



Ministry of Environment, Solid Waste
Management and Climate Change



UNIVERSITY OF
MAURITIUS

Report

Half-Day Workshop

**Observatoire de L'Environnement
(Research & Development Component)**

held on 08 September 2020

Venue : Lecture Theatre 2, New Academic Complex, University of Mauritius

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1.0 Introduction

The Ministry of Environment, Solid Waste Management and Climate Change (MoE) in collaboration with the University of Mauritius, organised a half-day workshop to kick start the process of consultation with key stakeholders on the modalities and way forward on the Research & Development component of an Observatoire de L’Environnement.

The workshop was held at Lecture Theatre 2, New Academic Complex, University of Mauritius on 8th September 2020.

Some 100 participants from the public, parastatal and private sectors, academia, research institutions as well as from Non-Governmental Organisations were present for the workshop.

The agenda of the workshop is at **Annex 1**.

The list of institutions represented in the workshop is at **Annex 2**.

2.0 Context

One of the recommendations from the Assises de L’Environnement held in December 2019 is the setting up of an Observatoire de L’Environnement under the aegis of the Ministry of Environment, Solid Waste Management and Climate Change.

The main roles of the environmental observatory would be, inter alia, to:

- monitor environmental indicators to assess the state of the environment;
- generate periodic reports such as the state of the environment report;
- collect environmental data and provide accessibility to these data;
- disseminate environmental information to the public;
- disseminate the findings and recommendations of impactful research works; and
- provide evidence-based scientific information to policy makers for rational decision making and to support investment in environmental protection.

Access to scientific environmental information, improved communication and dissemination of research results are imperative in supporting evidence-based environmental decision making.

The observatory to be set up would comprise several components, one of which is the Science to Policy platform. This platform would promote research for proper policy development and to respond to emerging environmental challenges.

3.0 Welcoming Remarks and Opening ceremony

- **Welcoming Remarks from Mrs Amreeta Nivault (Master of Ceremony for the Opening session)**

Mrs Amreeta Nivault from the University of Mauritius (UoM) welcomed the eminent personalities, the guests, resource persons and participants to the half-day workshop.

- **Address by Professor Dhanjay Jhurry, CSK, GOSK, Vice-Chancellor (UOM)**

The Vice-Chancellor highlighted on the vision of the UoM to promote a ‘Research-engaged and entrepreneurial University’. He also laid the context of an unprecedented environment and climate crisis and the need for a critical mass of scientists and engineers that can tackle problems and develop actionable solutions.

Address of Vice-Chancellor is at **Annex 3**.

- **Speech by Honourable Kavydass Ramano, Minister of Environment, Solid Waste Management and Climate Change**

In his speech, the Honourable K. Ramano highlighted the importance of having the collaboration of all partners including government, parastatal, private institutions, Non-Governmental Organisations (NGOs), youth and women community for the successful functioning of the observatory. He stressed that the model of the Observatoire de L’Environnement would rest on the following four fundamental principles: inclusiveness, participation, transparency and accessibility to information.

Speech of Hon. Kavydass Ramano is at **Annex 4**.

- **Keynote Address and Opening of Workshop by Honourable Mrs Leela Devi Dookun-Luchoomun, GSCK, Vice Prime Minister, Minister of Education, Tertiary Education, Science and Technology**

In her address, the Vice Prime Minister stressed on the importance of research-based, scientifically proven data for policy making. She explained that we need to make informed choices to improve the state of the environment and help in mitigation of environmental degradation.

Key Note Address of Honourable Mrs Leela Devi Dookun-Luchoomun is at **Annex 5**.

- **Launching of the Special Edition of UoM Sustainable Development Goals (SDGs) Newsletter on Observatoire de L’Environnement: Research and Development context**

The Vice-Chancellor together with the Honourable Minister and Vice Prime Minister launched the Special Edition of UoM SDGs Newsletter on Observatoire de L’Environnement: Research and Development context.

A copy of the said newsletter can be found at
<https://www.uom.ac.mu/index.php/sdgsnewsletter>.

4.0 Exhibition by UOM Staff and Students

An exhibition of posters was put up by the UoM staff and students on some conclusive research works, namely: plastic pollution, marine ecosystems, heavy metal contamination in sea food, coral bleaching, sea water intrusion in basaltic aquifers, medicinal plants, biomedicine, mangroves, and impact of agricultural practices on water quality.

5.0 Presentations

- **Presentation by Dr. R. Foolmaun, Divisional Environment Officer, MoE**

Dr.R. Foolmaun explained on the cross-sectoral and multi-disciplinary aspects of the environment and the need to have an Observatoire de l’Environnement for an integrated and systematic approach towards improved environmental monitoring, periodic reporting, and access to environmental data. He further elaborated on the objectives of the observatoire to disseminate environmental information, to allow identification of knowledge gaps as well as for rational decision making.

He also mentioned about the 6 societal transformations described by Prof. Jeffrey David Sachs based on the 17 SDGs, namely (i) Education, Gender and Equality (ii) Health, Well-being and Demography (iii) Energy Decarbonisation and Sustainable Industry (iv) Sustainable Food, Land, Water and Oceans (v) Sustainable Cities and Communities (vi) Digital Revolution for Sustainable Development.

Presentation is at **Annex 6**.

▪ **Presentations by University of Mauritius**

6 presentations were made by representatives of the University of Mauritius, as below:

(i) **Theme: Education, Gender and Equality**

Dr Robin NUNKOO, Associate Professor, Department of Management, Faculty of Law and Management, and Head, International Centre for Sustainable Tourism and Hospitality

Presentation is at **Annex 7**.

(ii) **Theme: Health, Well-being and Demography**

Dr Marie France CHAN SUN, Associate Professor, Department of Medicine, Faculty of Science

Dr Vidushi NEERGHEEN, Associate Professor, Department of Health Sciences, Faculty of Science and Biopharmaceutical Unit, Centre for Biomedical and Biomaterials Research

Presentation is at **Annex 8**.

(iii) **Theme: Energy Decarbonisation and Sustainable Industry**

Dr Vimi DOOKHUN, Senior Lecturer, Department of Chemical and Environmental Engineering

Dr Yatindra RAMGOLAM, Senior Lecturer and Head, Department of Electrical and Electronic Engineering, Faculty of Engineering

Presentation is at **Annex 9**.

