

**Administration of land for planning and development:
A case of Gujarat, India**

Harpal Dave
Architect & Urban Planner,
CEPT University,
India.

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Presentation Overview

History of cartography in India

Present scenario of land administration

Process of map making – its updation and digitisation

Recent initiatives in the state of Gujarat

Land – the basic resource

Land is the basic most resource.

All developments are directly or indirectly based on land.

Land management including map making, revenue administration, land use planning and legislation is therefore utmost important.

Land a Socio - Political issue

India is largely an agrarian country with about 60 percent population dependent on agriculture.

Holding of land is linked to social status / prestige in rural areas.

Historically land owned by few, with agrarian reforms in independent India land was transferred to the tiller on lease hold.

Land generally transferred in legacy, selling only in pressing situations, with population increase the land holdings are fragmented.

The development of country has made demands for urban and infrastructure development. Land mobilisation through acquisition and market interventions often acquire political overtones.

Scientific management of both registry and cadastre is therefore important.

Present scenario

India has about 3.2 mn sq km of land

The population of India is a humongous figure of 1.2 bn people

fortunately a large part of land is usable as geographic extremes are few.

Total no of million plus cities: about 45

Total no of towns: about 5000

Total no of villages: about 1.8 mn

(source: census of India, 2013)

Land administration is therefore critical!

History of Cartography in India

Cartography not too old a science in India. In old days land was measures in local units. Descriptions of several hundreds acres of land gifted to temples. Ownership on copper plates but no map records found!

For the first time land measured and assessed in the time of Mughal Emperor Akbar. The purpose was to promote agriculture for increased revenue.

Maps based on scientific survey were prepared by the British in nineteenth century. The purpose was again to facilitate administration and promote revenue. The 'Survey of India' was established. Preparation of Topographic maps and Village Cadastral maps went on side by side.



Topographic map (Toposheet)



Present initiatives in Cartography - A case of Gujarat

Land a state subject and therefore the success at level of different State Govt. is different. the Union Govt restricts itself to formulation of policy and legislation.

Presently the following type of maps are available:

- 1 survey of India Topographic maps (Toposheets)
- 2 Village Cadastral maps (Scale 1:5000)
- 3 City survey maps (Various scales)



Two types of process are going on:

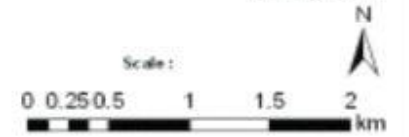
- 1 Preparation of fresh maps for certain areas
 - 2 Digitisation and collation of Cadastral maps on GIS platform
- (we can call this a process of modernisation and updation of land records)
- (Maps are made available on the government websites, albeit not in GIS format)

Village Cadastral Map

ગામ : ભુખલી
તાલુકો : ભાવનગર
જિલ્લો : ભાવનગર

Village Map of Gujarat State ગુજરાત રાજ્યનો ગામ નકશો

For official use only



Index Map :



આ નકશો રાજ્ય સરકારી ઉપયોગ માટે છે અને અધિકૃત નકશો રજિસ્ટ્રાર, ભાવનગર, પાસેથી મેળવવો.
આ નકશો રજીસ્ટ્રાર પાસેથી મેળવવો. માપ માટે આધાર લઈ લેવામાં નથી. આ નકશો રાજ્ય સરકારી
અધિકૃત, અધિકૃત અને સ્થળ સ્થિતિ માટે જ છે.

ગામ નમુનો નંબર ૭ અને ૧૨ No. G 1452448

બ્લોક/સરવે તંબર : ૩૭૫

સત્તાપ્રકાર : જુની શરત (જુ.શ)

પેતરનું નામ

અન્ય વિગતો : સ.ન.૨૩૪૭૩ બાન આધિકૃત બાધકામ

પાત્રું :

