



SECOSUD II – 22 de Junho de 2016
Complexo Pedagógico, Campus Principal
UEM, Maputo MZ

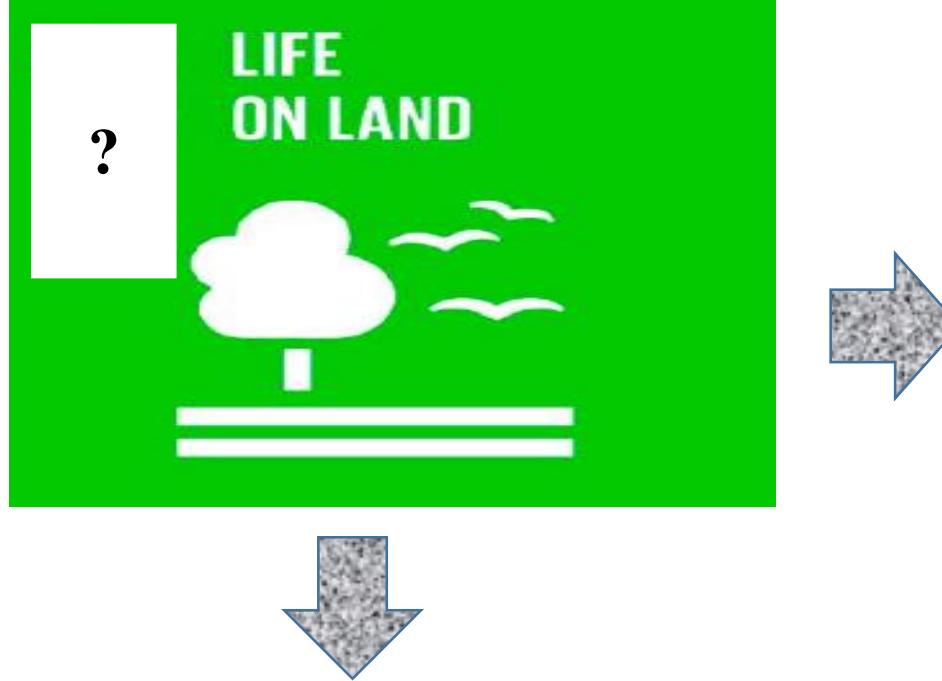
**Land use, land-use change and forestry
monitoring in Mozambique through Collect
Earth**

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Land use: how and why man alter his environment?

1. Introduction



Land

= resource [soil + water + biodiversity]

Population growth

- 45% food demand
- 50% demand for energy
- 30% demand for water
- 4-5% demand for building-up

Unsustainable development goals

- loss of biodiversity from deforestation
- drought from hydrological cycle change
- water pollution
- decreasing of productivity in drylands



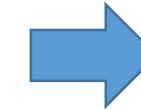
Land degradation



1/1. Introduction



SUSTAINABLE
DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



169 targets

Target 15.3:

- ✓ *combat desertification,*
- ✓ *restore degraded land*
- ✓ *strive to achieve a land degradation-neutral world*

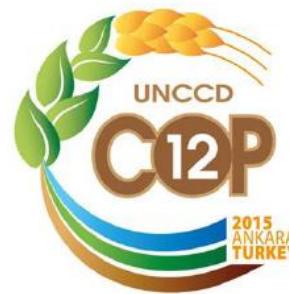
Indicator

LDN = $d_{\text{land}}/\Sigma_{\text{land}[a]}$

- ✓ d_{land} : *degraded land that is degraded over*
- ✓ $\Sigma_{\text{land}[a]}$: *total land area*



