheries. In the Maldives both tuna and reef fish resources are the main source of protein for the population and tuna is served almost daily in every household¹⁹. Maldives also has the highest per capita consumption of fish in the world. Both fisheries and agriculture plays a significant role in providing food security to the peoples of the Maldives. In 2012 GDP share of agriculture was 2.3% while fishery was 1.7%. Unfortunately shortage of suitable land for cultivation and fresh water for irrigation has prevented farmers from investing in agricultural ventures²⁰. Both fishery and agriculture sector provide employment for 7.1% and 5.2% of the population respectively.

Except for fresh tuna and few other agricultural products, Maldives heavily relies on imported food. The heavy dependence on imports with limited storage facilities across the country and the high cost of transport all contribute to food security risks. In 2012, 21% of the total imports were food items. In 2012 total fish landings were at 120 metric tons of which 47% were exported while 53% were consumed local²¹. Maldives promote environmentally friendly fishing methods such as pole-and-line which also helps to distribute earnings from fishing over a larger portion of the population. Use of large nets such as gill nets, purse seine and trawl nets are banned in Maldivian waters.

Land is very scarce in Maldives. About 1% of the 90,000km² is land. Of this only 27% of land area is used for agriculture. The highest earning crops are banana, chilli, betel leaf, watermelon, and pumpkin. Laamu Atoll has the largest cultivable land in the country. *“Due to poor quality of soil only few selected crops can be successfully grown. Coconut palm is abundant across Maldives and is used extensively”*²². Traditionally coconut palm was used to make thatch while the husk was used to make coir ropes. The wood from the tree was used for boat building.

Climate change can adversely impact both these industries through droughts, floods, soil erosion, loss of land and coral reef degradation. Loss of biodiversity due to climate change can put more pressure on both fishery and agricultural resources. Tuna are highly migratory and sensitive to biophysical conditions of the water they live in. El Nino events in the past have affected tuna catches in the Maldives. Tuna migration and abundance around the Maldives depend on the productivity of the ocean which is related to the biophysical conditions of the ocean and can be affected by climate change. Any decline in catches will affect the availability of protein to the population leading to malnutrition. Increased pressure on reef resources with climate change impacts can affect reef fish stocks threatening food security, income and tourism.

¹⁹ Department of National Planning,(2013), Statistical Year Book of Maldives 2013, Male', Maldives. <http://planning.gov.mv/yearbook2013/yearbook.html>

²⁰ Presidents Office (2013) Policy Update Document, Presidents Office, Male'

²¹ Ministry of Finance and Treasury, Department of Planning and National Development, (2013) Statistical Year book, Male', Maldives.

²² Dr Shafia, Director General Ministry of Fisheries and agriculture, Rep of Maldives

Current position

The Maldives has a very open economy and an extreme reliance on imports to meet almost all of its consumption, especially food, and 90 percent of food requirement is imported. In 2012, of total imports 21 percent were food items demonstrating huge implications for food security as well as inflation²³.

“To ensure the sustainable development of fisheries, the government promotes exports and trade; enhance infrastructure and financial services to support sector development and promote research, training and technical development in the fisheries sector. In the agriculture sector, reducing dependence on imports and improving national food security, strengthening organized farming and subsistence farming systems, applying appropriate technologies and developing the required market infrastructure are among the key goals to be implemented by the government”²⁴.

“A government partner like STO requires to establish regional food storage facilities to ensure food security among the population and to deliver food & other daily goods at a cheap rate in a sustainable manner”²⁵”. To minimise food security risks to the population the government of Maldives has removed tariffs on most essential food items imported into the country. It has also removed or minimised tariffs on equipment and materials imported for agriculture and fisheries related activities.

In addition Maldives is encouraging people to invest in both these industries by providing financial support to establish small and medium enterprises among the island communities. Government has also designated land for agricultural purposes and leased these agricultural islands for private sector investments. Climate change is another threat to food security in Maldives due to its adverse effects on crops and fish stocks. In addition sea level rise is affecting the available land for agriculture. The government of Maldives is working with FAO and IFAD through private sector participation to introduce new and innovative technology to encourage farmers and enhance sustainable development among island communities.

Actions taken by the Government

As Heavy import dependency, limited food storage and ad hoc distribution also pose severe food security risk to the population. The Maldives imports almost all food items except fresh tuna and coconut. Long-term and emergency food storage is virtually absent except for warehousing in Male' and nine other islands. The government of Maldives with assistance from FAO has prepared a master plan for the agricultural sector to support both small-scale farming and commercial agriculture. In addition a draft legislation to implement the plan has been submitted to the parliament.

In the fisheries sector, Maldives promote sustainable exploitation of resources and has obtained MSC certification for the pole-and-line skipjack tuna fishery. In 2010 a shark fishing ban throughout the Maldives EEZ came into effect. Maldives has become a member of Indian Ocean Tuna Commission and is seeking assistance from several non-governmental organisations in managing its marine ecosystems.

²³ Department of National Planning,(2013), Statistical Year Book of Maldives 2013, Male', Maldives. <http://planning.gov.mv/yearbook2013/yearbook.html>

²⁴ Ministry of Economic Development(2013), Maldives Economic Diversification strategy, , Republic of Maldives,

²⁵Dr. Mohamed Naseer, Permanent Secretary Ministry of fisheries and agriculture , Male' Maldives



Recommendations

- Promote agriculture and fisheries as a means of investment and as an acceptable and feasible means of livelihood and Opportunities must be provided for farmers to transport and market their produces Encourage public to make more informed choices on the right kind of food.
- A national food security strategy must be formulated & Maldives should increase its effort to utilize untapped islands which can be developed into agricultural islands. Increase own agricultural products and provide Opportunities for farmers to transport and market their produces.
- Introduce relevant technologies & create awareness on appropriately use of fertilizer to improve harvests & establish regional food storage facilities to ensure food security among the population and develop mechanisms to increase access to local markets by encouraging public to make more informed choices on the right kind of food.
- Promote research, training and technical development in the marine, fisheries and agriculture sector & establish agriculture and fisheries financing and research for sustainability and efficiency
- Focus on production of organic products & Encourage home gardening to reduce imports of fruits and vegetables that could be grown in the country & encourage use of hydroponic systems as an easy method and Improve postharvest handling and quality assurance.
- Promote aquaculture to address ever increasing demand for fishery produces.
- Expand poultry and livestock sectors.
- Tap new fishery resources & promote marine research to improve use of marine resources.