મોજે : ડીડોલી

તાલુકો : સુરત સીટી

જિલ્લો : સુરત

1 of

લાયક જમીન	લોખંડળ	ખાતા નંબર લોખંડળ આકાર	નોંધ નંબરો અને
જસસ્તી	દે. આરે. ચો. મી.	દે. આરે. ચો. મી.	કબજેદારોના નામ
-----	૦-૬૭-૭૯		૩૩૪૪,૩૩૪૫,૪૦૬૪,૬૫૯,૭૩૮,૮૯૩
કુલ લોખંડળ	૦-૬૭-૭૯	૩૯ ૦-૬૭-૭૯ ૧૦.૫૬	નરીતમભાઈ બીમભાઈ
આકાર રૂ.	૧૦.૫૬		નાનુભાઈ વસનજી
જુડી તથા વિશેષધારો રૂ	૦.૦૦		રમેશચંદ ગુલાબભાઈ
પાણીભાગ રૂ.	૦.૦૦		
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ગામ નમુનો નંબર ૧૨

વર્ષ	પેડૂતનું નામ	મોસમ	પાક	ક્ષેત્રફળ હે. આર. ચોમી.	ખેડની રીત	સિંચાઈનાં સ્ત્રોત/સાધનો	વૃક્ષો અને તેની સંખ્યા	શેરો
૨૦૧૦-૨૦૧૧	રમેશચંદ્ર ગુલાબભાઈ	ખરીફ	ખેસિ.ઉપ	૦-૬૭-૭૯	-----	---/--		
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	નરોત્તમભાઈ ભીમભાઈ	ખરીફ						
૨૦૦૯-૨૦૧૦	રમેશચંદ્ર ગુલાબભાઈ	ખરીફ	ખેસિ.ઉપ	૦-૬૭-૭૯	-----	---/--		
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	નરોત્તમભાઈ ભીમભાઈ	ખરીફ						
૨૦૦૮-૨૦૦૯	રમેશચંદ્ર ગુલાબભાઈ	ખરીફ	ખેસિ.ઉપ	૦-૬૭-૭૯	-----	---/--		
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	નરોત્તમભાઈ ભીમભાઈ	ખરીફ						

ਖਰੀ ਜ.ਫ਼.ਫ਼.

નાયબ મામલતદાર
શ્રી. જસ. સીટી તાલુકો, સુરત.

#-નામંજુર &-તકરારી •-રજ

18/07/2011 09:35 pm ની સ્થિતિએ

વેચાણની નકલ/ Chargable Copy અંકે રૂ. 5/- (રૂપિયા પાંચ પુરા) મળેલ છે, આભાર સહ.

સૌજન્ય : રાષ્ટ્રીય સૂચના-વિજ્ઞાન કેન્દ્ર, ગુજરાત રાજ્ય

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મામલતદાર કચેરી, ગુજરાત સરકાર

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साय नमूना वादा

विद्यार्थी जीवन

[महाराष्ट्र जमीन महसूल अधिभार अधिनियम आणि नौदलधरा (सवाम बटाणे अ सुविधीत ठेकने) नियम, १९७२ च्याही नियम २५]