(iv) **Theme: Sustainable Food, Land, Water and Oceans**

Dr Sushma MATTAN-MOORGAWA, Senior Lecturer & Head, Department of Biosciences and Ocean Studies, Faculty of Science

Mr Shane HARDOWAR, Senior Lecturer, Department of Agricultural Production and Systems, Faculty of Agriculture

Presentation is at **Annex 10**.

(v) **Sustainable Cities and Communities**

Dr Manta NOWBUTH, Associate Professor, Department of Civil Engineering,
Faculty of Engineering

Presentation is at **Annex 11**.

(vi) **Digital Revolution for Sustainable Development**

Dr Baby GOBIN-RAHIMBUX, Acting Dean, Faculty of Information,
Communication and Digital Technologies

Presentation is at **Annex 12**.

6.0 Discussion on Modalities, Collaboration and Way Forward

The moderator, Prof Ramjeeawon gave a brief presentation on the conceptual model of an observatory, namely the 3 main components: data, analysis and communication.

Presentation is at **Annex 13**.

He drew the attention of the audience to the existing DPSIR framework (**D**rivers, **P**ressures, **S**tate, **I**mpact and **R**esponse Model of Intervention) set by United Nations Environment Programme (UNEP) that has brought to the establishment of the 17 SGDs. He also explained on the integrated policymaking process framework, namely issue identification and agenda setting, policy formulation and assessment, decision making, policy implementation, policy monitoring and evaluation.

Professor Ramjeeawon reiterated the need for clear outcomes and a sound communication strategy for the observatory to be established and that it was important to identify relevant indicators for evidence-based policy making. He was determined that for the proper functioning of such an observatory, strong collaborations will need to be established with local industries and all stakeholders.

While laying emphasis on the communication aspect, he reiterated that goals and objectives of the observatory and relevant details e.g. a pre-selection of priority indicators would need to be established first: the whole process is intended to support evidence-based decision making process.

It was also important to get consensus from all parties concerned on those indicators, on which we need to focus.

He made an important observation: that this initiative of setting up the Environment Observatory had strong political support and institutional support, both of which are key factors to its success.

Another point of reflection was made to the fact that there was a need to identify where the existing data or newly generated data would fit under the DPSIR framework. Commenting further in the aspect, he pointed out that the DPSR process was so far being met, however there was more work to be done on the 'I' side of the process, i.e. the monitoring of the changes to the environment.

From a policy point of view, there was a need to identify the problems and link them to policy assessment and support policy makers in taking the necessary actions e.g. in determining the examples of environmental indicators in the policy cycle: e.g. how much investment would be required to allow for timely restorations.

During his exposé, Prof Ramjeeawon emphasized on the key benefits that could be derived from the setting up of an observatory. He mentioned the importance to have access to data, skills and expertise and the opportunity for multi-disciplinary research on sustainable development.

Prof Ramjeeawon set the basis of the discussion by proposing to participants to reflect on six main questions.

- 1. What is the vision/purpose/objectives of the Research & Development component of the Observatory?**
- 2. What kind of activities/output are expected from this component?**
- 3. What should be the institutional set-up for collaboration?**
- 4. What should be the communication strategy/communication tools?**
- 5. How to ensure financial sustainability?**
- 6. What should be the immediate next steps?**

Prof Ramjeeawon invited Mr Jogeewar Seewoobaduth, the Ag Director of the Ministry of Environment, Solid Waste management and Climate Change to provide his views on the above list of questions.

Firstly, Mr Seewoobaduth referred to the diverse research works being done by the University of Mauritius and the good achievement in various fields of national interest. He particularly laid emphasis on the Multilateral Environmental Agreements and conventions under which Mauritius has the obligations to respond to the specific requirements. A wide range of expertise is required to fulfill same: at times requiring deep dive considerations into the subject matter.

He evoked that there was a real need for empirical data on the basis of which we can make solid, rational and scientifically-based policies as well as provide concrete evidence to support further investment into environmental protection and management.

Mr Seewoobaduth supported the motion that a list of core environmental indicators need to be determined so as to periodically assess our state of the environment. He also laid emphasis on the need to have environmental indicators to improve our international ranking, namely the World Risk Index, the Environment Performance Index, the ecological footprint, the Earth overshoot day, amongst others.

He highlighted that according to the World Risk Report 2019, Mauritius has now become the 47th country with the highest disaster risk as compared to the 2018 ranking whereby we were the 16th country with the highest disaster risk and the 10th most exposed to natural hazards. He was of the view that in fact, Mauritius is still very vulnerable and still runs the same exposure and risks. He attributed the shift in the ranking to probably a change in the methodology used for the assessment by the international experts.

While referring to the sustainability of industries, the Acting Director inferred that we shall require data to track the SDG transformations and such process required reliable data that will enable measurement of the performance of the industries.

Referring to the MV Wakashio ship wreck and oil spill event, Mr Seewoobaduth laid emphasis on the importance for Mauritius to have the capacity to collect its own data to perform the assessment of environmental damages in order to support itself with regard to claims to be made following climate related incidents or other unsolicited scenarios such as the oil spill.

While complimenting the many projects funded by international organizations, the Ag. Director stressed on the need to attract more funding both locally from local state agencies and private sector as well as from international sources for applied research works.

He emphasized on the importance of collaborations with all major stakeholders, including academic, public, private, parastatal, NGOs, the youth and the need for a proper framework that would step up our progress and lead to more applied research. He underscored the need to identify the knowledge gaps and the needs for research and policy making.

He reiterated the importance of having the Observatoire de l'Environnement for proper environmental monitoring while he attributed the importance of having the science-to-policy platform to foster Research & Development. Sub-committees could then operate under the main

umbrella. Lead coordinators and theme champions could eventually be designated to follow up with the identified themes in their related fields.

With regard to the communication strategy, Mr Seewoobaduth raised the fact that there was need for different levels of communication to target different groups and the public at large. He reiterated the need to have a State of the Environment Report every 5 years and other regular newsletters and periodic reports.