4.3. Clean and efficient energy

Background

Maldives relies heavily on imported oil to meet its energy requirements. In the recent years the price of oil has increased drastically. At present about 16% of the GDP (in 2010) was spent on importing oil. Large portion of this oil is diesel which is used for generating electricity and transport. The total primary energy consumption is around 340,311toe in 2009 and the energy sector is growing around 10% per year.

In 2012 more than 481 thousand tons of petroleum products worth 7.3 billion rufiyaa was imported into Maldives. About 35% of the imported fuel is use by tourist resorts while 10% of the fuel is used for fishery related activities²⁶. In the last 20 years the amount of vehicles and vessels used throughout the Maldives has increased rapidly. Improvement in living conditions and both sea and land transport have enabled many people to acquire vehicles/vessels and also travel to various parts of the country. This has also resulted in an increase in demand for energy²⁷.

Almost all the inhabited islands and tourists resorts have a powerhouse which is often located within 100m of the coastline making it vulnerable to storm surges and sea level rise. State Electric Company (STELCO) is the main electricity provider in the country and it uses around 63 million litres of diesel every year. The first greenhouse gas inventory of the Maldives, total greenhouse gases emissions, amount to 665,000 tons of carbon dioxide equivalent. Maldives has been exploiting renewable sources of power for generating electricity. Solar energy and wind energy are considered to hold the best short-term supplemental opportunities for application in Maldives.

Current position

Maldives is entirely dependent on imported fossil fuel for its energy needs which currently constitutes 23% of the GDP. Almost all electricity in the country is produced through diesel based generation, which poses a threat on the nation energy security. Production of electricity through diesel also causes emission of pollutants which can have negative impacts on human health.

Production of electricity is also costly and at presents ranges from US\$ 30 – US\$ 70 cents which is one of the highest electricity tariff in the region²⁸. The poor in the community is mostly affected by increase of tariff while the elderly is mostly like to be affected by effects of pollution. Due to the high retail tariff, the Government is spending more than US\$ 40 million on electricity subsidies for domestic consumers. This is expected to grow exponentially over the next few years due to increase of demand and also increase of diesel prices.

The ad-hoc nature in developing infrastructure and power projects in the outer islands, poor operation and maintenance of power systems has resulted in frequent power outages, extended blackout periods, higher level of pollution. In addition it has added enormously to the operational costs. In the recent years Maldives has been pursuing the use of solar power to generate electricity.

²⁶ Department of National Planning,(2013), Statistical Year Book of Maldives 2013, Male', Maldives.
<http://planning.gov.mv/yearbook2013/yearbook.html>

²⁷ Maldives National Strategy for sustainable development (April 2009)

²⁸ World Bank <http://api.worldbank.org/>



Actions taken by the Government

The government has taken initiatives to enhance national energy security by promoting renewable and environmentally sound sources of energy by introducing solar power and bio-fuels. In many resorts across Maldives solar thermal is used to heat water. Solar powered navigational lights and street lamps can be in almost every atoll of Maldives. In addition solar-diesel hybrid power generation systems have been established in some islands and in Male' photovoltaic cells have been fitted on roofs of many government building to generate electricity that is supplied to the main STELCO power grid. Initiatives are also taken to strengthen the institutional framework of the energy sector.

Recommendations

- Strengthen a low emission development future and ensure the energy security for the Maldives
- Capacity building for remote communities to manage supply side efficiency and use of renewable energy technologies to increase the efficiency.
- Foster Smart Cities and Communities and acquire Smart Grid and Sound Water Technologies suitable for small islands & encourage private sector involvement to ensure further development of the sector.
- Expand use of renewable technology in all sectors to reduce emissions by Encouraging private sector involvement to ensure further development of the sector and developing suitable monitoring mechanisms, reviewing incentive mechanisms (such as subsidy) for the power sector and creating awareness programs to target demand side management are essential for improving the sector.
- Promote research, training and technical development in Energy sector and deliver clean, reliable, affordable, accessible, environmentally appropriate and sustainable energy services to improve the quality of life.
- Establish clear and consistent policies, regulations and plans that will encourage private sector investments in renewable energy.
- Increase storage capacity for imported oil.
- Ensure that equitable development between population groups through recognition of the unique nature of each of the atolls, diversity of needs and access to opportunities, services, goods and privileges.
- Integrate economic, social and environmental objectives through mutually supportive policies and practices and manage trade-offs.

4.4. Smart, green and integrated transport

Background

Maldives consists of small islands that are sparsely spread over an Indian Ocean covering a territorial area of 90,000 km². About 99% of this territory is sea and the population is spread across 187 islands. Establishing a suitable transport network connecting the islands has always been a challenge to the government. Current modes of transport between the islands include sea and air transport.

A well-established transport network is pivotal for economic growth and for the well-being of the communities spread across the islands. Proper harbours and suitable vessels are essential components of a good ferry system. More than 50% of the inhabited islands have proper manmade harbours. Four international airports and 8 domestic airports exist have helped improve the movement of goods and people within Maldives as well as to other countries²⁹.

“Maldives is primarily based on maritime based nation, so need to move things from one end to the other, it is a big challenge it has to grow by the sea you know, the challenge comes in forms of that as a small nation the quantity is smallas a result the price, the unit cost jumps, when the unit cause jumps up, u naturally the tendency of cutting cost is the first and for most things that comes to people’s mind, so as reason so what happens is that all the other factors that supports that stable and safe transport is compromised resulting in accidents resulting in overall higher cost over a period of time and resulting in and unsafe practice in logistic management³⁰”. Hence more focused from immediate result and solution need to be changes to sustainable transport facility.