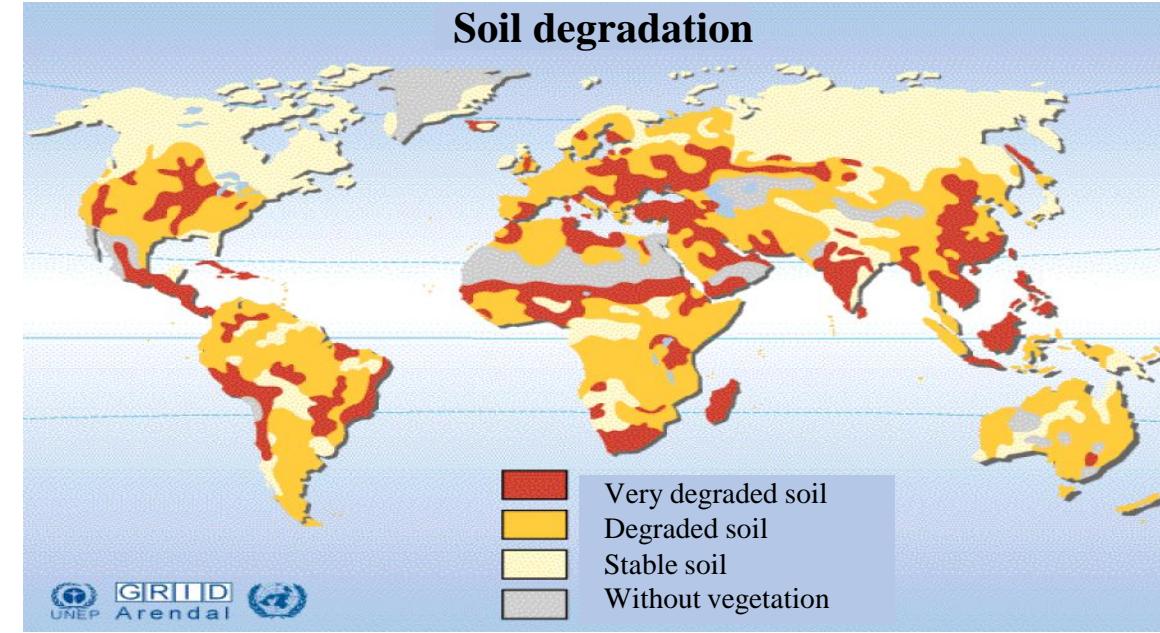
**SUSTAINABLE
DEVELOPMENT GOALS**
17 GOALS TO TRANSFORM OUR WORLD



Reflection [??]

- ❖ The *demand for land* and *land degradation* differ between countries, region and continent.

Priority [UNEP]: Countries should monitor and control the level of their global land use by interpreting it, first in the local context.



Invitation: All UNCCD country Parties should formulate national targets to achieve LDN