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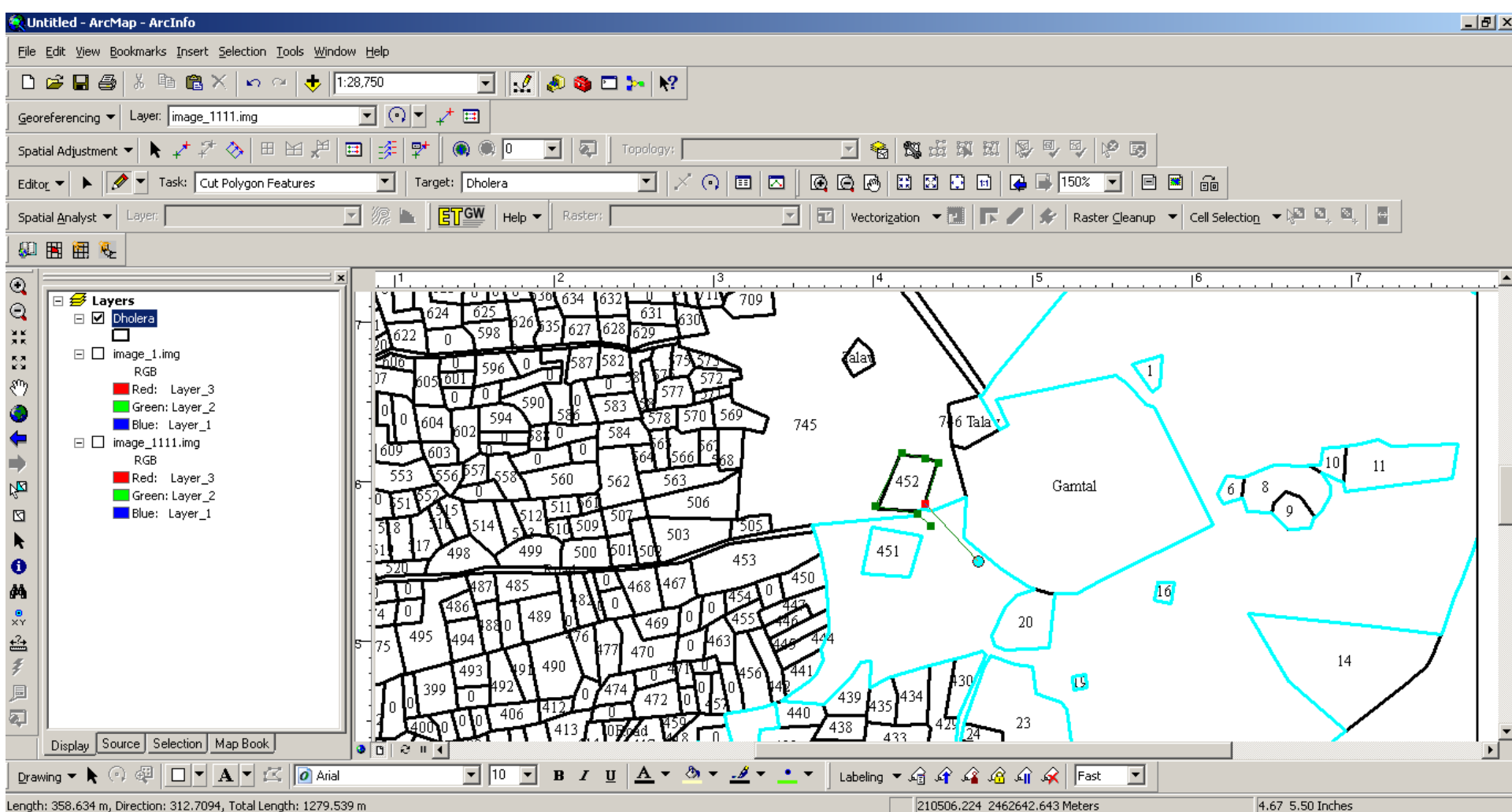
Salient features

Digitisation of maps removes the need of buying it from the DILR office, online access possible

