

"GIS based Rectification of GN (Villages) boundaries for Household Planning"

(Special references to Kalutara District - Sri Lanka , Pilot Project's work collaborating with Urban Development Authority , Department of Census and Statistics , Department of Survey of Sri Lanka)

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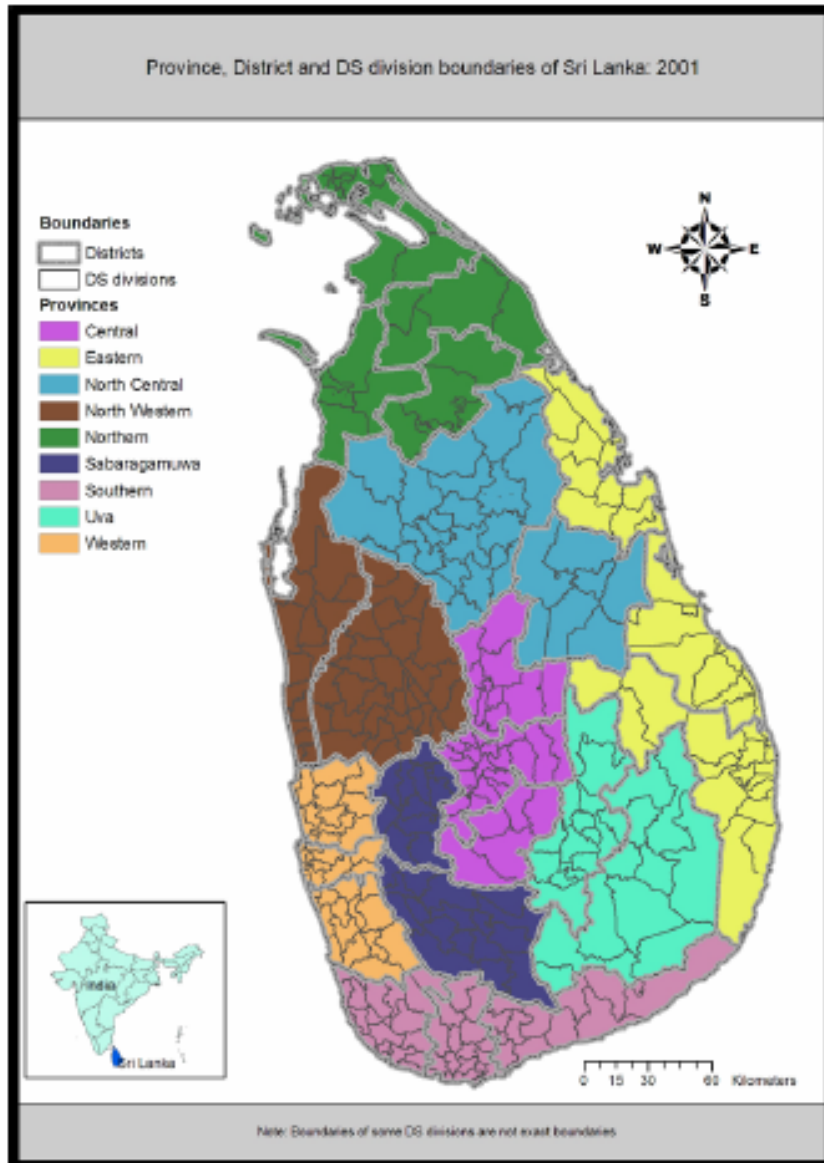
Former

