

A proposed program to assess and monitor the impact of tobacco farming on savanna woodlands in post fast track land reform era in Zimbabwe



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Presentation Outline

- Land tenure systems in Zimbabwe
- Fast track land reform program (FTLRP)
- Tobacco production – woody resources nexus
- Rationale for the proposed program
- Proposed structure and expected results
- Concluding remarks

Land tenure systems

- Freehold tenure
- Leasehold tenure
- Resettlement Permit tenure
- Common hold (communal) tenure
- State land
- Easement (servitude)

Fast track land reform program

- Government initiated the FTLRP in 2000
- Program was meant to undress land distribution imbalances between indigenous people and the minority commercial farmers
- Largely viewed as haphazard and politically motivated
- Consolidation of the permit system for A1 farms (between 7 and 60 hectares depending on agricultural region)
- Emergence of 99-year lease concept for A2 farms (small, medium, large and peri-urban)

Zimbabwe tobacco industry

- Tobacco is the golden leaf of the Zimbabwean economy (c.a 26% of agricultural GDP)

Tobacco Production, Average price variations and grower growth (since 2006)



FTLRP – tobacco production - wood resources nexus

- Increased uptake of tobacco farming after FTLRP
- Fast source of income – foreign buyers
- Declining economy has resulted in low uptake of modern curing technologies
- Wood fuel considered a cheaper alternative to electricity and coal – **over 90% flue-cured**
- Forest area cleared to cure one hectare of tobacco steadily increasing (Manyanhaire, 2015)
- Estimated woodland losses of over **300 000** hectares have been cited between 1990 and 2005

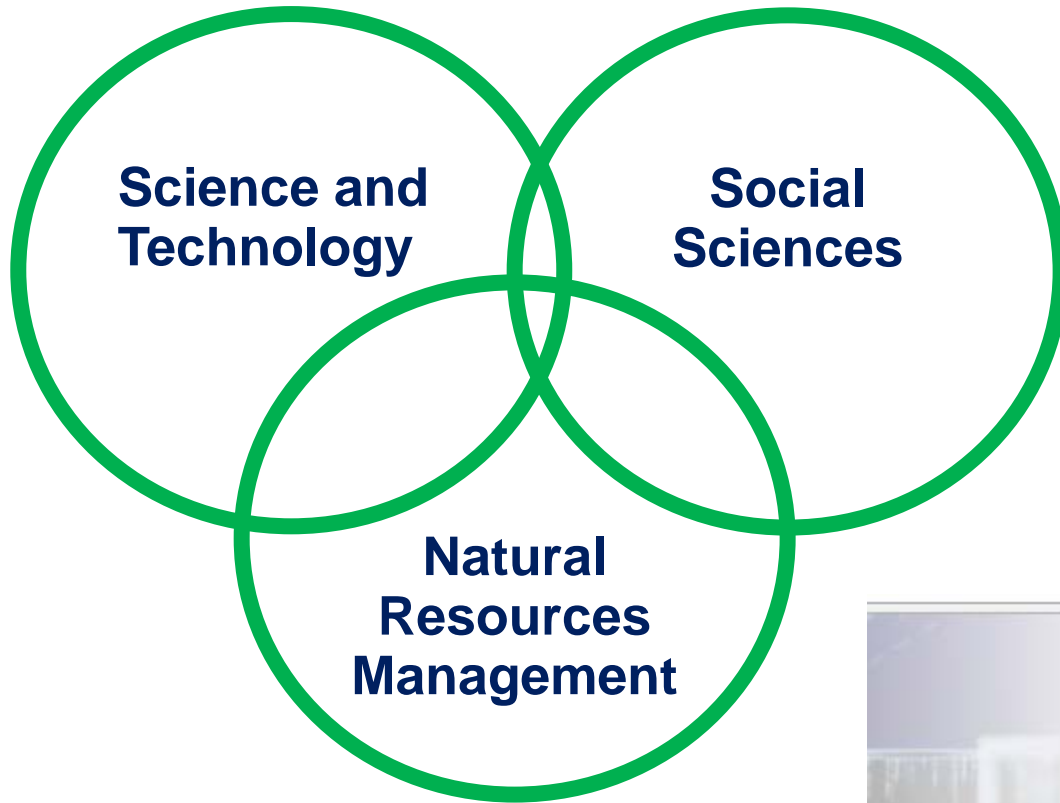
Rationale

- Estimated forested area losses have not been verified (Forestry Commission, 2017)
- Lack of automated classification and LULC detection algorithms to quantify savanna woodland losses
- Current systems rely mainly on optical remotely sensed (Landsat) data
- Paucity of literature on the use earth observation techniques in savanna woodlands

Rationale

- There is need to develop human capacity to handle data from optical and radar sensors
- Close collaboration between universities and custodians of savanna woodlands
- Contribute to the body of knowledge on earth observation and geoinformation analysis in savanna woodland dynamics
- underutilization of the **Zimbabwe Centre for High Performance Computing** facility

Savanna woodland dynamics



3 Faculties – common interest

Proposed structure

- Run from an Earth Observation and Geospatial Analytics Centre
- Joint degree to be awarded from collaborating universities (if possible)
- International university staff and student exchange component
- 18 month MPhil program
- 4 year doctoral program

Expected results

- Establishment of an Earth Observation and Geospatial Analytics Centre at Midlands State University
- **4 x Doctoral graduates**
Each working with 2 Masters student for two years in the following areas:
 - Optical remote sensing algorithms
 - SAR algorithms
 - Data fusion – SAR and optical
 - Geospatial analytics
- **16 x MPhil graduates**
2 intakes of 8 students every two years
- Skilled manpower for the Zimbabwe Forestry Commission

Concluding remarks

- Cross pollinate and learn from experienced researchers
- Contribute to body of knowledge on savanna woodland dynamics by fully utilizing the **High Performance Computing** facility
- Increase interdisciplinary publications at Midlands State University, thereby contributing to the rating of Midlands State University

I Thank You