Traffic congestion is the outcome of economic growth, as economies grow, societies urbanize. Thus, even in the Maldives, individuals move from islands (rural areas) to mainly city where employment opportunities, services and means of production are high. This has increased population density in Male’ and in turn increased the demand for transportation. Almost one third of the Maldives population lives in Male’ (less than 200 hectares) where the traffic congestion is high.

Current position

The challenges Maldives faces in the context of climate change and development are similar to other small island countries, extremely high population densities, high levels of poverty, a dispersed geography of atolls over a large ocean area making communication difficult and transport expensive, and a small island economy that is physically isolated from world markets but highly susceptible to global influences.

²⁹ http://www.transport.gov.mv/Statistics/Stat_VesselTypes.pdf

³⁰ Captain Ahmed Maumoon, Republic of Maldives, Chair, Stellar Holdong Pte Ltd.

Maldives population is scattered across the country living in often small islands. Many of these islands house less than thousand people and have no means of transport between neighbouring islands without chartering a boat, which is usually very costly and not affordable for most people. Lack of inter-island transport has hampered development activities in the island/regions while most development activities have been concentrated around the capital, Male'. For most island communities it is less costly to travel by a ferry/shuttle to Male' for their basic services than to travel to the regional capital where such services are often provided. This lack of suitable transport network has often made it impossible for island communities to fully contribute to both national and regional development³¹.

Maldives is a small, low lying atoll island country and their vulnerability to climate change impacts and associated disasters are much more profound due to limited ecological, socio-economic and technological capacities. Due to limited transportation between islands communities demand that all the necessary services be provided on every inhabited island. This has obstructed development as government resources are often stretched to meet the needs of the all communities. The limitations in the inter-island transport network forced many people to migrate to the capital, Male'. This migration together with all the development activities concentrated around the capital resulted in congestion in this region³². At present the population density of Male' is more than 500 people per hectare. Harbours established across the country are not fully utilised due to poor inter-island transport system. Lack of a proper legal framework is hindering investments from the private sector.

On many Islands, due to its small size, mode of transport within islands are walking and cycling while on larger islands motor vehicles are used for transport. On islands like Male' and HulhuMale', where the population is high, public buses are operated.

Actions taken by the Government

Several National policies are available for addressing issues related to transport, however, the implementation is not very effective due to lack of awareness and stakeholder engagement during the planning process. Government policies are made to ensure that the transport system meets the mobility needs of the people, ensure that transport system meets society's economic, social and environmental needs whilst minimizing their undesirable impacts on the economy, society and environment. In some parts of the country ferries are operated linking the inhabited islands within that atoll. These ferries are operated by both public companies and private individuals. Efforts are underway to expand the transportation network to increase accessibility and shift towards environment friendly transport modes to bring about a sustainable transport and mobility of people and goods.

Recommendations

- Initiate an affordable transport network across the nation by engaging private sector.
- Encourage use of environmentally friendly, economical vehicles for transportation.
- Conduct studies to provide a better more affordable transport service.
- Establish better links between markets, services and people through efficient transport network.
- Construct suitable terminals accommodating passengers and cargo.

³¹ Ministry of Housing, Transport and Environment. (2009) .National Strategy for Sustainable Development, Ministry of Housing, Transport and Environment, Male', Maldives

³² President's Office (2013) Policy Update Document, Presidents Office, Male' Maldives



- Establish suitable warehouses in the regional capitals.
- Improve safety standards for all types of transport.
- Develop regulations for limiting number of land based vehicles in each island.
- Strengthening the monitoring of the CCTV cameras installed, for the prevention of crime, monitoring of drug activities and to for a smooth the traffic control
- Establish a computerized vehicle security system should to manage traffics, roads, commercial roads, Harbour & educational institutions to create a safer community in Male City
- Provide free transport to patients in life-threatening cases of emergency.
- Reform the Civil Justice System to provide a protective and transparent environment to encourage foreign and local investments in the Maldivian Economy

4.5. Climate action, resource efficiency and raw materials

Background

Due to impacts of global warming and resulting sea level rise we are one of the immediate victims as majority of our islands are less than 1 meter above sea level³³. The Maldives believes that climate change is the 21st Century's greatest development and security challenge.

The Maldives is one of the smallest six atoll island nations globally, with a landmass of approximately 300 sq. km. Even though the land area is small, it has a relatively large, exclusive economic zone, measuring approximately 895,000 sq. km, with 330,652 people located on the equator in the Indian Ocean consist of roughly 1,297 islands, 188 of which are populated, 105 are tourist resorts and 1004 are uninhabited islands³⁴.

The most fundamental threat facing many of the small island states like Maldives is security. Security from the impacts of rising sea level such as regular inundation, erosion, destruction of infrastructure and threats to food and water security. Several islands across Maldives face the threat of frequent flooding and ultimately submerging entirely threatening the population. Maldives is one of the smallest states with a land area of about 235km². The islands are on average about 1.5m above mean sea level. This makes the Maldives population very vulnerable to the threats of climate change. Especially threats due to sea level. There are about 187 inhabited islands and 44% of the population are within 100m from the shoreline. Almost 90% of the islands experience flooding and erosion while 37 islands are subjected to regular flooding. Most of the inhabited island are less than 1km² and just few feet above sealevel making it impossible for the people to move too far inland or climb on to higher grounds during storm surges and sever flooding. The infrastructure on many of these islands are not designed to provide protection from the impacts of floods and tropical storms. Storms can easily cripple the islands as the essential infrastructure are not too far from the shoreline.

Rising sea levels also leave salt deposits in the soil which contaminates the ground water affecting agriculture, food and water security. Frequent flooding and tidal surges often raise the water table under atolls destroying island vegetations and crops. Many island communities depend on groundwater supplies for freshwater to ensure the uninterrupted functioning of public health systems. Ensuring adequate freshwater supplies for drinking, sanitation and agriculture has been an enormous challenge to Maldives with the adverse impacts of climate change and the sparse distribution of population. Rising sea levels have also increase island erosion. Erosion is a critical problem on many small island states like Maldives. Of the 1200 coral islands in Maldives only ten islands are bigger than 2.5km². The largest island is just little bigger than 6km². The remaining islands are less than 1km². More than 64% of the inhabited island have reported severe beach erosion in the past 5 years while almost all the inhabited islands and tourist resorts have experienced some form of beach erosion. Agricultural practices and severe rain storms have also flushed the top soil into the surrounding lagoons affecting the crops and surrounding coral reefs.

