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ENVIRONMENT STATISTICS COMPENDIUM

2020

Foreword

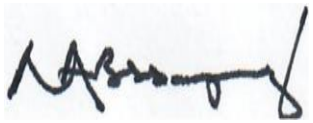
This is the first issue of the Environment Statistics Compendium; it will be an annual publication of the Gambia Bureau of Statistics.

This report presents statistics according to the United Nations Framework for the Development of Environment Statistics (FDES 2013). The FDES 2013 classifies environment statistics into six components namely: Environmental Conditions and Quality; Environmental Resources and their Use; Residuals; Extreme Events and Disasters; Human Settlements and Environmental Health; and Environmental Protection, Management and Engagement.

The statistics provided in this publication are the up to date available ones and cover up to 2017, wherever possible.

It is hoped that these statistics will prove useful to the public in general, particularly to planners, decision makers and researchers.

The compendium has been prepared with the collaboration of the National Environment Agency, Department of Forestry, Planning Service Unit of the Ministry of Agriculture, Department of Water Resources, Ministry of Environment, National Disaster Management Agency and Department of Parks and Wildlife Management. The co-operation and assistance of all these organisations are gratefully acknowledged**.**



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Statistician General

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List of acronyms

BCC	Banjul City Council
BFW	Breast Feeding Woman
CFC	Chlorofluorocarbon
CFMA	Community Forest Management Agreement
CRR	Central River Region
F	Female
GEAP	Gambia Environmental Action Plan
HC	Hydrocarbon
HCD	Houses Completely Damaged
HFC	Hydrofluorocarbon
HFO	Hydrofluoroolefins
HH	Household
HPD	Houses Partially Damaged
KMC	Kanifing Municipal Council
LGA	Local Government Area
LRR	Lower River Region
M	Male
mm	Millimetre
mt	Metric tonne
N/A	Not Available
NBR	North Bank Region
NS	Not Stated
PC	Physically Challenged
PCFMA	Preliminary Community Forest Management Agreement
PW	Pregnant Woman
RB	Roof Blown away
TR	Trace
URR	Upper River Region
VIP	Ventilated Improved Pit
WCR	West Coast Region

Introduction

The ongoing environmental challenges faced by modern societies, such as population pressure, energy issues, sustainable development and climate change has increased the demand for environment statistics. The environment is ever more present in public policies and development plans.

The realization that human wellbeing and development depending on the environment has led to an increasing emphasis on environmental and sustainability concerns. Of paramount importance to these actions is the regular production of environment statistics of the highest quality. These statistics portray key information about the state of the environment and its changes through time.

Furthermore, they give information to organizations, students and the public, and can be used as input and support for fact-based policymaking. As in other developing countries, environment statistics represent a new and emerging domain which is typically endowed with limited (technical, financial and human) resources and is challenged by an institutional setup and inter-institutional coordination that are still in development.

This Compendium is based on the structure of the Framework for the Development of Environment Statistics (FDES 2013) developed by the United Nations Statistics Division (UNSD). The FDES 2013 is a flexible, multi-purpose conceptual and statistical framework that is comprehensive and integrative in nature. It marks out the scope of environment statistics and provides an organizing structure to guide their collection and compilation and to synthesize data from various subject areas and sources, covering the issues and aspects of the environment that are relevant for analysis, policy and decision making.

The Compendium is structured in six sections following the components of the FDES 2013:

1. Environmental conditions and quality
2. Environmental resources and their use
3. Residuals
4. Extreme events and disasters
5. Human settlements and environmental health
6. Environmental protection, management and engagement

CHAPTER 1: ENVIRONMENTAL CONDITIONS AND QUALITY

1.1: MEAN TEMPERATURE (°C)

This chapter based on the FDES Component 1 on Environmental Conditions and Quality includes statistics about the physical, biological and chemical characteristics of the environment and their changes over time. These conditions determine the ecosystems characteristics and will vary in space and time as a result of natural processes and/or human influence. These fundamental background conditions are strongly interrelated and determine the types, extent, conditions and health of ecosystems. Many of these natural conditions change very slowly as a result of natural processes or human influence. Others may show immediate and dramatic effects. Importantly, changes in environmental conditions and quality are the result of combined and accumulated impacts of natural and human processes. Connecting the changes with individual activities or events is thus not a straightforward process.

Table 1.1.1: Yundum station monthly mean temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	25.5	26.9	28.3	27.2	28.5	29.1	27.6	27.6	27.3	28.2	27.7	26.5
2011	25.5	26.2	26.2	26.8	26.6	28.6	30.4	27.5	28.2	28.3	26.8	25.1
2012	26.1	27.3	28.4	28.6	28.4	27.6	27.1	26.2	25.5	25.3	24.9	25.6
2013	24.3	27.2	26.5	25.3	27.7	28.2	28.0	26.7	27.6	27.8	26.8	25.0
2014	25.3	25.6	26.1	26.2	26.3	29.1	29.0	27.6	27.8	28.5	26.2	25.7
2015	24.9	25.1	26.3	26.0	28.7	29.9	28.7	27.5	27.6	27.6	26.4	24.5
2016	26.4	27.6	26.8	26.5	25.8	27.9	27.7	28.3	27.9	28.8	27.7	26.8
2017	25.4	25.5	29.8	29.0	29.1	29.0	28.1	27.2	28.1	28.5	27.9	25.7
AVERAGE	**25.4**	**26.4**	**27.3**	**26.9**	**27.6**	**28.7**	**28.3**	**27.3**	**27.5**	**27.9**	**26.8**	**25.6**

Source: Department of Water Resources

Table 1.1.2: Jenoi station monthly mean temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	24.9	27.4	29.3	31.3	31.9	30.6	28.8	28.7	28.0	29.4	N/A	N/A
2011	N/A	N/A	N/A	30.9	30.7	30.6	29.1	28.0	28.4	29.2	27.7	24.4
2012	24.5	25.8	28.9	30.3	29.9	29.9	28.1	27.7	27.6	28.3	28.0	24.1
2013	23.8	N/A	N/A	28.6	30.7	29.6	28.8	27.5	27.9	28.9	27.5	25.3
2014	24.8	25.0	28.0	33.5	30.3	31.2	27.4	28.1	28.2	29.2	25.6	25.2
2015	29.1	26.0	26.9	30.2	30.3	30.7	28.9	28.1	28.4	28.9	27.7	24.0
2016	25.3	26.1	28.2	30.0	30.4	29.0	27.9	28.5	N/A	29.6	28.2	25.8
2017	24.7	25.8	29.1	30.6	30.7	30.3	28.8	30.2	27.4	27.4	26.1	24.5
AVERAGE	**25.3**	**26.0**	**28.4**	**30.7**	**30.6**	**30.2**	**28.5**	**28.4**	**28.0**	**28.9**	**27.3**	**24.8**

Source: Department of Water Resources

Table 1.1.3: Kerewan station monthly mean temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	25.5	26.9	28.9	29.4	29.2	29.9	27.4	28.0	26.9	27.8	26.8	26.1
2011	24.1	25.2	27.0	28.6	28.0	27.6	27.1	26.3	26.9	27.9	27.1	24.5
2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26.1	24.4
2015	23.8	25.6	26.6	28.3	28.7	28.9	27.5	26.4	26.6	27.5	27.4	25.5
2016	26.9	N/A	27.8	27.8	28.3	26.5	25.6	26.3	26.6	28.0	27.6	25.3
2017	24.4	24.6	28.4	29.5	29.0	30.5	28.6	28.4	28.8	29.6	27.6	22.7
AVERAGE	**24.9**	**25.6**	**27.7**	**28.7**	**28.7**	**28.7**	**27.2**	**27.1**	**27.2**	**28.2**	**27.1**	**24.8**

Source: Department of Water Resources

Table 1.1.4: Janjanbureh station monthly mean temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	24.7	27.2	30.2	N/A	31.3	29.1	27.8	27.9	27.7	28.0	26.1	24.9
2011	24.8	26.2	29.1	31.3	31.7	30.1	28.7	27.7	27.7	28.6	27.3	24.0
2012	25.0	26.3	29.2	30.6	31.1	30.6	28.2	27.1	27.4	28.6	28.3	24.7
2013	23.9	28.1	31.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27.7	N/A
2014	N/A	N/A	N/A	N/A	31.9	32.0	30.0	27.2	N/A	29.1	26.5	23.3
2015	23.7	26.4	26.7	30.0	30.6	34.2	28.1	27.7	27.9	28.5	26.9	23.6
2016	25.9	26.2	28.9	30.8	32.2	31.1	28.4	27.9	27.6	29.3	27.9	26.0
2017	24.2	26.7	29.9	30.6	31.4	30.7	27.4	26.5	27.8	28.6	29.4	29.8
AVERAGE	**24.6**	**26.7**	**29.3**	**30.7**	**31.5**	**31.1**	**28.4**	**27.4**	**27.7**	**28.7**	**27.5**	**25.2**

Source: Department of Water Resources

Table 1.1.5: Basse station monthly mean temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	24.7	28.8	31.4	33.4	33.4	30.9	28.4	27.9	27.9	28.4	27.3	25.9
2011	24.8	26.7	30.4	32.3	32.7	30.7	28.9	28.0	27.5	28.7	27.6	23.7
2012	24.6	26.7	30.0	32.3	31.8	31.0	28.1	27.5	27.6	29.3	29.2	25.1
2013	25.1	28.7	31.5	32.2	33.0	31.9	28.9	27.6	28.1	28.9	28.3	25.7
2014	26.0	30.0	27.0	33.0	33.0	31.5	29.9	27.9	27.2	29.1	28.1	25.0
2015	24.9	27.9	29.6	32.1	32.9	32.1	28.5	27.8	27.9	28.7	27.3	23.4
2016	25.4	25.8	29.5	32.5	33.3	30.8	28.6	28.1	27.5	29.9	27.9	25.5
2017	25.4	26.7	31.3	30.8	32.8	32.1	28.6	28.0	28.9	30.4	28.9	30.4
AVERAGE	**25.1**	**27.6**	**30.1**	**32.3**	**32.9**	**31.4**	**28.7**	**27.9**	**27.8**	**29.2**	**28.1**	**25.6**

Source: Department of Water Resources

1.2: MAXIMUM TEMPERATURE (°C)

Table 1.2.1: Yundum station monthly maximum temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	37.5	42.5	43.8	42.0	38.5	35.9	33.8	32.7	34.3	37.0	37.5	38.5
2011	39.7	40.2	40.5	42.3	37.5	35.5	33.2	32.6	34.4	35.5	36.5	36.5
2012	37.6	39.0	41.2	40.2	39.3	34.5	32.2	32.5	34.4	35.5	35.5	35.6
2013	36.5	37.8	41.0	39.3	38.6	34.7	34.2	34.0	34.4	33.9	36.5	35.0
2014	37.2	37.0	40.0	40.6	37.5	36.0	34.9	34.6	33.7	35.0	38.4	37.0
2015	35.6	37.6	41.0	41.5	38.8	36.8	36.2	35.0	34.0	34.0	34.8	34.0
2016	38.0	41.6	40.4	44.4	38.8	36.0	35.0	35.0	34.8	36.0	38.0	38.5
2017	36.4	38.4	43.0	42.8	38.8	40.0	40.4	34.0	35.2	36.8	37.4	39.0
AVERAGE	**37.3**	**39.3**	**41.4**	**41.6**	**38.5**	**36.2**	**35.0**	**33.8**	**34.4**	**35.5**	**36.8**	**36.8**

Source: Department of Water Resources

Table 1.2.2: Jenoi station monthly maximum temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	39.8	43.5	44.0	43.6	44.3	39.6	36.0	36.4	35.3	37.4	39.9	39.5
2011	37.6	41.5	43.0	43.1	44.1	41.8	37.6	35.0	34.8	38.0	39.5	38.0
2012	39.0	42.0	42.2	43.4	43.5	39.9	34.8	33.6	34.8	36.5	39.4	38.0
2013	38.0	40.4	43.7	42.7	41.0	37.0	35.5	34.5	39.5	35.5	38.8	39.5
2014	40.0	38.5	41.5	43.0	43.5	40.5	39.0	36.0	33.9	36.0	36.5	36.4
2015	36.0	39.0	41.2	43.6	42.5	41.6	37.4	33.8	35.4	36.0	37.0	36.0
2016	38.0	42.0	41.4	44.6	44.0	41.0	36.0	34.4	N/A	36.4	38.0	39.0
2017	38.0	40.4	43.5	43.8	43.0	42.0	38.0	34.2	35.9	37.6	38.0	36.2
AVERAGE	**38.3**	**40.9**	**42.6**	**43.5**	**43.2**	**82.7**	**36.8**	**34.7**	**35.7**	**36.7**	**38.4**	**37.8**

