

*Workshop on Environment Statistics in support of the  
implementation of the FDES 2013 at Zilwa Attitude, Grand  
Gaube, Mauritius  
26 to 29 January 2015*



# Framework for the Development of Environment Statistics (FDES) Implementation in Mauritius

*Presented by  
D Balgobin, Statistician  
Statistics Mauritius  
Mauritius*

# Mauritius at a glance



- ❑ Main island – Mauritius (1,865 Km<sup>2</sup> )
- ❑ Group of smaller islands: Rodrigues, Carajos, Agaléga, Tromelin & Chagos Archipelago
- ❑ Total Land Area Republic of Mauritius: 2,040 Km<sup>2</sup>
- ❑ Population (pluralistic) : 1.3 Million
- ❑ Population density : 618 Km<sup>2</sup>
- ❑ Marine Exclusive Economic Zone : 2.3 million Km<sup>2</sup>
- ❑ Annual average rainfall : 2,100 mm
- ❑ Economic background : Services, Manufacturing, Tourism, Agriculture  
Financial services, Information and Communication
- ❑ GDP/capita : \$ 10,000

# Environmental Indicators

- Land covered by forest : 25.3%
- Land protected areas : 7.6%
- Threatened species
  - Plant : 88%
  - Animal : 89%
- Per capita CO<sub>2</sub> emission : 3 tons
- Per capita solid waste disposal : 0.97kg
- Per capita domestic water consumption : 165 litres
- Electricity from renewable sources : 21%
- Energy intensity 0.73 toe (Rs 100,000GDP at 2000 prices)

# Environment Statistics Unit



- ❑ In 1994, Statistics Mauritius started to work on the development of environmental statistics.
- ❑ In June 1999, a Statistics unit was established at the Ministry of Environment and Sustainable Development.
- ❑ Staff composition
  - 1 Statistician
  - 1 Senior Statistical Officer
  - 1 Statistical Officer
- ❑ The first Economic Social Indicator on Environment Statistics was published in 2002 with data for period 1990, 1995 and 2000.
- ❑ A team working on Environment Economic Accounts, first account was published in 2011

# Sources of data

## □ Data collected from:

- **Different Statistics Units of Statistics Mauritius** ( Energy and Water, Agriculture, Transport, Census and surveys, Trade )
- **Ministries/Departments** (Forestry services, Water Resources Unit, The Meteorological Services, Waste Water Management Authority)
- **From Reports** (Mauritius Environment Outlook, Second National Communication)
- **Census and Surveys** (mainly adding environment related questions to the Continuous Multipurpose Household Survey)

# Topics covered

❑ Information are collected and classified according to FDES 1984

- Flora
- Fauna
- Atmosphere
- Land
- Water
- Human settlements

❑ Statistics on Environment from Census and Surveys.

# Dissemination

## □ Environment statistics are disseminated in both printed copies & on Web

### ➤ Economic and Social Indicator, Environment Statistics

- Lag of seven months

### ➤ Digest of Environment Statistics

- Lag of nine months
- Presents in a single report detailed time series data relating to the environment
- Published the twelfth issue of Digest in 2013

# Dissemination

❑ Environment Economic Accounts was Published in 2011 for the years 2002 to 2009

- Water use,
- Atmospheric emissions, and
- Material flow

❑ SM is in the process of updating these accounts



# Data Availability and Action taken FDES 2013



## □ Assessment of the current situation using FDES

- Environment statistics already available and disseminated by SM were identified (160 out of 492)
  
- For Statistics not collected the key stakeholders were identified

# Data Availability - FDES 2013

**Table 4.2 The Basic Set of Environment Statistics**

**Component 1: Environmental conditions and quality**

Sub-component 1.1: Physical Conditions	Topic Statistics and Related Information (Bold Text – Core Set/Tier 1; Regular Text – Tier 2; Italicized Text – Tier 3)	Potential, Aggregations and scales	Published
<b>Topic 1.1.1:</b>			
<b>Atmosphere, Climate and weather</b>	<b>a. Temperature</b>	National    Sub-national	
	1. Monthly averages		y
	2. Minimum Monthly averages		y
	3. Maximum Monthly averages		y
	<b>b. Precipitation</b>		
	1. Annual averages		y
	2. Long-term annual averages		y
	3. Minimum Monthly value		y
	4. Maximum Monthly value		y
	<b>c. Relative humidity</b>		
	1. Minimum Monthly value		y
	2. Maximum Monthly value		y
<b>Topic 1.1.2:</b>			
<b>Hydrographic characteristics</b>	<b>e. Seas</b>	National, within coastal waters or EEZ	
	1. Coastal waters Area		n
	2. Territorial sea Area		n
	3. Exclusive Economic Zone (EEZ) (2.3.1.d) Area		y
	4. Sea level Depth		n
	5. Location		n
	6. Area of sea ice Area		n

