



TIPS FORUM 2017

INDUSTRIALISATION AND SUSTAINABLE GROWTH

AN ASSESSMENT OF THE INFLUENCE OF GROWTH POLES ON LAND- USE TRANSFORMATIONS IN UGANDA: EVIDENCE FROM KAMPALA INDUSTRIAL AND BUSINESS PARK (KIBP)

AARON ACHOROI

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MAKERERE



UNIVERSITY

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INTRODUCTION

- Speakman (2013) states that Growth poles are simultaneous, coordinated investments in many sectors to support self-sustaining industrialization in a country.
- Basing on the Sustainable Development Goals of the United Nations (2016) and Goal 9 in particular that states: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, countries world-over have come to realise the need for sustainable development including industrialisation with focus on the promotion of sustainable industrialisation

INTRODUCTION CONTINUED

- Ampurire (2016) stated that the Government of Uganda is to establish at least 22 industrial parks across the country key among which is Kampala Industrial and Business Park (KIBP) with an effort to create jobs and ease land access for both local and foreign investors.
- However Ladu (2016) opined that the story of Kampala Industrial and Business Park (KIBP) is largely a depressing one despite recent encouraging developments there as in the last 12 years since the idea of KIBP was mooted, so little has been achieved.

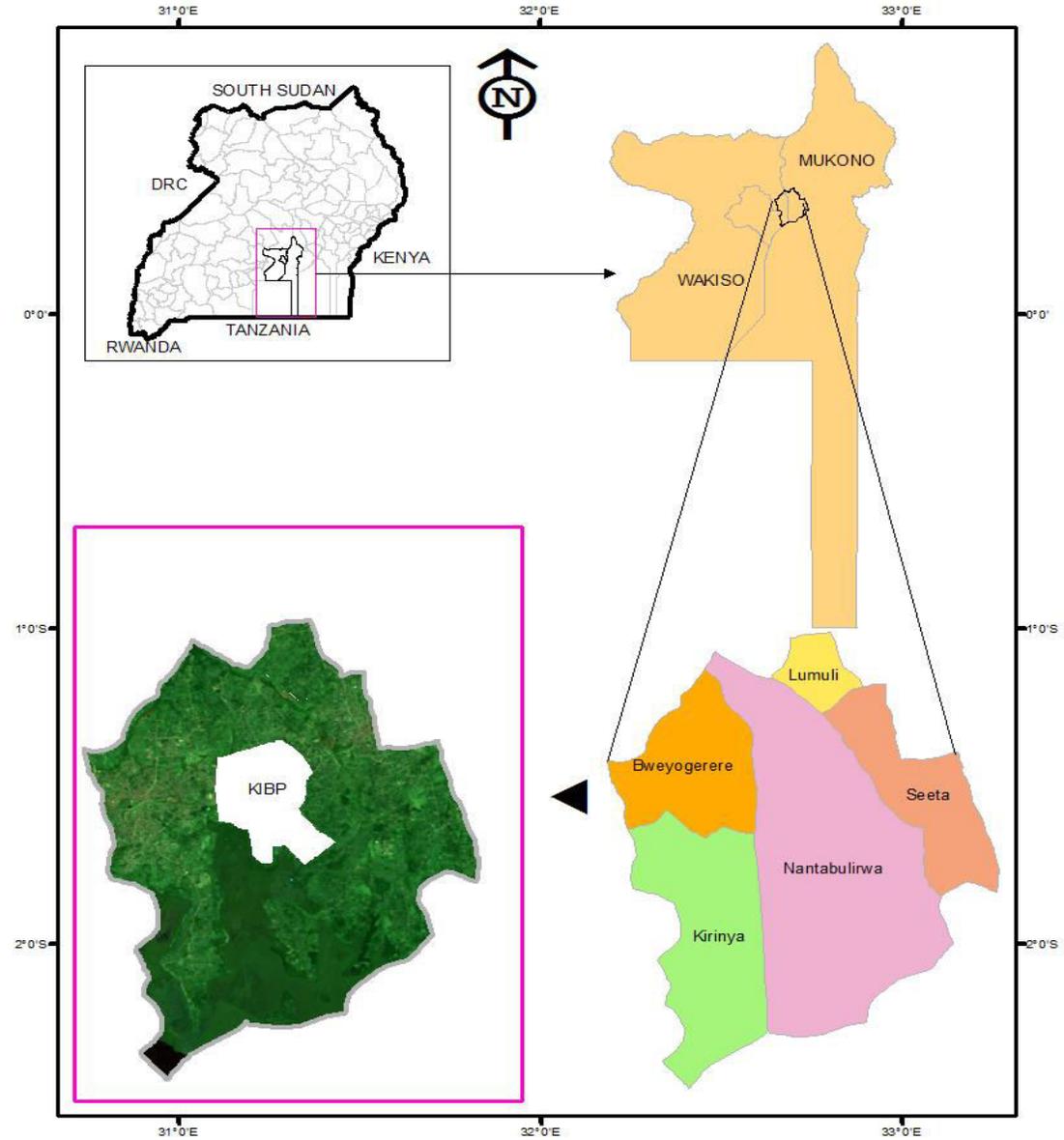
OBJECTIVES

- To map and characterize the industrial units (business structures, number of employees, use of local raw materials, density of firms etc.) within KIBP.
- To empirically quantify the total economic impact of the Kampala Industrial and Business Park (KIBP).
- **To assess the influence of Kampala Industrial and Business Park (KIBP) on land use transformations.**

STUDY AREA

- The Kampala Industrial and Business Park (KIBP) is located in Namanve, 14km East of Kampala in Mukono Municipality and Wakiso-Kira Town council east of the Central Business District of Kampala, Uganda's capital city on the Kampala Jinja Highway. It is a 2,200 acre facility.