Assistant Director

Urban Development Authority

Sri Lanka

Sri Lanka: Location



X min:79.521339 **X max:**81.879051
Y min:5.919475 **Y max:**9.835052

Population: 20 Million

Population Growth Rate = 1.5%

Area = 65300 sqkm

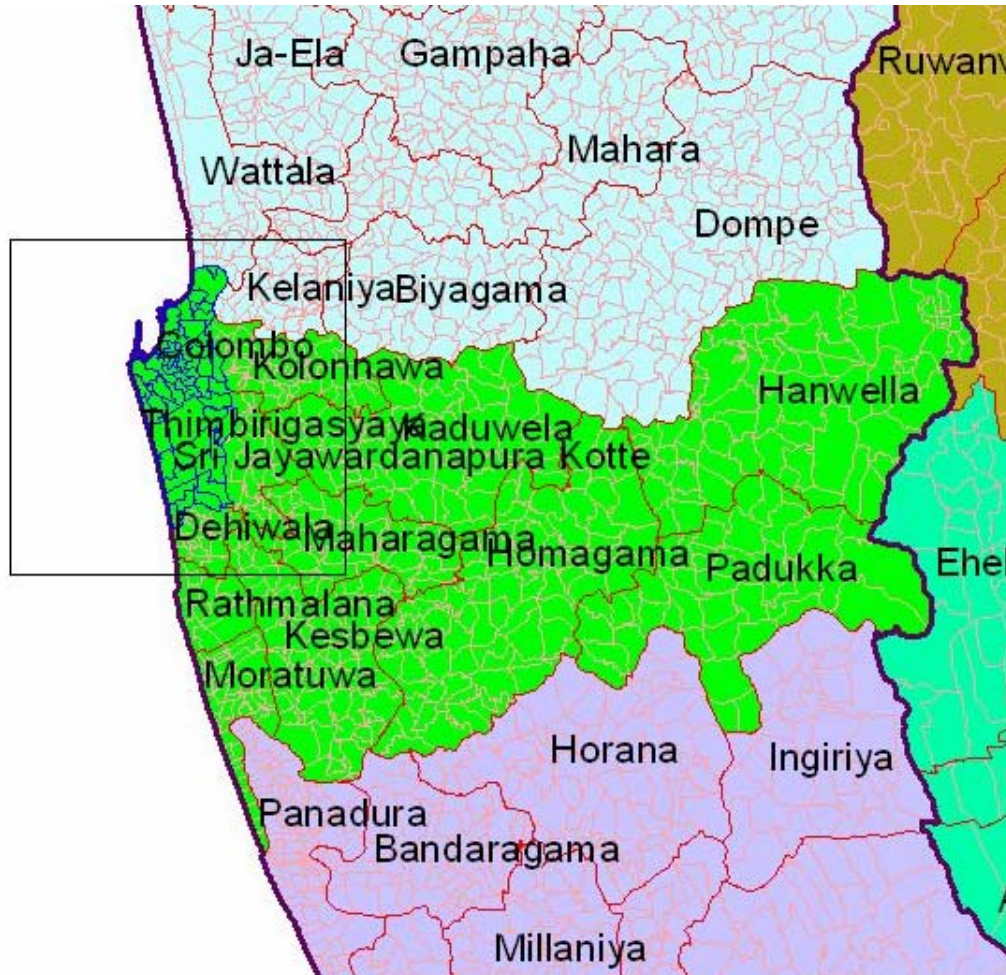
Literacy rate : 90.9 %

Per Capita Income \$ 1375

Administrative Boundaries:

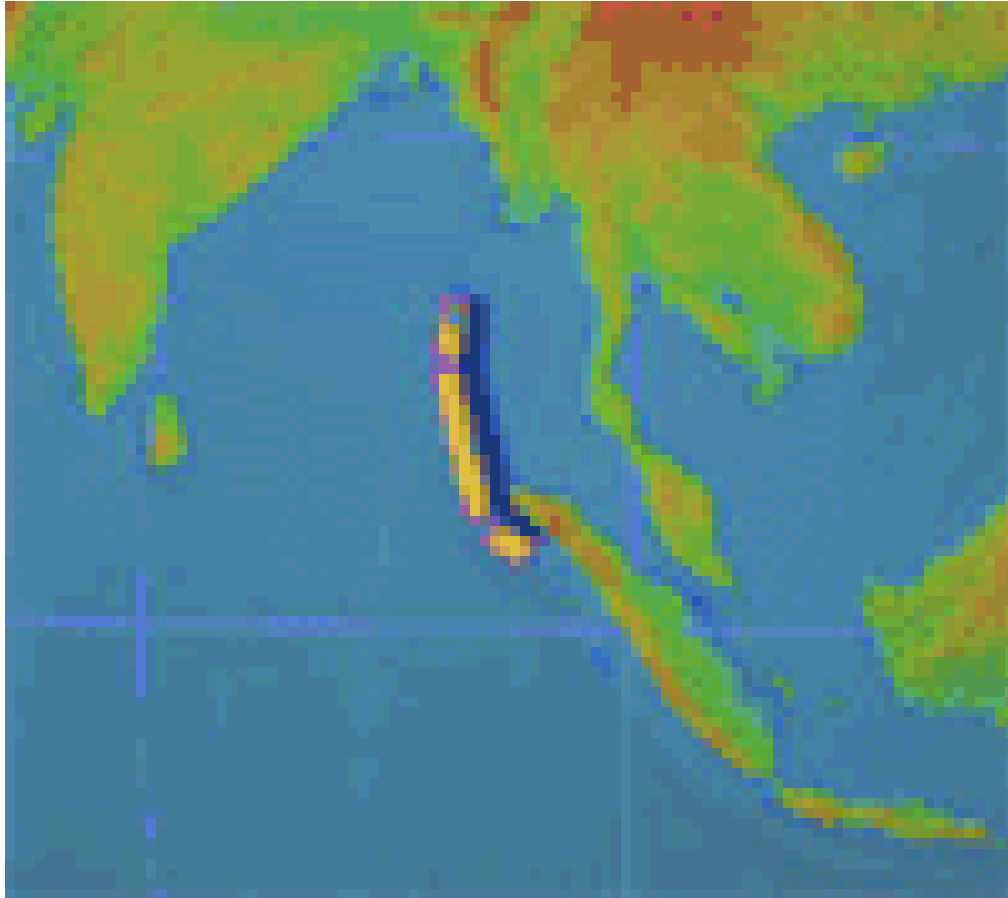
1. Province Boundaries 09
2. District Boundaries 25
3. DSD Boundaries 250
4. GN Boundaries 14413