Questions / thoughts from the audience

▪ Dr Vincent Florens from the UOM

Dr Florence congratulated members for their very informative presentations in the earlier sessions. He made the following points:-

- (i) He stressed on the need to first identify the indicators of success for the project on the '*Observatoire de L'Environnement*'.
- (ii) He referred to the presentation of Dr Dookhun and mentioned that the only SDGs where the progress were on a downshift were related to biodiversity.
- (iii) There is need to prioritise the areas of focus and biodiversity should be a priority area for research, data collection, analysis, policy making and intervention.

▪ Ms Shaama Sandooeyea from Fridays for Future Mauritius

Ms Sandooeyea raised the points as below:-

- (i) Referring to the 6 SDGs transformations, she was of the view that there was need to lay more focus on resources/ biodiversity and nature-based solutions. She stressed that a priority theme should be "**Biodiversity, ecology and ecosystems**".
- (ii) Overexploitation of resources and biodiversity loss could cause a halt in local development.
- (iii) More importance should also be given to the human as an integral part of the environment. She was of the view that environment was more about people and more emphasis should be placed to benefits that go to community.
- (iv) She stressed that researchers from the social science and economics should also form part of the Observatory.

- (v) She observed that some research works were treated at micro levels only and could be scaled up to national levels.
- (vi) She proposed to open the forum to a wider audience that would include more NGOs representatives.
- (vii) With regard to the institutional set up of the observatory, she was of the view that the observatory should involve other ministries and should be hosted by another ministry higher up in the hierarchy.

On this point, the moderator, Mr Seewoobaduth, reassured the floor that environment being cross-sectoral and multi-disciplinary, all ministries would be involved.

▪ **Ms Adi Teelock from Platform Moris Lanvironman**

- (i) Ms Teelock raised concern about whether it is only UoM collaborating with the Ministry.

On this point, Mr Seewoobaduth explained that this workshop was meant to kick-start the process and would be followed by a series of focus meetings with all key stakeholders. The principle behind the setting of the observatory is participatory approach, inclusiveness and transparency.

- (ii) She stressed on the fact that faculties of Economy and Social Sciences should also be represented in future consultations.
- (iii) She commented on the need for Strategic Environmental Assessment (SEA) to evaluate the environmental implications of proposed policies, plans or programmes.
- (iv) She stressed on the need to also communicate in a layman's language and not solely in research language that policy makers only can understand.
- (v) Referring to MV Wakashio oil spill, she advocated for more transparency and communication in environmental monitoring exercises done by the Ministry of Environment.

▪ **Ms Shameelah Mamode from the Department of Continental Shelf**

- (i) Ms Mamode was of the view that a science to policy platform would bring much benefits in terms of access to environmental data and information.

- (ii) While referring to the '*Oceanic Carbonate Chemistry Observatory*' under the Mauritius Oceanography Institute, she sought clarifications as to how the different observations would work together so as to avoid duplication.

Mr Seewoobaduth again reassured that there would be synergy among ministries to avoid any duplication and a series of focus meetings would follow the workshop.

- (iii) She cautioned on the confidentiality and Intellectual Property Rights aspects of data sharing.

▪ **Dr Robin Nunkoo from UOM**

Dr Nunkoo emphasized on the need to come up with a proper definition for the term 'environment'; a definition that is not restricted to biophysical aspects, but that takes on board the human factor.

On this note, Prof Ramjeeawon raised the need to have a Steering Committee to spearhead the development and implementation of the project.

▪ **Dr T. Roshan Ramessur from UoM**

Dr Ramessur laid emphasis on the fact that we need to make sure that the DPSIR framework also addresses the link between socio-economics, governance and ecological aspects.

▪ **Ms Zahirah Dhurmeea from Ministry of Blue Economy, Marine Resources, Fisheries and Shipping**

Ms Dhurmeea acknowledged the various challenges in getting access to information/ data from researchers as well as from institutions.

She mentioned about the legal binding clauses that exist at various institutions regarding publication and dissemination of data.

▪ **Ms Myriam Blin from Charles Telfair Campus**

Ms Blin reiterated the fact that data should be disseminated to the public at large in a common language that is understood by all.

▪ **Mr Krishnadeva Pentayah from Sov Lanatir NGO**

Mr Pentayah elaborated on the active contributions of his NGO during the oil spill event. He however strongly advocated that there should have been better coordination of activities at the level of the government. He welcomed the idea of the Observatory on behalf of the NGO Sov Lanatir and congratulated the Ministry of Environment and the UoM team for the commendable initiative. He believed that there was need for more networks among all actors, including the NGOs.

7.0 Main Recommendations

The main recommendations from the discussions were:

- (i) There is need for strong political and institutional support throughout the project.
- (ii) A multi-stakeholder Steering Committee must be set up to spearhead the development and implementation of the project. Sub-committees could then operate under the observatory. Lead coordinators and theme champions could be designated to follow up with the identified themes in their related fields.
- (iii) The conceptual model of the observatory should include 3 main components: data, analysis and communication.
- (iv) There is need for different levels of communication to target different groups and the public at large. Data should be disseminated in a common language that is understood by all.
- (v) Indicators of success and clear outcomes for the project on the ‘Observatoire de L’Environnement’ must be first identified so as to meet the set targets.
- (vi) The DPSIR model could be used in identification of the environmental indicators.
- (vii) Strong collaborations, networks and partnerships with all actors including NGOs need to be established for the project.
- (viii) “Biodiversity, ecology and ecosystems” should be a priority focus.
- (ix) ‘Environment’ should be defined such that it is not restricted to biophysical aspects, but also takes on board the human factor, the social sciences and the economy. The link between socio-economics, governance and ecological aspects must also be addressed.
- (x) The observatory should have more focus in terms of monitoring of the changes to the environment.

- (xi) The observatory should be able to provide facts and evidence to support investment in environmental protection and management.
- (xii) There is need to scale up some research works being undertaken at micro levels only to national scales.
- (xiii) There is need for synergy among ministries to avoid any duplication with other local existing observatoires.
- (xiv) There is need to attract more funding by international organisations , local state agencies as well as from private sector for applied research works on environmental protection.
- (xv) Confidentiality and Intellectual Property Rights aspects of data must be looked into.
- (xvi) Challenges in getting access to information/ data from researchers as well as from institutions must be looked into.