- It was planned to be a flagship industrial park for the country. According to MoFPED, (2014) It is approximately 896 hectares (ha) and comprises of four estates; Namanve north (100.1 ha). South A (126.9 ha), South B (294.5 ha), and South C (375.2 ha).
- The KIBP is surrounded by parishes; Bweyogerere and Kirinya to the west, Seeta to the East, Lamuli to the North and Nantabulirwa to the South.

MAP SHOWING STUDY AREA



METHODOLOGY

- Landsat satellite imagery of 1996, 2006 and 2016 was obtained from United States Geological Survey (USGS).
- Spatial data was developed for three points in time i.e., 1996, 2006, and 2016 and processed in Geographic Information System (GIS).
- The images were interpreted and then digitized in a GIS environment using ArcGIS 10.2 software in the form of polygons representing different land use/land cover categories.

METHODOLOGY CONTINUED

- All data was developed into Universal Transverse Mercator (UTM) coordinate system, zone 36N, with World Geocoded System (UTM WGS 84) projection parameters.
- False colour composites of these images were then created by combining different bands of each of the images.
- Colour composites for each of the images were then overlaid with the Kampala Industrial and Business Park shape file.
- Classification was done for each colour composite in which five clusters were chosen and then classified using FAO Land use classification standard

METHODOLOGY CONTINUED

Characteristics of Landsat images, United States Geological Survey

Data Type	Path	Row	Acq. Date	Spatial Resolution (m)	Source
Landsat 8 OLI	171	60	29/04/2016	30x30	USGS
Landsat 7 ETM	171	60	10/02/2006	30x30	USGS
Landsat 4-5 TM	171	60	01/03/1996	30x30	USGS

RESULTS

Land use	Characteristics
Built-Up Areas	Commercial, residential, industrial
Farming	Subsistence and commercial
Forests	Natural and Artificial, stand-alone trees
Wetland	Papyrus, Bog, marsh
Open Water	Lakes, Ponds, springs

MAPS SHOWING LAND USE COVER OVER TIME (1996-2016)