WHY NEED ACCURATE VILLAGE (GN) SPATIAL DATABASE :



Census Purpose
Disaster Management
Public Administration
Research Work

HOUSEHOLD PLANNING IN CASE OF TSUNAMI ETC:

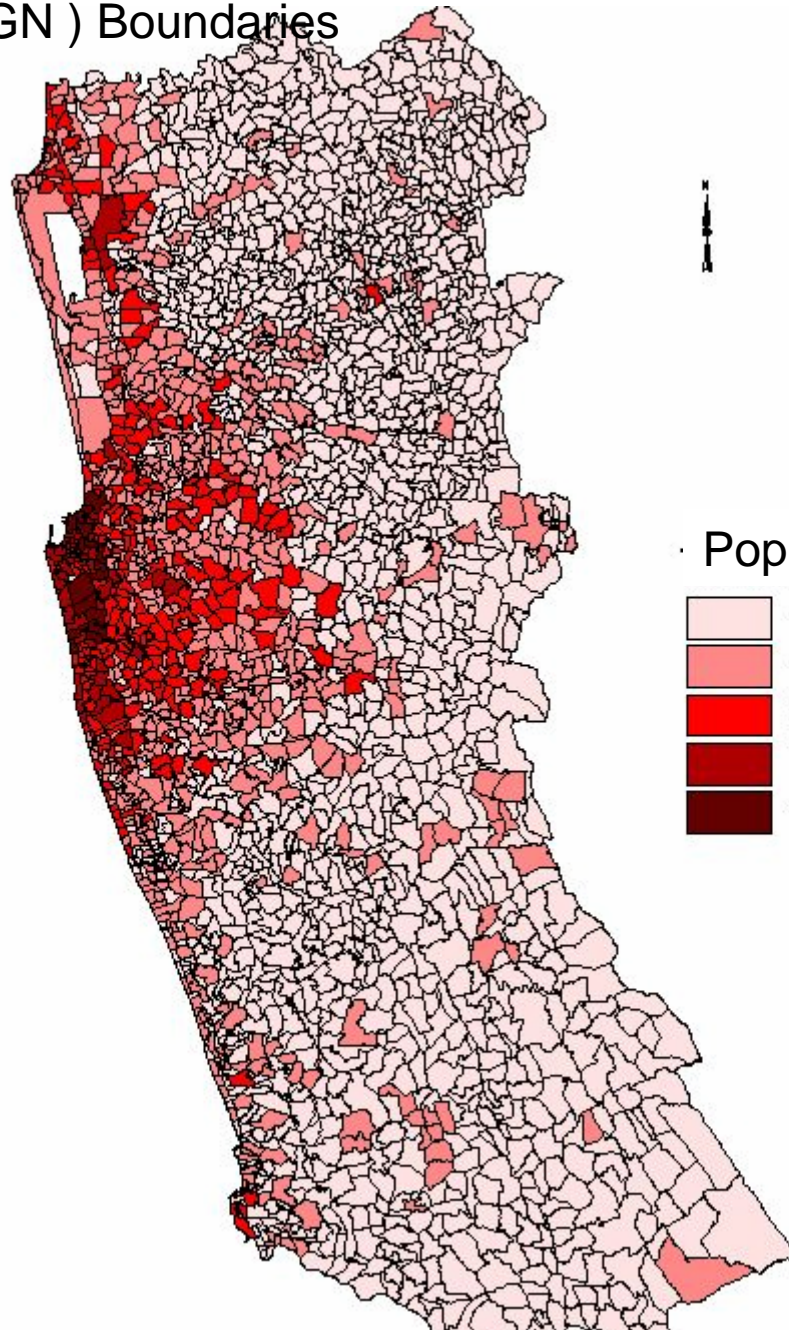


INDIAN OCEAN TSUNAMI OF DECEMBER 26TH, 2004