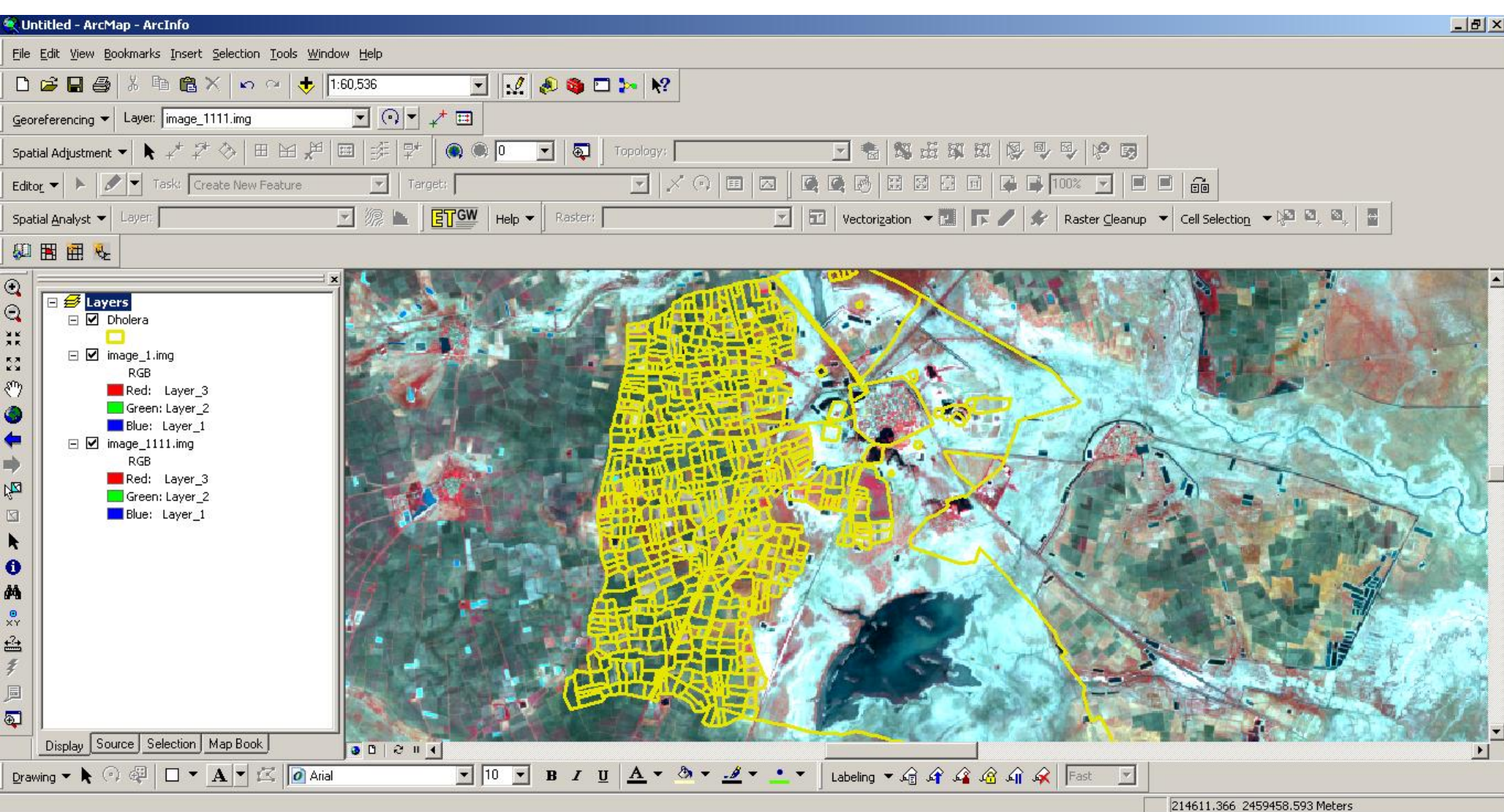
Preparation of district level maps by Bhaskaracharya Institute of Space Application and Geomatics (BISAG) (sometimes a separate process), which updates the map with the recent satellite imagery and shows the location of the new developments, like public utilities. Very useful in urban and regional planning.

Public access of maps through government website. Registry information available through an alternate platform, e-dhara. <http://gil.gujarat.gov.in/edhara.html>