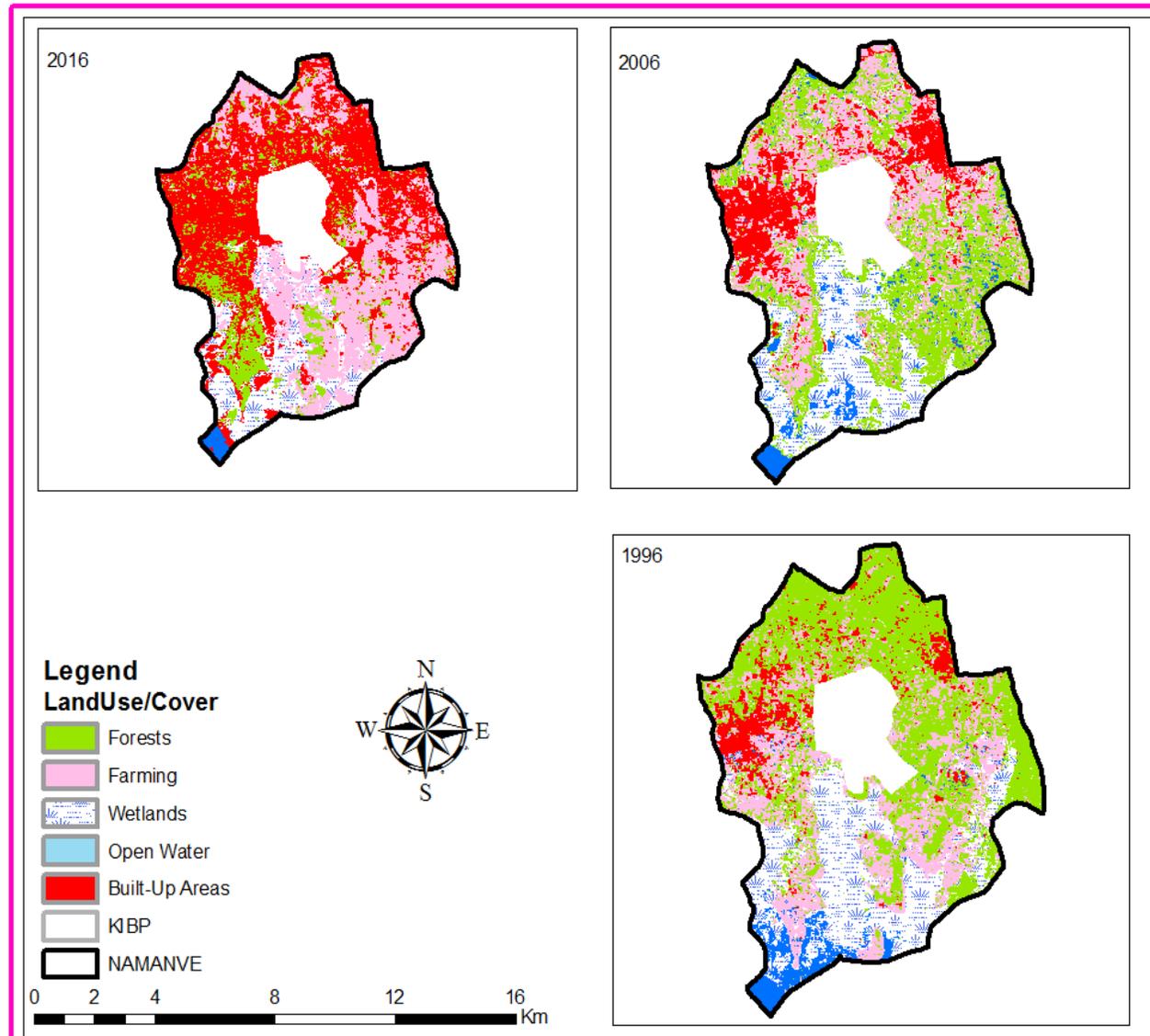
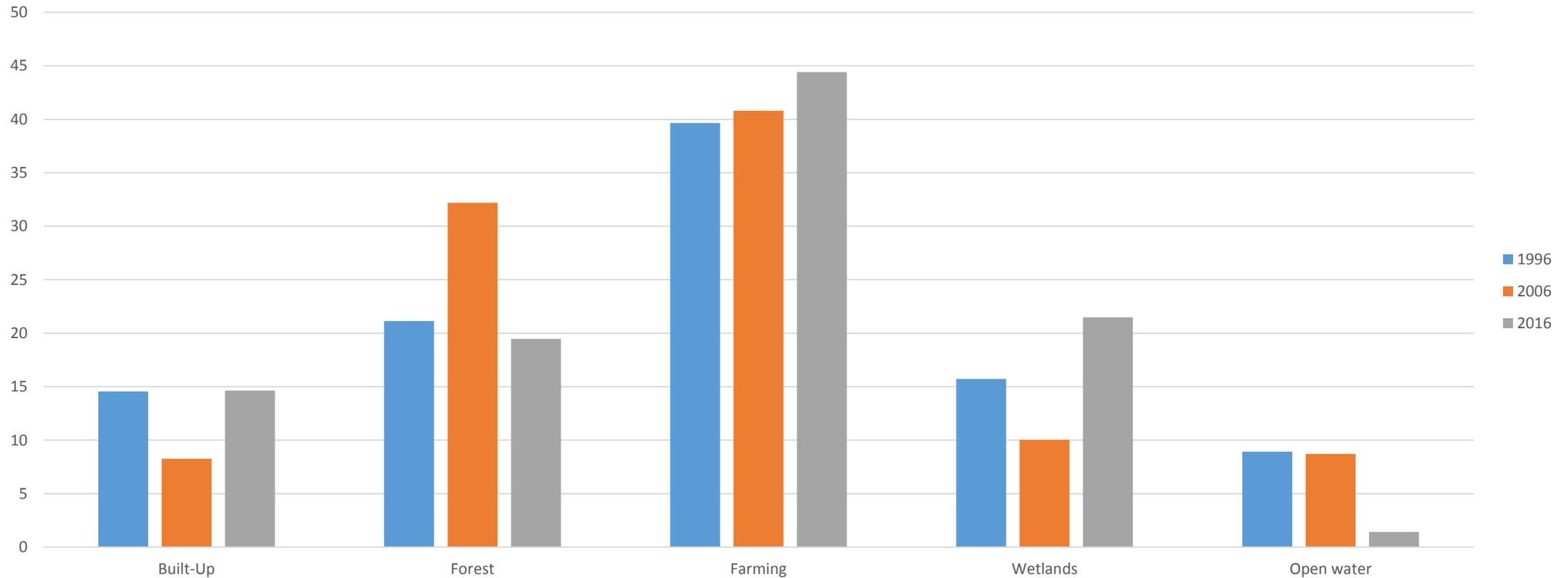