³³ Ajwad Musthafa Permanent secretary, Energy Economist, Ministry of Environment and Energy.

³⁴ Department of National Development 2012, Ministry of Finance, Rep of Maldives

Both agriculture and fishing plays a significant role in providing food security to the peoples of the Maldives. The arid land available for agriculture is very limited and climate change will have additional negative impacts on the already struggling agricultural industry. Heat stress from increasing global atmospheric temperature, changes in soil moisture content due to drought, loss of rich top soil due to erosion during heavy rainfall and flooding, decrease in availability of freshwater due to salt seepage into the groundwater affecting freshwater aquifer, and inundation due to sea level rise will all affect food production through agriculture. Tuna is the main source of protein for people throughout the Maldives. Tuna are highly migratory and sensitive to biophysical conditions of the water they live in. El Nino events in the past have affected tuna catches in the Maldives. Any decline in catches will affect the availability of protein to the people which can result in malnutrition. Maldives imports almost all products other than fresh tuna and is heavily dependent on imported agricultural products. Any negative impacts on the agricultural industry would put the population at a greater risk. There are no large warehouses throughout the country ensuring essential food storage³⁵. Few storage facilities are available in Male' and on few islands but these can store essential food items like rice, flour and sugar for only few months.

Already a number of Maldives island face shortage of drinking water every year due to lack of rainfall. *"Especially during the dry season water need to be transported from male to island to 50% of the island, hence Incoherent water and sanitation program to aware people on better health conditions are also carried out³⁶".* Surface freshwater suitable for drinking and sanitation is not available in Maldives and most people in the island depend on rainwater and ground water. In some islands the communities have access to desalinated water and bottle water. Sea level rise causes saltwater intrusion into the groundwater as the islands are permeable³⁷. The groundwater in several inhabited islands in Maldives is already saline and is not very useful for drinking, agriculture or sanitation. In addition, warming of the atmosphere increases water evaporation thus reducing soil moisture and decreasing the rate of groundwater recharge.

Current position

Due to the disperse islands, over populations in the central is a main issue. It reduces the likelihood of the emergence of new urban centres that will absorb internal migrants, it also deteriorates the quality of life in Male, combined with underemployment, unemployment, traffic congestion, and the inflation of housing prices, generates overabundance of social, environmental, economic, health and safety problems. Hence quality service at regional level is required for a quality life style³⁸.

³⁵ President's Office (2013) Policy Update Document, Presidents Office, Male' Maldives

³⁶ Shaheeda Adam, Director General, Ministry of Environment, Energy and water, Republic of Maldives

³⁷ Ministry of Environment and energy(2013) , Biosphere reserve implementation Plan 2013-2017, Republic of Maldives

³⁸ Focus group discussions of this study

The majority of the budget for development goes into infrastructure projects. This includes dredging and reclamation projects, harbour development, construction of buildings, installation of desalination plants to provide drinking water, and waste water management systems. National Biodiversity Strategy and Action Plan of the Maldives, Maldives Scaling up Renewable Energy Investment Plan (2013-2017), and United Nations Framework Convention on Climate Change are some of the main policies that exist in Maldives³⁹. In 2009, the government with UNISDR developed the Strategic National Action Plan for Disaster Risk Reduction and Climate Change Adaptation (SNAP). The SNAP sought to identify a consolidated set of programs and projects to be implemented using government and donor budgets. The country's overall decentralization strategy SNAP is coordinated with the policies and plans of the government. Many of the projects are funded by external agencies such as the World Bank, the International Monetary Fund and the Asian Development Bank.

Recent major projects for the protection of environment and livelihood includes, completion of a World Bank project on environmental management worth almost USD 14 million is almost completed. Expressions of Interest were invited for the construction of a proposed bridge between Hulhule island and Malé, and the work is progressing. In March 2014 the Ministry of Housing and Infrastructure has launched the Gedhoruverikurun Program which includes two new housing schemes. The first scheme provides social housing to citizens of Malé and the second scheme provides financial support to citizens of other islands to undertake home building. In February 2014. Expressions of Interest were invited for consultancy services to survey and design sewerage facilities for 30 islands. And in December 2013. Expressions of Interest were invited for the development of a multi-specialty hospital in Hulhumale which the implementation work has begun. Importantly June 2013. The Ministry of Housing and Infrastructure signed a contract with the Maldives Transport and Contracting Company for the design and construction of 22 harbors in selected islands in the Maldives on a contractor finance basis.

Almost 80% of Maldives population are within 300m from the shore, living on an island that is hardly 1.5m above mean sea level making them extremely vulnerable to storm surges and flooding. Most of the basic facilities like houses, agricultural land, hospitals, power plants, schools and buildings are located very close to the shore as only 10 out of the 187 inhabited islands are bigger than 2.5km². Destruction of these basic infrastructures could disrupt both social and community activities due to lack of critical health services. It can also affect the economic development thus making the communities more vulnerable to respond to impacts of climate change. Thus government has formulated policies to ensure protection of communities and started to implement these through various government agencies responsible. Coastal and marine biodiversity and accounts for 98% of national exports, 89% of GDP, 62% of foreign exchange, 71% Of our national employment, High Carbon Ecosystems in Maldives.

Actions taken by the Government

National Policies are available to address climate related action, resource efficiency and raw materials. Several policies are not implemented effectively due to lack of expertise and resources. Some initiatives are already in place to protect the communities. Planting trees and protecting the trees along the shoreline of many Maldives islands has helped reduce erosion. It also protects the island from storm surges. Mining of sand from the beaches and lagoons surrounding the islands is prohibited as sand mining aggravates erosion. Government has designated sites for sand mining.