8.0 Closing Remarks

Mr Seewoobaduth thanked all participants for their valuable suggestions and mentioned that these would be taken on board and would be further discussed in the focus meetings. He also thanked the University of Mauritius for its contribution in terms of research in environmental protection.

In his final comment, Prof Ramjeeawon reckoned that so far the linkages between UoM and the Ministry of Environment had been ad hoc. He expressed his wish that with the setting up of the Observatoire de L'Environnement and the Science to Policy Platform, this collaboration would be better structured and result-oriented. While closing the meeting, he thanked all members of the organizing team both from the Ministry of Environment, Solid Waste Management and Climate Change and from the University of Mauritius for their valuable comments.

The workshop ended at 13.00 hrs.

Gallery of photos is at **Annex 14**.

Annex 1

Agenda of the workshop

Programme of the day

Opening

09h 15-09h 17	Welcome Address
09h 17-09h 25	Address by Professor Dhanjay JHURRY, CSK, GOSK Vice Chancellor, University of Mauritius
09h 25-09h 35	Speech by Hon Kavydass RAMANO Minister of Environment, Solid Waste Management and Climate Change
09h 35-09h 45	Keynote Address and Opening of Workshop by Hon Mrs Leela Devi DOOKUN- LUCHOOMUN, GCSK Vice-Prime Minister, Minister of Education, Tertiary Education, Science and Technology
09h 45-09h 50	Launching of the Special Edition of UoM SDGs Newsletter on <i>Observatoire de L'Environnement</i> : Research & Development Component
09h 50-10h 20	Tea Break & Visit to Exhibition on Ongoing Research by UoM Staff and Students

Workshop

10h 20-10h 30 **Presentation** by Dr Rajendra Kumar Foolmaun, Divisional Environment Officer, MOE on: Setting up of the *Observatoire de l'Environnement*

10h 30- 11h 30 **Presentations by University of Mauritius**

Theme: Education, Gender and Equality

Dr Robin NUNKOO, Associate Professor, Dept of Management, Faculty of Law and Management, and Head, International Centre for Sustainable Tourism and Hospitality

Theme: Health, Well-being and Demography

Dr Marie France CHAN SUN, Associate Professor, Dept of Medicine, Faculty of Science

Dr Vidushi NEERGHEEN, Associate Professor, Dept of Health Sciences, Faculty of Science and Biopharmaceutical Unit, Centre for Biomedical and Biomaterials Research

Theme: Energy Decarbonisation and Sustainable Industry

Dr Vimi DOOKHUN, Senior Lecturer, Dept of Chemical and Environmental Engineering

Dr Yatindra RAMGOLAM, Senior Lecturer and Head, Dept of Electrical and Electronic Engineering, Faculty of Engineering

Theme: Sustainable Food, Land, Water and Oceans

Dr Sushma MATTAN-MOORGAWA, Senior Lecturer & Head, Dept of Biosciences and Ocean Studies, Faculty of Science

Mr Shane HARDOWAR, Senior Lecturer, Dept of Agricultural Production and Systems, Faculty of Agriculture

Theme: Sustainable Cities and Communities

Dr Manta NOWBUTH, Associate Professor, Dept of Civil Engineering, Faculty of Engineering

Theme: Digital Revolution for Sustainable Development

Dr Baby GOBIN-RAHIMBUX, Acting Dean, Faculty of Information, Communication and Digital Technologies

11h30 – 12h 30 **Discussion on Modalities, Collaboration and Way Forward**

Moderators:

Professor Toolseeram Ramjeawon, University of Mauritius

Mr Jogeewar Seewoobaduth, Ag. Director, Ministry of Environment, Solid Waste Management and Climate Change

Annex 2

List of institutions present

List of institutions present

- 1. Beach Authority**
- 2. Business Mauritius**
- 3. Central Water Authority**
- 4. Charles Telfair Campus**
- 5. Commonwealth Climate Fund**
- 6. Delegation of the European Union**
- 7. Department of Continental Shelf**
- 8. Energy efficiency Management Office**
- 9. Food and Agricultural Research and Extension Institute (FAREI)**
- 10. Fridays for Future Mauritius (NGO)**
- 11. Higher Education Commission**
- 12. High Commission of India**
- 13. Industrial Property Office, Ministry of Foreign Affairs, Regional Integration and International Trade**
- 14. Indian Ocean Commission**
- 15. Land Drainage Authority**
- 16. Ministry of Environment, Solid Waste Management and Climate Change**
- 17. Ministry of Housing and Lands**
- 18. Ministry of Energy and Public Utilities**
- 19. Mauritius Cane Industry Authority**
- 20. Mauritian Wildlife Foundation (NGO)**
- 21. Mauritius Meteorological Services**
- 22. Mauritius Institute of Education**
- 23. Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Fisheries Section)**
- 24. Ministry of National Infrastructure & Community Development**
- 25. Ministry of Agro-Industry and Food Security**
- 26. Ministry of Industrial Development, SMEs and Cooperatives (Industrial Division)**
- 27. National Disaster Risk Reduction and Management Centre**
- 28. National Computer Board**
- 29. National Coast Guard**
- 30. Platform Moris Lanvironman (NGO)**
- 31. Reef Conservation (NGO)**
- 32. Road Development Authority**
- 33. Sov Lanatir (NGO)**
- 34. Special Mobile Force Mauritius**
- 35. Statistics Mauritius (Environment Statistics)**

36. Traffic Management and Road Safety Unit

37. University of Mauritius

- Department of Biosciences and Ocean Studies
- Faculty of Engineering
- Department of Chemical and Environmental Engineering
- Department of Software and Information System, Faculty of Information, Communication and Digital Technologies
- Faculty of Agriculture
- Molecular Life Sciences Pole of Research Excellence , Faculty of Science
- Centre for Biomedical and Biomaterials Research

38. UN Resident Coordinator's Office for Mauritius and Seychelles

39. University of Technology Mauritius

Annex 3

**Address of Professor Dhanjay JHURRY, *CSK, GOSK*,
Vice Chancellor, University of Mauritius**

**The Ministry of Environment, Solid Waste Management and Climate Change
in Collaboration with the University of Mauritius**

