Implementing the Social Tenure Domain Model with Open Source Software: The Case of Ethiopia

Washington DC, US, March 10th 2009
Christiaan Lemmen
Jaap Zevenbergen, Monica Lengoiboni, Klaus Deininger, Tony Burns

FIG ITC UN-HABITAT

The Agenda

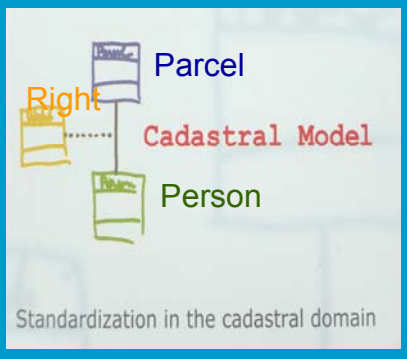
- Social Tenure Domain Model
- Data Acquisition in Ethiopia
- Data processing
- Prototype

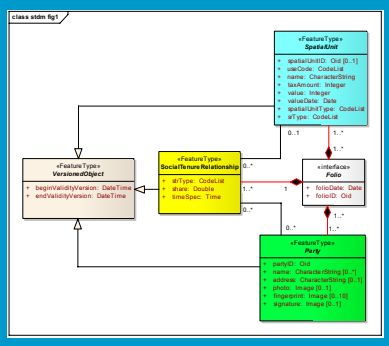
FIG ITC UN-HABITAT

Social Tenure Domain Model

The Social Tenure Domain Model

Party ⟺ Social Tenure Relationship ⟺ Spatial Unit





STDM - broaden the scope of land administration

- pro poor land tool
- land information management framework that would integrate formal, informal, and customary land systems and integrating administrative and spatial components
- facilitate recording all forms of land rights, all types of rights holders and all kinds land and property objects / spatial units regardless of the level of formality

Range of Party/Person – Types

- Group with non-defined membership
- Group
- Group of groups
- Natural Person
- Company
- Municipality
- Co-operatives
- Married couple
- Ministry
- Etc << can be extended

Social Tenure (Right) – Continuum

- Ownership
- Apartment - Right
- Co-operations
- Occupation
- Tenancy
- Possession
- Miri – Milk – Waqf
- Restriction Types
- State Property
- Etc << can be extended

- Non-formal and informal rights
- Customary Types
- Indigenous Rights
- Tenancy
- Possession
- (Certificate of) Comfort
- Disagreement
- Overlap
- Uncontrolled Privatisation
- Conflict situations
- Etc << can be extended

(Social) Credit Right – 'Continuum' "where"

- Micro Credit
- Group Loan
- Individual Loan
- Loan on a Constructed Residence
- Mortgage
- Etc << can be extended

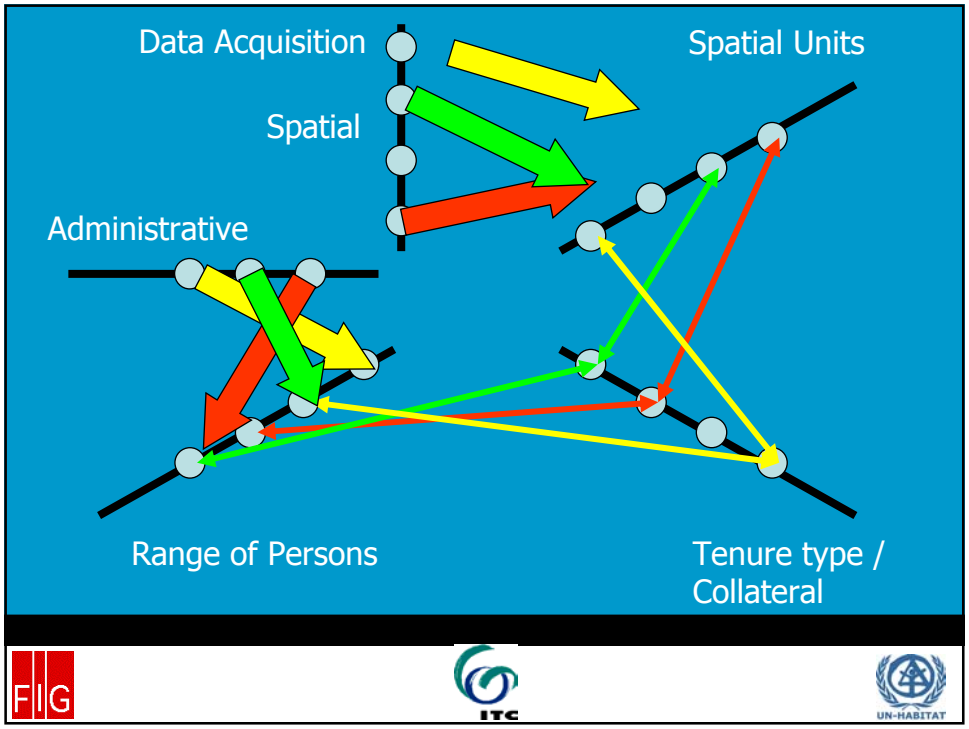
- Risks: people cannot pay!