³⁹ Ministry of Environment and energy(2013) , Maldives Scaling up Renewable Energy Investment Plan (2013-2017), Republic of Maldives

Coral mining is banned throughout the country. Imported aggregates are used for construction. In many islands initiatives have been taken to plant corals to increase live coral cover on the reef. As a result it helps to increase biological diversity on the reef as well as protect the islands from large waves approaching the island. In addition to coral reefs mangroves also helps protect communities from climate change impacts. Mangroves acts as sumps absorbing flood waters during storm surges and heavy rain. It is also rich in biological diversity and provides suitable environments for both marine and terrestrial organisms to breed. Campaigns by both government and private sector have helped create some awareness among public to protect critical ecosystems. Some mangroves have been designated as protected areas.

Maldives has signed 14 conventions⁴⁰ related to environment which shows Maldives concern to climate actions and as a stimulus of these, in June 2012, at the UN Conference on Sustainable Development, RIO+20 meeting in Rio de Janeiro, Brazil, the President of Maldives announced the intention to declare the whole of Maldives as a UNESCO Biosphere Reserve. This announcement was inspired by the success achieved in designating Baa Atoll as the first UNESCO Biosphere Reserve in Maldives. Environmental threats area many in Maldives as identified in the Maldives as a Biosphere reserve implementation Plan 2013-2017 released on January 2013⁴¹. Maldives has pledge to become carbon neutral by 2020 and declared carbon neutral aspirations such as, ensure 50% of the electricity is from renewable source by 2015, targeting to achieve 50% reduction in GHG emissions in the energy sector compared to 2000 levels, reaching a saving of 7.5% of final energy consumption over 10 years until 2020⁴².

Recommendations

- Conduct awareness programs among the public to encourage sustainable use of resources and ecosystem based resource management and Fostering the use of local and traditional knowledge into climate adaptation
- Develop a mechanism to ensure that climate change is integrated in all sectors of economic and social and ensure that the citizens of the Maldives respect for, and preservation of, the values, culture and traditions of Maldives
- Conduct research related to climate change impacts on Maldives ecosystems.
- Minimise import of non-biodegradable materials into the country.
- Enhance and expand water resource storage capacity in the island communities.
- Develop a mechanism to sustain supply and management of fresh water availability for communities to adapt in changing climate and prolonged dry spell.
- Develop mechanism for adoption of sustainable adaptation technologies that are locally and traditionally appropriate.
- Ensure and Integrate sustainable financing in climate change adaptation opportunities and low emission development measures and inculcate national, regional and international climate change advocacy and awareness in cross-sectorial areas
- Strengthen adaptation actions and opportunities and build climate resilient future to address current and future vulnerabilities
- Encourage student research around the issue of local climate change and its significance to the Maldivian societies and Encourage sustainable development.

⁴⁰ <http://www.foreign.gov.mv/new/tpl/show/content/treatiesandconventions/>

⁴¹ Ministry of Environment and energy(2013) , Biosphere reserve implementation Plan 2013-2017, Republic of Maldives

⁴² Ministry of Housing, Transport and Environment. (2009) .National Strategy for Sustainable Development, Ministry of Housing, Transport and Environment, Male', Maldives



4.6. A changing world - inclusive, innovative and reflective societies

Background

Although Maldives has fully achieved MDGs 1, 4, 5 and 6 it still experiences high level of inequalities based on social group, gender and income. More work needs to be done to promote gender equality and to empower women. In terms of innovation by embracing new technology Maldives is doing well with other South Asian countries. With the Human right commission Act in Place, Maldives Promote a democratic, cohesive, caring, just society with respect for human rights and diversity that creates equal opportunities and combat discrimination in all its forms. Although education is wide spread across the country, majority of the schools do not have a proper environment and resources to cater to the needs of disabled students. Only a handful of teachers are trained to teach special needs children in the society. Two schools in Male', Jamaludheen School and Imaadhudheen School conducts special classes for the disabled children. Care Society, an NGO, also provides special education services.

All citizens are encouraged to fully participate in the political process of the country, by raising political awareness and increasing policy participation and by promoting the rule of law, raising awareness of legal matters and ensuring access to legal aid. Promotion and protection of human rights, gender equity, socio-economic and linguistic equity, and notions of a fairer nation where island communities had equitable access to basic services, are all in place. Maldivian women are subjected to violence – sometimes physical, sometimes sexual or, more often than not, both. Most of the violence is committed by the man they are married to, or are in a relationship with. Few opportunities are available for victims to report on domestic violence. Perhaps many feel that complaining would stigmatise them socially. One in every three women between the ages of 15-49 has been a victim of domestic violence. Infidelity and disobedience, most women accept, are valid reasons for taking a good beating from the husband.

People with disabilities are often sent abroad for treatment as Maldives do not have appropriate medical facilities for treating most of these patients. Hence their participation in the society are very limited. Lack of job opportunities for the disabled citizens is a great barrier. Few persons with disabilities participate in the social and economic development of their society

The income inequality still exists. Maldives needs to pave path to fill in the level of inequalities based on social group, gender and income. The Female Labour Participation Rate is 58% (2012) while Youth Unemployment is found to be 22.2% (2006). Cellular subscription is also on increase over the years.

Current position

From now on it is essential for Maldives to address climate change threats to its communities and work towards building a climate resilient community, to make the socio-economic development both inclusive, innovative reflective as well smart, green, safe and drug-free society. To attend such societal challenges the main opportunity for Maldives is to have a strong population consolidation policy in place.

Consolidation of population in larger and safer islands will decrease the risks posed by the sudden effects of tsunamis and will curb the progressive effects of the rising sea levels due to climate change⁴³. Added we need civic education made mandatory in the national curriculum to teach the coming generation to act in order to protect our society and to protect our fragile environment where the very existence of Maldives is threatened by sea level rise and global warming and to reassures people to live in harmony with the global community.

Maldives need to encourage the establishment and defend the stability of democratic institutions in the country, based on justice, fairness and openness. Improving educational, training and learning opportunities for all groups, provision of special needs education, gender should meet the needs of all people and children.

Commissioner of police highlighted that the demographics of the youth who are involved in drugs and drug related crime is a very worrying issue for the law enforcement. We believe the root cause for youth offenses is the drug epidemic. The number of youth involved in drugs and alcohol crimes keeps on increasing despite the efforts undertaken to rehabilitate the identified drug-user population.