OPENING CEREMONY

Half-day Workshop on the Research and Development Component of the

‘Observatoire de L’Environnement

Tuesday 8 September 2020 at 9.15 am, Lecture Theatre 2

- **Honourable (Mrs) Leela Devi Dookun-Luchoomun, GCSK,
Vice-Prime Minister and Minister of Education, Tertiary Education,
Science and Technology**
- **Honourable Kavydass Ramano, Minister of Environment, Solid Waste
Management and Climate Change**
- **Excellencies and members of the Diplomatic corps**
- **Excellency Ms Christine Umutoni, UN Resident Coordinator**
- **Deans of Faculties**
- **University Colleagues**
- **Distinguished Guests**
- **Ladies and Gentlemen**

Good morning and welcome in this newly refurbished Lecture Theatre which is hosting its first event. It is with immense pleasure and satisfaction that I welcome this partnership with the Ministry of Environment, Solid Waste Management and Climate Change entrusting the UoM to lead the Research & Development

component of the ‘Observatoire de l’Environnement’. This is perfectly in line with UoM’s vision to promote a ‘Research-engaged and entrepreneurial University’ and we are most grateful to Hon. Minister Kavydass Ramano for his trust in the UoM.

This partnership focusing on research is most timely as the world including Mauritius faces (i) an unprecedented environmental and climate crisis with air, water and ocean pollution as well as a threatening of the biodiversity (ii) a rise in technological capacity where cooperation becomes a must and (iii) the digital revolution and all accompanying disruption that causes to our traditional economic model.

To address these challenges and shifts, we cannot think in terms of either the economy or the environment. We have to embrace fully the concept of sustainability and reconcile economic development with environmental sustainability and social inclusion. The UN SDG Agenda 2030 provides us with a roadmap to achieve sustainability through 6 societal transformations: education and know-how; health and well-being, clean-energy and industry, sustainable land use, sustainable cities and digital technologies.

Science and Technology lies at the heart of all six transformations. The COVID-19 pandemic and the Wakashio oil spill have both reminded us how dependent we are on S&T and how much innovation depends on S&T. It is imperative we have in our country a critical mass of scientists and engineers that can tackle problems and develop actionable solutions. We also need to encourage the young minds to opt for the sciences. At the UoM, we have put in place several projects that support the SDGs through the Agri-Tech Park to address food security and modern agriculture, the e-library to provide access to knowledge to all, the National Road Safety Observatory to contribute to solving the road safety problem in Mauritius, the

green roof project for sustainable energy and the marine litter project for ocean pollution amongst others.

We have put in place at the UoM a mechanism to support national priority research projects of a multi-disciplinary nature such as environmental problems. So we are equipped in terms of human resources – staff and students - to efficiently lead the R&D component of the Observatoire de l'Environnement. However, goodwill is important but certainly not enough. We need funding for projects to move forward. Maybe the time is ripe to think of new funding schemes from TEC and MRIC that would address research with potential impacts on society. The MRIC has launched in a recent past the COVID-19 and the Oil Spill call for proposals. Perhaps we should have more of similar schemes.

It is important for me to say that we do not know everything at the University, nor can we do everything on our own. It is through such partnership and through global cooperation that we can bring solutions to problems we face. The 'Observatoire de l'Environnement' will serve as a platform to draw stakeholders together to share a common vision, the starting point for addressing problems.

The ACU has also launched in January last the SDG Network, which pools together Universities under specific regions. As Chair of that Network, we are reinforcing capacity in teaching and learning, Research, Engagement and Impact, Sustainable Operations and Partnerships. To further build critical mass, we are proposing at the UoM to build University SDG Clusters to accelerate tech transfer and promote innovative projects.

To mark this special occasion of the launching of the Observatoire, we have published a Special Edition of our SDG Newsletter.

Before concluding, I would like to express my grateful thanks to all those from the UoM and from the Ministry who have contributed to the mounting of today's event and to the SDG Newsletter. This has been a University-wide effort. A big thank you to CFS and his team at the services section to make sure that the lecture theatre is ready for the event.

Prof Dhanjay Jhurry, *CSK, GOSK, FAAS*

Vice-Chancellor

Annex 4

Speech of Hon. Kavydass Ramano

Allocution du

**Ministre de l'Environnement, de la Gestion des
déchets et du Changement climatique**

l'Honorable Kavydass Ramano

**Séminaire sur *L'Observatoire de L'Environnement :*
*Recherche & Développement***

Université de Maurice, Réduit

Mardi 08 septembre 2020 à 09.15

Honorable Madame Leela Devi Dookun-Luchoomun, GCSK, la vice-Première Ministre et Ministre de l'éducation, de l'enseignement supérieur, des sciences et de la technologie

Excellences, Mesdames et Messieurs du corps diplomatique

Prof. Dhanraj Jhurry, CSK, GOSK, Vice Chancelier, L'Université de Maurice

Mme Moheenee Nathoo, chef de cabinet de mon ministère

Monsieur Shiv Seewoobaduth, Directeur par intérim du Département de l'Environnement

Distingués doyens et représentants des universités, des institutions de recherche, les ONGs

Distingués Intervenants et participants

Mesdames et Messieurs,

Bonjour à tous

C'est un immense plaisir pour moi d'être des vôtres ce matin pour ce séminaire qui est un point de départ pour rallier des réflexions sur la mise en place d'un observatoire de l'environnement sous l'égide de mon ministère. Je suis très heureux de rencontrer cet impressionnant parterre d'acteurs, qui jouent un rôle très important dans la collecte de données environnementales, la recherche ainsi que dans la prise de décisions pour la protection et la gestion de l'environnement.

Je vous assure que nous partageons tous, les mêmes préoccupations environnementales ainsi que la même conviction, celui de protéger notre seule planète Terre.

Pour commencer, je voudrais saluer la présence de plusieurs hauts dignitaires, notamment la représentante des Nations Unies à Maurice ainsi que les

représentants du corps diplomatique. Je voudrais également remercier l'Université de Maurice, à travers son Vice Chancelier pour son accueil et engagement inlassable pour promouvoir les initiatives environnementales.

Le projet de l'observatoire découle des échanges et discussions franches qui ont eu lieu durant les Assises de l'Environnement en décembre 2019. Cet exercice nous a permis de franchir un grand pas en réunissant tous les acteurs engagés dans le domaine de l'environnement et du développement durable, y compris la société civile, les scientifiques et le secteur privé.