Source: Department of Water Resources

Table 1.2.3: Kerewan station monthly maximum temperature (°C), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	39.5	43.5	44.5	43.0	42.0	40.0	35.5	35.0	35.0	36.5	39.0	38.5
2011	39.5	41.5	42.0	43.5	44.5	41.5	36.5	34.5	35.5	37.5	40.0	37.5
2012	39.0	N/A	42.5	42.5	43.0	39.0	35.0	34.5	35.2	36.0	38.2	38.0
2013	37.5	40.5	43.5	42.0	42.0	37.8	35.5	35.0	35.7	36.0	38.5	37.3
2014	39.2	38.9	42.5	44.4	43.6	39.6	37.0	36.0	N/A	N/A	38.2	38.5
2015	36.2	39.2	41.2	41.6	42.0	39.0	38.6	34.6	34.2	35.2	36.8	36.0
2016	38.8	42.2	41.6	44.2	43.8	39.6	35.0	33.9	35.5	36.6	38.8	39.6
2017	37.6	39.8	43.2	44.4	41.0	40.6	36.2	35.0	35.6	37.6	35.6	37.6
AVERAGE	**38.4**	**40.8**	**42.6**	**43.2**	**42.7**	**39.6**	**36.2**	**34.8**	**35.2**	**36.5**	**38.1**	**37.9**

Source: Department of Water Resources

Table 1.2.4: Janjanbureh station monthly maximum temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	39.9	42.6	44.0	43.6	41.0	37.3	36.4	35.0	36.5	39.0	37.4	N/A
2011	37.4	41.3	42.8	42.8	45.3	40.0	36.5	35.1	34.5	37.4	39.6	37.5
2012	38.7	40.8	41.8	42.1	43.4	40.5	34.6	32.8	34.5	36.0	38.6	38.0
2013	38.0	40.6	44.0	42.5	N/A	N/A	N/A	N/A	N/A	N/A	38.5	N/A
2014	N/A	N/A	N/A	N/A	N/A	N/A	38.9	35.2	35.0	38.6	39.0	38.0
2015	37.2	40.6	41.9	44.0	43.2	40.6	37.8	34.0	34.0	35.4	37.0	36.2
2016	38.1	41.6	42.8	43.6	44.6	41.4	37.1	34.8	35.0	38.7	39.3	40.0
2017	38.6	40.7	43.6	43.2	42.8	41.6	34.8	33.6	36.6	38.0	36.6	38.0
AVERAGE	**38.3**	**41.2**	**43.0**	**43.1**	**43.4**	**40.2**	**36.6**	**34.4**	**35.2**	**37.6**	**38.3**	**38.0**

Source: Department of Water Resources

Table 1.2.5: Basse station monthly maximum temperature (°C), 2010 - 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	40.5	44.0	44.2	44.5	44.8	41.2	36.9	33.8	35.3	37.2	38.2	40.0
2011	39.6	41.3	43.6	43.5	43.8	42.5	37.5	39.2	35.3	37.2	38.9	39.2
2012	38.6	41.5	42.2	43.5	43.6	41.5	35.5	34.2	35.8	38.0	39.6	38.5
2013	39.0	41.5	44.6	44.5	43.0	40.7	35.8	34.6	35.4	36.2	39.2	38.4
2014	40.0	40.1	42.5	43.8	43.9	39.4	39.5	34.7	34.4	37.1	38.7	38.2
2015	37.9	40.3	41.4	44.1	43.6	41.2	38.2	33.6	34.7	36.6	38.0	35.6
2016	38.3	41.1	42.2	44.2	44.6	43.0	36.4	35.0	34.9	39.0	38.5	40.4
2017	38.0	41.0	45.0	43.2	43.0	43.0	35.3	34.0	35.0	39.5	35.0	39.5
AVERAGE	**39.0**	**41.4**	**43.2**	**43.9**	**43.8**	**41.6**	**36.9**	**34.9**	**35.1**	**37.6**	**38.3**	**38.7**

Source: Department of Water Resources

1.3: MINIMUM TEMPERATURE (°C)

Table 1.3.1: Yundum station monthly minimum temperature (°C), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	13.5	15.5	17.5	20.0	20.3	21.8	21.0	21.5	21.0	21.5	17.3	16.5
2011	15.5	14.8	15.5	16.6	18.7	21.1	22.3	21.5	21.0	21.1	16.5	14.0
2012	15.5	15.1	16.6	18.0	19.0	20.5	20.4	21.6	21.5	20.0	21.1	12.0
2013	13.5	16.5	16.5	18.0	18.3	22.0	20.5	20.9	20.5	20.5	17.5	15.4
2014	13.4	14.4	15.5	14.5	18.5	21.0	22.5	22.0	21.8	22.0	18.4	15.0
2015	15.0	13.0	15.4	15.4	18.5	20.6	19.4	20.2	21.0	20.0	15.0	11.0
2016	15.0	15.5	15.8	15.8	16.0	18.0	20.0	21.8	20.0	20.0	17.4	15.0
2017	13.0	12.0	16.6	19.0	19.3	21.0	20.6	20.4	21.5	20.2	16.2	15.0
AVERAGE	**14.3**	**14.6**	**16.2**	**17.2**	**18.6**	**20.8**	**20.8**	**21.2**	**21.0**	**20.7**	**17.4**	**14.2**

Source: Department of Water Resources

Table 1.3.2: Jenoi station monthly minimum temperature (°C), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	9.5	10.0	15.0	18.5	20.4	21.8	21.9	21.6	21.2	22.3	N/A	N/A
2011	N/A	N/A	N/A	19.2	19.8	21.0	22.0	21.5	20.5	19.0	13.6	10.0
2012	11.6	11.2	16.0	18.0	18.6	19.4	20.8	20.5	21.5	20.6	16.4	11.0
2013	10.2	13.4	17.0	15.4	11.5	23.0	21.5	21.0	21.0	21.0	14.0	12.0
2014	12.0	13.0	14.0	16.0	17.0	20.0	22.0	21.5	21.0	21.0	12.0	8.4
2015	11.4	12.0	11.0	18.6	20.0	21.6	20.6	21.0	19.0	22.0	14.0	10.0
2016	11.0	11.4	13.4	13.4	20.0	17.0	18.6	20.0	N/A	20.2	18.4	13.8
2017	10.0	12.6	14.3	16.4	19.0	20.0	21.0	20.0	19.0	18.0	13.6	9.1
AVERAGE	**10.8**	**11.9**	**14.4**	**16.9**	**18.3**	**20.5**	**21.1**	**20.9**	**20.5**	**20.5**	**14.6**	**10.6**

Source: Department of Water Resources

Table 1.3.3: Kerewan station monthly minimum temperature (°C), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	12.8	13.5	15.3	17.5	18.0	21.0	19.0	21.0	18.0	18.0	14.5	15.0
2011	10.5	11.0	13.0	16.0	17.0	18.2	18.0	18.0	18.0	19.0	11.0	11.0
2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20.0	18.5	20.0	13.4	12.2

2015	12.0	13.0	13.0	15.8	15.0	19.3	19.4	19.4	20.4	20.5	14.0	13.8
2016	13.0	0.0	12.0	14.0	14.6	14.6	14.6	17.0	18.4	20.2	16.0	13.0
2017	13.0	10.0	11.0	15.2	16.0	21.0	21.6	20.0	21.5	21.0	21.5	21.0
AVERAGE	**12.3**	**9.5**	**12.9**	**15.7**	**16.1**	**18.8**	**18.5**	**19.2**	**19.1**	**16.5**	**15.1**	**14.3**

Source: Department of Water Resources

Table 1.3.4: Janjanbureh station monthly minimum temperature (°C), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	9.5	12.5	17.5	19.2	17.5	20.5	20.5	21.6	18.5	12.5	10.0	N/A
2011	10.0	12.7	14.5	18.5	20.4	21.5	20.5	21.0	20.5	19.5	14.4	10.0
2012	12.3	11.0	15.0	15.9	15.6	20.5	22.4	16.0	21.5	21.0	18.0	10.5
2013	10.5	13.6	19.0	17.5	19.2	21.9	21.9	21.8	22.0	21.5	15.8	13.0
2014	11.5	11.5	12.5	15.0	22.0	23.5	23.0	19.3	20.5	19.6	14.0	8.6
2015	10.2	10.2	11.4	15.4	22.1	19.4	21.8	21.2	21.8	21.6	14.2	11.0
2016	12.5	11.0	15.8	17.6	20.0	22.0	21.0	21.0	21.2	21.7	15.0	12.4
2017	8.2	11.0	13.6	17.4	19.8	21.0	19.4	19.7	19.6	17.2	19.6	17.2
AVERAGE	**10.6**	**11.7**	**14.9**	**17.1**	**19.6**	**21.3**	**21.3**	**20.2**	**20.7**	**19.3**	**15.1**	**11.8**

Source: Department of Water Resources

Table 1.3.5: Basse station monthly minimum temperature (°C), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	10.4	14.8	19.8	22.4	23.0	21.5	21.3	20.8	21.4	17.0	14.9	13.4
2011	11.1	11.5	15.2	17.7	22.5	22.5	21.0	20.0	19.6	20.0	13.4	9.4
2012	11.8	11.4	16.5	20.7	20.8	21.0	21.5	21.4	21.2	20.3	14.4	11.8
2013	10.6	12.5	16.6	21.0	22.0	20.8	20.0	22.0	21.5	21.4	16.5	12.2
2014	12.0	12.5	14.2	20.6	22.9	22.0	21.6	17.5	19.0	20.8	12.4	9.3
2015	9.7	13.3	12.3	16.1	19.0	22.1	21.6	21.2	21.8	22.1	14.1	9.8

2016	12.0	11.4	15.6	19.3	23.6	20.2	20.2	21.6	21.2	22.4	14.6	12.3
2017	5.5	10.6	15.0	19.5	20.2	23.0	22.0	20.5	22.0	21.5	22.0	21.5
AVERAGE	**10.4**	**12.3**	**15.7**	**19.7**	**21.8**	**21.6**	**21.2**	**20.6**	**21.0**	**20.7**	**15.3**	**12.5**

Source: Department of Water Resources

1.4: MEAN RELATIVE HUMIDITY

Table 1.4.1: Yundum station monthly mean relative humidity (%), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	53.0	61.0	60.0	68.0	72.0	75.0	84.0	88.0	91.0	84.0	70.0	71.0
2011	57.0	43.0	58.0	65.0	72.0	75.0	81.0	88.0	85.0	82.0	70.0	50.0
2012	48.0	51.0	55.0	64.0	71.0	76.0	82.0	87.0	87.0	83.0	70.0	56.0
2013	48.0	50.0	64.0	58.0	70.0	75.0	81.0	90.0	86.0	83.0	70.0	60.0
2014	50.0	39.0	57.0	57.0	73.0	74.0	78.0	85.0	86.0	81.0	62.0	47.0
2015	42.0	44.0	51.0	67.0	71.0	71.0	78.0	87.0	86.0	84.0	71.0	56.0
2016	51.0	39.0	53.0	66.0	69.0	73.0	83.0	86.0	85.0	79.0	66.0	52.0
2017	41.0	47.0	58.0	56.0	72.0	71.0	82.0	80.0	85.0	79.0	69.0	45.0
AVERAGE	**49.0**	**47.0**	**57.0**	**63.0**	**71.0**	**74.0**	**81.0**	**86.0**	**86.0**	**82.0**	**68.0**	**55.0**

Source: Department of Water Resources

Table 1.4.2: Jenoi station monthly mean relative humidity (%), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	41.0	46.0	41.0	47.0	50.0	65.0	78.0	82.0	82.0	75.0	59.0	54.0
2011	42.0	33.0	40.0	50.0	50.0	63.0	73.0	81.0	80.0	73.0	57.0	46.0
2012	36.0	35.0	36.0	41.0	47.0	62.0	73.0	79.0	79.0	73.0	57.0	42.0
2013	38.0	33.0	47.0	42.0	50.0	65.0	80.0	85.0	80.0	78.0	61.0	48.0
2014	41.0	28.0	35.0	41.0	44.0	60.0	79.0	84.0	73.0	80.0	58.0	36.0
2015	25.0	31.0	32.0	37.0	50.0	53.0	71.0	80.0	78.0	77.0	57.0	45.0
2016	41.0	30.0	32.0	42.0	47.0	61.0	74.0	77.0	72.0	71.0	51.0	38.0

2017	27.0	33.0	40.0	39.0	50.0	54.0	73.0	79.0	76.0	72.0	61.0	40.0
AVERAGE	**36.0**	**34.0**	**38.0**	**42.0**	**48.0**	**60.0**	**75.0**	**81.0**	**77.0**	**75.0**	**58.0**	**44.0**

Source: Department of Water Resources

Table 1.4.3: Kerewan station monthly mean relative humidity (%), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	37.0	40.0	43.0	40.0	43.0	71.0	71.0	71.0	75.0	71.0	55.0	48.0
2011	37.0	25.0	34.0	38.0	48.0	59.0	71.0	82.0	79.0	71.0	52.0	27.0
2012	30.0	28.0	31.0	35.0	44.0	59.0	72.0	78.0	78.0	71.0	49.0	36.0
2013	26.0	33.0	39.0	41.0	49.0	N/A	73.0	84.0	80.0	71.0	53.0	39.0
2014	30.0	19.0	25.0	25.0	42.0	55.0	68.0	78.0	80.0	72.0	51.0	35.0
2015	20.0	28.0	26.0	39.0	45.0	53.0	69.0	79.0	81.0	76.0	52.0	34.0
2016	28.0	17.0	24.0	42.0	37.0	53.0	72.0	76.0	78.0	66.0	46.0	27.0
2017	22.0	22.0	30.0	30.0	43.0	54.0	75.0	78.0	74.0	68.0	44.0	22.0
AVERAGE	**29.0**	**27.0**	**31.0**	**36.0**	**44.0**	**58.0**	**71.0**	**78.0**	**78.0**	**71.0**	**50.0**	**33.0**