Experimentation with drugs and alcohol during adolescence is seen to be more common these days. Unfortunately, teenagers often don't see the link between their actions today and the consequences tomorrow. They also have a tendency to feel indestructible and immune to the problems that others experience. Using alcohol and tobacco at a young age has, as you may know prominent negative health effects. Drug use is associated with a variety of negative consequences, including increased risk of serious drug use later in life, school failure, and poor judgment which may put teens at risk for accidents, violence, unplanned and unsafe sex, and suicide.

The link between drugs and alcohol-related aggression, crime and disorderly behaviour is determined to a significant effect by other factors, such as expectations, inherent aggression and the social environment. However, there is no doubt that there is a significant link. As with adults, a proportion of youth crime and anti-social behaviour occurs under the influence of drugs or alcohol. *“Islamic values needs to be incorporated and yes values education needs to be strengthened. We should respect our religion, however the conflicting issues like The “Jihad” extremism could can be tackled when values education is incorporated in the curriculum. The mutual understanding of all things need to explained and practiced to adhere to the rules, acts and regulations”⁴⁴*. The way forward is to add civic education as a subject and we have to learn it, it is a different thing, religious education values that are instilled in is not effective in this changing world, because people still lie, people still steal all of these are happening. The challenge of drug trafficking, abuse and drug related crimes pose a serious threat to national security, especially to the extent that it breeds and backup crime and creates fear among the society. *“Drug abuse among the youth has risen alarmingly over the past years. The national crime rate has been rising due to illicit drug trade and involves a number of crime syndicates”⁴⁵*.

⁴³ Hon. Mohamed Waheed Deen, Former Vice President of Maldives , Republic of Maldives,

⁴⁴ Commissioner of police Hussain Waheed, Republic of Maldives, June 2014

⁴⁵ Rtd. Mohamed Nazim, Minister of Defence and National Security , Republic of Maldives, 2014

so we have to re-evaluate where we are and newly introduce civic education that can complement the religious education that is happening, and teach it a way that people can actually relate to what is coming people are not relating, children and youth are not relating it, and the way unlike the other subjects where people are thinking about problem solving manner.

“If we introduce civic education say for instance something like a citizen education they have in US and EU to grow up in this culture, that has the certain ways for things that are, the rights and the wrongs morality and all of that are instilled in a young age. I think in civic education you have to focus on getting people to familiarize themselves with the changes of our current system of the realities of the everyday world and give them real situations where we can act and sort of get them to encourage them to approach it in a different way as they might now”⁴⁶.

Actions taken by the Government

Government has realised importance of addressing the needs of the vulnerable in the society.

Thus a social protection act, the policy is available in native language. Disability act is in place but not implemented. National Health Policy is available for addressing many issues. Initiatives are underway to make the necessary changes to some infrastructure to in accessibility for disabled people.. Government provide special medical and financial assistance for persons with disabilities under a separate scheme which has different scrutinizing procedures to the existing one for all needy people. Not all islands have specialized doctors and nurses. To improve the health of the people, government has been promoting healthy lifestyles by providing opportunities to have access to better housing.

Recommendations

- Reduce vulnerability and poverty through human development and wider employment opportunities.
- Improve access to opportunities and services through regional development and population consolidation.
- Promote good governance through strengthening legal, administrative and political institutions and civil society.
- Promote sustainable and equitable economic and social development through economic diversification and promotion of corporate social responsibility.
- Strengthen family values and national unity through investing in social, cultural and religious harmony.
- Ensure that the values of the society are consistent with global sustainable developments and other international commitments.
- Develop Youth Work Profession Create an entrepreneurial culture amongst young people and Promote healthy and responsible lifestyles amongst youth towards creating youth of high moral standard and facilitate youth participation and leadership in all social, economic and cultural spheres of the country
- Strengthen institutional frameworks and mainstream gender concerns in national policies and programs and develop mechanisms to increase economic and socio-political participation of women and Support the strengthening of the justice and legal system to provide equal rights to women

⁴⁶ Aishath Velezinee, Independent consultant/ varied governance and media civil society

- Prevent drug abuse through awareness raising and behaviour-change interventions and Conduct programs to building people's skills and capacities, especially those of young people to shape their character. treatment for drug abusers and reduce the supply of illicit drugs in the community Provide rehabilitation and Improve coordination among agencies responsible for drug control Policy

4.7. Secure societies - protecting freedom and security of the country and its citizens

Background

With the introduction of democratic multi-party system it is observed that the crime rate is increasing day by day. In 2013, theft (6681 cases) is the most common crime occurred followed by drugs related crime (3969 cases) and traffic accidents (1940 cases). Narcotics remains the basis for most of the crimes committed in the country be it either through abuse, trafficking or the influence of narcotics in the carrying out of other crimes such as gang violence, sexual violence and theft. *“Maldives what we have to focus on is judiciary, lack of rule of law, judiciary is weak, and in the dimension before the transitional phase when we tried to build the status the judiciary was thorn there, so unless. Or if we want to build the confidence we have to build confidence in the judiciary, so the most critical issue is lack of confidence. When people do not have confidence that applies them equally there is not law and order”⁴⁷*

Human trafficking is also an emerging issue. It is estimated about hundred thousand expatriate works live in the Maldives. Of these around 30,000 migrant workers are undocumented and illegal. It is estimated about 2400 new expatriate workers enter the Maldives every month. The loss of revenue to the state from the number of illegal expatriate workers in the county is approximately US\$ 4.5m per month from remittances and MRF 90m per month in visa fees. Maldives also is a destination for migrant workers, notably from Bangladesh, who comes illegally.

