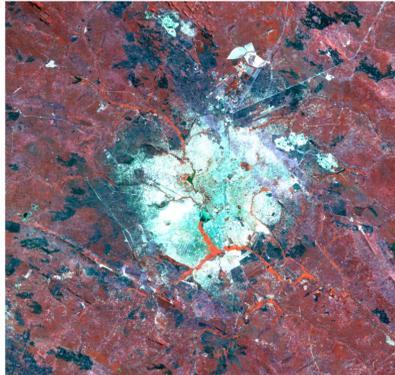


A review of terms, definitions and characteristics relating to the « urban » terminology

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Introduction - Context



In order to evaluate the resistance of landscape classes and ecosystems to the periurbanization process of a dozen cities in Sub-Saharan Africa, we plan to conduct a diachronic landscape evolution analysis from satellite imagery. But remote sensing image interpretation and classification require a clear definition of what is considered as a rural, a periurban and an urban area. Different terms, definitions and characteristics relating to different « urban terminology » concepts have been reviewed and compared according to different criteria like their type, citation frequency (references in the footer), strenghts and weaknesses.

In the tables, « Freq. » means « frequency », « Quant. » means « quantitative » and « Qualit. » means « qualitative ».

« Urban » areas

Type of criterion	Criterion	Freq.	Quant.	Qualit.	Forces	Weaknesses	References
Morphologic	Dominant type of land cover "built-up areas"	18%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image Choice of threshold 	2, 3, 30, 32, 33, 39, 42, 45, 50, 57, 59, 63, 69, 70, 93
Human geography	High population density	14%	x		If a threshold is set, possibility to draw an accurate limit to the area	<ul style="list-style-type: none"> Difficult to obtain this data in sub-Saharan Africa Choice of threshold 	14, 17, 36, 39, 59, 63, 65, 69, 70, 80, 87, 88
	Number of persons	13%	x				14, 17, 39, 59, 63, 65, 69, 80, 88, 90, 98
Morphologic	High constructions density	9%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image Choice of threshold 	35, 36, 39, 42, 59, 69, 70, 81
	Continuous built	6%	x				3, 30, 31, 36, 93
Energy	Surfaces characterized by a consumption of energy and materials greater than what they can produce	6%	x		<ul style="list-style-type: none"> Summary and eloquent index If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Complex calculation Choice of threshold 	10, 29, 71, 72, 75
Environment	Surfaces characterized by a waste production greater than what they can assimilate	6%	x		<ul style="list-style-type: none"> Summary and eloquent index If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Complex calculation Choice of threshold 	10, 29, 71, 75
Morphologic	Position in a gradient away from downtown: before all other areas, in the center	4%		x	<ul style="list-style-type: none"> Simple Broad consensus on this criterion 	No criteria to locate exactly the area	22, 55, 83
Institutional	Presence of own government/authority	4%		x	Simple		2, 36, 61

« Suburban » areas

Type of criterion	Criterion	Freq.	Quant.	Qualit.	Forces	Weaknesses	References
Morphologic	Position in a gradient away from downtown: after the city center, before exurban/periurban area	36%		x	<ul style="list-style-type: none"> Simple Broad consensus on this criterion 	No criteria to locate exactly the area	13, 14, 17, 22, 56, 61, 62, 80, 83, 87
	Continuous built	18%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Assessment depends on the resolution of the satellite image Choice of the threshold distance between buildings 	4, 13, 18, 77, 92
	Dominant type of land cover "built-up" and of land-use "residential"	11%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image 	28, 62, 92
Human geography	Population density lower than that of downtown	7%	x		<ul style="list-style-type: none"> If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Difficult to obtain this data in sub-Saharan Africa Choice of threshold 	61, 92

« Periurban » areas

Type of criterion	Criterion	Freq.	Quant.	Qualit.	Forces	Weaknesses	References
Morphologic	Dominant type of land cover "agricultural" and land-use "rural" but mosaic of different uses	8%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> "Rural" vague term Field work required to identify land uses Identification of built areas depends on the resolution of the image 	3, 5, 7, 12, 16, 19, 24, 26, 38, 56, 77, 79, 92, 95, 96
	Quantification of landscape pattern using index	8%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	Less intuitive interpretation	1, 3, 6, 38, 40, 41, 56, 60, 73, 76, 77, 82, 94, 96, 97
	Position in a gradient away from downtown: after suburban area, before rural area	8%		x	<ul style="list-style-type: none"> Simple Broad consensus on this criterion 	No criteria to locate exactly the area	14, 16, 17, 21, 22, 35, 61, 78, 80, 83, 87, 89, 92, 95
	Discontinuous built	6%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Assessment depends on the resolution of the satellite image Choice of the threshold distance between buildings 	3, 5, 16, 27, 38, 73, 77, 91, 92, 96
	Low constructions density	5%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image Choice of threshold 	1, 25, 56, 62, 74, 81, 83, 92, 95
	Population density	5%	x		If a threshold is set, possibility to draw an accurate limit to the area	<ul style="list-style-type: none"> Difficult to obtain this data in sub-Saharan Africa Choice of threshold 	11, 23, 24, 58, 74, 77, 85, 91, 92
Sustained population growth	3%	x		<ul style="list-style-type: none"> Consensus for developed and developing countries If a threshold is set, possibility to draw an accurate limit to the area 	5, 54, 77, 89, 91, 92		
Shuttle workers to the agglomeration	3%	x		If a threshold is set, possibility to draw an accurate limit to the area	5, 12, 52, 77, 91, 92		
Morphologic	Distance to the city center	3%	x		<ul style="list-style-type: none"> Can be measured by remote sensing and using indices of landscape ecology If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Simplistic, ignores the complexity of urban patterns Choice of threshold 	1, 16, 34, 38, 46, 96
	Dispersed settlement	3%	x			<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image Choice of threshold 	5, 25, 74, 77, 91, 92
	High proportion of single family homes	3%	x			<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image Choice of threshold 	23, 27, 38, 66, 77, 96
	Rapid evolution of the built area	2%	x			<ul style="list-style-type: none"> Identification of built areas depends on the resolution of the image Choice of threshold 	1, 34, 91, 92
Human geography	Average or above average incomes	2%	x		<ul style="list-style-type: none"> Varies according to the region studied Difficult to obtain this data in sub-Saharan Africa 	67, 77, 91, 92	

« Rural » areas

Type of criterion	Criterion	Freq.	Quant.	Qualit.	Forces	Weaknesses	References
Morphologic	Position in a gradient away from downtown: beyond the exurban/suburban areas	53%		x	<ul style="list-style-type: none"> Simple Broad consensus on this criterion 	No criteria to locate exactly the area	14, 17, 22, 59, 69, 80, 83, 87
	Dominant type of land-use and cover "agricultural" and "forestry"	33%	x		<ul style="list-style-type: none"> Consensus for developed and developing countries If a threshold is set, possibility to draw an accurate limit to the area 	<ul style="list-style-type: none"> Field work required to identify land uses Choice of threshold 	22, 35, 56, 59, 69