TABLE SHOWING LAND USE COVER OF STUDY AREA

Land use/cover	2016		2006.		1996.	
	A.hq	% LUC	A.hq	% LUC	A.hq	% LUC
Built-Up	669.01	14.6	319.5	8.3	578.3	14.5
Forest	889.97	19.5	1245.8	32.2	840.7	21.1
Farming	2030.03	44.4	1578.1	40.8	1576.5	39.7
Wetlands/Swamps	982.11	21.5	388.1	10.0	625.2	15.7
Open Water	65.4	1.4	337.0	8.7	354.3	8.9
Total	4571.1		3868.44		3974.9	

GRAPHICAL REPRESENTATION OF LAND USE COVER OVER TIME (1996-2016)

Graph showing land use cover proportions in different time periods



RESULTS DISCUSSION

- **Built Up.** Analysis shows that the built up land use class increased from 578.3 hectares in 1996 to 669.01 hectares in 2016 (increase of 7.32 percent)
- However there was a decline of Built-Up land use class in 2006 from 578.3 hectares to 319.5 hectares because of the opening of the industrial park boundaries around this time for industrial development leading to reduction of the built-up structures in the affected areas.
- **Farming.** . In the year 1996 the total area under farm land use was 1576.5 hectares (39.7 % of the total study area) which increased to 2030 hectares (44.4% of the total study area) in 2016 due to the expansion of the built up areas in the northern part of the industrial park leaving majority of the farmers to move to the south to produce more food for the increased population in the area and surrounding areas.