Source: Department of Forestry

Table 1.4.4: Janjanbureh station monthly mean relative humidity (%), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	46.0	43.0	41.0	36.0	42.0	57.0	70.0	73.0	76.0	75.0	61.0	56.0
2011	45.0	40.0	38.0	43.0	45.0	55.0	74.0	70.0	78.0	72.0	63.0	39.0
2012	37.0	34.0	36.0	39.0	46.0	60.0	76.0	80.0	80.0	75.0	58.0	45.0
2013	37.0	35.0	40.0	38.0	43.0	67.0	63.0	84.0	82.0	76.0	55.0	40.0
2014	33.0	28.0	28.0	36.0	46.0	65.0	76.0	80.0	81.0	74.0	50.0	36.0
2015	26.0	22.0	36.0	37.0	28.0	51.0	72.0	81.0	80.0	72.0	54.0	41.0
2016	29.0	25.0	29.0	30.0	38.0	51.0	73.0	75.0	76.0	70.0	52.0	36.0
2017	32.0	23.0	31.0	32.0	39.0	49.0	80.0	80.0	74.0	68.0	23.0	38.0
AVERAGE	**36.0**	**31.0**	**35.0**	**36.0**	**41.0**	**57.0**	**73.0**	**78.0**	**78.0**	**73.0**	**52.0**	**41.0**

Source: Department of Water Resources

Table 1.4.5: Basse station monthly mean relative humidity (%), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	46.0	43.0	41.0	36.0	42.0	57.0	70.0	73.0	76.0	75.0	61.0	56.0
2011	45.0	40.0	38.0	43.0	45.0	55.0	74.0	70.0	78.0	72.0	63.0	39.0
2012	37.0	34.0	36.0	39.0	46.0	60.0	76.0	80.0	80.0	75.0	58.0	45.0
2013	37.0	35.0	40.0	38.0	43.0	67.0	63.0	84.0	82.0	76.0	55.0	40.0
2014	33.0	28.0	28.0	36.0	46.0	65.0	76.0	80.0	81.0	74.0	50.0	36.0
2015	26.0	22.0	36.0	37.0	28.0	51.0	72.0	81.0	80.0	72.0	54.0	41.0
2016	29.0	25.0	29.0	30.0	38.0	51.0	73.0	75.0	76.0	70.0	52.0	36.0
2017	32.0	23.0	31.0	32.0	39.0	49.0	80.0	80.0	74.0	68.0	23.0	38.0
AVERAGE	**36.0**	**31.0**	**35.0**	**36.0**	**41.0**	**57.0**	**73.0**	**78.0**	**78.0**	**73.0**	**52.0**	**41.0**

Source: Department of Water Resources

1.5: RAINFALL (mm)

Table 1.5.1: Yundum station monthly rainfall (mm), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
2010	0.0	0.0	0.0	0.0	0.0	52.8	232.1	258.1	618.3	41.7	1.0	0.0	1204
2011	0.0	0.0	0.0	0.0	0.0	43.4	112.4	373.1	276.2	75.9	0.0	0.0	881
2012	0.0	0.0	0.0	0.0	40.7	134.7	326.6	368.6	438.0	65.5	8.5	0.0	1382.6
2013	0.0	0.0	0.0	0.0	0.2	17.7	118.1	651.4	179.2	55.8	0.0	0.0	1022.4
2014	0.0	0.0	0.0	0.0	4.3	26.1	68.8	358.3	126.3	29.8	0.0	0.0	613.6
2015	0.0	0.0	0.0	0.0	0.0	9.6	240.5	475.4	444.1	83.9	27.3	0.0	1280.8
2016	0.0	0.0	0.0	0.0	TR	9.8	262.0	268.1	267.4	14.9	0.0	0.0	822.2
2017	0.0	TR	0.0	0.0	0.0	77.5	337.2	359.3	61.5	32.6	0.0	0.0	868.1
AVERAGE	**0.0**	**0.0**	**0.0**	**0.0**	**6.5**	**46.5**	**212.2**	**389.0**	**301.4**	**50.0**	**4.6**	**0.0**	**1010.2**

Source: Department of Water Resources

Table 1.5.2: Jenoi station monthly rainfall (mm), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
2010	0.0	0.0	0.0	0.0	0.0	171.0	293.9	307.2	356.2	65.8	0.0	0.0	1194.1
2011	0.0	0.0	0.0	0.0	4.6	15.7	138.7	285.4	182.8	7.2	0.0	0.0	634.4
2012	0.0	0.0	0.0	0.0	10.6	64.2	256.2	388.2	462.8	155.7	0.0	0.0	1337.7
2013	0.0	0.0	0.0	0.0	60.9	104.8	390.6	317.1	49.0	0.0	0.0	0.0	922.4
2014	0.0	0.0	0.0	0.0	0.0	20.1	47.5	281.5	195.9	62.4	0.0	0.0	607.4
2015	0.0	0.0	0.0	0.0	0.0	5.6	208.3	356.6	241.3	172.3	15.5	0.0	999.6
2016	0.0	0.0	0.0	0.0	TR	82.3	391.6	236.2	430.3	15.9	0.0	0.0	1156.3
2017	0.0	0.0	0.0	0.0	0.0	27.0	271.6	458.5	64.1	109.4	0.0	0.0	930.6
AVERAGE	**0.0**	**0.0**	**0.0**	**0.0**	**10.9**	**61.3**	**249.8**	**328.8**	**247.8**	**73.6**	**1.9**	**0.0**	**974.1**

Source: Department of Water Resources

Table 1.5.3: Kerewan station monthly rainfall (mm), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
2010	0.0	0.0	0.0	0.0	0.0	110.1	198.8	153.3	593.8	78.5	0.0	0.0	1134.5
2011	0.0	0.0	0.0	0.0	4.3	12.1	80.5	216.8	190.3	29.8	0.0	0.0	533.8
2012	0.0	0.0	0.0	0.0	4.3	53.8	335.7	244.1	309.7	83.4	0.0	0.0	1031
2013	0.0	0.0	0.0	0.0	0.0	5.9	143.4	383.0	177.1	78.8	0.0	0.0	788.2
2014	0.0	0.0	0.0	0.0	0.0	25.2	29.8	337.2	161.1	60.1	0.0	0.0	613.4
2015	0.0	0.0	0.0	0.0	0.0	0.0	244.8	390.0	370.4	135.3	0.0	0.0	1140.5
2016	0.0	0.0	0.0	0.0	0.4	32.5	174.8	245.2	348.5	25.6	0.0	0.0	827
2017	0.0	0.0	0.0	0.0	0.0	179.3	376.5	271.0	77.4	39.7	0.0	0.0	943.9
AVERAGE	**0.0**	**0.0**	**0.0**	**0.0**	**1.1**	**52.4**	**198.0**	**280.1**	**278.5**	**66.4**	**0.0**	**0.0**	**876.5**

Source: Department of Water Resources

Table 1.5.4: Janjanbureh station monthly rainfall (mm), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
2010	0.0	0.0	0.0	0.0	0.0	114.5	228.1	268.5	228.8	27.3	0.0	0.0	867.2
2011	0.0	0.0	0.0	0.0	63.0	47.9	141.4	226.3	145.8	65.0	0.0	0.0	689.4
2012	0.0	0.0	0.0	0.0	69.6	79.4	213.8	306.2	253.4	0.0	0.0	0.0	922.4
2013	0.0	0.0	0.0	0.0	2.3	141.6	269.2	232.1	346.3	48.3	0.0	0.0	1039.8
2014	0.0	0.0	0.0	0.0	0.9	15.0	39.5	199.5	158.3	76.2	0.0	0.0	489.4
2015	0.0	0.0	0.0	0.0	0.0	47.4	114.6	310.9	209.8	114.0	0.0	0.0	796.7
2016	0.0	0.0	0.0	0.0	16.6	30.7	260.4	311.9	237.1	3.7	0.0	0.0	860.4
2017	0.0	0.0	0.0	0.0	0.0	156.4	177.2	391.8	30.5	57.4	0.0	0.0	813.3
AVERAGE	**0.0**	**0.0**	**0.0**	**0.0**	**19.1**	**79.1**	**180.5**	**280.9**	**201.3**	**49.0**	**0.0**	**0.0**	**809.9**

Source: Department of Water Resources

Table 1.5.5: Basse station monthly rainfall (mm), 2010 – 2017

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	SUM
2010	0.0	0.0	0.0	0.0	0.0	83.9	397.7	285.2	255.7	93.9	0.0	0.0	1116.4
2011	0.0	0.0	0.0	0.0	4.9	73.0	95.7	337.7	330.2	48.0	0.0	0.0	889.5
2012	0.0	0.0	0.0	0.0	52.9	95.5	101.0	261.1	240.2	57.3	0.0	0.0	808
2013	0.0	0.0	0.0	0.0	16.1	85.9	169.5	352.8	243.9	65.5	10.1	0.0	943.8
2014	0.0	0.0	0.0	0.0	25.9	121.4	228.4	214.9	187.4	40.2	0.0	0.0	818.2
2015	0.0	0.0	0.0	0.0	0.0	35.8	307.9	274.4	297.6	76.0	TR	2.3	994
2016	0.0	0.0	0.0	0.0	TR	82.5	193.1	354.3	254.2	5.9	0.0	0.0	890
2017	0.0	0.0	0.0	0.0	0.0	124.8	289.3	436.1	35.0	12.6	0.0	0.0	897.8
AVERAGE	**0.0**	**0.0**	**0.0**	**0.0**	**14.3**	**87.9**	**222.8**	**314.6**	**230.5**	**49.9**	**1.4**	**0.3**	**921.7**

Source: Department of Water Resources

Table 1.6: Forest area by category, 1981 - 2010

(ha)	1981/1982	1997/1998	2008/2010
FOREST	N/A	N/A	300,000
MANGROVE	66,900	58,800	36,000
OTHER WOODED LAND	N/A	N/A	123,000
CLOSED WOODLAND	N/A	12,000	N/A
OPEN WOODLAND	N/A	N/A	N/A
GALLERY FOREST, CLOSED & OPEN WOODED LAND	90,700	N/A	N/A
SAVANNAH WOODLAND	N/A	88,800	N/A
TREE AND SHRUB SAVANNA	347,700	360,800	N/A
OTHER LAND	N/A	N/A	589,000
INLAND WATER	N/A	N/A	118,000

Source: Department of Forestry

Table 1.7: Community forest management stage changes, 2014 and 2017

Area of Forest (ha or unit)	Start up (ha)		Preliminary Community Forest Management Agreement (PCFMA) ha		Community Forest Management Agreement (CFMA) ha		Total in ha.	Total in ha.	% Area under community forest management
	2014	2017	2014	2017	2014	2017	2014	2017	2017
West Coast	725.6	75	3091.2	3022.9	3,957.3	5,041	7,774.2	8,138.9	22.2
Lower River	1,853.2	1,366.6	3,326	2,072.1	1,773.5	4,021	6,952.6	7,459.7	20.3
North Bank	773.2	398.5	235	3,309.4	122.3	357.5	1,130.5	4,065.4	11.1
Upper River	669	500	469.6	345	1,764.3	3,267.1	2,902.9	4,112.1	11.2
Central River South	2,809.4	1,177.5	1,796	1,238.5	2,731	4,678.1	7,336.3	7,094.1	19.3
Central River North	282.9	410	2,836.5	1,510.2	2,466.6	3,909	5,586	5,829.2	15.9
TOTAL	**7,113.3**	**3,897.6**	**11,754.2**	**11,498.1**	**12,815.0**	**21,273.7**	**31,682.3**	**36,699.3**	100.0