Spatial Units

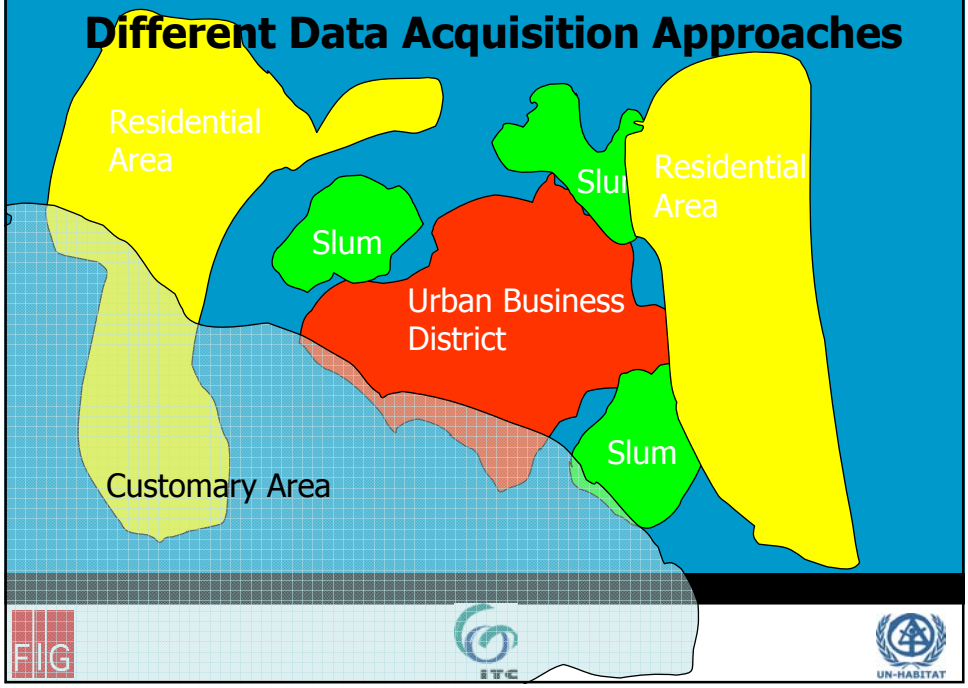
- Parcel
- Apartment
- Building
- Etc << can be extended

- One Point - inside polygon
- One point - street axes
- Set of Lines
- Polygon (low accuracy)
- Polygon (high accuracy)
- 3D Volume
- Etc << can be extended