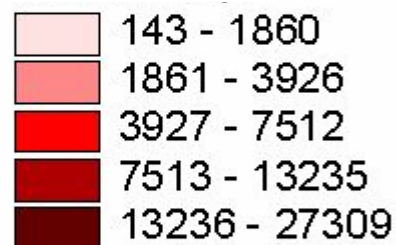


Existing Village (GN) Boundaries

Total population

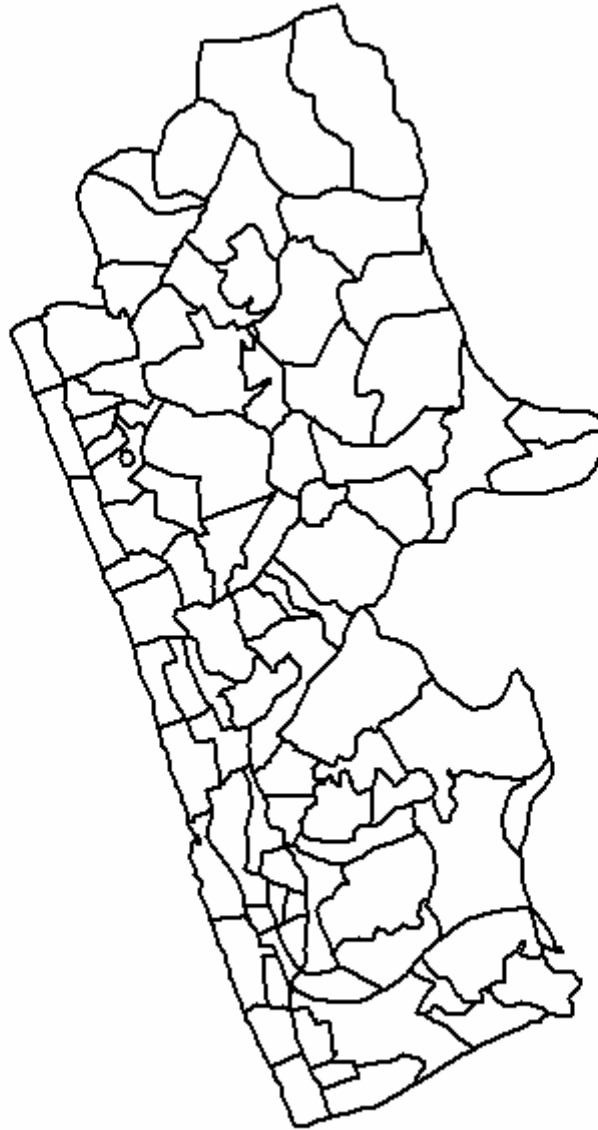


Population



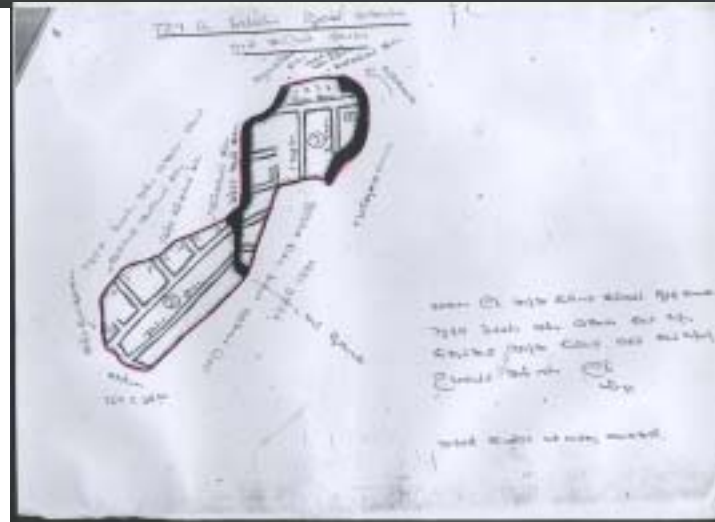
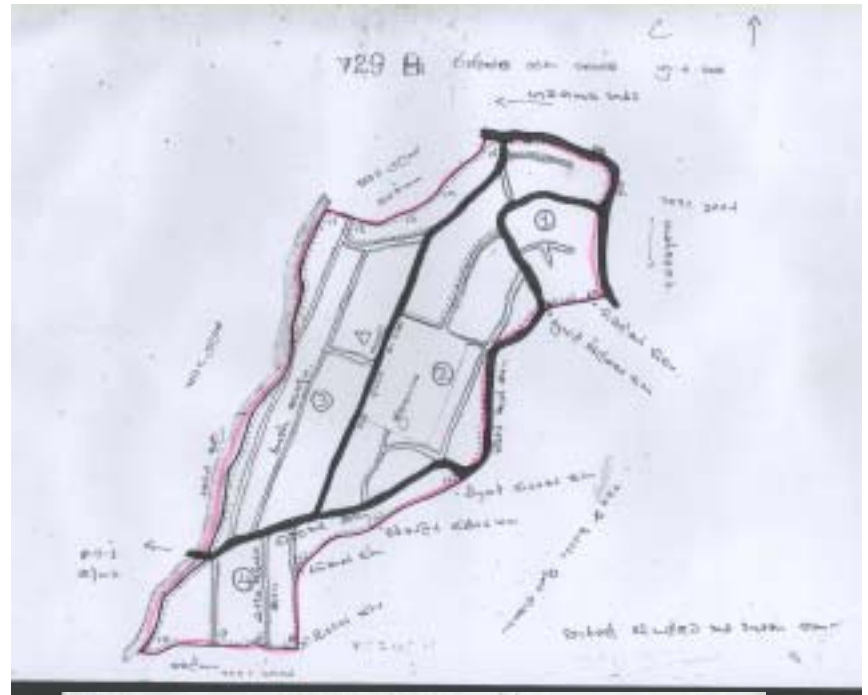
Selected Area for Pilot work