RESULTS DISCUSSION CONTINUED

- **Forest.** In the year 1996, the total area under forest class was 840.7 hectares (21.1% of the total study area) which increased to 1245.8 hectares (32.2% of the total study area) in 2006.
- The forest cover decreased to 889.97 hectares as of 2016 approximately 19.5% of study area because of increased anthropogenic pressure.
- **Wetlands.** In the year 1996 the total area under this category was 625.2 hectares (15.7% of the total study area) which decreased to 388.1 hectares (10% of the total study area) in 2006 as a result of massive encroachment onto the swamps during the period of take-off for the industrial park

RESULTS CONTINUED

- However after various efforts by NEMA to restore wetlands in the area, the wetlands coverage as of 2016 increased to about 982.11 hectares approximately 21.5% of the total study area.
- **Open Water.** In the year 1996, the total area mapped under this category was 354.3 hectares (8.9% of the total study area) which slightly decreased to 337 hectares (8.7% of the total study area) in 2006 and further massively decreased to 65.4 hectares (1.4% of total study area) within a period of 20 years in the study area mainly due to anthropogenic pressures and also utilisation from the industrial park.

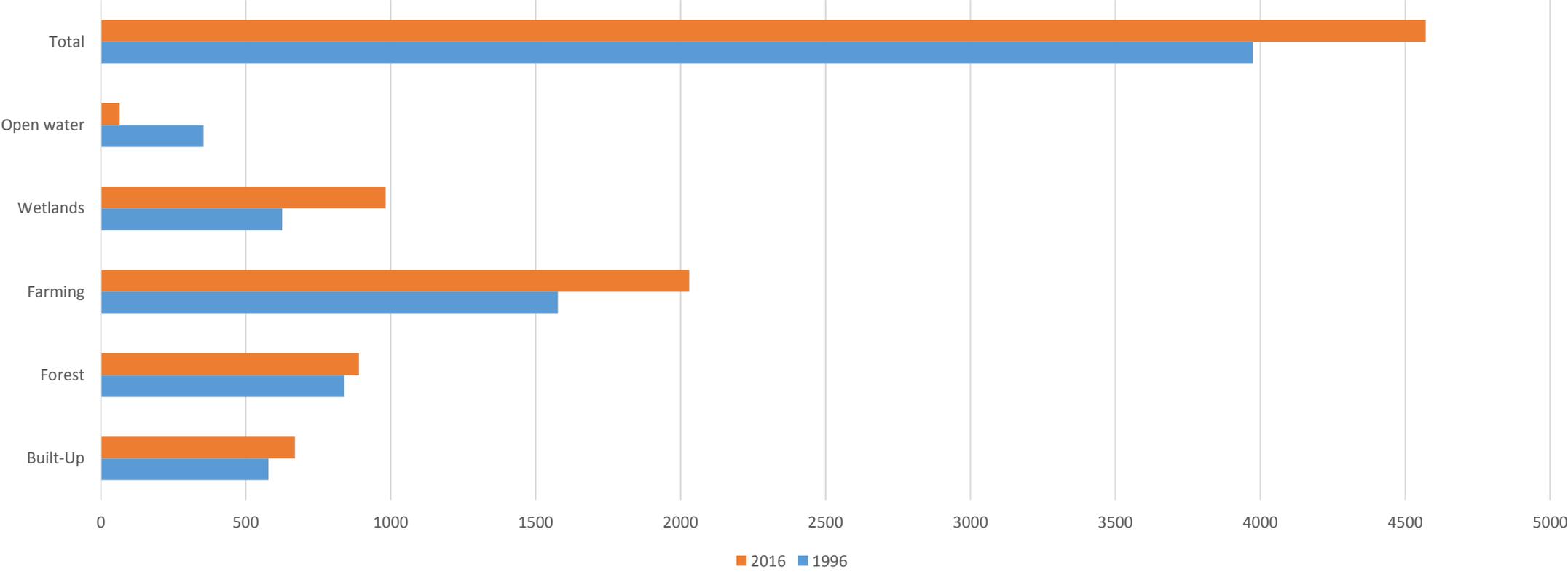
LAND USE TRANSFORMATION ANALYSIS

Land transformation analysis (1996-2016)

Land use/cover	1996	2016	LUC Hqs	% Change
Built-Up	578.3	669.01	90.71	7.32
Forest	840.7	889.97	49.27	3.98
Agriculture	1576.5	2030.03	453.53	36.60
Wetlands	625.2	982.11	356.91	28.80
Open water	354.3	65.4	-288.9	23.31
Total	3974.9	4571.1	1239.32	