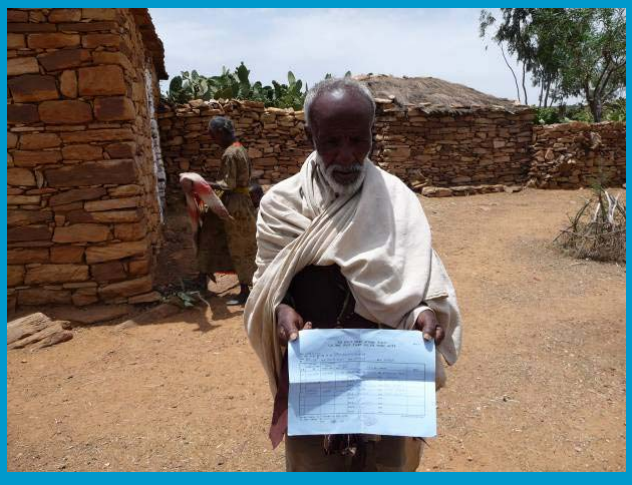
•Quality labels

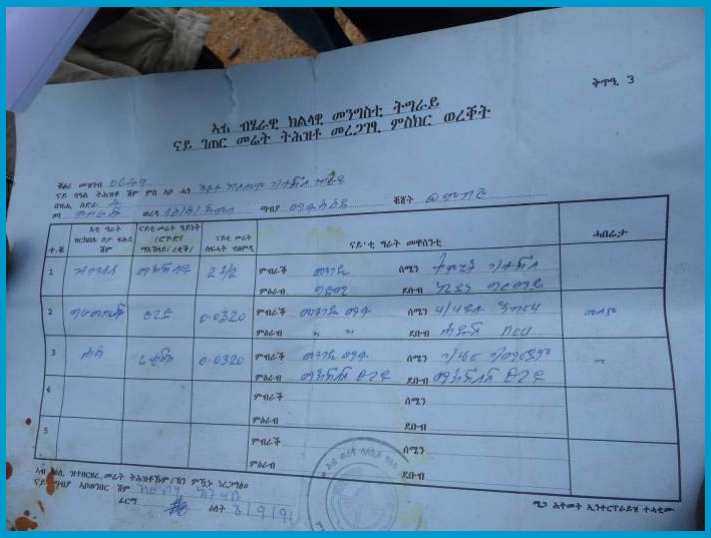


Different Data Acquisition Approaches



Data Acquisition in Ethiopia





ትግራይ 3

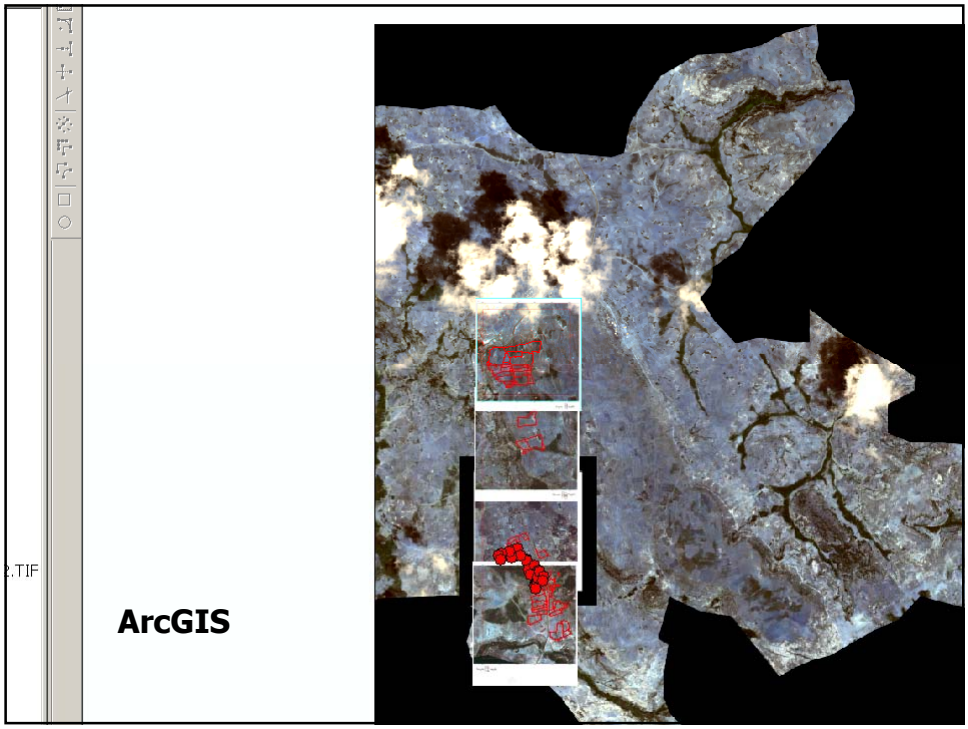
አፋ፡ ብሄራዊ ክልላዊ መንግስቲ ትግራይ
ናይ ገጠር መሬት ትሕዝቶ መረጋገፂ ምስክር ወረቐት