# Data Availability - FDES 2013



Components of FDES 2013	Number of Environmental Statistics_ FDES 2013	Number of Environmental Statistics Published <sup>1</sup> in Environment Digest	Remarks
1. Environment Conditions and Quality	182	53	
2. Environmental Resources and Their Use	124	48	Out of 124 , 25 is not applicable, namely mineral and non mineral resources
3. Residuals	57	20	
4. Extreme Events and Disasters	33	0	
5. Human Settlements and Environmental Health	49	21	
6. Environment Protection, Management and Engagement	47	23	CMPHS results icw Environment Module.(19),others (4)
<b>Total</b>	<b>492</b>	<b>165</b>	

<sup>1</sup> The 165 environment statistics are published under Fauna, Flora, Atmosphere, Water, Land, Human Settlement and Statistics on Environment from census and surveys.

# Stakeholders to be contacted for data gaps



Stakeholders	Status		
	Total	Statistics Published	Statistics To be collected
Mauritius Meteorological Services	20	8	12
Foresrty Services	38	20	18
Water Resources Unit	47	12	35
Albion Fishery Research Centre	39	20	19
Central Water Authority	32	23	9
Ministry Of Environment or Finance	79	12	67
Agricultural Research Extension Unit	36	15	21
Ministry of Housing	2	0	2
Nationl Parks and Conservation Service	15	1	14
Waste Water Management Authority	11	3	8
Ministry of Local Government	19	3	16
Nationl Transport Authority	4	1	3
Ministry of Health	25	12	13
Disaster Risk Reduction Management Centre	58	0	58
Statistics Mauritius	38	35	3
UNKNOWN	29	0	29
<b>Total</b>	<b>492</b>	<b>165</b>	<b>327</b>

# Future Plan



- ❑ Strengthening of Institutional collaboration
  - Conduct meetings or workshop with all stakeholders,
    - Present FDES list of environment statistics ,
    - Discuss on relevancy and availability of data
    - Priorities data needs,
    - Take stock of which statistics exist and where
- ❑ Collect, compile, present and analyse data
  - Build up on existing statistics

# Future Plan

## Dissemination of Available Environment Statistics under the components of FDES



### Component 1 : Environment Conditions and Quality

<u><i>Topic : Atmosphere climate and weather</i></u>	
Table 1.1	Monthly mean maximum temperature, 2004– 2013
Table 1.2	Monthly mean minimum temperature, 2004 – 2013
Table 1.3	Monthly rainfall, averaged over all sugar zones, 2004 – 2013
Table 1.4	Yearly rainfall, averaged over all sugar zones by region, 2004– 2013
Table 1.5	Mean Rainfall, 2004 - 2013
Table 1.6	Monthly mean values of humidity (%) with extremes, 2013
Table 1.7	Monthly total hours of sunshine by region and station, 2004 – 2013
<u><i>Topic : Hydrographic characteristics</i></u>	
Table 1.8	Gross storage capacity and characteristics of reservoirs
<u><i>Topic : Biodiversity</i></u>	
Table 1.9	Status of Flora population,2010
Table 1.10	Status of endangered flora,2012
Table 1.11	Fauna population,2010
Table 1.12	status of endangered native fauna,2012
Table 1.13	List of land protected areas, Republic of Mauritius, 2013
Table 1.14	List of Marine Protected Areas, 2013

# Future Plan

## Dissemination of Available Environment Statistics under the components of FDES



### Component 2 : Environmental Resources and Their Use

#### *Topic: Production and use of energy from renewable and non renewable resources*

<b>Table 1.1</b>	Primary energy requirement (Energy unit), Republic of Mauritius, 2004 – 2013
<b>Table 1.2</b>	Imports of energy sources (Energy unit), Republic of Mauritius, 2004 – 2013
<b>Table 1.3</b>	Final energy consumption by sector (Energy unit), Republic of Mauritius, 2004 – 2013
<b>Table 1.4</b>	Final energy consumption by sector and type of fuel (Physical unit), Republic of Mauritius, 2004 – 2013
<b>Table 1.5</b>	Percentage share of final energy consumption by sector, Republic of Mauritius, 2004 -2013
<b>Table 1.6</b>	Electricity production, 2004 - 2013
<b>Table 1.7</b>	Plant capacity, 2004 - 2013
<b>Table 1.8</b>	Fuel input for electricity production (Energy unit), Republic of Mauritius, 2004 – 2013

