

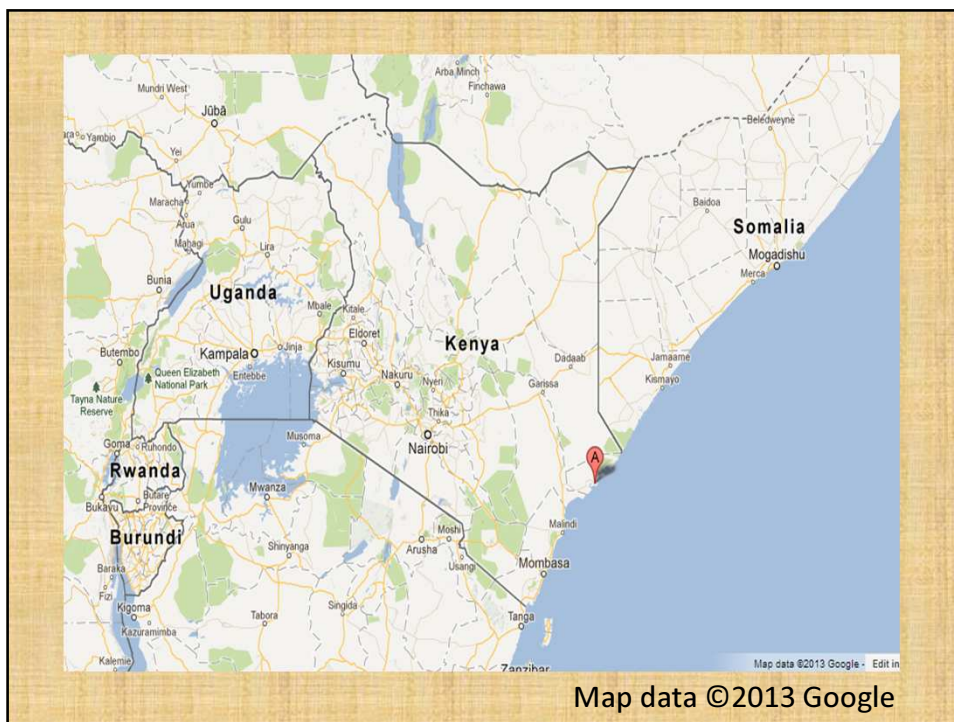
Geographic Information Tools in the Service of Conservation in a World Heritage Site (6372)

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Background

- Lamu Town is a World Heritage Site in the Lamu archipelago off the north-eastern Kenya Coast.
- WHS status recognises outstanding universal values arising from:
 - i. Cultural diversity and harmony
 - ii. International maritime trade over many centuries
 - iii. Unique architectural environment



Problem

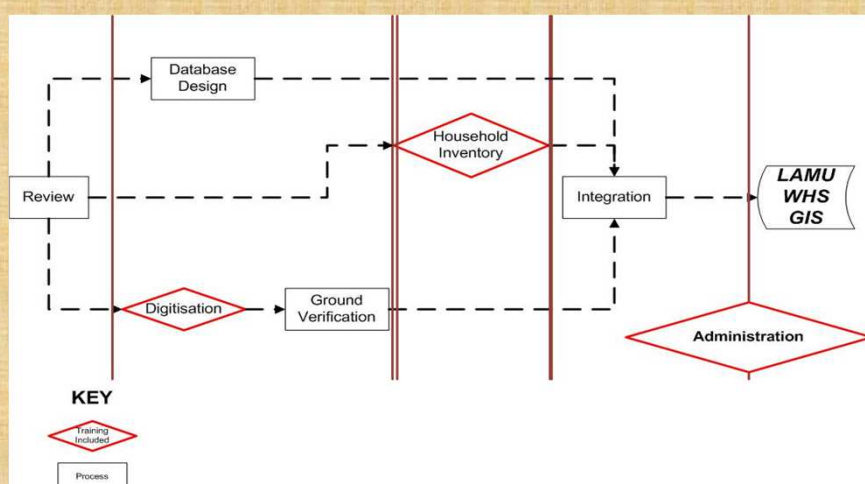
- Can comprehensive spatial data be acquired and used in development of a Heritage Management Plan?



Objectives

- Create Digital Maps of the World Heritage Site, Buffer Zone, Influential Peripheral Areas and Infrastructural services within the WHS
- Create a comprehensive relational database capturing all aspects necessary for Heritage Management and local administration
- Collect data from fields relevant to a developed database
- Link relational database to the Geographic Information System
- Train end users and administrators, complete with a User Manual for future training reference.

Methodology



How was it done?