Les assises et les consultations qui ont fait suite, ont mis en lumière un certain nombre de défis environnementaux et sociaux que Maurice doit relever pour répondre aux besoins du pays et aux obligations internationales telles que les objectifs de développement durable.

Comme vous savez déjà, mon ministère élabore actuellement, un plan directeur sur l'environnement pour la République de Maurice. Le plan comprendra les orientations politiques et stratégiques sur l'environnement pour les dix années à venir (2020-2030), ainsi qu'un plan d'action pour les cinq prochaines années.

Ce document nous permettra de répondre à nos urgences et aussi d'avancer vers des résultats ambitieux pour une transition écologique.

Déjà, plusieurs mesures recommandées durant les assises ont été transmises dans le récent budget et sont en cours d'implémentation. Une des mesures phares prise tout récemment est l'interdiction des produits en plastique à usage unique à partir de 15 janvier 2021. C'est bon de souligner que l'Université de Maurice a déjà des résultats de recherche très prometteurs concernant l'utilisation et la valorisation des

fibres et autres matériaux bio, disponibles localement comme substitut au plastique.

Mesdames et messieurs,

On est tous pleinement conscient que les enjeux environnementaux à relever, en tant que petit état insulaire, sont de grande taille. Il va sans dire que le changement climatique, la protection des zones côtières et de l'environnement marin, la biodiversité, le contrôle des déchets plastiques, l'économie circulaire, la qualité de l'air et le développement durable sont des défis majeurs pour notre République.

La rapidité de l'urbanisation, l'exploitation de nos ressources, la pression sur nos écosystèmes et une consommation excédentaire sont tous des facteurs clés liés à la dégradation de l'environnement et au changement climatique.

Mesdames et messieurs,

Face à tous ces grands défis émergents et mesures à grands pas, le pourquoi d'un observatoire de l'environnement à Maurice est plus qu'évident.

Un observatoire de l'environnement est avant tout une plateforme publique pour permettre le suivi des indicateurs environnementaux, évaluer l'état différents milieux environnementaux tels que l'air, le sol, les océans, la biodiversité, l'eau, pour ainsi générer des rapports sur l'état des écosystèmes. Il sert aussi à informer et permet d'orienter les politiques environnementales.

Entre autres, l'observatoire permet des analyses prospectives et des scénarios afin de générer les rapports thématiques. L'observatoire va aussi héberger une plateforme '*Science to Policy*' pour diffuser et communiquer des travaux de recherche

concluants et ainsi, encourager davantage la recherche et le développement pour une meilleure gouvernance environnementale et une prise de décision factuelle.

En tant que petit État insulaire en développement, Maurice est écologiquement fragile. La collecte de données sur les différents milieux environnementaux tels que l'air, le sol, les océans, la biodiversité, l'eau, parmi d'autres, permettra à Maurice de mieux surveiller ses indicateurs environnementaux, d'être plus précis dans ses 'reporting' sous ses obligations internationales et aussi améliorer sa performance par rapport au classement international, par exemple le '*Human Development Index*', le '*World Risk Index*', le '*Earth Overshoot Day*', notre '*Environmental Performance Index*', notre classement au '*Biodiversity – International Union for Conservation of Nature (IUCN)*', le '*Sustainable Development Goal Index*' ainsi que notre '*Ecological footprint*'. En l'absence de données précises pour le pays, souvent les agences internationales ont recours à des données moyennes, qui ne reflètent pas la réalité.

Comme vous le savez tous, le changement climatique est une des problématiques globales majeures qui menace la stabilité socio-économique de notre planète. Nous sommes pleinement conscients de cette menace et nous nous sommes attelés à travailler pour renforcer notre résilience face aux impacts de ce phénomène et également pour soutenir notre transition écologique vers une économie à basse émission de carbone.

Le '*Climate Change Bill*' permettra une gestion optimale et multisectorielle pour combattre les aléas du dérèglement climatique. L'apport de l'Observatoire de l'Environnement sera, d'ailleurs, crucial pour soutenir la mise en œuvre des mesures préconisés sous le '*Climate Change Bill*'. L'Observatoire permettra notamment de collecter et de générer des données relatives aux émissions de gaz à

effet de serre et pour faire le suivi des mesures d'adaptation et d'atténuation au changement climatique. Ces données sont essentielles pour la préparation de nos rapports nationaux qui doivent être soumis à la Convention-cadre des Nations Unies sur le changement climatique régulièrement. Ces données aideront également à développer des stratégies et des plans d'actions pour l'adaptation et l'atténuation au changement climatique.

Au final, les données empiriques, les indicateurs environnementaux, les résultats scientifiques et les analyses sous l'observatoire vont nous permettre davantage:

- a) d'apporter plus de transparence en termes de visibilité sur les paramètres et index de l'environnement;
- b) de promouvoir la participation et l'engagement des acteurs concernés;
- c) d'étudier les différentes entités des milieux naturels tels que l'air, la biodiversité, les océans et zones côtières, les terres et sols, les eaux, les écosystèmes et ressources et donc analyser les tendances, les interactions et l'état actuel de l'environnement à Maurice;
- d) d'identifier les principaux facteurs de changements environnementaux;
- e) d'analyser l'efficacité des solutions politiques adoptées face à ces défis environnementaux;
- f) d'identifier et de combler les lacunes en matière de connaissances avec de nouvelles données pour améliorer notre capacité d'évaluer les impacts environnementaux;
- g) de construire des scénarios, modélisations et perspectives pour atteindre nos objectifs de développement durable; et
- h) de trouver les nouveaux enjeux et répercussions possibles pour formuler les politiques futures et transversales.

Mesdames et messieurs,

Mon ministère étudie actuellement les modèles des observatoires de l'environnement qui existent ailleurs et aussi des structures présentes localement tels que l'observatoire de l'énergie sous le '*Energy Efficiency Management Office*', le '*Oceanic Carbonate Chemistry Observatory*' sous le '*Mauritius Oceanography Institute*' ainsi que '*Mauritius Research Repository*' sous '*Mauritius Research and Innovation Council*', pour enfin développer le modèle approprié pour Maurice.