#### **Topic : Land use**

<b>Table 1.9</b>	Land use by category, 1995 and 2005
<b>Table 1.10</b>	Number of mangroves planted and area covered,2011 - 2013

#### **Topic: Timber resources and their use**

<b>Table 1.11</b>	Silvicultural operations carried out in state forest land plantation, 2004 - 2013
<b>Table 1.12</b>	Number of seedlings raised by species at the nurseries of the Forestry Service, 2004 - 2013
<b>Table 1.13</b>	Number of plants issued free and sold to the public by the Forestry Service, 2004 - 2013
<b>Table 1.14</b>	Local production, imports and consumption of timber, poles and fuelwood, 2004 - 2013

# Challenges

- Lack of Resource (Stakeholders and Statistics Mauritius)
- Lack of Geospatial information
- Building capacity

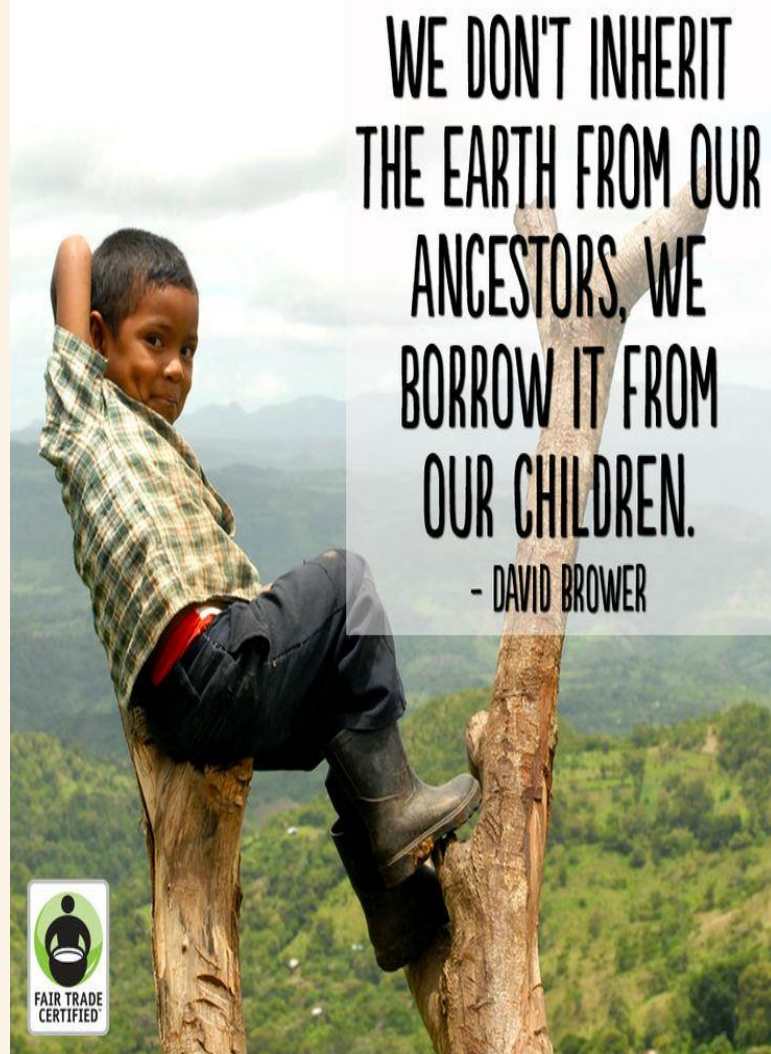


# Conclusion

- FDES has allowed us to have an overview of the status of our Environment Statistics
- Has help in identifying data gaps
- Will use FDES as a guide to organise, present and disseminate environment statistics
- The Core (minimum) set of Environment Statistics simplifies collection as a starting point
- FDES will serve as a guide for SEEA
- We hope that all stakeholders will comply with the FDES



I don't want to protect the environment.  
I want to create a world where  
the environment does not need protecting.



WE DON'T INHERIT  
THE EARTH FROM OUR  
ANCESTORS, WE  
BORROW IT FROM  
OUR CHILDREN.  
- DAVID BROWER



# Thank you