Data sources

- National Museums of Kenya
- Lamu County Government (Formerly Lamu County Council)
- Lamu Water and Sewerage Company
- Ministry of Lands
- Site Visits



Personnel

- Principal Researcher
- 2 No digitisers/ Ground Verifiers
- 1 No database specialist
- 10 No data collectors

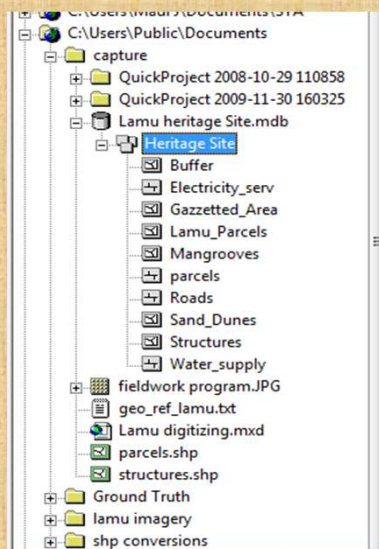
Digitisation

Serial No.	Block No.	Plot No.	Name and address of Rateable owner	Situation	Descrip of property	Nature of Interest	Plot Area HA	Unimproved Site Value Kshs	Remarks
L.I 1	I	638	Ahman Bin Mohamed Bin Haji and another	Lamu Island	Land	Freehold	0.1619 HA (0.4 Ae)	1,129,000	2 nd Row
L.I 2	I	1203	Trustees of Kenya African National Union Lamu Branch	Lamu Island	Land	Freehold	0.046 HA	788,000	Sea Front
L.I 3	I		Government of Kenya						
L.I 4	I	1	Naser Slim Shaabul Box 98232 Mombasa	Lamu Island	Land	Freehold	0.004 HA (0.01 Acres)	60,700	2 nd Row
L.I 5	I	2	KANU Box 60 Lamu	Lamu Island	Land	Freehold	0.0081 HA (0.02 Acres)	162,000	
L.I 6	I	3	Manlal Kevharal Parmar	Lamu Island	Land	Freehold	0.0081 HA (0.02 Acres)	169,000	
L.I 7	I	639	Farma Bai Mohamed Hussein Jaffer Denji	Lamu Island	Land	Freehold	0.0283 HA (0.07 Acres)	427,000	
L.I 8	I	4	Mbwanza Hirizi Faraj	Lamu Island	Land	Freehold	0.0081 HA (0.02 Acres)	60,700	
L.I 9	I		Government of Kenya						