1.Kalutara District : Existing GN Boundary of Kalutara DS Division



90 GN Boundary

Existing Paper Maps at Divisional Secretariat Office



2. Geo referenced Satellite image of Area



3.Available GPS UNITS

2 Units
Belongs to UDA



The GeoXT™ handheld from the Trimble® GeoExplore
r® 2005 series is the essential tool for maintaining GIS.

A high performance,
submeter GPS receiver combined with
a rugged handheld computer,
the GeoXT handheld is optimized to
provide reliable,high-accuracy location
data,

Price=USD 10000

25 Units
Belongs to Census
Department



The eTrex Summit was designed for both marine
and recreation use. This all-in-one navigation device
for the outdoor enthusiasts is the first combination GPS
,altimeter, and electronic compass.

Suggested Retail Price:
\$214 U.S

UNPLEASANT PLACES

4: GN Officer

GN Officer



ROUGH SURFACE

5: Survey Team



Marshy Area:
Can't Accessible
Not Clearly demarcate GN Boundary



12 4:31PM

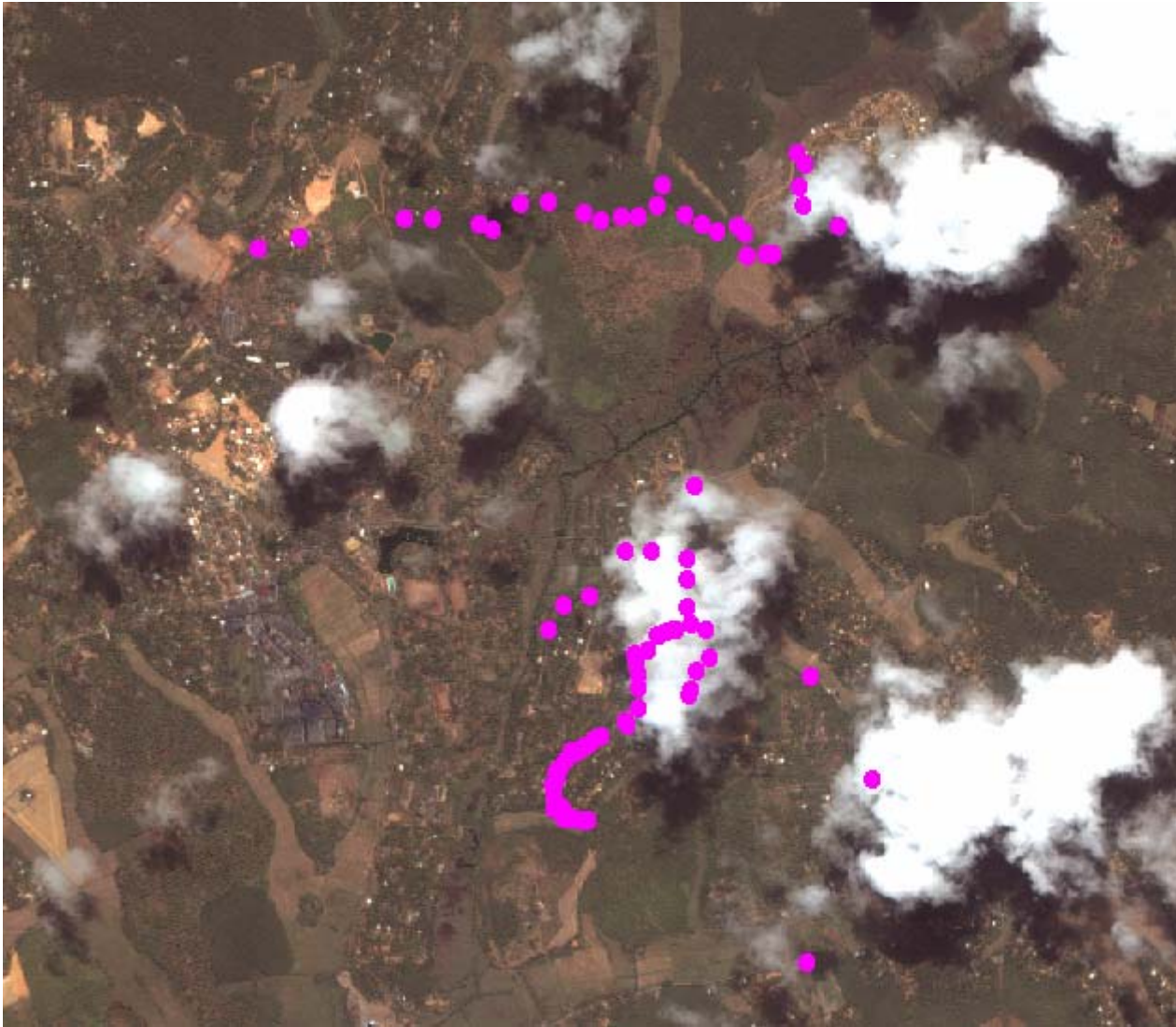
Scrub Areas



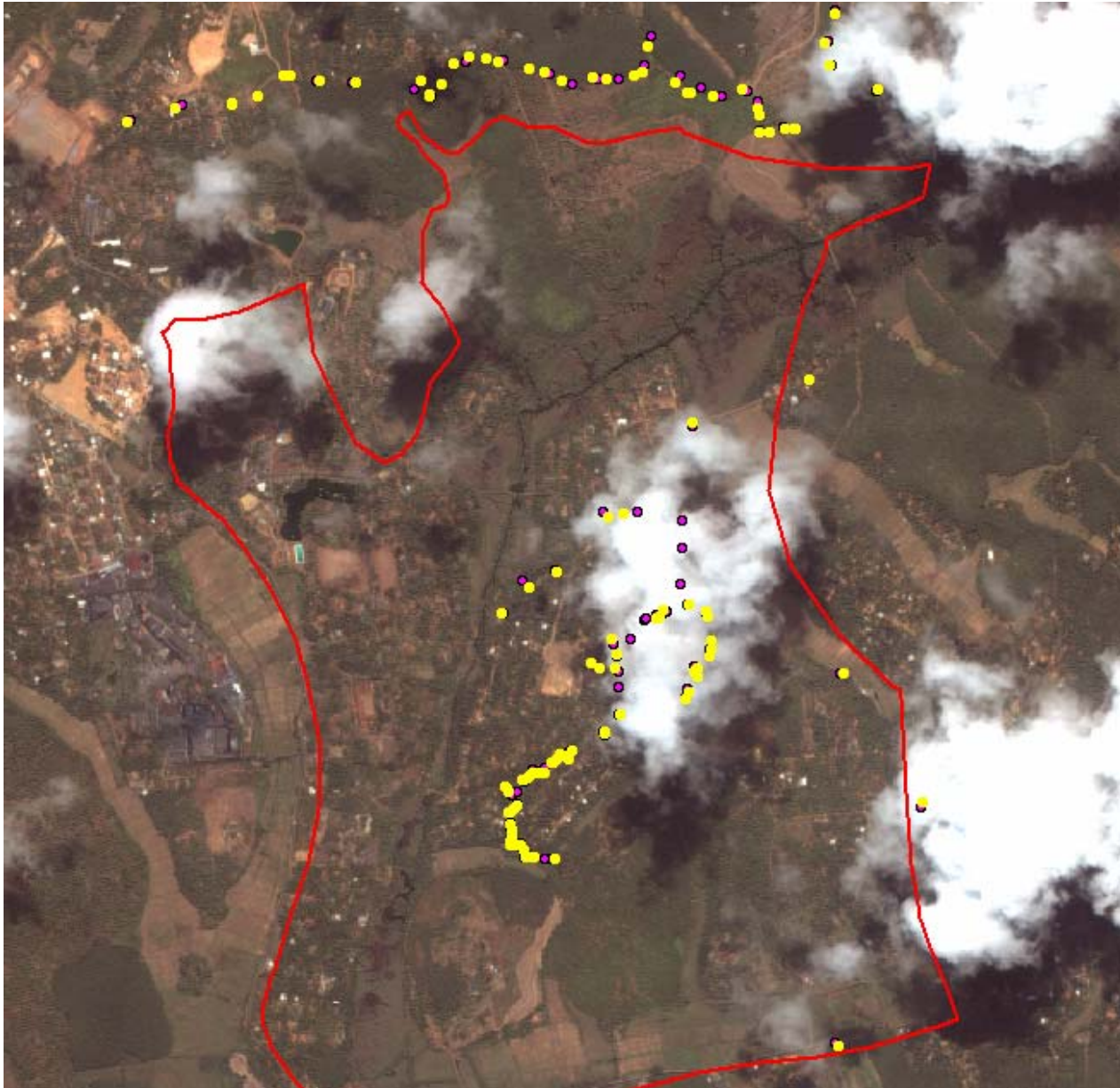
CLOUD ON SATELLITE IMAGE



GPS Data Collection using GeoXT Handheld Trimble Unit



GPS Collection using eTrex Summit Unit



Difference between two machine