Support: UNCCD bodies and creation of *Global Mechanism*

Target: (1) *Land Degradation Neutrality*
(2) *Human welfare*

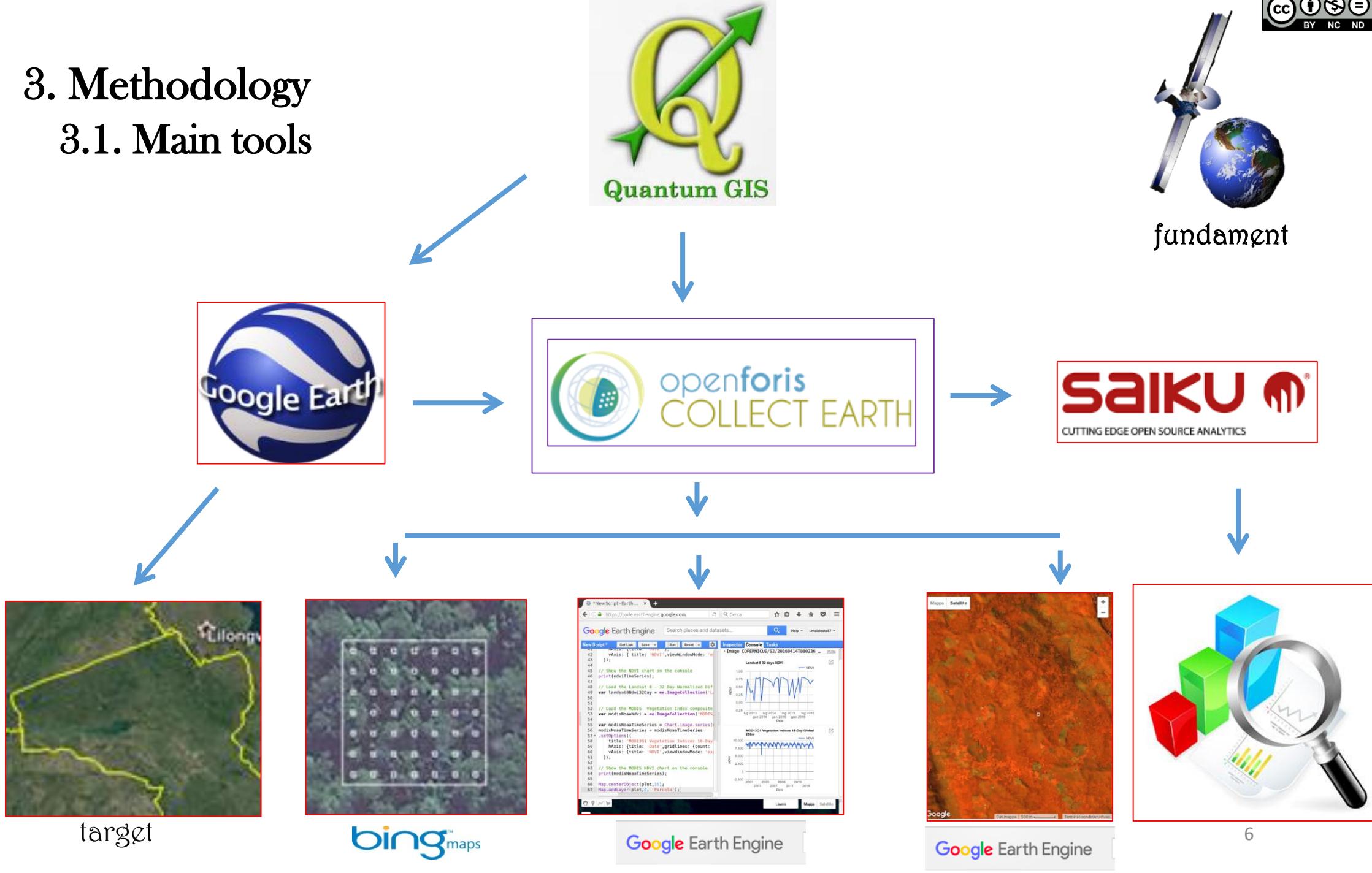


2. Objectives

- Evaluate land use, land use change and forestry in 25,000 parcels randomly placed across the country in the past 15 years through Collect Earth.
- Provide the resulting data to SADC institutions as a baseline to define LDN targets.

3. Methodology

3.1. Main tools



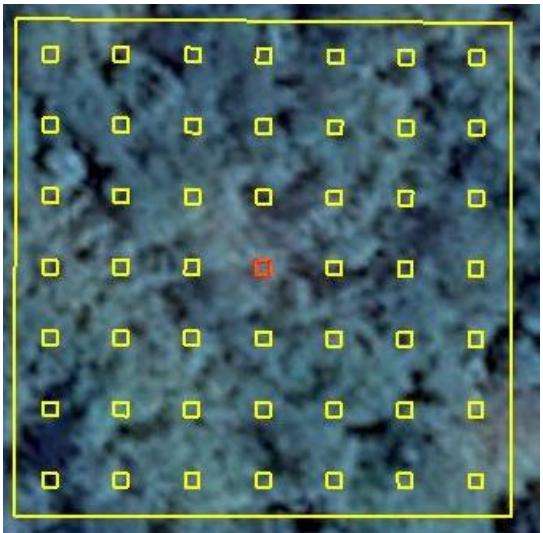


3.2. Basics elements (cards)

Places

- 483 - ID# : 87639,0
- 484 - ID# : 92281,0
- 485 - ID# : 99890,0
- 486 - ID# : 104052,1
- 487 - ID# : 85324,0

3.2.1. plot target



3.2.2. grid

3.2.3. identity card

Elementos(A) Elementos(B) FAO-FRA IPCC Clasif. Nacional

Imagen de alta resolución disponível

2016

Vegetação

Tipo de Vegetação	Cobertura Vegetal
Árvore	90-100%
Arbusto	0%
Palmeira	0%
Bambu	0%
Cultura agrícola	0%