Le principe fondamental reste une approche participative et inclusive – '*leaving no one behind*', dans un esprit de transparence, l'accès à l'information tout en s'assurant la conformité avec le '*Intellectual Property Rights*'. Les acteurs principaux comprennent les '*data custodians*', les organismes publics, parapublics, privés, les chercheurs, les ONGs, les jeunes, entre autres.

Le but de ce séminaire aujourd'hui est donc, de rallier les chercheurs, les scientifiques, la société civile, le secteur privé ainsi que les décideurs pour provoquer des réflexions et parvenir à des discussions afin de nous aider dans le processus de la mise en place de l'observatoire de l'environnement, mais en particulier la plateforme '*Science to Policy*' qui va être hébergé sous l'observatoire.

Mesdames et Messieurs,

Actuellement, de nombreuses institutions, y compris des organismes publics, parapublics, privés et même des ONG, ont entrepris et entreprennent actuellement des travaux de recherche pertinents à Maurice. Cependant, leurs résultats et recommandations n'atteignent pas toujours les décideurs.

Il faut absolument qu'il y ait des 'network', forums et partenariats entre chercheurs et décideurs au sein du gouvernement et de l'industrie pour des échanges, partages de connaissance et réflexions en matière de la protection de l'environnement. C'est également une opportunité pour réfléchir collectivement aux défis environnementaux auxquels notre pays est confronté et identifier les *'knowledge gaps'* pour enfin focaliser les recherches.

Le but est aussi de permettre la communication de l'information scientifique à un vaste public par divers moyens, dont des bulletins électroniques et des rapports scientifiques.

Mesdames et Messieurs,

L'importance d'utiliser l'information scientifique pour étayer la prise de décisions n'est plus à démontrer. Avec l'élaboration du plan directeur de l'environnement, qui est en cours, la plateforme *'Science to Policy'* va permettre aux décideurs de prendre des décisions éclairées au sujet des défis en matière de politiques, lois et gouvernance.

Cette demi-journée d'échange aujourd'hui sera suivie d'une série de réunions de consultation ciblées avec tous les acteurs concernés, notamment les institutions de recherche, universités, les ONGs, les jeunes, le secteur public, parapublic et privé.

Je suis confiant que l'observatoire de l'environnement dans son ensemble va permettre des partenariats pour avancer vers le développement durable et une transition écologique. Mais toutefois, ces objectifs ne pourront pas être atteints sans la collaboration de tout un chacun.

Il est clair que ce projet nécessite la collaboration de tous les partenaires notamment ceux qui sont dans les secteurs de la recherche, de l'innovation et les '*data custodians*', entres autres.

Je tiens, une fois de plus, à remercier l'Université de Maurice, à travers son Vice Chancelier, pour sa collaboration avec mon ministère. Permettez-moi de souligner quelques travaux de recherche sur les sciences marines entrepris par l'Université de Maurice et qui méritent d'être mentionnés ici, notamment sur la biologie des coraux, sur les microorganismes zooplancton dont les coraux se nourrissent ainsi que sur les matériaux disponibles localement pour lutter contre les déversements de l'huile.

En ce qui concerne le naufrage de MV Wakashio, l'Université de Maurice collabore avec les experts internationaux et mon ministère pour une évaluation des impacts sociaux et environnementaux à court, moyen et long terme. L'Université va aussi être partie prenante dans les exercices dont la revue du 'National Oil Spill Contingency Plan', le 'Regional Oil Spill Contingency Plan' et 'l'Environment Protection Act' ainsi que dans la modélisation des régions en cas de catastrophes naturelles.

L'Université de Maurice collabore aussi avec mon ministère pour la mise en place d'un 'online repository' pour la collecte de toutes les données relatives au déversement d'huile de Wakashio. Ces données vont être éventuellement utilisées comme preuves juridiques et pour la formulation de réclamations auprès de la compagnie d'assurance.

Mesdames et Messieurs,

J'espère surtout que ce séminaire ouvre la voie à de nouvelles réflexions, une ère de collaboration et de partenariat avec tous les acteurs concernés.

Nous sommes convaincus qu'un tel projet permettra de soutenir efficacement nos objectifs de développement durable, notre transition écologique, la réduction des émissions de carbone et la résilience au changement climatique.

Je vous souhaite de riches et fructueuses délibérations.

Merci de votre aimable attention.

K.R

Annex 5

**Key Note Address of
Honourable Mrs Leela Devi Dookun-Luchoomun, *GSCK***

Address of Hon L.D. Dookun-Luchoomun

Vice Prime Minister,

Minister of Education, Tertiary Education, Science and Technology

Half-Day Workshop Leading to a Science –to - Policy Platform

Tuesday Sept 8, 2020

Protocol

It gives me great pleasure to be here today for this half-day workshop that will ultimately be prefatory to the setting up of ‘L’observatoire de l’environnement’.

As we know, Observatories the world over, no matter whether they happen to be geared towards terrestrial or celestial events, serve, among other things, to collect data, scientifically-proven data, that help define and inform policies. This partnership between the Ministry of Environment, Solid Waste Management and Climate Change and the University is to come up with an observatory to determine the link between environmental quality issues in our island in order to better understand how these affect the health, well-being and economical impact.

Of course, there are modalities involved, modalities that have to be worked out and defined for the setting up of such a science-to-policy platform. Today, I am certain that this threshold will be resolutely crossed.

Indeed, we all expect today’s workshop to clear the air and indicate the way forward.

Allow me at this juncture to congratulate my Colleague, the Minister of Environment, Solid Waste Management and Climate Change, for having taken the initiative quite a while ago, in December last, to hold “Les Assises de L’environnement”.

Such ‘Assises’, as we know, are always instrumental in defining the orientations that policies should take, in this case, policies on the environment.

Now, we do know that there are a number of organizations, NGOs, private individuals and others who, in their own individual ways, are contributing to raising concerns about the environment and also adopting a hands-on approach to these. The ‘Assises’ were certainly instrumental in bringing all of these persons and groups together so that all parties could look in the same direction.

However, it doesn’t suffice to read from the same script. It is also vital to ascertain that recommendations made get to be implemented, wherever feasible.

Hence, I am glad that matters have been brought to a head today. Not only has work started on the setting up of the Observatory, but today’s meeting fulfils one the objectives of the Observatory which is to develop its research and development component.