Source: Department of Forestry

Table 1.8: List of endangered species

Species Name	Scientific Name	Group
African White-backed Vulture	*Gyps africanus*	Birds
African Mahogany	*Khaya senegalensis*	Plants
African Skimmer	*Rynchops flavirostris*	Birds
African Slender-snouted Crocodile	*Crocodylus cataphractus*	Reptiles
African Wedgefish	*Rhynchobatus luebberti*	Fishes
African Wild Dog	*Lycaon pictus*	Mammals
Albizia ferruginea	*Albizia ferruginea*	Plants
Atlantic Humpbacked Dolphin	*Sousa teuszii*	Mammals
Audouin's Gull	*Larus audouinii*	Birds
Beaudouin's Snake-eagle	*Circaetus beaudouini*	Birds
Bigeye Tuna	*Thunnus obesus*	Fishes
Black Crowned-crane	*Balearica pavonina*	Birds
Black-tailed Godwit	*Limosa limosa*	Birds
Blackchin Guitarfish	*Rhinobatos cemiculus*	Fishes
Bottlenose Skate	*Rostroraja alba*	Fishes
Buff-breasted Sandpiper	*Tryngites subruficollis*	Birds
Common Hippopotamus	*Hippopotamus amphibius*	Mammals
Common Sawfish	*Pristis pristis*	Fishes
Denham's Bustard	*Neotis denhami*	Birds
Dusky Grouper	*Epinephelus marginatus*	Fishes
Dwarf Crocodile	*Osteolaemus tetraspis*	Reptiles
Egyptian Vulture	*Neophron percnopterus*	Birds
Eurasian Curlew	*Numenius arquata*	Birds
Eurasian Peregrine Falcon	*Falco peregrinus peregrinus*	Birds
Giant Butterfly Ray	*Gymnura altavela*	Fishes
Goliath Grouper	*Epinephelus itajara*	Fishes
Gray Nurse Shark	*Carcharias taurus*	Fishes
Guinea Baboon	*Papio papio*	Mammals
Hallea stipulosa	*Hallea stipulosa*	Plants
Lappet-faced Vulture	*Torgos tracheliotos*	Birds
Largetooth Sawfish	*Pristis perotteti*	Fishes
Leopard	*Panthera pardus*	Mammals

Lesser Flamingo	*Phoeniconaias minor*	Birds
Lesser Kestrel	*Falco naumanni*	Birds
Liver-oil Shark	*Galeorhinus galeus*	Fishes
Milicia regia	*Milicia regia*	Plants
Night Shark	*Carcharhinus signatus*	Fishes
Oceanic Whitetip Shark	*Carcharhinus longimanus*	Fishes
One-finned Shark	*Heptranchias perlo*	Fishes
Pallid Harrier	*Circus macrourus*	Birds
Portuguese Dogfish	*Centroscymnus coelolepis*	Fishes
Queen Triggerfish	*Balistes vetula*	Fishes
Rueppell's Vulture	*Gyps rueppellii*	Birds
Spotted Eagle Ray	*Aetobatus narinari*	Fishes
Straw-coloured Fruit Bat	*Eidolon helvum*	Mammals
West African Manatee	*Trichechus senegalensis*	Mammals
West African Red Colobus	*Procolobus badius*	Mammals
Whale Shark	*Rhincodon typus*	Fishes
White Grouper	*Epinephelus aeneus*	Fishes
White-headed Vulture	*Trigonoceps occipitalis*	Birds

Source: Department of Parks and Wildlife Management

Table 1.9 Forest fires incidences 2016 to 2018 (ha)

REGIONS	2016 Forest Fires	2017 Forest Fires	2018 Forest fires
West Coast Region	3,025	1,067	3,142
Lower River Region	1,017	2,906	2,818
North Bank Region	1,790	2,114	1,535
Central River Region-South	6,891	693	3,987
Central River Region-North	2,461	2,410	6,559
Upper River Region	9,321	13,717	7,412
Ground Total Area	24,505	22,907	25,454

Source: Department of Forestry

Table 1.10: List of Forest parks

WEST COAST REGION		
District	**Name of Forest Park**	**Size (Ha)**
Kombo North	Bijilo	51.5
	Salagi	312.0
Kombo South	Bamba	389.0
Kombo Central	Nyambai	202.0
	Kabafita	243.0
	Furuya	488.8
Kombo East	Pirang	60.4
	Finto Manareg	1,106.6
	Katilenge	406.8
	Bama Kuno	1,092
TOTAL		**4,352.1**
NORTH BANK REGION		
Lower Nuimi	Lohen	93.7
Upper Nuimi	Kasaywa	155.7
Jokadu	Kumadi	304.0
Lower Baddibu	Marike	175.0
Central Baddibu	Jalobiro	59.6
Upper Baddibu	Pakala	941.4
	Ngeyen	527.1
TOTAL		**2,256.5**
LOWER RIVER REGION		
Kiang West	Brikama	357
	Faba	517.3
Kiang Central	Mutaro Kunda	803.0
Kiang East	Jollofin	447.8
	Kaiaf	28.5
Jarra West	Jabisa	16.4
	Nyanaberi	1,132.5
	Se-Ulunbang	554.1

Jarra Central/East	Tamba Jang	1,468.0
	Berikolon	
	Tabanang Sita	
Jarra East	Jambang Kunda	358.6
	Sutukung Bani	6.9
TOTAL		**5,690.1**
CENTRAL RIVER REGION		
Niamina Dankunku	Pilabi	219.9
	Sallo koto	3.2
	Sikunda	505.2
Niamina West	Jamara	575.3
Niamina East	Njassang	2,240
Fulladu West	Kaolong	2,454.2
	Kunkiling	144.4
	Madina Demba	2,270.7
	Bankuba	794.3
Lower Saloum	Belel	449.2
	Jumbo Yaka	214.5
Upper Saloum	Njama	16.4
	Njau	467.0
Nianija	Kahi Badi	1,181.7
Niani	Niani Maru	804.0
	Gassangf	57.8
	Sibikuroto	32.2
	Tanu	2,178.2
	Ngongonding	1,410.0
Sami	Sao	702.9
	Kiberi	382.1
	Dobo	35.4
	Kata	5.1
	Sambo Tumang	52.3
TOTAL		**16,996**
UPPER RIVER REGION		
Fulladu East	Sibikuruto	147.5

	Helakunda	241.2
	Gambisara	277.9
	Sabbi	94.0
Kantora	Jundala	357.3
	Kusun	432.5
	Koina	12.2
Sandu	Mamato Konko	601.0
	Sacaru Dalla	316.1
	Humdalai	87.9
Wuli	Jeloki	872.5
TOTAL		**3,440.1**

Source: Department of Forestry

Table 1.11: Seedling production/Nursery management

REGIONS	**2017**	**2018**
West Coast Region	20,000	1,658
Lower River Region	23,603	4,975
North Bank Region	34,489	27,858
Central River Region-South	28,423	8,836
Central River Region-North	22,244	6,777
Upper River Region	17,599	26,925
Ground Total Area	**146,358**	**77,029**

Source: Department of Forestry

CHAPTER 2: ENVIRONMENTAL RESOURCES AND THEIR USE

Environmental resources (or assets, as they are referred to in the System of Environmental-Economic Accounting Central Framework (SEEA-CF)) are the naturally occurring living and non-living components of the earth, together constituting the biophysical environment, which may provide benefits to humanity. Environmental resources include natural resources, such as subsoil resources (mineral and energy), biological resources and water resources, and land. They may be naturally renewable (e.g., fish, timber or water) or non-renewable (e.g., minerals).
They are important in every aspect of human activity such as shelter, food, health care, infrastructure, communications, transportation, defence and more. Thus, statistics of quality and availability of environmental resources are needed for policy makers to make informed decisions, especially to avoid the shortage or restriction of their use and availability. The main focus is the measure of stock variability over time, space and their use for production and consumption.

Table 2.1a: Imports by quantity (Metric tonnes), 2010 - 2017

	2010	2011	2012	2013	2014	2015	2016	2017
HS Codes Minerals								
270500: Coal gas, water gas, producer gas and similar gases	0.1	6	3	2	93	107	1	2
270900: Petroleum oils	132	238	66	128	100	36	5	0
271011: Light oils and preparations	22,272	26,955	27,433	31,825	30,715	32,191	34,562	0
271019: Kerosene	55,911	52,065	63,980	52,515	59,582	60,726	69,764	109,043
271111: Natural gas	4	1	8	10	26	9	20	32
271113: Butanes, liquefied	1	1	78	4	8	9	5	118
271129: Petroleum gases and other gaseous hydrocarbons in gaseous state	1	3	4	0	14	35	1	0
271390: Other residues of petroleum oils or of oils obtained from	51	98	430	987	21	0	37	0
271500: Bituminous mixtures based on natural asphalt, on natural bitumen	54	113	80	17	37	73	30	35
Energy								
271600 Electrical energy (optional heading)	5	5	0	10	0	3	0	0
Crops								
1001: Wheat	1	3	2	3,310	30,696	46,102	29,578	0

1005: Maize (corn)	0	1	3	0	34	6	18	4
120210: Groundnuts in shell, not roasted or otherwise cooked	0	0	0	12	24	52	5	0
120220: Shelled groundnuts, not roasted or otherwise cooked	0	0	2	0	0	36	0	0
1006: Rice	88,214	143,768	140,672	130,226	140,411	906,894	129,811	159,853
Livestock								
010110: Purebred breeding animals	0.3	2	1	0.2	0.3	0.1	1	0
010290: Live bovine animals, other than purebred breeding	0	0	2	0	0	0	0	0
010511: Live fowls of species gallus domesticus (chicks)	1	2	1	1	1	2	0	1
010519: Live ducks, geese, and guinea fowls	0	0	1	1	0.1	0	0	0
Forest Products								
440110: Fuel wood, in-logs, in-billets, in-twigs, in-faggots or in similar	2	178	8,190	2,437	9,139	17,994	29,164	9,302
440121: Coniferous wood in chips or particles	2	94	11	19	27	56	39	398
440122: Non-coniferous wood in chips or particles	0	4	15	1	1	2	3	3
440290: Other wood nes	0	1,321	11,050	3,152	2,339	3,485	5,566	3,247
440310: Wood in rough, treated with paint, stains, creosote or other preservatives	8	90	11	33	111	12	103	28
440410: Coniferous hoopwood; split poles, etc; wooden sticks, etc; chipwood	39	63	2	50	1568	294	42	89
440890: Veneer sheets and sheets for plywood and other wood, =<6mm thick, nes	145	147	159	76	53	21	0	17
440929: Other Non-coniferous wood	0	2	24	19	2	1	0	3
441011: Waferboard, including oriented strand board of wood	343	222	79	2	3	1	5	106
441231: With at least one outer ply of tropical wood specified in	582	834	728	881	931	1,283	1,174	3
441232: Plywood with at least one outer ply of nonconiferous wood	18	16	30	162	101	177	365	86
441239: Other plywood	369	0	10	1	81	448	147	2
441299: Plywood, veneered panels and similar laminated wood nes	106	6	46	9	9	42	0	594

Source: Statistics Unit, Ministry of Trade, Industry and Employment

Table 2.1b: Exports by quantity (Metric tonnes), 2010 - 2017

	2010	2011	2012	2013	2014	2015	2016	2017
HS Codes Minerals								
270500: Coal gas, water gas, producer gas and similar gases	0	0	0	0	0	0	0	0
270900: Petroleum oils	0	0	0	0	0	0	0	0
271011: Light oils and preparations	0	0	0	0	0	0	0	0
271019: Kerosene	0	0	0	0	0	0	0	0
271111: Natural gas	0	0	0	0	0	0	0	0
271113: Butanes, liquefied	0	0	0	0	0	0	0	0
271129: Petroleum gases and other gaseous hydrocarbons in gaseous state	0	0	0	0	0	0	0	0
271390: Other residues of petroleum oils or of oils obtained from	0	0	0	0	0	0	0	0
271500: Bituminous mixtures based on natural asphalt, on natural bitumen	0	0	0	0	0	0	0	0
Energy								
271600: Electrical energy (optional heading)	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
Crops								
1001: Wheat	0	0	0	0	0	0	0	0
1005: Maize (corn)	0	0	0	0	0	0	0	0
120210: Groundnuts in shell, not roasted or otherwise cooked	1,556	207	4	371	167	686	703	72
120220: Shelled groundnuts, not roasted or otherwise cooked	8,302	2,224	1,422	4,148	534	982,893	10,417	7,937
1006: Rice	0	0	0	0	0	0	0	0
Livestock								
010110: Purebred breeding animals	0	0	0	0	0	0	0	0
010290: Live bovine animals, other than purebred breeding	0	0	0	0	0	0	0	0
010511: Live fowls of species gallus domesticus (chicks)	0	0	0	0	0	0	0	0
010519: Live ducks, geese, and guinea fowls	0	0	0	0	0	0	0	0
Forest Products								
440110: Fuel wood, in-logs, In-billets, in-twigs, in-faggots or in similar	0	235	3,634	591	0	0	0	0

440121: Coniferous wood in chips or particles	0	0	1,216	596	58,677	25,486	17,988	6,138
440122: Non-coniferous wood in chips or particles	0	0	0	0	0	0	0	0
440290: Other wood nes	0	0	598	148	19	101	0	0
440310: Wood in rough, treated with paint, stains, creosote or other preservatives	0	0	0	0	0	0	0	0
440410: Coniferous hoopwood; split poles, etc; wooden sticks, etc; chipwood	0	0	3,240	347	0	0	0	3,813
440890: Veneer sheets and sheets for plywood and other wood, =<6mm thick, nes	0	0	0	0	0	0	0	0
440929: Other Non-coniferous wood	0	0	0	0	0	0	0	0
441011: Waferboard, including oriented strand board of wood	0	0	0	0	0	0	0	0
441231: With at least one outer ply of tropical wood specified in	0	0	0	0	0	0	0	0
441232: Plywood with at least one outer ply of non-coniferous wood	0	0	0	0	0	0	0	0
441239: Other plywood	0	0	0	0	0	0	0	0
441299: Plywood, veneered panels and similar laminated wood nes	0	0	0	0	0	0	0	0