Corpos d'água

Corpo d'água	Cobertura do Corpo d'água
Lago	0%
Rio	0%

openforis COLLECT EARTH

Seguinte

Infraestrutura

Elementos de Infraestrutura	Cobertura da Infraestrutura
Casa	0%
Outras edificações	0%
Estrada pavimentada	0%
Estrada não-pavimentada	0%

Número de árvores

Mais que 30

Número de arbustos

0

Comprimento da vegetação linear (em metros)

0

openforis COLLECT EARTH

Anterior **Seguinte**

3.3. Classification

FAO classification

Elementos(A) Elementos(B) FAO-FRA IPCC Clasif. Nacional

Classe FRA

Floresta	Outras terras florestais
Outras terras com árvores	Outras terras
Corpos de água interiores	

7

IPCC classification

↓ ↓

Elementos(A)	Elementos(B)	FAO-FRA	IPCC	Classif. Nacional
Uso da terra				
Floresta	Área agrícola			
Outros usos	Pastagem / Pradaria			
Área alagada	Área urbana			
Sem dados				
Categoria do Uso da Terra - Confiança				
Sim	Não			
Conversão do Uso da Terra				
FL > FL	OU > FL			
AG > FL	PA > FL			
AL > FL	AU > FL			
Subcategoria do Uso da Terra - Confiança				
Sim	Não			
openforis COLLECT EARTH				
Anterior		Seguinte		

Elementos(A)	Elementos(B)	FAO-FRA	IPCC	Classif. Nacional
Sim	Não			
Tipo do uso da terra atual				
Conifera	Folhosa			
Mix Conif. e Folhosa	Mangue			
Floresta ripária	Floresta de galeria			
Plantação	Matagal			
Savana arbustiva	Bamboo			
Palmeiral				
Subtipo do uso da terra atual				
Floresta folhosa mista	Floresta folhosa sempre-verde			
Floresta folhosa decidua				
Houve mudança no tipo de uso da terra?				
Sim	Não			
openforis COLLECT EARTH				
Anterior		Seguinte		

- Forest: 20% of trees
- Grassland: 20% of grass
- Wetlands: 20% water

- Cropland: 20%
- Settlement: 20%
- Other uses: 20%

National classification

↓

Elementos(A)	Elementos(B)	FAO-FRA	IPCC	Classif. Nacional
Land Use				
Forest	Cropland			
Grassland	Other Land			
Water Bodies	Settlement			
Thicket	Shrub Land			
Plantation				
Subcategory				
Evergreen	Deciduous			
Wetland				
Subcategory Types				
Open Deciduous	Closed Deciduous			
Mopane				
Disturbance				
openforis COLLECT EARTH				
Anterior		Enviar		