Ladies and Gentlemen,

Matters related to the environment are highly significant for a country like Mauritius, a Small Island Developing State. We know the extent to which we are highly vulnerable to climate change: we are currently situated in the 13th position in the measure of such vulnerability. We are also the 7th most exposed country to natural cataclysms like cyclonic conditions and risks pertaining to heavy rainfall.

Events that have been happening for some time now - flash floods, the recent oil spill, the loss of beach land through erosion, the global rise of sea level to the tune of 3,2 mm per year, the threat to our bio-diversity - all these serve as a wakeup call, indicating the need for us to be vigilant.

Obviously, the impact is both social and economic. We should realize that floods alone, for instance, come with a price estimated at USD 27,2 M . In addition, the impact on the fishing industry and, even more, on the Tourism industry, among others, is quite telling.

We have to face it: an increasing trend in investment today focuses on eco-tourism. Agreed, Covid 19 has led to the temporary closure of our frontiers—but *one day or the other, these will have to be opened.*

The question we will have to respond to is this: will we be in a condition to draw environmentally-minded tourists to Mauritius if our natural conservation is not vitally sustained?

But the proof of the pudding, as we say, lies in the eating. The vulnerability or otherwise of our environment has to be substantiated by evidence.

As an African proverb has it,

“When the shadow of a tree is bent, straighten the tree, not the shadow.”

The soon-to-be-set-up Observatory will help straighten the tree by relying enormously on research-based data and evidence.

And this is where the linkage between the Ministry of Environment and the UoM becomes timely and *‘fort a propos’*

I must say that collaborative research is something that my Ministry particularly encourages. This is all the more true for our public HEIs.

In fact, can a University prove its mettle by solely relying on its teaching component without due regard to a strong dosage of research?

I personally believe that one of the contributory factors to Mauritius achieving international recognition for its higher education sector is the latter's capacity to generate new knowledge through research, to transmit it effectively and ultimately, ensure its applicability.

This is why my Ministry had set up a Research Fund under the Higher Education Commission in 2017 to foster the culture of research among academics in Public HEIs. A number of Research Schemes have thus been elaborated and partnerships and collaborative ventures are encouraged not only with local but also with international partners. The linkage of the UoM to *Le Partenariat Hubert Curien, Le Réduit* for instance, is one such case where networks and bilateral exchanges become possible among University staff.

I am therefore quite pleased that the UoM should be working collaboratively with the Ministry of Environment, Solid Waste Management and Climate Change in this present context.

Ladies and Gentlemen,

Issues pertaining to the environment are a matter of concern for all of us.

And, most countries in the world now make it a point to inculcate the sound principles related to the environment right from an early age.

Our own policy about the environment in education is already clearly established. Thus, environment issues are addressed in our school curriculum. We also ensure that students are made aware of solid waste management problems, the need for conservation of our biodiversity, climate hazards, coastal erosion, soil degradation and backfilling of wetlands.

Need I therefore add that all data and evidence that will arise from the observatory will in fact be instrumental in redefining our programmes of study?

In conclusion, ladies and gentlemen, we should not forget, that very often the vulnerability of our environment, is primarily due to our own actions, the actions of human beings. We are often responsible for environmental degradation.

Hence, the very fact of having an observatory that collects, manages and sifts through all the data coming from different sources already sends a positive signal. This becomes the first concrete response to the environmental crisis: such data will help sensitize and empower both seasoned and active “warriors” for the environment as well as the average citizen. By making more informed choices, we are very likely, through combined efforts, to improve the ‘State of Health ‘ of our environment or, at the very least, help towards the mitigation of its degradation.

Let me therefore wish all of you positive deliberations so that the modalities of a sound science-to-policy platform can be enunciated.

Bon courage and God’s speed to all of you.

Thank you for your attention.

PRESENTATIONS *(please click on hyperlink to open presentations)*

Annex 6: Presentation by Dr. R. Foolmaun, Divisional Environment Officer, MoE

[Workshop environment\Ministry of Environment.pptx](#)

Annex 7: Presentation by Dr Robin NUNKOO, Associate Professor, Dept of Management, Faculty of Law and Management, and Head, International Centre for Sustainable Tourism and Hospitality

[Workshop environment\1 Education Gender and Equality - Dr R Nunkoo.pptx](#)

Annex 8: Presentation by Dr Marie France CHAN SUN, Associate Professor, Dept of Medicine, Faculty of Science and Dr Vidushi NEERGHEEN, Associate Professor, Dept of Health Sciences, Faculty of Science and Biopharmaceutical Unit, Centre for Biomedical and Biomaterials Research

[Workshop environment\2 Health Well-being and Demography - Dr M F Chan Sun and Dr V Neergheen.pptx](#)

Annex 9: Presentation by Dr Vimi DOOKHUN, Senior Lecturer, Dept of Chemical and Environmental Engineering and Dr Yatindra RAMGOLAM, Senior Lecturer and Head, Dept of Electrical and Electronic Engineering, Faculty of Engineering

[Workshop environment\3 Energy Decarbonisation and Sustainable Industry - Dr Vimi Dookhun.pptx](#)

Annex 10: Presentation by Dr Sushma MATTAN-MOORGAWA, Senior Lecturer & Head, Dept of Biosciences and Ocean Studies, Faculty of Science and Mr Shane HARDOWAR, Senior Lecturer, Dept of Agricultural Production and Systems, Faculty of Agriculture

[Workshop environment\4 Sustainable Food Land Water and Oceans - Dr S Mattan-Moorgawa and Mr S Hardowar.pptx](#)

Annex 11: Presentation by Dr Manta NOWBUTH, Associate Professor, Dept of Civil Engineering, Faculty of Engineering

[Workshop environment\Sustainable Cities and Communities SDG11 .pptx](#)

Annex 12: Presentation by Dr Baby GOBIN-RAHIMBUX, Acting Dean, Faculty of Information, Communication and Digital Technologies

[Workshop environment\6 Digital Revolution for Sustainable Development - Dr N Choramun and Mr S Jaunbuccus.pptx](#)

Annex 13: Presentation of Prof Ramjeeawon

[Workshop environment\Half Day Workshop Observatoire Environnement Moderation Final Ramjeawon.pptm](#)

Annex 14
Gallery of photos