Source: Statistics Unit, Ministry of Trade, Industry and Employment

Table 2.2: Agricultural crops – Crop production, 2010 - 2017

Crop (Metric tonne)	2010	2011	2012	2013	2014	2015	2016	2017
Early Millet	77,505	72,941	96,467	71,527	59,116	55,969	54,663	39,874
Late Millet	18,872	14,293	19,622	22,272	17,701	18,301	17,798	12,135
Sorghum	14,440	20,556	23,146	30,390	20,289	21,626	20,458	18,846
Maize	35,761	23,613	28,934	33,060	30,289	32,019	31,005	21,441
Total Coarse Grain	**146,578**	**131,403**	**168,169**	**157,249**	**127,395**	**127,914**	**123,923**	**92,296**
Upland Rice	46,327	15,228	40,838	52,237	32,301	N/A	N/A	21,485
Swampland Rice	16,599	12,606	13,381	17,467	14,373	N/A	N/A	8,481
Total Paddy	**62,926**	**27,834**	**54,219**	**69,704**	**46,674**	**53,309**	**48,778**	**29,967**
Total Cereal	**209,504**	**159,237**	**222,388**	**226,953**	**174,069**	**181,224**	**172,701**	**122,263**
Groundnuts (73/33)	41,826	44,154	66,063	54,850	46,750	N/A	N/A	29,598
Groundnuts (28/206)	52,390	39,704	51,238	36,224	30,542	N/A	N/A	19,841
Philippine Pink	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8,185
Total Groundnuts	**94,216**	**83,858**	**117,301**	**91,074**	**77,292**	**82,653**	**71,082**	**57,625**

Source: Planning Service Unit, Ministry of Agriculture

Table 2.3: Agricultural crops - Area harvested, yield and production, 2012 - 2017

	2012			2013			2014			2015			2016			2017		
Early Millet	**Area (ha)**	**Yield (mt)**	**Production (mt)**	**Area (Ha)**	**Yield (mt)**	**Production (mt)**	**Area (ha)**	**Yield (mt)**	**Production (mt)**	**Area (ha)**	**Yield (mt)**	**Production (mt)**	**Area (ha)**	**Yield (mt)**	**Production (mt)**	**Area (ha)**	**Yield (mt)**	**Production (mt)**
West Coast Region	1,467	938	1,376	5,523	1,150	6,352	1,609	659	1,060	2,154	590	1,271	2,324	591	1,374	1,408	564	795
Lower river Region	8,591	1,187	10,196	10,320	1,003	10,354	9,201	733	6,748	9,195	740	6,804	9,895	743	7,352	9,364	604	5,659
North Bank Region	50,269	1,002	50,358	25,702	819	21,051	28,354	737	20,897	18,576	1,144	21,251	21,176	944	19,990	20,373	591	12,038
Central R. Region North	17,304	1,116	19,308	15,079	761	11,468	15,025	847	12,725	15,076	828	12,483	13,376	828	11,075	13,861	631	8,746
Central R. Region South	13,469	903	12,166	17,787	832	14,799	15,272	667	10,192	15,129	700	10,590	15,129	630	9,532	15,173	529	8,021
Upper River Region	4,027	761	3,063	8,155	920	7,503	9,008	832	7,493	9,312	836	7,785	12,602	666	8,393	7,345	628	4,615
The Gambia	**95,127**	**1,014**	**96,467**	**82,566**	**914**	**71,527**	**78,469**	**753**	**59,116**	**69,440**	**806**	**55,969**	**74,501**	**734**	**54,663**	**67,523**	**591**	**39,874**
Late Millet																		
West Coast Region	6,745	830	5,596	8,312	905	7,525	7,458	817	6,093	7,106	866	6,154	7,126	816	5,815	2,643	660	1,745
Lower river Region	126	778	98	500	1,175	588	424	837	355	468	782	366	463	712	329	750	624	468
North Bank Region	926	1,301	1,205	1,281	920	1,178	814	912	742	759	981	744	760	911	693	1,634	586	957
Central R. Region North	1,337	642	859	1,548	842	1,303	1,986	374	742	2,027	700	1,419	2,111	701	1,480	2,450	633	1,550
Central R. Region South	1,301	728	947	1,770	720	1,274	1,798	904	1,625	1,858	842	1,565	1,751	832	1,457	1,560	602	940
Upper River Region	11,258	970	10,917	9,815	1,060	10,404	9,881	824	8,144	9,491	886	8,409	9,591	926	8,877	9,572	676	6,475
The Gambia	**21,693**	**905**	**19,622**	**23,226**	**937**	**22,272**	**22,361**	**792**	**17,701**	**21,709**	**843**	**18,301**	**21,802**	**816**	**17,798**	**18,609**	**652**	**12,135**

Sorghum																		
West Coast Region	1,544	902	1,393	3,399	1,110	3,773	254	924	235	307	854	262	310	643	199	501	766	384
Lower river Region	202	802	162	1,350	965	1,303	1,412	776	1,096	1,047	887	928	912	678	618	1,089	876	953
North Bank Region	1,573	853	1,341	2,120	1,120	2,374	1,034	878	908	1,036	928	961	839	923	774	1,550	764	1,184
Central R. Region North	4,762	879	4,184	1,973	776	1,532	2,676	752	2,013	2,134	925	1,974	2,013	785	1,581	2,103	795	1,673
Central R. Region South	4,739	900	4,264	3,127	980	3,065	2,465	644	1,587	2,492	741	1,846	2,492	812	2,022	2,222	779	1,731
Upper River Region	18,270	646	11,802	16,751	1,095	18,343	19,394	745	14,450	18,132	826	14,977	18,655	1,026	19,140	13,994	923	12,921
The Gambia	**31,091**	**744**	**23,146**	**28,720**	**1,008**	**30,390**	**27,235**	**745**	**20,289**	**25,146**	**860**	**21,626**	**25,220**	**811**	**20,458**	**21,459**	**878**	**18,846**
Maize																		
West Coast Region	2,773	748	2,075	5,135	1,243	6,383	5,934	810	4,809	6,113	869	5,312	5,413	869	4,703	4,500	679	3,056
Lower river Region	1,876	1,403	2,632	3,423	933	3,195	3,588	697	2,502	4,448	692	3,078	4,108	792	3,253	4,011	738	2,960
North Bank Region	6,072	888	5,394	3,458	1,040	3,596	4,926	887	4,369	4,246	933	3,961	4,016	736	2,956	3,633	806	2,930
Central R. Region North	4,203	1,261	5,302	5,048	770	3,887	5,192	744	3,863	5,678	994	5,643	5,126	948	4,859	3,000	560	1,681
Central R. Region South	5,144	963	4,953	7,034	998	7,020	7,920	789	6,245	7,675	799	6,132	7,275	943	6,860	7,158	673	4,816
Upper River Region	8,220	1,044	8,578	9,072	990	8,979	9,143	930	8,502	8,645	936	8,092	8,637	1,093	9,440	7,506	799	5,999
The Gambia	**28,287**	**1,023**	**28,934**	**33,170**	**996**	**33,060**	**36,704**	**825**	**30,289**	**36,804**	**870**	**32,019**	**34,573**	**897**	**31,005**	**29,809**	**719**	**21,441**

Upland Rice																	
West Coast Region	9,030	993	8,963	16,133	1,210	19,520	15,090	714	10,775	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,469	494
Lower river Region	7,635	914	6,976	7,001	913	6,392	7,826	714	5,588	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,881
North Bank Region	12,760	853	10,889	7,873	1,148	9,038	9,227	403	3,723	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,174
Central R. Region North	4,225	924	3,905	5,224	945	4,937	5,395	641	3,456	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,206
Central R. Region South	6,603	665	4,391	5,342	934	4,991	4,394	596	2,618	N/A	N/A	N/A	N/A	N/A	N/A	4,617	430	1,985
Upper River Region	8,400	680	5,714	7,373	998	7,359	8,150	753	6,140	N/A	N/A	N/A	N/A	N/A	N/A	10,900	439	4,786
The Gambia	**48,653**	**839**	**40,838**	**84,946**	**1,025**	**52,237**	**50,082**	**645**	**32,301**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**53,418**	**402**	**21,486**
Swamp Rice																	
West Coast Region	N/A	N/A	N/A	500	815	408	380	908	345	N/A	N/A	N/A	N/A	N/A	N/A	352	381	134
Lower river Region	5,525	839	4,638	3,872	862	3,338	3,491	646	2,256	N/A	N/A	N/A	N/A	N/A	N/A	2,983	609	1,818
North Bank Region	2,561	551	1,412	4,675	1,287	6,015	4,613	886	4,085	N/A	N/A	N/A	N/A	N/A	N/A	5,305	609	3,232
Central R. Region North	4,166	938	3,906	4,870	1,153	5,614	3,501	995	3,482	N/A	N/A	N/A	N/A	N/A	N/A	3,169	522	1,653
Central R. Region South	4,422	775	3,425	3,517	595	2,092	4,197	998	4,187	N/A	N/A	N/A	N/A	N/A	N/A	3,569	447	1,595
Upper River Region	N/A	-	N/A	-	-	-	22	800	17	N/A	N/A	N/A	N/A	N/A	N/A	105	476	50
The Gambia	**16,752**	**799**	**13,381**	**17,434**	**942**	**17,467**	**16,204**	**887**	**14,373**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**15,482**	**548**	**8,481**

Groundnut 73/33																		
West Coast Region	5,021	919	4,613	6,119	836	5,114	4,220	979	4,132	N/A	N/A	N/A	N/A	N/A	N/A	3,342	693	2,317
Lower river Region	1,304	1,946	2,537	2,269	1,046	2,373	4,825	1,064	5,132	N/A	N/A	N/A	N/A	N/A	N/A	4,459	798	3,556
North Bank Region	13,726	1,322	18,141	18,240	1,227	22,375	13,379	986	13,187	N/A	N/A	N/A	N/A	N/A	N/A	11,055	667	7,377
Central R. Region North	16,140	1,049	16,927	5,223	948	4,951	6,351	1,060	6,732	N/A	N/A	N/A	N/A	N/A	N/A	5,096	621	3,163
Central R. Region South	10,489	849	8,905	7,887	748	5,900	8,367	870	7,281	N/A	N/A	N/A	N/A	N/A	N/A	7,394	766	5,666
Upper River Region	12,875	1,160	14,939	14,625	967	14,138	9,993	1,029	10,287	N/A	N/A	N/A	N/A	N/A	N/A	9,654	779	7,519
The Gambia	**59,556**	**1,109**	**66,063**	**54,363**	**962**	**54,850**	**47,134**	**992**	**46,750**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**41,000**	**722**	**29,598**
Groundnut 28/206																		
West Coast Region	5,972	767	4,581	6,091	825	5,023	4,443	1,029	4,573	N/A	N/A	N/A	N/A	N/A	N/A	3,790	742	2,811
Lower river Region	6,786	911	6,183	4,237	852	3,612	4,053	929	3,763	N/A	N/A	N/A	N/A	N/A	N/A	3,904	604	2,358
North Bank Region	16,522	752	12,418	9,363	815	7,629	6,565	885	5,806	N/A	N/A	N/A	N/A	N/A	N/A	7,786	761	5,926
Central R. Region North	6,784	1,010	6,855	6,927	915	6,338	3,399	924	3,141	N/A	N/A	N/A	N/A	N/A	N/A	2,883	702	2,025
Central R. Region South	5,981	1,110	6,639	7,511	749	5,627	5,323	971	5,170	N/A	N/A	N/A	N/A	N/A	N/A	4,850	772	3,742
Upper River Region	15,272	954	14,562	8,724	917	7,996	6,562	1,233	8,088	N/A	N/A	N/A	N/A	N/A	N/A	4,454	669	2,979
The Gambia	**57,317**	**894**	**51,238**	**42,853**	**845**	**36,224**	**30,345**	**1,007**	**30,542**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**27,666**	**717**	**19,841**

Groundnut (73/33+28/208)																		
West Coast Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,086	1,022	11,330	11,141	621	6,918	N/A	N/A	N/A
Lower river Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,173	1,010	9,264	9,312	909	8,465	N/A	N/A	N/A
North Bank Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20,510	994	20,387	21,210	912	19,346	N/A	N/A	N/A
Central R. Region North	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,090	949	10,524	10,820	784	8,482	N/A	N/A	N/A
Central R. Region South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13,689	1,021	13,976	14,612	894	13,063	N/A	N/A	N/A
Upper River Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16,614	1,041	17,295	17,914	897	16,070	N/A	N/A	N/A
The Gambia	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**82,161**	**1,006**	**82,654**	**85,009**	**836**	**71,082**	**N/A**	**N/A**	**N/A**
Groundnut (Philipine pink)																		
West Coast Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6,735	648	4,364
Lower river Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	464	788	366
North Bank Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,047	781	817
Central R. Region North	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	56	790	44
Central R. Region South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	74	755	56
Upper River Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,881	881	2,539
The Gambia	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**11,257**	**727**	**8,186**