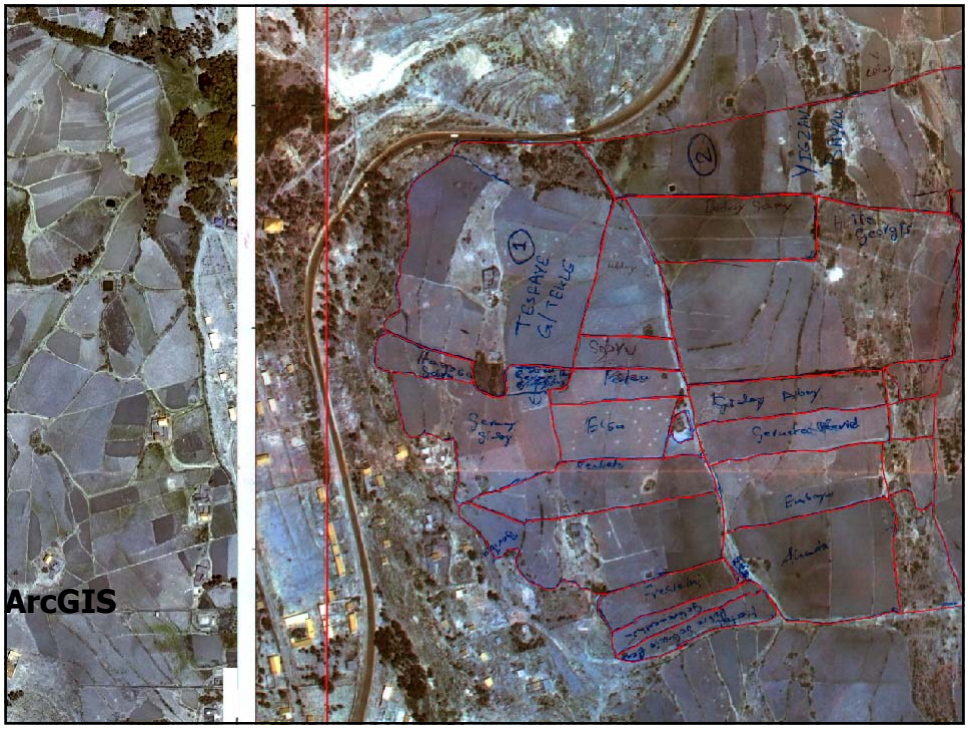
ተ.ቁ	አቲ ባዕት ክርክቡ ሰብ ናይሰ ሽም	ናይቲ መሬት ዓይነት ሃርቶና፣ ማሽላና፣ ረቂቅ/	ናይቲ መሬት ስፍሓት ብሄክታር	ናይቲ ባዕት መሞሰኒቲ			ሓበሬታ
1	ገብረሕለ	ማይ ፍፍ ለዋ	2 1/2	ምብራች	መንገዲ	ሰሜን ተወልደ ገ/ተክለ	
				ምዕራብ	ሻይወጋ	ደቡብ ገ/ጽዲ ወ/ማርያም	
2	ግርማይ/ሽ	ቀጋይ	0.0320	ምብራች	መንገዲ ማዳ	ሰሜን ዓ/ዳዕለ ዓ/ጥሩላ	መሬቱ
				ምዕራብ	" "	ደቡብ ሓጎስ በርሀ	
3	ሐሸ	ሊጭጭ	0.0320	ምብራች	መንገዲ ማዳ.	ሰሜን ገ/ዛዕ ገ/ማርያም	"
				ምዕራብ	ማንኩስ ቀጋይ	ደቡብ ማንኩስ ቀጋይ	
4				ምብራች		ሰሜን	
				ምዕራብ		ደቡብ	
5				ምብራች		ሰሜን	
				ምዕራብ		ደቡብ	

