

## 18 years of continuous forest monitoring; lessons learnt and experiences

Anderson Muchawona<sup>1</sup>,

<sup>1</sup>[Forestry Commission, Zimbabwe, [andersonmuchawona@gmail.com](mailto:andersonmuchawona@gmail.com), Forest Mapping Inventory Officer, No 1 Orange Groove Highlands, Harare],

### Abstract

Monitoring forests is key to ensure sustainable natural resources conservation. Collect earth online has been popular tool that is widely used to measure how forests has been changing. Zimbabwe designed a collect earth online survey to understand land use changes between 2000 and 2018. A total of 3500 samples plots were interpreted and further analysed. The eighteen years of forest monitoring has shown a remarkable decrease in forest area due to mainly agriculture expansion. The collect online presents a quick, efficient and cost-effective way to generate useful information for policy formulation and decision making. The data was also used to compile climate change reports.

Period	hectares				
	to Grasslands	To Croplands	To Settlement	To Bare soil	To Other Wooded Land
2000-2010 losses	195,884.9	1,340,850.0	73,408.4	0.0	32,275.2
2010-2018 losses	112,780.4	676,664.1	0.0	0.0	18,285.2
<b>Estimated area (ha)</b>	<b>308,665</b>	<b>2,017,514</b>	<b>73,408</b>	<b>-</b>	<b>50,560</b>

Drivers of forest Loss 2000- 2018

### Lessons Learnt, Findings and Recommendations

- The country has a total natural forest area of **18.351 million hectares**, which is about 46 percent of the total land area. The area under forest plantation is estimated to be **187 531.42 ha**, which is about **0.48 percent** of the total land area.
- The area of forest continues to decline, and the country lost approximately **2,450,148 ha** for the period 2000 to 2018.
- The annual deforestation rate is estimated at **136,119.34 ha** per annum for the period 2000 to 2018. The major direct drivers of forest loss were agriculture expansion (70%), and settlement (30 %).
- The deforestation was derived from analysis of 3500 samples collect earth online analysed.
- Google Earth Engine is a powerful tool that can improve continuous and cost-effective forest monitoring
- I recommend the country to harness the power of Google Earth Engine and collect earth, and build capacity in all stakeholders involved in forest monitoring to allow continuous monitoring and develop a near real time system because often change is detected when it is too late to address the problem