Rice (Upland + Swamp)																		
West Coast Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15,009	842	12,638	16,207	733	11,880	N/A	N/A	N/A
Lower river Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,310	799	9,036	10,501	800	8,401	N/A	N/A	N/A
North Bank Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14,212	654	9,295	14,379	607	8,727	N/A	N/A	N/A
Central R. Region North	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,262	766	7,095	9,732	539	5,242	N/A	N/A	N/A
Central R. Region South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8,560	827	7,079	8,852	710	6,284	N/A	N/A	N/A
Upper River Region	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,299	839	7,801	9,889	819	8,099	N/A	N/A	N/A

Source: Planning Services Unit, Ministry of Agriculture

Table 2.4: Livestock herd and poultry status by type, 2010 - 2017

Animal Type	2010[1]	2011	2012	2013	2014	2015	2016	2017
Ndama Cattle	356,395	392,288	226,725	405,497	431,308	N/A	253,545	256,241
Non Ndama Cattle		6,184	30,643	30,557	47,775	N/A	3,756	11,483
West African Dwarf Goat	330,677	296,939	286,621	254,102	340,314	N/A	326,603	313,198
Non West African Dwarf Goat		6,051	25,509	13,333	19,521	N/A	1,733	N/A
Djalonke Sheep	194,722	139,296	79,420	25,985	40,427	N/A	166,467	154,481
Non Djalonke Sheep		4,643	32,744	14,885	12,762	N/A	6,195	4,004
Donkeys	N/A	55,527	48,014	28,048	22,941	N/A	65,650	53,054
Horses	N/A	16,902	18,504	4,515	4,593	N/A	22,070	21,050
Pigs	7,991	6,385	N/A	4,873	8,192	N/A	14,380	14,283
Poultry	253,641	1,870,376	637,028	516,806	609,180	N/A	937,951	N/A

Source: Planning Services Unit, Ministry of Agriculture

[1] In 2010 cattle, goat and sheep were not disaggregated by breed.

CHAPTER 3: RESIDUALS

This chapter contains statistics on the amount and characteristics of residuals generated by human production and consumption processes, their management, and their final release to the environment. Residuals are flows of solid, liquid and gaseous materials, and energy, that are discarded, discharged or emitted by establishments and households through processes of production, consumption or accumulation. Residuals may be discarded, discharged or emitted directly to the environment or be captured, collected, treated, recycled or reused. The FDES 2013 covers the main groups of residuals that are emissions of substances to air, water or soil, wastewater and waste, and the release of residuals from the application of chemical substances.

Table 3.1: Imports of Ozone Depleting Substance Alternative in all sectors (mt), 2012 - 2015

Alternative	Imports			
	2012	2013	2014	2015
HFC				
HFC-134a	7	8	8	8
HFC-227ea/HFC-365mfc	N/A	N/A	N/A	N/A
HFC blends				
R-404A	5	9	1	2
R-407C	1	1	1	2
R-410A	0	1	1	1
R-507A	N/A	N/A	N/A	N/A
HFO				
HFO-1234yf	N/A	N/A	N/A	N/A
Other alternative				
HC-290	N/A	N/A	N/A	N/A
HC-600a	1	3	3	2
Pentane (C, N, I)	N/A	N/A	N/A	N/A
R-744	N/A	N/A	N/A	N/A
R-717	N/A	N/A	N/A	N/A

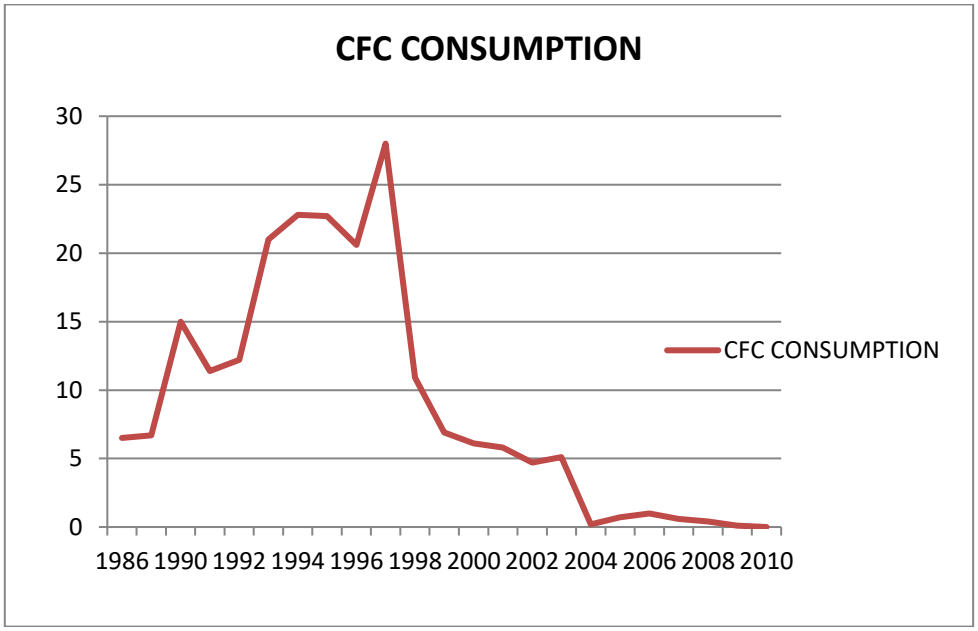
Source: National Environment Agency

Table 3.2: Estimated use of Ozone Depleting Substance Alternative (mt), 2012 - 2015

Alternative	*Estimated use*			
	2012	**2013**	**2014**	**2015**
HFC				
HFC-134a	9	11	13	15
HFC-227ea/HFC-365mfc	N/A	N/A	N/A	N/A
HFC blends				
R-404A	6	7	8	10
R-407C	5	6	10	12
R-410A	4	6	8	9
R-507A	N/A	N/A	N/A	N/A
HFO				
HFO-1234yf	N/A	N/A	N/A	N/A
OTHERS				
Methyl formate	12	13	15	16
HC-290				
HC-600a	4	5	7	8
Pentane (C, N, I)	N/A	N/A	N/A	N/A
R-744	N/A	N/A	N/A	N/A
R-717	N/A	N/A	N/A	N/A

Source: National Environment Agency

Figure 3.1: Consumption of CFC, 1986-2010



Source: National Environment Agency

Table 3.3: Pesticide / Chemical imported into The Gambia, 2013 - 2016

Pesticide / Chemical	Unit	2013	2014	2015	2016
Lanju brand mosquito spray	kg	8,840	N/A	113,210	74,485
Lanju brand mosquito coil	carton	32,460	10,311	N/A	N/A
Methanol	ml	250	N/A	N/A	N/A
Ethanol	ml	250	N/A	N/A	N/A
N-Deithylbenzamide	carton	N/A	50	N/A	N/A
Attack insecticide	Litre	N/A	1,920	N/A	N/A
Hdryochloric acid	Litre	N/A	900	N/A	N/A
Sodium hydrogen sulphate	kg	N/A	18,450	N/A	N/A
Aerosol insecticides (bayonet)	carton	N/A	13,307	N/A	N/A
Baygon liquid and aerosol	carton	N/A	645	N/A	N/A

Sniper DDVP	carton	N/A	298	N/A	N/A
Dye	kg	N/A	123	N/A	N/A
Baygon	Litre	N/A	26,840	9,114	N/A
Sulphuric acid	mg/m^3	N/A	N/A	11	N/A
Calcium carbide	litre	N/A	N/A	29,376	N/A
Odomos Mosquito repellent cream	kg	N/A	N/A	126	N/A
Insecticide spritex	Litre	N/A	N/A	19,656	N/A
Insecticide Bath	kg	N/A	N/A	13,977	N/A
Bop insecticide spray	Litre	N/A	N/A	9,600	N/A
Polymeric	Litre	N/A	N/A	N/A	332,000
Bayonet Aerosol	Litre	N/A	N/A	N/A	42,860

Source: National Environment Agency

CHAPTER 4: EXTREME EVENTS AND DISASTERS

This chapter organizes statistics on the occurrence of extreme events and disasters with focus on their impacts on human well-being and the infrastructure of the human sub-system. The most common data providers are national and subnational authorities responsible for disaster management and assistance, insurance companies, satellite information and research centres. Unfortunately, there is a data gap regarding FDES Component 4 for The Gambia.

The following data summaries for the years 2017 and 2018 provide information on persons affected and displaced. Hazards are disaggregated by one of four hazard types. Persons are broken down by both gender and age. Of those persons displaced, a count of those persons who are Pregnant Women (PW), Breastfeeding women (BFW), or physically challenged (PC) is also provided. Damage to houses is also presented with counts provided of house partially damaged (HPD), roof blown away (RB) and house completely damaged (HCD).

Table 4.1: Data summary for 2017

WCR

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
	M	F	M	F	M	F	M	F								
Bush Fire	2	2	24	8	16	16	2	2	72	0	0	0	0	0	0	0
Domestic Fire	61	50	52	58	52	41	2	2	318	47	0	1	0	14	0	12
Flash Flood	247	234	326	315	322	354	27	24	1849	417	18	47	3	65	52	46
Wind Storm	347	319	395	422	436	395	34	24	2372	372	24	37	18	94	3	46
Grand Total	657	605	797	803	826	806	65	52	4611	836	42	85	21	173	55	104

Source: National Disaster Management Agency

CRR

Hazard	0-5 yr	6-18 yr	19-65 yr	65+	Affected	Displaced	PW	BFW	PC	HPD	RB	HCD

	M	F	M	F	M	F	M	F								
Bush Fire	1	2	2	4	5	3	0	0	17	1	1	1	1	0	0	0
Domestic Fire	56	36	45	49	63	59	6	6	320	0	5	10	0	14	0	0
Flash Flood	817	702	715	649	672	554	105	65	4279	491	98	188	6	0	0	0
Wind Storm	555	555	613	637	619	617	118	94	3808	1	52	116	7	0	0	0
Grand Total	1,429	1,295	1,375	1,339	1,359	1,233	229	165	8,424	493	156	315	14	14	0	0

Source: National Disaster Management Agency

LRR

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
	M	F	M	F	M	F	M	F								
Bush Fire	2	4	7	12	9	10	1	0	45	0	0	4	1	0	0	0
Domestic Fire	8	3	20	21	21	32	2	2	109	10	2	9	0	2	2	0
Flash Flood	87	106	387	446	445	530	59	70	2,144	1,002	66	167	39	105	60	82
Wind Storm	212	194	790	894	769	1006	108	78	4,051	1,768	103	328	75	208	231	107
Grand Total	309	307	1,204	1,373	1,244	1,578	170	150	6,349	2,780	171	508	115	315	293	189

Source: National Disaster Management Agency

KMC

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
	M	F	M	F	M	F	M	F								
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	68	97	90	103	96	90	69	59	672	0	0	0	0	0	0	0
Flash Flood	529	545	747	818	872	953	103	73	4,640	0	83	172	39	412	0	0
Wind Storm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	597	642	837	921	968	1,043	172	132	5,312	0	83	172	39	412	0	0

Source: National Disaster Management Agency

URR

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD

	M	F	M	F	M	F	M	F								
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flash Flood	101	139	180	154	143	164	24	25	930	200	30	55	3	181	13	59
Wind Storm	63	87	114	100	123	146	21	16	670	92	30	56	3	77	34	13
Grand Total	164	226	294	254	266	310	45	41	1,600	292	60	111	6	258	47	72

Source: National Disaster Management Agency

NBR

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
	M	F	M	F	M	F	M	F								
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	0	1	3	2	8	3	1	0	18	18	0	0	0	4	0	0
Flash Flood	385	395	755	839	1,011	1,031	155	54	4,625	3,365	3	1	0	398	0	105
Wind Storm	67	48	144	126	135	108	32	14	674	441	0	0	0	57	0	14
Grand Total	452	444	902	967	1,154	1,142	188	68	5,317	3,824	3	1	0	459	0	119

Source: National Disaster Management Agency

BCC

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
	M	F	M	F	M	F	M	F								
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	11	13	2	8	15	4	0	0	53	22	0	1	0	0	0	6
Flash Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	11	13	2	8	15	4	0	0	53	22	0	1	0	0	0	6

Source: National Disaster Management Agency

OVERALL

Hazard	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HC

	M	F	M	F	M	F	M	F								D
Bush Fire	5	8	33	24	30	29	3	2	134	1	1	5	2	0	0	0
Domestic Fire	204	200	212	241	255	229	80	69	1,490	97	7	21	0	34	2	18
Flash Flood	2,166	2,121	3,110	3,221	3,465	3,586	473	311	18,467	5,475	298	630	90	1,161	125	292
Wind Storm	1,244	1,203	2,056	2,179	2,082	2,272	313	226	11,575	2,674	209	537	103	436	268	180
Grand Total	3,619	3,532	5,411	5,665	5,832	6,116	869	608	31,666	8,247	515	1,193	195	1,631	395	490

Source: National Disaster Management Agency

Table 4.2: Data summary for 2018

		WCR															
Hazard	**#HH**	**0-5 yr**		**6-18 yr**		**19-65 yr**		**65+**		**Affected**	**Displaced**	**PW**	**BFW**	**PC**	**HPD**	**RB**	**HCD**
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**								
Bird invasion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	43	70	58	108	96	91	71	17	8	519	7	14	5	270	14	10	2
Flash Flood	59	90	112	123	125	147	152	11	5	765	16	28	5	182	33	20	4
Hippo[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverine Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	119	165	204	254	255	232	238	16	5	1,369	17	41	5	356	27	34	52
Grand Total	221	325	374	485	476	470	461	44	18	2,653	40	83	15	808	74	64	58

Source: National Disaster Management Agency

[2] Hippo attacks rice fields in CRR, thus causing destruction to livelihood.