“The challenge of drug trafficking, abuse and drug related crimes pose a serious threat to national security, especially to the extent that it breeds and backup crime and creates fear among the society. Drug abuse among the youth has risen alarmingly over the past years. The national crime rate has been rising due to illicit drug trade and involves a number of crime syndicates”⁴⁸. The link between drugs and alcohol-related aggression, crime and disorderly behaviour is determined to a significant effect by other factors, such as expectations, inherent aggression and the social environment. However, there is no doubt that there is a significant link. As with adults, a proportion of youth crime and anti-social behaviour occurs under the influence of drugs or alcohol. *“ The young and poor who suffer from social anxiety, stress related disorder and depression being drug abuse to ‘feel better’ and lessen feelings of distress. The Maldives’ is a country where there is a significant disparity between the income and the cost of living. Thus unemployment and low incomes becomes the root of stress that could eventually lead to narcotics abuse.”⁴⁹*

Moreover, peer pressure is significant in a society where social problems due to population concentration are prevalent. With addiction, narcotics become a necessity for these people and their financial commitments begin to revolve around this habit, resulting in a shortage that leads to desperation. This in turn leads these young people to lives of crimes that may even go up to involve violence and organised criminal activity.

⁴⁷ Aishath Velezinee, Independent consultant/ varied governance and media civil society

⁴⁸ Rtd. Mohamed Nazim, Minister of Defence and National Security , Republic of Maldives, 2014

⁴⁹ Commissioner of police Hussain Waheed, Republic of Maldives, June 2014

“The demographics of the youth who are involved in drugs and drug related crime is a very worrying issue for the law enforcement. We believe the root cause for youth offenses is the drug epidemic. The number of youth involved in drugs and alcohol crimes keeps on increasing despite the efforts undertaken to rehabilitate the identified drug-user population⁵⁰”.

Current position

Male’ is one of the densely populated city’s in world, about one third of the nation’s population is living on an island of about two square kilometres. Due to the small land area people live in crowded places where building codes are not followed by majority of the people. *“People are supposed to share the land, the environment and air water between us. But we never see it been shared among the populations. Maldives is rich but is not distributed equally ”⁵¹.* As people are supposed to share the land, the environment and air water between us, t we never see it been shared among the populations. Maldives is rich but is not distributed equally. Hence we need to overcome those policies for a betterment of people
Maldives became a member state of IOM on August 5th 2011. IOM established its presence in the country in April 2013. The Maldivian authorities face the issue of efficiently control sea borders that spread over 90,000km² and at the same time the necessity to efficiently manage incoming flows of people of different natures – tourists, migrant workers and irregular migrants. More than a million tourists visited Maldives in 2013.

The Internet community in Maldives has grown rapidly over the past decade to reach hundred thousand users in 2012. This represents a penetration rate of more than 22.2 per cent of a total population of Maldives. Maldives has a very high cellular communication penetration rate with 147.9 mobile subscribers per 100 inhabitants. All inhabited highlands have access to fixed line telephones with a teledensity of 15.89 per cent. There are three licensed telecom operators, namely Dhiraagu that has been operating since 1988; Focus Infocom Raajjé (ROL) established in 2003, and, Oreedoo previously known as Wataniya which started its operation in 2005.

The accessibility of technologies is high and cybercrime is an emerging security threat, than at any other time in the history of Maldives. With the advancement in the communication network and heightened usage, critical information of government, communications systems, banking systems and personal information of individuals has been targets of cybercrimes. Cybercrimes like, blackmail, fraud and propaganda are growing at a faster rate. Hacking of a public database was also incident that need to take critical action. However majority of the cases, cybercrime has been a demonstration of technical ability rather than a specific attack.

⁵⁰ Commissioner of police Hussain Waheed, Republic of Maldives, June 2014

⁵¹ Hon. Abdulla Kamalludheen. Independent consultant, Expertise in Secure society, Previous Minister of Home Affairs Rep. of Maldives.

Actions taken by the Government

Maldives lies in the low elevation (80% below 1 meter above sea level) and flat topography of the small islands and the wide dispersion of its population in the atolls. The maximum sea level rise of 59cm by 2100 (predicted by the IPCC) due to global warming is expected to make flooding incidents more frequent and coastal erosion more prevalent. The frequency of occurrence of natural disasters in the Maldives is low. The fact that disaster preparedness became a priority of the Maldivian government only after the tsunami of 2004 was therefore quite normal.

The Department of Meteorology, however, suggests that the communities must be prepared for significant disasters. The eastern coastline of the northern and central islands is highly vulnerable to tsunami while the northern islands have the greatest exposure to storm surge hazards and cyclones. The Maldives is losing land to perennial beach erosion. Salt water has intruded into its ground water resources. Climate change is expected to have severe impacts on the small, low-lying coral islands of the Maldives because they “are highly reliant on the biological and geomorphologic functioning of the coral reef environment for their stability. The economic base, tourism and fisheries, and livelihood are directly linked to the coral reefs.

The first multi-party democratic election was held in 2008. Human rights commission of Maldives was established in 10th December 2003⁵². Maldives has been a society-driven nation throughout history. However, the establishment of a modern democracy in the Maldives requires the State to provide human-centric security in order to maintain democratic governance and to promote rule of law. In addition, Maldives has signed and ratified many international conventions for promoting and protecting human rights⁵³. It is therefore imperative that the Maldives takes a holistic approach to human-centric security. From a security perspective, the likelihood of Maldivians facing conventional security threat from another State is marginal. It is therefore essential that resources are allocated optimally to promote human security in the country.

In 2009, establishment of regional integrated multi-hazard early warning system (RIMES) was completed. Department of metrology gives forecast weather updates and early warning. Following the tsunami, the Government of Maldives acted swiftly and set up a Ministerial Committee and Task Force. A National Disaster Management Centre was established to facilitate response and coordination. The Ministry of Defence, Ministry of Finance and the Ministry of Planning and Development lead the emergency response and relief efforts in collaboration with other Departments, UN agencies and other development partners. The Centre has been the focal point for all response, relief and recovery activities

Recommendations

- Increase accessibility to judicial services, Strengthen judiciary services and ensure through legislative means the protections of national sovereignty, and make Maldivian society one in which the rule of law exists effectively , crime rates are low, country is safe and drug-free and people care about one another

⁵² President’s Office (2013) Policy Update Document, Presidents Office, Male’ Maldives