ሚ ሕትመት ኢንተርፕራይዝ ተሓቲሙ

Plot #	Code #	Name	Size	Adjacency	NW	S	E
1	0639	Tesfaye G/Tekle Gebrey	2½	Road	Beyene	Hagos Gebre	Weldu Alem
2	0631	Yisfaw Bayru	3				

Data processing


2.TIF
ArcGIS


ArcGIS

Prototype

Functionality

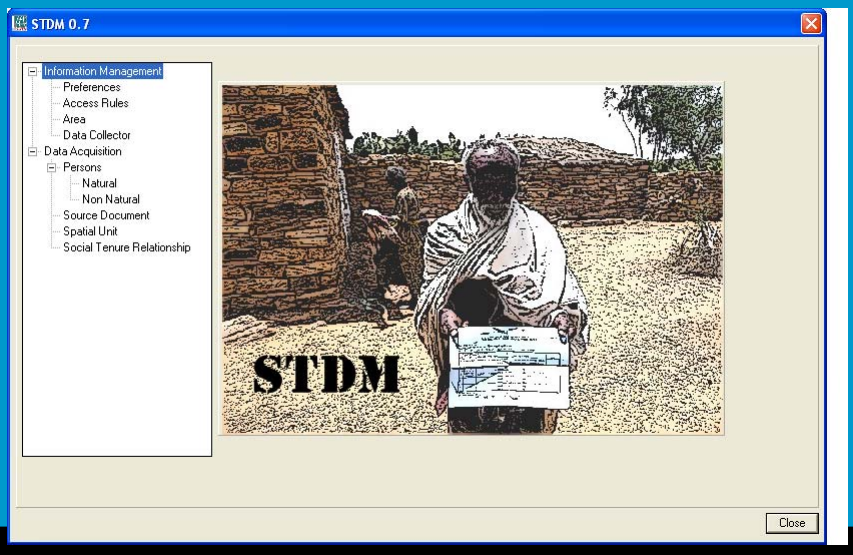
- Plot images for field work
- Print forms for field work
- Scan images
- Vectorise
- Overlapping claims
- Overlapping tenure
- Link spatial and admin
- Holdings – groups of Parcels
- History
- Process – not modelled
- Source documents
- Data collectors