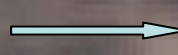
8 M Difference

A diagram showing a yellow dot on the left and a purple dot on the right. A light blue arrow points from the purple dot to the yellow dot.

6 M Difference

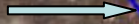
A diagram showing a yellow dot on the left and a purple dot on the right. A light blue arrow points from the purple dot to the yellow dot.

8 M Difference

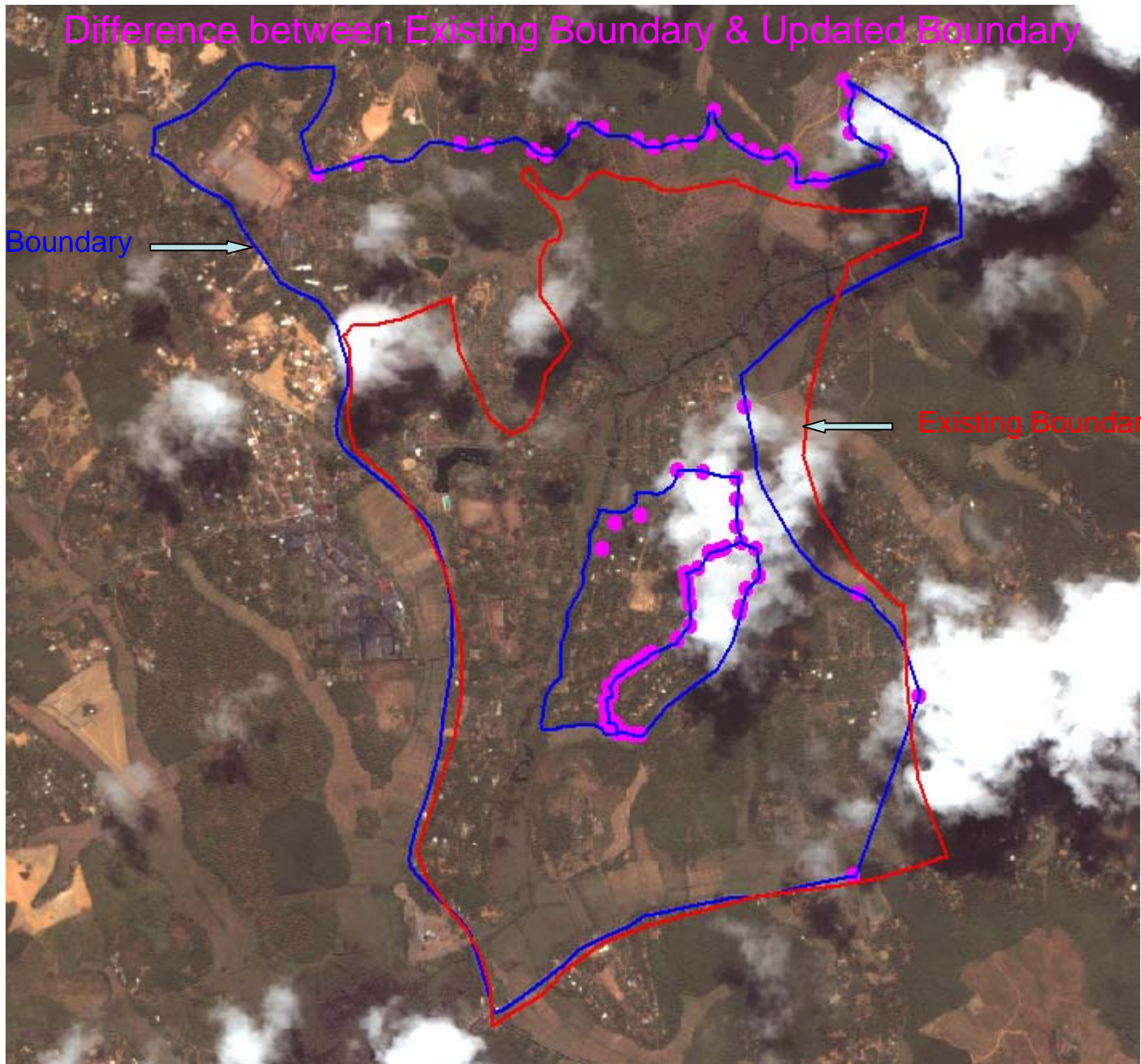
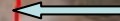
A diagram showing a yellow dot on the left and a purple dot on the right. A light blue arrow points from the purple dot to the yellow dot.