⁵³ <http://foreign.gov.mv/new/tpl/show/content/conventions01/>



- Promote research, training and technical development in security and civic education to remove corruption and political influences in policing and judicial processes and provide efficient and timely services to the public lifelong learning, skills training and talent development
- Invest in people through providing equal opportunity for education and improve the capacity to respond to threats to the sovereignty and independence of the Maldives which in advance will pave way for the security of our neighbouring countries and EU.
- Promote regionalization by providing services and opportunities to minimise migrating of people to the capital to create equity among the citizens.
- Change Building codes and strengthens the forecasting and disaster preparedness and makes the infrastructure of the country more resilient with a strong from the impacts of climate change and its response measures.
- Establish a strong security surveillance system and develop an efficient and affordable Criminal Justice System with emphasis on fairness, equity and accessibility for all which in respect can build strong communication for EU collaboration in security measures
- Use modern methods to investigate, gather evidence and solve crimes and prevent and reduce crime and anti-social behaviour to protect people and their properties through community partnership and participation
- Modernise the Maldives foreign service and Strengthen public diplomacy
- Expand, Promote and protect the rights of People with Disabilities in the future, and provide efficient services to the most vulnerable members of our society, children and adults with special needs.
- Empower women and advance protection for children, elderly, People with disabilities, poor and other vulnerable groups and establish an effective Retirement income system to promote welfare and well-being of the aged population

5. Summary

Repetitively in most interviews and focus group discussions all agrees that comprehensive policies and projects exist in all seven societal challenges. As a concern it was identified that these policies implemented are not sustained properly. Likewise due to weak Coordination and collaboration many water plants and power house projects put in place after Tsunami was not sustained and community was unable to get benefit out of it. These discussions revealed the need to have an integrated system and a policy to be in place to standardized community responsibility in all future projects, agreements, MOU and other contract, to maintain sustainability. A common recommendation raised was to put a population consolidation plan in place.

Priority areas identified in challenge 01, includes Designing cost-effective and efficient ways in the health sector inventing new integrated health policy, developing physical and technological infrastructure for health care services, training locals to work in the health sector and to establish tertiary level health services at atoll levels. In challenge 02, the food, agricultural & livestock sector, it was identified using technology to improved better integration to help in achieving increased productivity and quality standards of agricultural and fish & Eco tourism. Lack of land space, misuse of chemical fertilizers and insecticides in farming and solid waste management and sewage disposal was identified as bigger challenges across the Maldives. In challenge 03 in the energy sector, establishing a national grid and utilising renewable energy technologies to increasing electricity generation capacities, and to use renewable energy sources such as solar and wind for generating electricity and to free its heavy dependence on the imported oil for generating electricity was identified as mandatory. In relation to challenge 04 the transport sector, Use of energy efficient vehicles and vessels in the transport sector is another area in which the Government needs cooperation. Importance of public are encouraged to use battery operated vehicles.

Challenge 05 is the priority for Maldives which is the climate change and environment sector is the sector where climate change is the 21st Century's greatest development and security challenge for Maldives. With the process of coastal erosion and accretion is extremely complex with the interrelation to oceanographic, climate, geological, biological and terrestrial processes with human intervention affecting the growth and the stability of the reefs and island structure. In the innovative society & secure society sector priorities include developing and promoting the education and research environment, developing governance system, developing technological sector, developing sports and tourism sectors, conservation of the cultural and religious heritage. In the society freedom and society sector priorities included devising policies that ensure individual and community's security, introducing advanced and smart technologies for civil registration, establishing and designing crime control centres, cyber security framework and improved E-governance system.

This study underlined many opportunities of mutual interest for Maldives to collaboration with the EU, especially in using EU's technology, lesson learned in establishing public-private partnership and in development concepts. Priority areas for mutual collaboration with the EU in challenge 01 ,the health sector could can help in achieving increased productivity and quality standards in Trans-boundary diseases which have the potential for very rapid spread irrespective of national borders, causing serious socio-economic and possibly public health consequences. So as in challenge 02, the food, agricultural & livestock sector, the EU can help in achieving increased productivity provide a means for direct intense interaction between biologists working on nutrition-related, quality aspects of European food to establish a new import market. Opportunities exist to establish an integrated, multidisciplinary European-based platform with initial focus on nutrition and health-related components, but which has tools appropriate for knowledge generation and decision management system with broad applicability.



For EU mutual collaboration in challenge 03 which is the energy sector, priorities included research on power energy production cooperation and assistance from various donor agencies and countries to establish systems that could effectively use renewable energy sources such as solar and wind for generating electricity. In relation to challenge 04 which is the transport sector, for EU mutual collaboration priorities included achieving and finding ways for innovation cross-cutting ways to put challenge 04 into multiple societal challenge, specifically focusing on lesson learned from EU to make transport system in place by merging cost-effective and innovative climate change adaptation methodologies. The priority for Maldives challenge 05 which is the climate change and environment sector is where the physical vulnerability of the Maldives is due to the country's extremely low elevation and flat topography where beach erosion is the most serious environmental issue.

Hence the most significant area for future mutual collaboration with EU lays in climate change adaptation programs urgencies, introducing cost-effective and innovative climate change adaptation methodologies to establish an extensive outreach programme aimed at both science and society, where this shall enhance open access to the tools and knowledge generated and to effectively manage the newly generated knowledge of climate change in EU. In the innovative and secure society sector which is challenge 6 & 7, establish a strong security surveillance system and Modernise the Maldives Foreign Service and Strengthen public diplomacy can build strong communication for EU collaboration.

In this research Population consolidation was recognized as one of the main antidote for Maldives main societal challenges; especially where the biggest threat to Maldives is from climate change and its implication and a way to attend faced social and housing problems. Further this study brought to attention importance of Strengthening institutional frameworks, establishing results-based planning, implementing Public Private Partnerships and private sector financing, mainstream gender concerns in national policies through strengthening legal system, importance of civic education, introduction of smart grid where these would benefit for cost-effective methods for minimizing impacts of climate change. As well this study highlights that Technology and Innovations in all areas would help the communities living in the low-lying island of the Maldives to better cope with the societal challenges at large and challenges of climate change. Hence developing and promoting research related to climate change and environmental issues and educating the public should be in place as a priority for the Country. It is noted that in future all development areas should work towards introducing cost-effective methods for minimizing impacts of climate change on communities across the Maldives and adaptations to climate change policy a mandatory for the Maldives.