CRR

Hazard	#HH	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
		M	F	M	F	M	F	M	F								
Bird invasion	1	2	1	1	3	4	1		1	13	0	0	0	0	0	0	0
Bush Fire	5	17	16	15	17	24	14	1	5	109	1	2	0	0	1	0	0
Domestic Fire	36	70	80	87	81	77	67	13	22	497	10	13	0	0	32	0	0
Flash Flood	68	96	130	143	161	154	141	9	11	845	3	3			7	46	1
Hippo	7	19	19	18	19	20	16	3	1	115	1	0	0	0	0	0	0
Riverine Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	449	950	1,050	1,172	1,171	1,156	1,272	207	191	7,169	179	297	67	263	561	425	0
Grand Total	566	1062	1,187	1,284	1,339	1,405	1,258	157	216	8,748	179	288	67	263	601	372	1

Source: National Disaster Management Agency

LRR

Hazard	#HH	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
		M	F	M	F	M	F	M	F								
Bird invasion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flash Flood	5	3	2	11	12	9	13	2	1	53	2	2	0	21	2	1	3
Hippo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverine Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	145	98	134	252	267	316	318	47	47	1,479	44	79	21	614	89	37	81
Grand Total	150	101	136	263	279	325	331	49	48	1,532	46	81	21	635	91	38	84

Source: National Disaster Management Agency

KMC

Hazard	#HH	0-5 yr	6-18 yr	19-65 yr	65+	Affected	Displaced	PW	BFW	PC	HPD	RB	HCD

		M	F	M	F	M	F	M	F								
Bird invasion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	47	40	43	56	81	60	85	5	3	373	0	0	0	0	0	0	0
Flash Flood	88	124	85	180	179	241	217	31	19	1,076	161	28	44	84	96	29	9
Hippo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	998	6,848
Riverine Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	135	164	128	236	260	301	302	36	22	1,449	161	28	44	84	96	1,027	6,857

Source: National Disaster Management Agency

URR

Hazard	**#HH**	**0-5 yr**		**6-18 yr**		**19-65 yr**		**65+**		**Affected**	**Displaced**	**PW**	**BFW**	**PC**	**HPD**	**RB**	**HCD**
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**								
Bird invasion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	1	1	1	1	1	0	1	0	0	5	0	0	0	0	0	0	0
Flash Flood	1,026	3,292	3,730	3,759	3,587	3,549	3,983	413	456	22,769	581	1,026	266	1,666	649	359	28
Hippo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverine Flood	8	28	29	28	19	18	33	11	15	181	2	1	2	0	3	3	3
Wind Storm	45	178	210	157	188	160	179	10	8	1,090	24	38	15	214	22	16	31
Grand Total	1,080	3,499	3,970	3,945	3,795	3,727	4,196	434	479	24,045	607	1,065	283	1,880	674	378	62

Source: National Disaster Management Agency

NBR

Hazard	**#HH**	**0-5 yr**	**6-18 yr**	**19-65 yr**	**65+**	**Affected**	**Displaced**	**PW**	**BFW**	**PC**	**HPD**	**RB**	**HCD**

		M	F	M	F	M	F	M	F								
Bird invasion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bush Fire	1	0	0	1	2	1	1	1	0	6	0	0	0	0	0	0	0
Domestic Fire	6	3	3	9	6	9	12	3	1	46	0	0	0	15	4	2	0
Flash Flood	336	251	261	492	507	557	604	103	31	2,806	2	1	0	794	273	25	11
Hippo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverine Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	184	191	183	301	305	368	387	65	28	1,828	0	0	0	412	169	15	122
Grand Total	527	445	447	803	820	935	1004	172	60	4,686	2	1	0	1,221	446	42	133

Source: National Disaster Management Agency

BCC

Hazard	#HH	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
		M	F	M	F	M	F	M	F								
Bird invasion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bush Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flash Flood	5	6	7	53	18	25	17	3	0	129	0	1	0	39	3	1	0
Hippo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverine Flood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind Storm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	5	6	7	53	18	25	17	3	0	129	0	1	0	39	3	1	0

Source: National Disaster Management Agency

OVERALL

Hazard	#HH	0-5 yr		6-18 yr		19-65 yr		65+		Affected	Displaced	PW	BFW	PC	HPD	RB	HCD
		M	F	M	F	M	F	M	F								

Bird invasion	1	2	1	1	3	4	1	0	1	13	0	0	0	0	0	0	0
Bush Fire	6	17	16	16	19	25	15	2	5	115	1	2	0	0	1	0	0
Domestic Fire	133	184	185	261	265	237	236	38	34	1,440	17	27	5	285	50	12	2
Flash Flood	1,587	3,862	4,327	4,761	4,589	4,682	5,127	572	523	28,443	765	1,089	315	2786	1,063	481	56
Hippo	7	19	19	18	19	20	16	3	1	115	1	0	0	0	0	998	6,848
Riverine Flood	8	28	29	28	19	18	33	11	15	181	2	1	2	0	3	3	3
Wind Storm	942	1,582	1,781	2,136	2,186	2,232	2,394	345	279	12,935	264	455	108	1,859	868	527	286
Grand Total	2,684	5,602	6,249	7,069	6,987	7,188	7,569	895	843	43,242	1,035	1,547	430	4,930	1,985	1,922	7,195

Source: National Disaster Management Agency

CHAPTER 5: HUMAN SETTLEMENTS AND ENVIRONMENTAL HEALTH

This chapter encompasses statistics on the environment in which humans live and work, particularly with regard to living conditions and environmental health. These statistics are important for the management and improvement of conditions related to human settlements, shelter conditions, safe water, sanitation and health. Increasing concentration of humans in modern urban settlements pose special challenges to humans and their physical environment in which these settlements are located. The well-being and health risks associated with the environment can be mitigated substantially by the prevailing conditions and characteristics of human settlements. Appropriate infrastructure, adequate waste disposal, wise land use planning, clean and safe transportation and ecosystem health, among others, can modify the effect of environmental and settlement-related risks on human well-being.

Table 5.1: Percentage distribution of household by source of light, LGA and residence, 2013

	Electricity	Kerosene lamp with shade	Other kerosene lamp	Candle	Solar	Firewood	Battery powered light	Other	NS	Total	No. of Households
LGA											
Banjul	89.4	0.3	0.0	5.2	0.0	0.0	4.9	0.0	0.1	100	6,643
Kanifing	81.8	0.5	0.3	8.2	0.2	0.0	8.9	0.1	0.0	100	60,103
Brikama	42.9	0.5	0.6	16.1	4.7	0.0	35.1	0.1	0.1	100	82,006
Mansakonko	21.3	0.7	0.7	16.1	7.1	0.1	53.8	0.2	0.1	100	9,668
Kerewan	24.6	0.5	0.1	11.8	4.9	0.1	58.1	0.1	0.0	100	22,609
Kuntaur	8.2	1.2	0.2	31.0	3.8	1.5	53.9	0.0	0.1	100	8,913
Janjanbureh	12.0	1.5	0.3	35.0	4.3	0.4	46.3	0.1	0.2	100	11,849
Basse	26.5	1.6	1.0	22.8	7.2	0.6	39.7	0.5	0.1	100	15,819
Residence											
Urban	67.0	0.5	0.4	11.9	1.7	0.0	18.4	0.1	0.0	100	146,194
Rural	8.7	0.9	0.5	22.2	7.4	0.5	59.6	0.2	0.1	100	71,416
Total	**47.9**	**0.7**	**0.5**	**15.3**	**3.6**	**0.2**	**31.9**	**0.1**	**0.1**	**100**	**217,610**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.2: Distribution of household heads by source of light and sex, 2013

Source of light	Sex		Number of Households
	Male	Female	
Electricity	79,165	25,054	104,219
Kerosene lamp with shade	1,144	264	1,408
Other kerosene lamp	778	192	970
Candle	27,252	5,936	33,188
Solar	6,465	1,316	7,781
Battery powered lamp	56,693	12,692	69,385
Other	473	73	546
NS	93	20	113
Total	**172,063**	**45,547**	**217,610**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.3: Percentage distribution of households' main cooking fuel by LGA and residence, 2013

	Firewood	Kerosene	Briquette	Charcoal	Gas	Electricity	Saw dust	Other	NS	Total	Number of Households
LGA											
Banjul	6.4	0.9	0.0	58.7	3.5	0.0	0.0	0.4	30.1	100	6,643
Kanifing	31	0.8	0.4	48.3	6.9	0.0	0.5	0.2	11.8	100	60,103
Brikama	70.2	0.6	0.6	20.7	3.3	0.1	0.8	0.2	3.6	100	82,006
Mansakonko	90.1	0.2	1.0	3.8	0.6	0.0	0.4	0.1	3.7	100	9,668
Kerewan	88.4	0.5	0.2	5.1	0.5	0.0	0.3	0.0	5.0	100	22,609
Kuntaur	96.5	0.5	0.4	0.9	0.1	0.0	0.2	0.0	1.4	100	8,913
Janjanbureh	95.4	0.4	0.4	1.3	0.2	0.0	0.1	0.0	2.2	100	11,849
Basse	81.7	0.6	0.5	10.4	0.9	0.0	0.0	0.1	6.0	100	15,819
Residence											

Urban	48.2	0.8	0.5	35.6	4.8	0.1	0.6	0.2	9.2	100	146,194
Rural	94.7	0.3	0.4	1.9	0.5	0.0	0.22	0.0	2.0	100	71,416
Total	**63.5**	**0.6**	**0.5**	**24.5**	**3.4**	**0.0**	**0.5**	**0.1**	**6.9**	**100**	**217,610**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.4: Percentage distribution of households by type of toilet facility, LGA and residence, 2013

LGA	Type of Toilet Facility										Number of households
	Piped Sewer System	Septic Tank	Pit Latrine (with slab)	Pit Latrine (without slab)	Ventilated Improved Pit Latrine	Bucket/ Pan	No facility/ Bush/ Open	Other	NS	Total	
Banjul	87.4	3.5	7.0	0.9	0.0	0.9	0.2	0.0	0.0	100	6,643
Kanifing	0.0	41.7	37.5	14.5	4.6	0.5	0.6	0.6	0.0	100	60,103
Brikama	0.0	16.5	43.7	31.6	4.9	0.2	1.7	1.3	0.1	100	82,006
Mansakonko	0.0	2.8	41.1	49.7	2.4	0.0	3.4	0.4	0.1	100	9,668
Kerewan	0.0	3.8	46.6	42.4	3.0	0.2	2.7	1.1	0.0	100	22,609
Kuntaur	0.0	1.7	33.8	45.1	2.2	0.0	16.2	0.8	0.1	100	8,913
Janjanbureh	0.0	2.5	32.6	55.3	2.1	0.0	6.4	0.9	0.2	100	11,849
Basse	0.0	2.4	38.2	54.5	3.6	0.0	0.8	0.2	0.1	100	15,819
Residence											
Urban	4.0	26.7	41.2	21.5	4.8	0.4	0.5	0.9	0.0	100	146,194
Rural	0.0	2.4	36.6	51.7	2.4	0.0	6	0.9	0.1	100	71,416
Total	**2.7**	**18.7**	**39.7**	**31.4**	**4.0**	**0.3**	**2.3**	**0.9**	**0.1**	**100**	**217,610**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.5: Percentage distribution of households by method of solid waste disposal, LGA and residence, 2013

	Land fill/ Burying	Burning	Use as compost	Recycling	Collection by Municipality (Household	Collection by Municipality (Municipal	Collected by private firm	Set-setal*	Public dump site (authorized)	Bush or Open space	Other	NS	Total

					Containers)	Containers)							
LGA													
Banjul	0.4	0.9	0.6	0.0	86.9	8.8	0.1	0.0	1.9	0.2	0.3	0.1	100
Kanifing	3.4	14.1	0.5	0.2	9.2	5.2	41.0	0.8	18.1	6.6	1.0	0.0	100
Brikama	16.1	51.3	1.7	0.3	1.4	0.6	8.8	0.8	6.6	11.8	0.6	0.1	100
Mansakonko	29.2	22.0	4.4	0.7	0.5	0.4	0.4	0.3	5.3	36.4	0.3	0.1	100
Kerewan	23.3	19.6	8.4	0.7	0.8	0.3	3.3	0.3	3.4	39.6	0.2	0.0	100
Kuntaur	13.4	17.6	6.7	0.1	0.0	0.0	0.0	0.4	0.7	60.9	0.1	0.1	100
Janjanbureh	18.0	17.1	2.1	0.6	0.1	0.0	0.8	0.4	5.1	55.4	0.4	0.2	100
Basse	15.9	23.9	7.1	0.4	1.4	0.1	1.6	0.1	7.2	41.8	0.3	0.1	100
Residence													
Urban	8.3	32.7	0.9	0.3	8.8	2.9	22.4	0.8	12.3	9.9	0.8	0.0	100
Rural	24.0	23.5	6.5	0.4	0.1	0.1	0.4	0.2	2.2	42.3	0.2	0.1	100
Total	**13.4**	**29.6**	**2.8**	**0.4**	**5.9**	**2.0**	**15.2**	**0.6**	**8.9**	**20.6**	**0.6**	**0.1**	**100**

*"Set-settal" is a national cleansing exercise which is conducted bi-monthly.