- ❖ Pdf
- ❖ Hard copy
- ❖ Aerial imagery



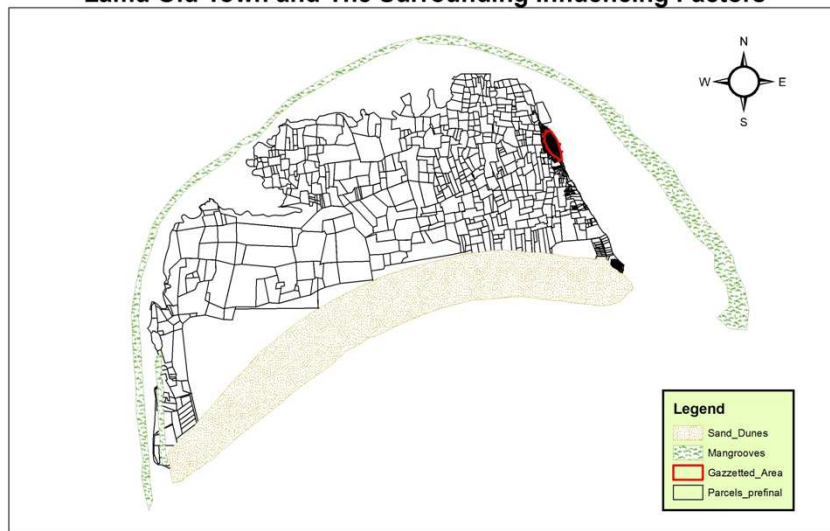
Components of the digital WHS

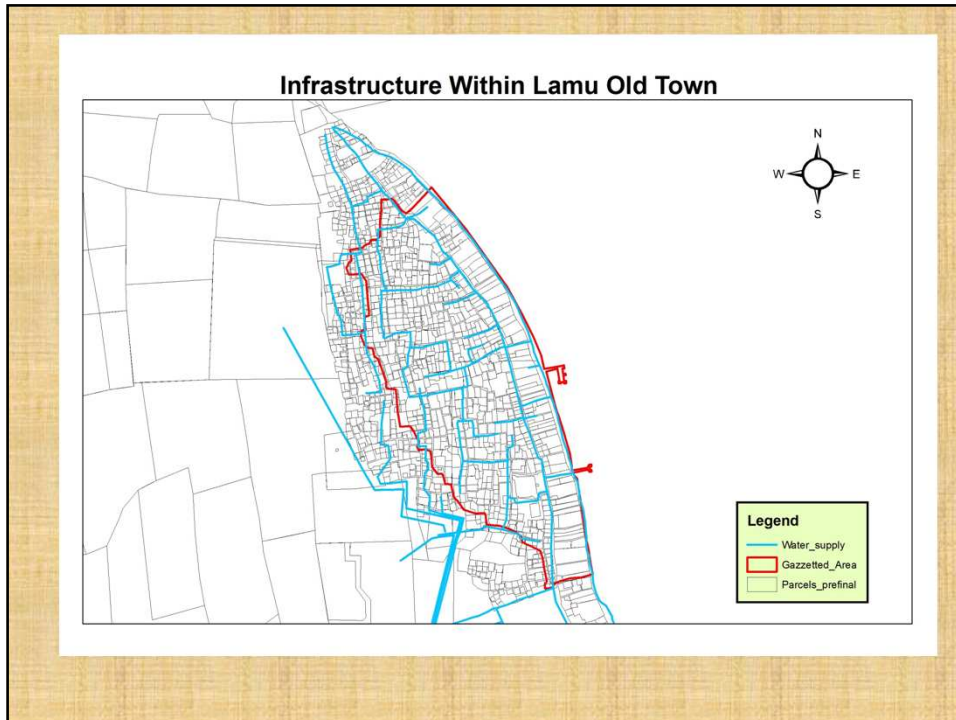


Lamu World Heritage Site



Lamu Old Town and The Surrounding Influencing Factors





Linking Digital with Heritage and Conservation



Household Survey

18 Threats to building

01. deterioration from weather 05. major alterations proposed
 02. Proposed demolition for new building 06. Major alterations in progress
 03. Demolition in process 07. Other
 04. Looting of materials eg doors