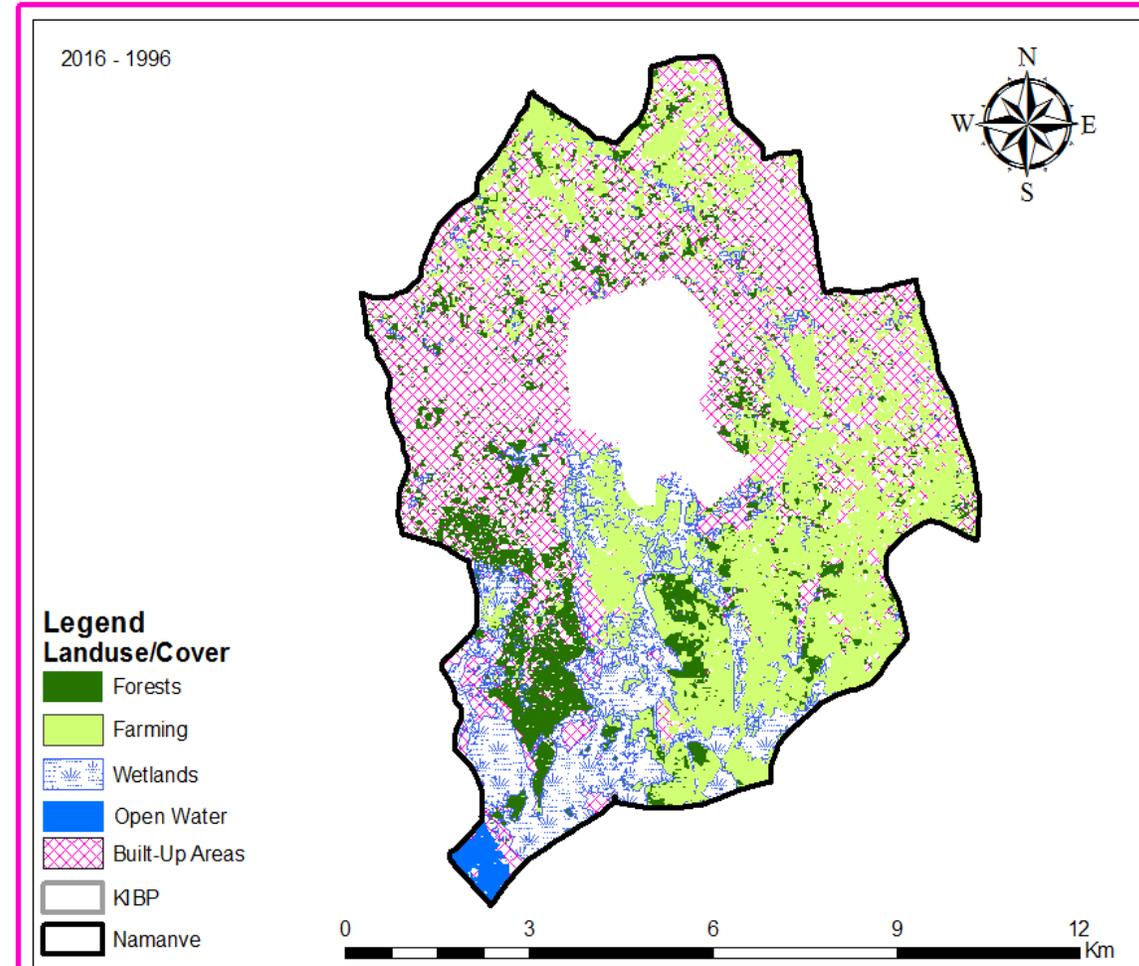
TRANSFORMATION ANALYSIS CONTINUED

Graph showing land use transformation between 1996 and 2016



LAND TRANSFORMATION ANALYSIS

Super imposed image of 1996 LUC and 2016 LUC



CONCLUSION

- The co-current expansion in KIBP has about brought ecologically important land use classes under the transformation process.
- The continued trend of land use change and conversion in the Namanve periphery area is largely attributed to the uncontrolled growth especially of the population in the area leading to massive land use changes.
- This trend of growth and land use change is expected to continue for the foreseeable future and necessary intervention of zoning is necessary as well as continued research, land use planning, monitoring and evaluation of the changing land use activities in the area.

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THANK YOU