- Open forest: >30%
- Closed forest: >65%



Genesis of the evaluation skills



30/05 - 10/06/2016



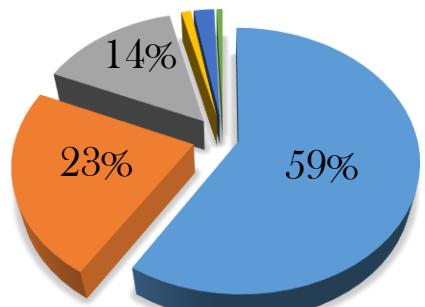
Current data processed: 15.000 plots



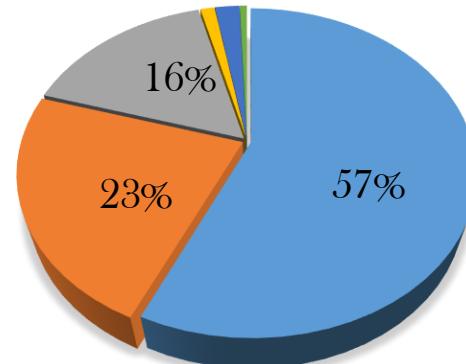
4. Results

4.1. National scale data

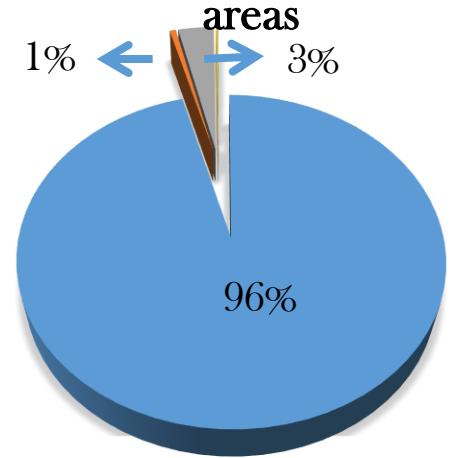
Land use in 2001-2002



Land use in 2016-2017



Changes in national forest areas



- The country has lost forest for 2% of its surface;
- ❖ 4% of the original forest cover has been lost.

Legend:

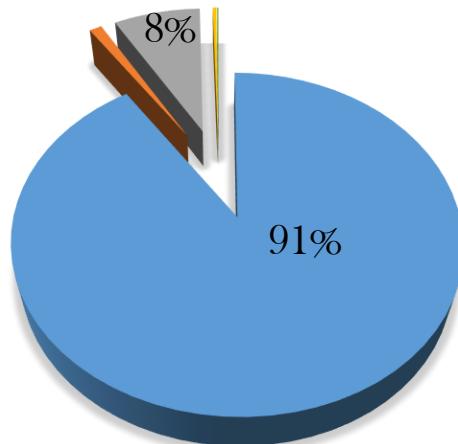
 Forest and woodland

 Grassland

 Cropland

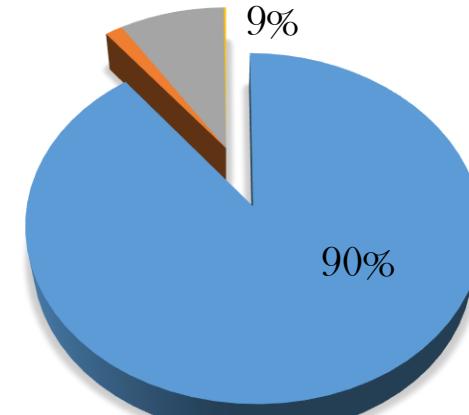
4.1. Changes in forest areas: provincial scale data

Zambézia



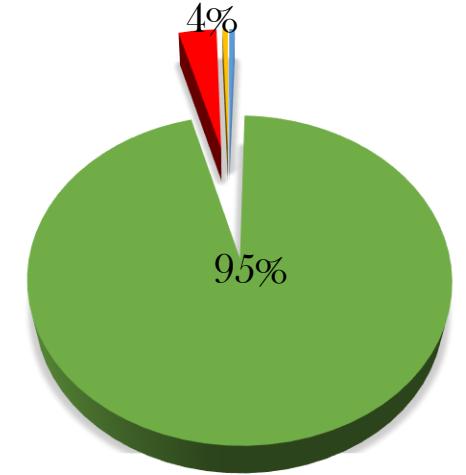
- 4% surface forest lost
- 9% forest > croplands

Nampula



- 4% surface forest lost
- 9% forest > croplands

Maputo



- 1% surface forest lost
- 4% grassland > croplands

Legend

 Unchanged forest
and woodland

 Forest > Grassland

 Cropland

 Unchanged Grassland

 Grassland > Cropland



Conservation and equitable use of biological diversity in the SADC region



Thank you



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para a Alimentação e
a Agricultura