19 Conservation/Preservation

01. No preservation 03. Preservation works in progress
 02. Preservation works proposed 04. Preservation complete

20 Number of stories

21 Door design

Household Database

1. Building Ty.	2. Plot Number	3. Neighbourhood	4. Survey zone	5. Street Name	6. Building No.	7. Building No.	8. Ownership	9. Owners Name	10. Address	11. Present te.	12. Status of t.	13. Date built	14.
B-Traditional Sv	1/0	Langoni	Harambee	1/0			C-Private				01-Intact & In Us	05-Aug-1990	
B-Traditional Sv	2/0	Mtamwini	Harambee	2/0		Amu House	A-Public	Hussein/ Many			02-Intact & In Us		
A-Traditional Sv	3/0	Langoni	Harambee	3/0			C-Private	Masjeri			01-Intact & In Us		
A-Traditional Sv	4/0	Langoni	Gaigalo	4/0			B-Waqt	Shee			02-Intact & Parti		
A-Traditional Sv	5/0	Mtamwini	Harambee	5/0			C-Private	Tima			01-Intact & In Us		
A-Traditional Sv	6/0	Mtamwini	Harambee	6/0			C-Private				01-Intact & In Us		
C-Shopfront	7/784/1	Langoni	Langoni	Gaigalo	7/0		C-Private	Ali Abdallah Blik	186 Lamu		01-Intact & In Us	01-Jan-1982	04
A-Traditional Sv	8/0	Lamu Fort	Mkunguni	8/0			A-Public	N.M.K	48 Lamu		01-Intact & In Us	01-Jan-1821	
D-Mosque/Chur	9/0	Mtaa Marini	Kenyetta road/L	9/0		Masiri wa Pwani	B-Waqt	Zahidi Ngumi	84 Lamu		01-Intact & In Us	01-Jan-1951	
A-Traditional Sv	10/0	Halima Kanyaga	MilimaZini	Dandi	10/401		C-Private	Chief Adnan			01-Intact & In Us	01-Jan-1993	
B-Traditional Sv	11/0	Halima Mikomani	Gadeni	11/0			C-Private	Shani			01-Intact & In Us	01-Jan-1988	
A-Traditional Sv	12/0	Tima Ali	Mitumani	Basaid road	12/0		C-Private	Tima Amin			01-Intact & In Us	01-Jan-1987	
D-Mosque/Chur	13/0	Halima	Bajuri	13/0		Bajuri	A-Public				01-Intact & In Us		
A-Traditional Sv	14/0	Esha	Bajuri	Shee street	14/0		C-Private	Maimuna			01-Intact & In Us	08-Jan-1981	
D-Mosque/Chur	15/0	Ohachuzi	Coast	Twaifu Road	15/0		Missionary chur	Peter Mwangi			01-Intact & In Us	01-Jan-1996	
B-Traditional Sv	16/0	Maveye	Gadeni	Dandi	16/0		C-Private	Hidaya Adnan			01-Intact & In Us	05-Jan-1990	
B-Traditional Sv	17/940	Shebe	Coast	Coast	17/0		C-Private	Amina Shee			01-Intact & In Us	01-Jan-1986	
A-Traditional Sv	18/0	Barke	Gadeni Riadha	Riadha	18/0		C-Private	Habsni			01-Intact & In Us	01-Jan-1996	
B-Traditional Sv	19/0	Madina	Dandi	Misheni	19/0		C-Private	Jafor			02-Intact & Parti	01-Jan-2005	
B-Traditional Sv	20/0	Ricki	Mtamwini	Police Station	20/0		A-Public	Sweleh Sary	35 Lamu		01-Intact & In Us	01-Jan-1960	50
B-Traditional Sv	21/565	Wahinda	Mtamwini	Musini Road	21/0		C-Private	Zena Abubakar			01-Intact & In Us		
B-Traditional Sv	22/0	Kilimanjaro	Stone House Ro	22/0		Lamu Medical Ci	A-Public	Omar Baghdam			01-Intact & In Us		
A-Traditional Sv	23/942	Anisa	Anisa/Coast	Anisa Road	23/0		C-Private	Omar Ali			01-Intact & In Us	01-Jan-1990	20
B-Traditional Sv	24/961	Mwanaisha	Anisa	Anisa Mosque R	24/0		C-Private	Ahmed Omar	181 Lamu		01-Intact & In Us	01-Jan-1979	30
B-Traditional Sv	25/136/11	Nyali	Gadeni	Gasabale Road	25/0		C-Private	Timor Omar			02-Intact & Parti		
B-Traditional Sv	26/0	Tike	Uhubuni	Tike Road	26/0		C-Private	Judith Andrew			01-Intact & In Us	01-Jan-2007	31
B-Traditional Sv	27/993	Mikomani	Kiyundani	Mikomani	27/0		C-Private	Saad Abubakar	84 Lamu		01-Intact & In Us		
A-Traditional Sv	28/0	Awadh	Kiyundani	Mikomani	28/0		A-Public	Derid			01-Intact & In Us		
A-Traditional Sv	29/017	Lamu Shoe Sand	Utukuni	Mikomani	29/0		A-Public	Gawaahi Abdala			04-Partially Colla		
D-Mosque/Chur	30/0	Kilicai	Mikomani	Mikomani	30/0		B-Waqt	Ad ralyi Saanda			01-Intact & In Us	01-Jan-2000	10
A-Traditional Sv	31/017	Anglican Church	Twaif Coast	Mikomani	31/0		C-Private	Ibrahim Musa	197 Lamu		01-Intact & In Us	01-Apr-2004	01
B-Traditional Sv	32/09/107	Coast Carpentry	Coast	Mikomani	32/0		C-Private	Kassim Mohame			01-Intact & In Us	01-Jan-2008	20
B-Traditional Sv	33/0	Coast Carpentry	Utukuni/Coast	Mikomani	33/0		C-Private	Duali Farah			01-Intact & In Us	01-Jan-1962	19
A-Traditional Sv	34/0	Store House	Utukuni	Mikomani	34/0		C-Private	Alsha Suleimal			02-Intact & Parti		
A-Traditional Sv	35/505	Peny House	Utukuni	Mikomani	35/0		A-Public	Jawad	208 Lamu		01-Intact & In Us	01-Jan-1895	18

Beneficiaries and Users of GIS

- National Museums of Kenya
- Lamu Water and Sewerage Company
- Lamu County Government
- Kenya Forest Services
- Ministry of Lands

Challenges

- Inadequate communication strategy between the researcher and the recipient organisation
- Problems of data sharing even within Government offices
- Mistrust among the locals
- Scarcity of digital copies of any records from the Authorities
- Cultural/ Religious obstacles in using male enumerators



Appreciation

- National Council for Science and Technology
- National Museums of Kenya
- People of Lamu

***Badiliko la mjukuu, huanza
na babu***

*Change for the young ones, starts with the
Grandfather*

Asante