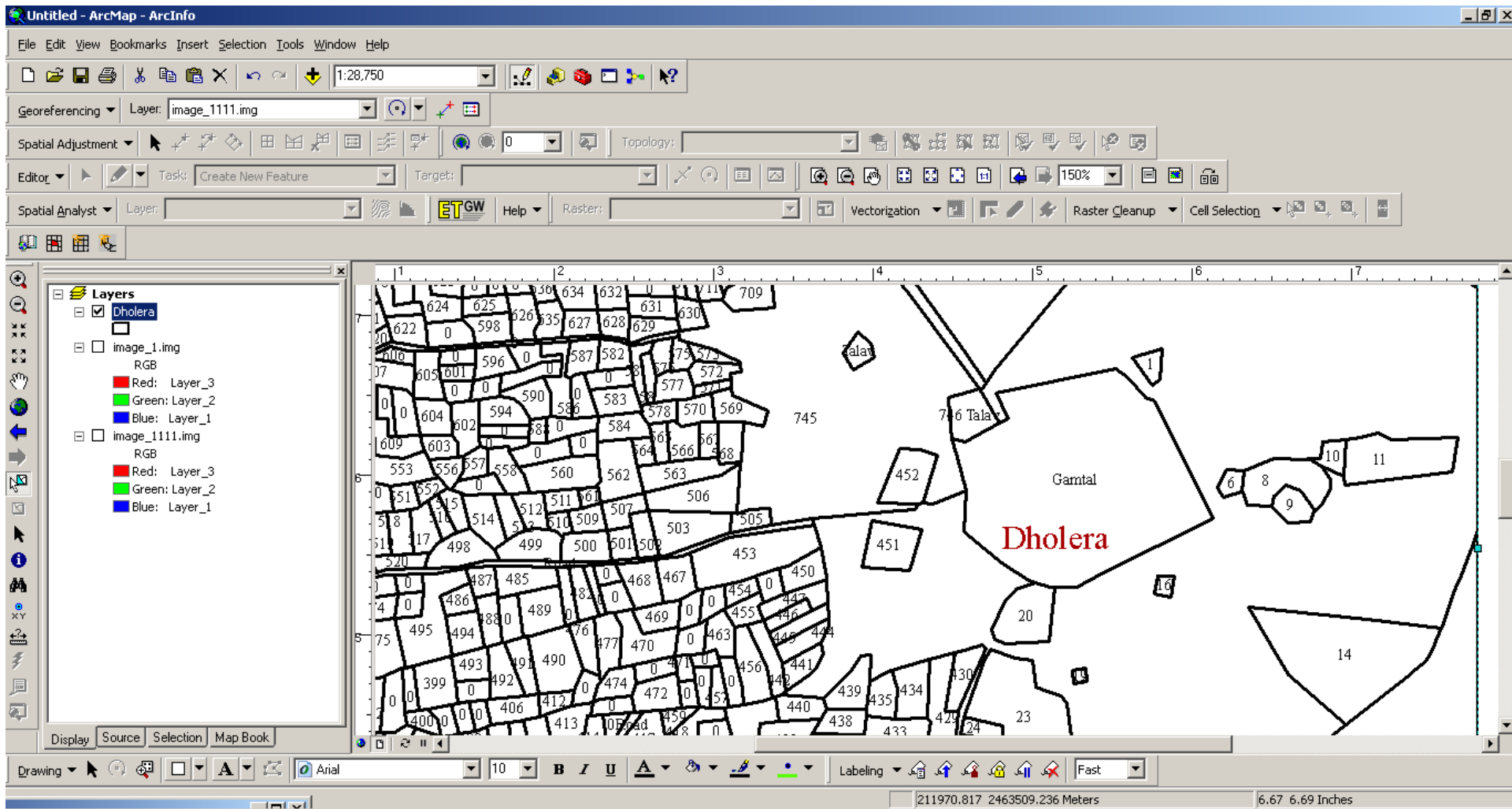
The Process of Digitisation



The process of digitisation



The process of Digitisation continued...



The process of Digitisation continued...

Untitled - ArcMap - ArcInfo

File Edit View Bookmarks Insert Selection Tools Window Help

Georeferencing Layer: image_1111.img

Spatial Adjustment

Editor Task: Create New Feature Target:

Spatial Analyst Layer: ETGW Help Raster: Vectorization Raster Cleanup Cell Selection

Layers

- ☒ Dholera
- ☐ image_1.img RGB
- ☐ image_1111.img RGB
- ☐ Red: Layer_3
- ☐ Green: Layer_2
- ☐ Blue: Layer_1