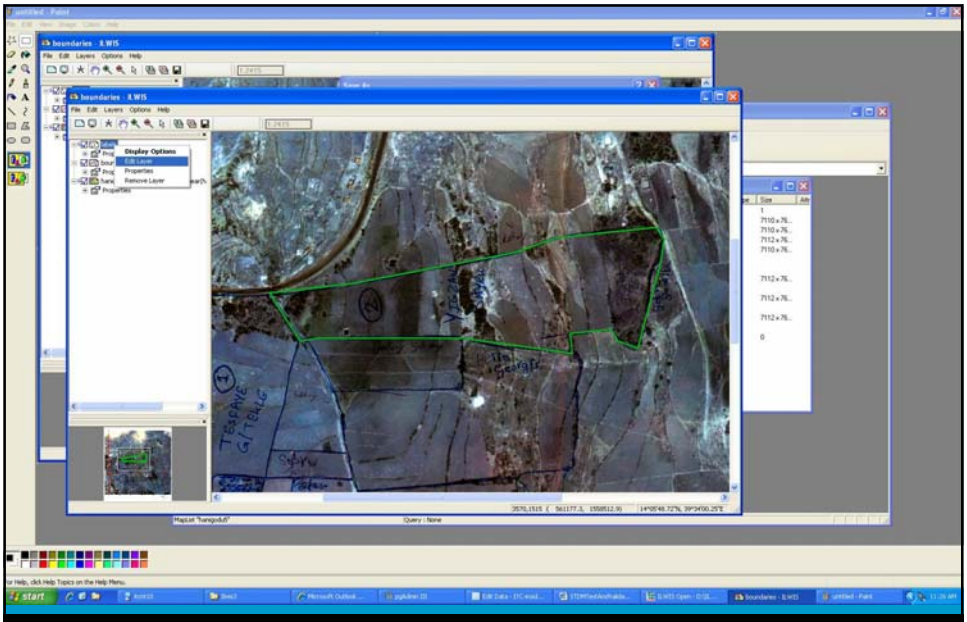
Status March 2009

- Conceptual Design
- Functional Design
- Technical Design
- Prototype – Internally tested

- Reviews to be provided

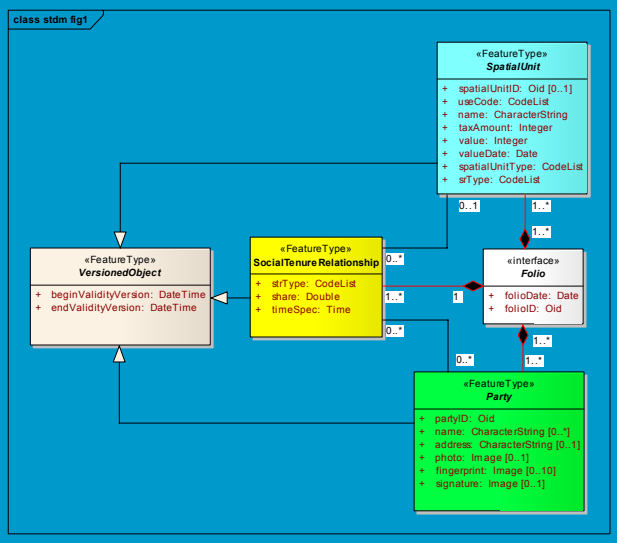
- External Testing to be done



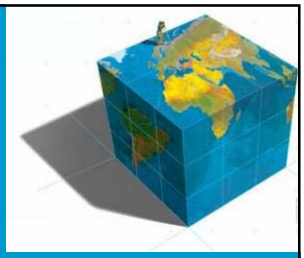


Experiences

- People can read the images easily
- It is easy to get lost: GPS for orientation is a requirement – to be investigated
- In some area's boundaries are flexible
- Photo's as evidence
- Admin checks cost relatively a lot of time


class stdm fig1
«FeatureType»
SpatialUnit
+ spatialUnitID: Oid [0..1]
+ useCode: CodeList
+ name: CharacterString
+ taxAmount: Integer
+ value: Integer
+ valueDate: Date
+ spatialUnitType: CodeList
+ srType: CodeList
«FeatureType»
VersionedObject
+ beginValidityVersion: DateTime
+ endValidityVersion: DateTime
«FeatureType»
SocialTenureRelationship
+ strType: CodeList
+ share: Double
+ timeSpec: Time
«interface»
Folio
+ folioDate: Date
+ folioID: Oid
«FeatureType»
Party
+ partyID: Oid
+ name: CharacterString [0..*]
+ address: CharacterString [0..1]
+ photo: Image [0..1]
+ fingerprint: Image [0..10]
+ signature: Image [0..1]
0..1
1..*
0..*
1
ITC
UN-HABITAT

Leaflet

The Social Tenure Domain Model
A pro poor land rights recording system
STDM
ITC
UN-HABITAT

Thank you