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.6: Percentage distribution of households by regularity of collection of solid waste, LGA and residence, 2013

	Collected (private)	Collected (municipality)

	Regular	Not regular	Regular	Not regular	Not Stated	Total	Number of Households
LGA							
Banjul	2.5	2.5	84.0	11.0	0.0	100	6,356
Kanifing	62.4	14.4	11.2	11.9	0.0	100	33,233
Brikama	68.1	15.4	11.4	4.3	0.8	100	8,892
Mansakonko	41.1	24.2	10.5	24.2	0.0	100	124
Kerewan	60.1	12.1	17.9	10.0	0.0	100	1,002
Janjanbureh	32.4	30.5	4.8	32.4	0.0	100	105
Basse	49.1	12.3	28.3	10.3	0.0	100	495
Residence							
Urban	55.7	12.9	20.9	10.5	0.1	100	49,792
Rural	40.0	36.6	9.6	13.7	0.0	100	415
Total	**55.6**	**13.1**	**20.8**	**10.5**	**0.1**	**100**	**50,207**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.7: Percentage distribution of households by main source of water, LGA and residence, 2013

	Piped into Dwelling	Piped into Compound	Public Stand Pipe	Protected Well in Compound	Unprotected Well in Compound	Well with pump (public)	Well without pump (public)	Other	Not Stated	Total	Number of households
LGA											
Banjul	24.2	71.9	1.9	0.0	0.6	0.1	0.0	1.2	0.1	100	6,643
Kanifing	12.7	62.5	15.5	2.2	1.8	0.6	0.7	4.1	0.0	100	60,103

Brikama	4.9	29.5	25.1	10.2	12.8	8.2	5.2	4.0	0.0	100	82,006
Mansakonko	1.5	7.6	29.5	12.8	1.1	35.3	10.3	1.5	0.4	100	9,668
Kerewan	1.7	13.4	34.1	9.7	4.3	23.7	11.2	1.8	0.0	100	22,609
Kuntaur	0.6	3.3	16.0	7.5	0.8	49.1	22.2	0.5	0.1	100	8,913
Janjanbureh	2.2	5.4	22.3	7.8	4.9	35.1	21.5	0.7	0.2	100	11,849
Basse	0.8	1.3	11.5	33	5.5	33.8	10.1	3.9	0.1	100	15,819
Residence											
Urban	9.5	47.5	19.9	7.5	6.3	2.9	2.3	4.1	0.0	100	1,476,194
Rural	0.6	2.7	24.4	12.6	7.1	35.7	15.4	1.6	0.2	100	71,416
Total	**6.6**	**32.8**	**21.4**	**9.2**	**6.5**	**13.7**	**6.6**	**3.3**	**0.1**	**100**	**217,610**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.8: Percentage distribution of households by source of water, 1983-2013

	Census Years			
Main source of water	**1983**	**1993**	**2003**	**2013**
Private pipe	9.9	15.7	26	39.4
Public pipe	12.1	17.7	31.5	21.4
Private well	21.7	22.3	13.7	9.2
Public well with pump	1.1	17.0	18.5	13.7

Public well without pump	45.8	20.2	8.6	6.6
Other	2.7	4.4	1.4	3.5
NS	6.8	2.6	0.3	1.0
Total	**100**	**100**	**100**	**100**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.9: Percentage distribution of the population by residence and sex, 2013

Residence	Population			% share of the population		
	Male	Female	Total	Male (%)	Female (%)	Total (%)
Urban	537,005	536,822	1,073,827	50	50	100
Rural	376,750	406,604	783,354	48.1	51.9	100
Total	**913,755**	**943,426**	**1,857,181**	**49.2**	**50.8**	**100**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.10: Percentage distribution of the population by LGA and residence, 2003 and 2013

LGA	2003			2013		
	Urban	Rural	Total	Urban	Rural	Total
Banjul	100	0.0	100	100	0.0	100
Kanifing	100	0.0	100	100	0.0	100
Brikama	60.3	39.7	100	73.6	26.4	100
Mansakonko	18.4	81.6	100	18.7	81.4	100
Kerewan	20.1	79.9	100	22.8	77.2	100
Kuntaur	6.4	93.6	100	7.3	92.7	100
Janjanbureh	15.5	84.5	100	14.9	85.1	100
Basse	13.0	87.0	100	28.6	71.4	100
Total	**50.4**	**49.6**	**100**	**57.8**	**42.2**	**100**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.11: Percentage distribution of the population by LGA, 1973-2013

	Population					% Share of total population				
LGA	**1973**	**1983**	**1993**	**2003**	**2013**	**1973**	**1983**	**1993**	**2003**	**2013**
Banjul	39,179	44,188	42,326	35,061	31,054	7.9	6.4	4.1	2.6	1.7
Kanifing	39,404	101,504	228,214	322,735	377,134	8.0	14.8	22	23.7	20.3
Brikama	91,013	137,245	234,917	389,594	688,744	18.4	20.0	22.6	28.6	37.1
Mansakonko	42,447	55,263	65,146	72,167	81,042	8.6	8.0	6.3	5.3	4.4
Kerewan	93,388	112,225	156,462	172,835	220,080	18.9	16.3	15.1	12.7	11.9
Kuntaur	47,669	57,594	67,774	78,491	96,703	9.7	8.4	6.5	5.8	5.2
Janjanbureh	54,232	68,410	88,247	107,212	125,204	11.0	9.9	8.5	7.9	6.7
Basse	86,167	111,388	155,059	182,586	237,220	17.5	16.2	14.9	13.4	12.8
Total	**493,499**	**687,817**	**1,038,145**	**1,360,681**	**1,857,181**	**100**	**100**	**100**	**100**	**100**

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.12: Percentage distribution of households and the de jure population by source of drinking water, time to obtain drinking water, and treatment of drinking water, according to residence, The Gambia 2013

	Households			Population		
Characteristic	**Urban**	**Rural**	**Total**	**Urban**	**Rural**	**Total**
Source of drinking water						
Improved source	95.3	84.7	91.0	94.3	84.8	89.6
Piped into dwelling	5.5	0.4	3.4	4.3	0.3	2.3
Piped to yard/plot	60.4	6.1	38.2	59.2	5.0	32.5
Public tap/standpipe	24.6	44.7	32.8	25.2	44.7	34.8
Tubewell or borehole	1.8	18.9	8.8	1.6	18.6	10.0
Protected well	2.4	14.5	7.4	3.9	16.1	9.9
Bottled water	0.6	0.1	0.4	0.1	0.0	0.1

Non-improved source	3.7	14.5	8.1	4.3	14.6	9.4
Unprotected well	3.7	14.3	8.0	4.3	14.5	9.3
Surface water	0.0	0.2	0.1	0.0	0.1	0.1
Other source	0.9	0.7	0.8	1.3	0.5	0.9
Total	100	100	100	100	100	100
Time to obtain drinking water (round trip)						
Water on premises	69.8	11.8	46.1	67.2	10.8	39.4
Less than 30 minutes	24.6	67.7	42.3	25.6	67.2	46.1
30 minutes or longer	5.1	19.3	10.9	6.6	21.1	13.8
Don't know/missing	0.4	1.2	0.7	0.6	1.0	0.8
Total	100	100	100	100	100	100
Water treatment prior to drinking[1]						
Boiled	0.3	0.2	0.2	0.2	0.1	0.1
Bleach/chlorine added	2.9	3.1	3.0	3.0	3.1	3.1
Strained through cloth	5.1	23.5	12.6	7.3	25.5	16.2
Ceramic, sand, or other filter	0.3	0.1	0.2	0.2	0.1	0.1
Other	0.2	0.4	0.3	0.2	0.2	0.2
No treatment	91.2	73.5	84.0	89.7	71.9	81.0
Percentage using an appropriate treatment method[2]	3.4	3.3	3.4	3.3	3.3	3.3
Number	3,671	2,546	6,217	25,939	25,202	51,142

1 Respondents may report multiple treatment methods, so the sum of treatment may exceed 100 per cent.

2 Appropriate water treatment methods include boiling, bleaching, filtering, and solar disinfecting.

Source: 2013 PHC, Gambia Bureau of Statistics

Table 5.13: Percentage distribution of households and the de jure population by type of toilet/latrine facilities, according to residence, 2013

	Households			Population		
Type of toilet/latrine facility	**Urban**	**Rural**	**Total**	**Urban**	**Rural**	**Total**
Improved, not shared facility	45.9	24.3	37	50.4	29	39.8

Flush/pour flush to piped sewer system	2.0	0.0	1.2	1.9	0.0	1.0
Flush/pour flush to septic tank	26.2	2.0	16.3	25.6	1.7	13.8
Flush/pour flush to pit latrine	2.1	0.4	1.4	2.2	0.5	1.4
Ventilated improved pit (VIP) latrine	4.3	4.2	4.2	5.8	4.2	5.0
Pit latrine with slab	11.3	17.7	13.9	14.8	22.5	18.6
Shared facility[1]	31.5	12.8	23.8	26.8	10.8	18.9
Flush/pour flush to piped sewer system	2.3	0.0	1.3	1.2	0.0	0.6
Flush/pour flush to septic tank	4.6	0.2	2.8	3.9	0.1	2.1
Flush/pour flush to pit latrine	1.5	0.2	1.0	1.3	0.2	0.8
Ventilated improved pit (VIP) latrine	6.9	2.1	4.9	6.1	1.7	4.0
Pit latrine with slab	16.3	10.2	13.8	14.1	8.8	11.5
Non-improved facility	22.6	62.9	39.1	22.9	60.2	41.3
Pit latrine without slab/open pit	22.1	58.0	36.8	22.6	56.5	39.3
No facility/bush/field	0.3	4.7	2.1	0.2	3.5	1.8
Other	0.1	0.2	0.1	0.0	0.1	0.1
Total	100	100	100	100	100	100
Number	3,671	2,546	6,217	25,939	25,202	51,142

1 Facilities that would be considered improved if they were not shared by 2 or more households

Source: 2013 DHS, Gambia Bureau of Statistics

CHAPTER 6: ENVIRONMENTAL PROTECTION, MANAGEMENT AND ENGAGEMENT

Environmental protection, management and engagement contains information on environmental protection and resource management expenditure to improve the environment and maintain ecosystem health. Environmental governance, institutional strength, enforcement of regulations and extreme event preparedness are also considered. It also includes a wide variety of programmes and actions to increase awareness, including environmental information and education, as well as private and community activities aimed at diminishing environmental impacts and improving the quality of local environments. However, this chapter only covers statistics on environmental governance and protection.

Table 6.1: List of Multilateral Environmental Agreements (MEAs) and other Global Environmental Conventions Signed, 2017

NO:	CONVENTION[3]	DATE OF SIGNING	DATE OF RATIFICATION	RESPONSIBLE AGENCY
1.	Abidjan Convention	March 23, 1981	Dec. 6, 1984	National Environment Agency
2.	Vienna Convention for the Protection of the Ozone Layer	Jan. 26, 1995		National Environment Agency
3.	Rotterdam Convention	1998	Feb. 2004	National Environment Agency
4.	Minamata	Oct. 2013	Nov. 2016	National Environment Agency
5.	United Nations Framework Convention on Climate Change	Oct.1995	Jan. 29, 1996	National Climate Committee with a Secretariat at the NEA
6.	Stockholm Convention	May 2001	May 2003	National Environment Agency
7.	Basel Convention	1989	1992	National Environment Agency
8.	Montreal Protocol	1987	Sept. 16, 1989	National Environment Agency

Source: National Environment Agency

Table 6.2: Policy frameworks and legislations, 2017

Legislation	Date enacted	Implementation Status	Comments
Gambia Environmental Action Plan (GEAP II)	2008	2009 - 2018	
National Environment Management Act.	1994		
Hazardous Chemical Control Act.	1994		Amendment Reg. 2013
Ozone Depleting Substances Regulations	1999		

[3] This list is not exhaustive, it only contains conventions that are under the responsibility of National Environment Agency.

Environment Quality standard Regulations	1999		

Source: National Environment Agency