Display Source Selection Map Book

Drawing

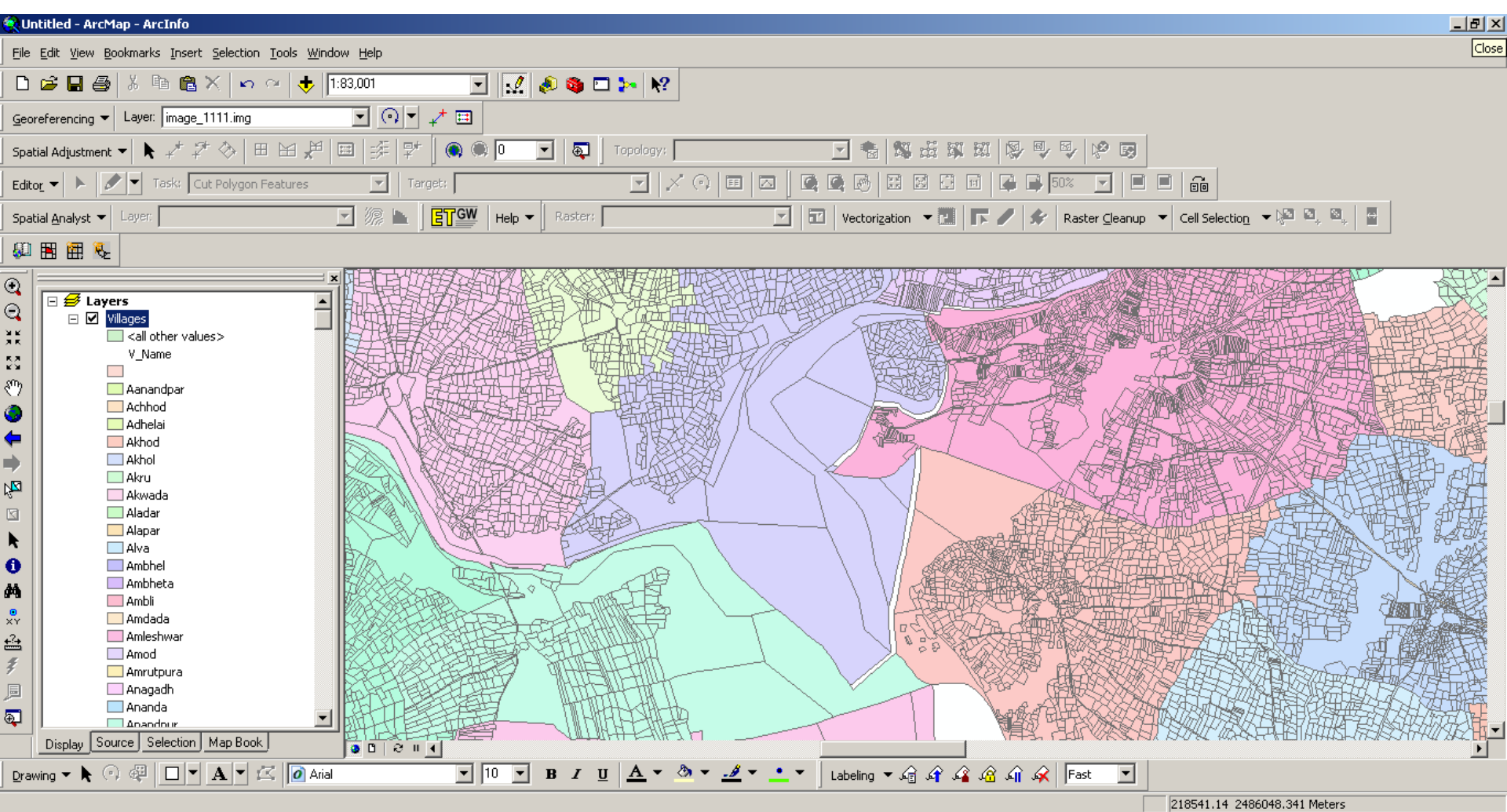
Attributes of Dholera

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682	0	104	00553600	Dholera	0.029042	0.029042
677	0	105	00553600	Dholera	0.014002	0.014002
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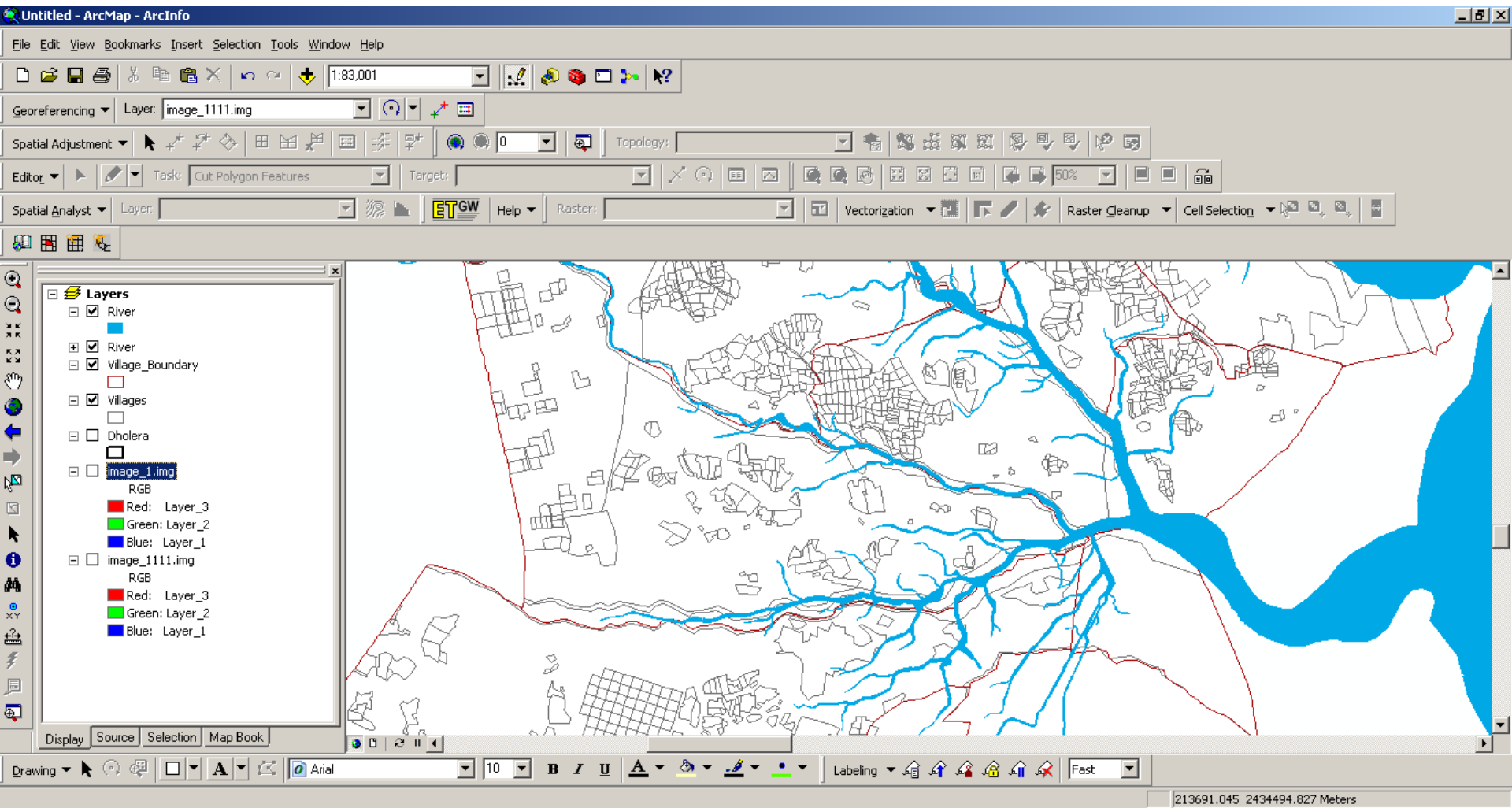
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The process of Digitisation – limitations and errors



The process of Digitisation – limitations and errors



Advantages of map digitisation

Improved access to land information

Speeding up of development process for large scale infrastructure
(yet to be fully realised)

Creation of Land Bank for non-agricultural (largely industrial) development

Limitations

The upgradation is mostly through initiatives of district revenue office only, even within state the quality of data differ.

Maps in itself are nothing but a information of land. The utility of maps lies in its creative application - emergency services, development planning, land use control, public utilities information. This creative utilisation is still a distant dream.

Some errors in digitisation still remain.

Other Nationwide Initiatives

Indian National Cartographic Association (INCA)

A non-profit making professional body of Cartographers, established in 1979 at Hyderabad (India) with the following aim:

- Fostering cartographic Research in India Promoting academic interaction within an inter-disciplinary frame
- Co-operate with professional organizations of cognate disciplines
- Foster co-operation amongst various organizations for advancement of cartography
- Create "Map Awareness" amongst the public through various means

National Land Records Modernisation Programme (NLRMP)

- Computerisation of Land Records
- Survey and re-survey where the need be
- Computerisation of all registry

(The District has been taken as the unit of implementation, where all programme activities are to converge)

Thank you!