Difference between Existing Boundary & Updated Boundary

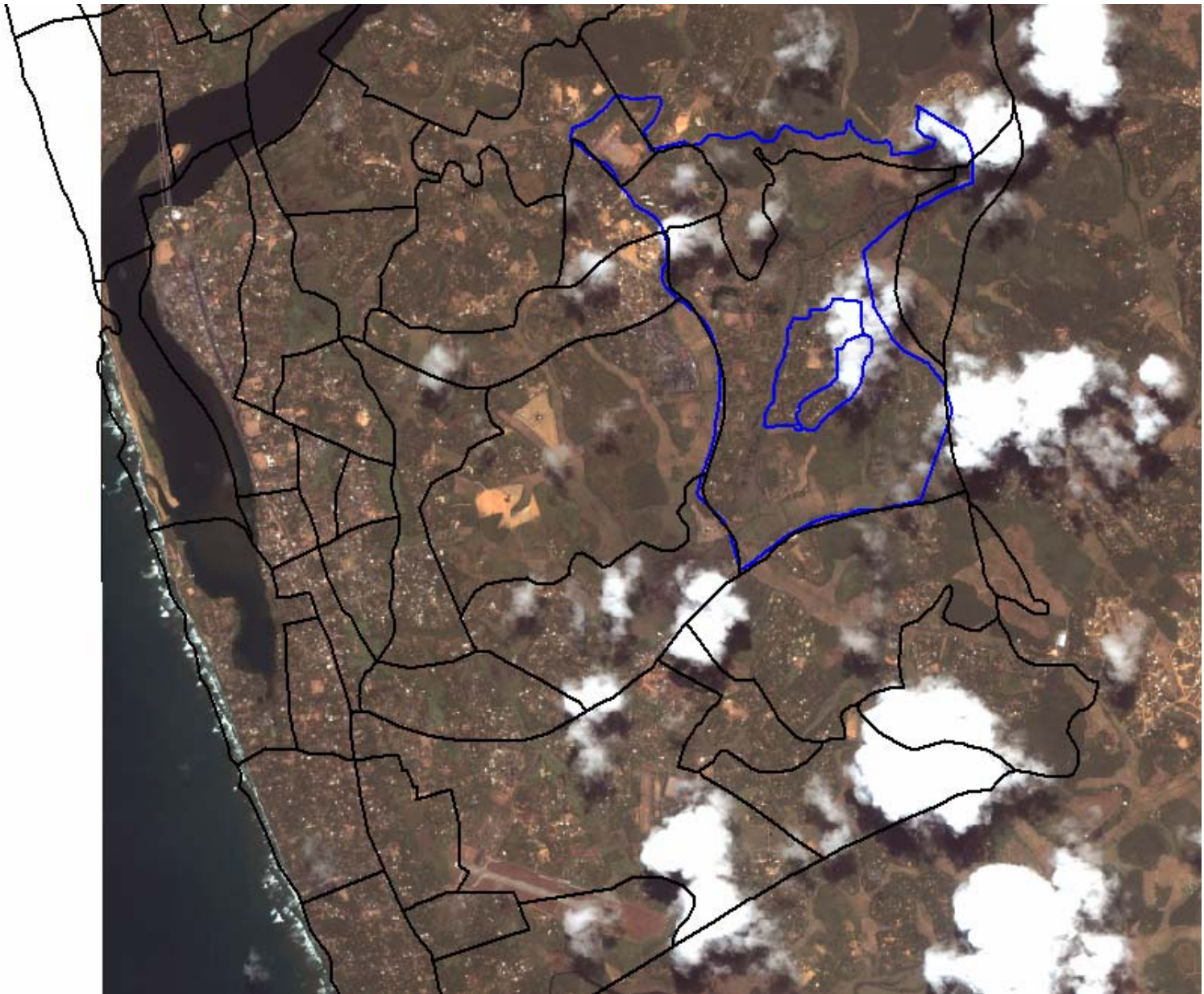
Updated Boundary



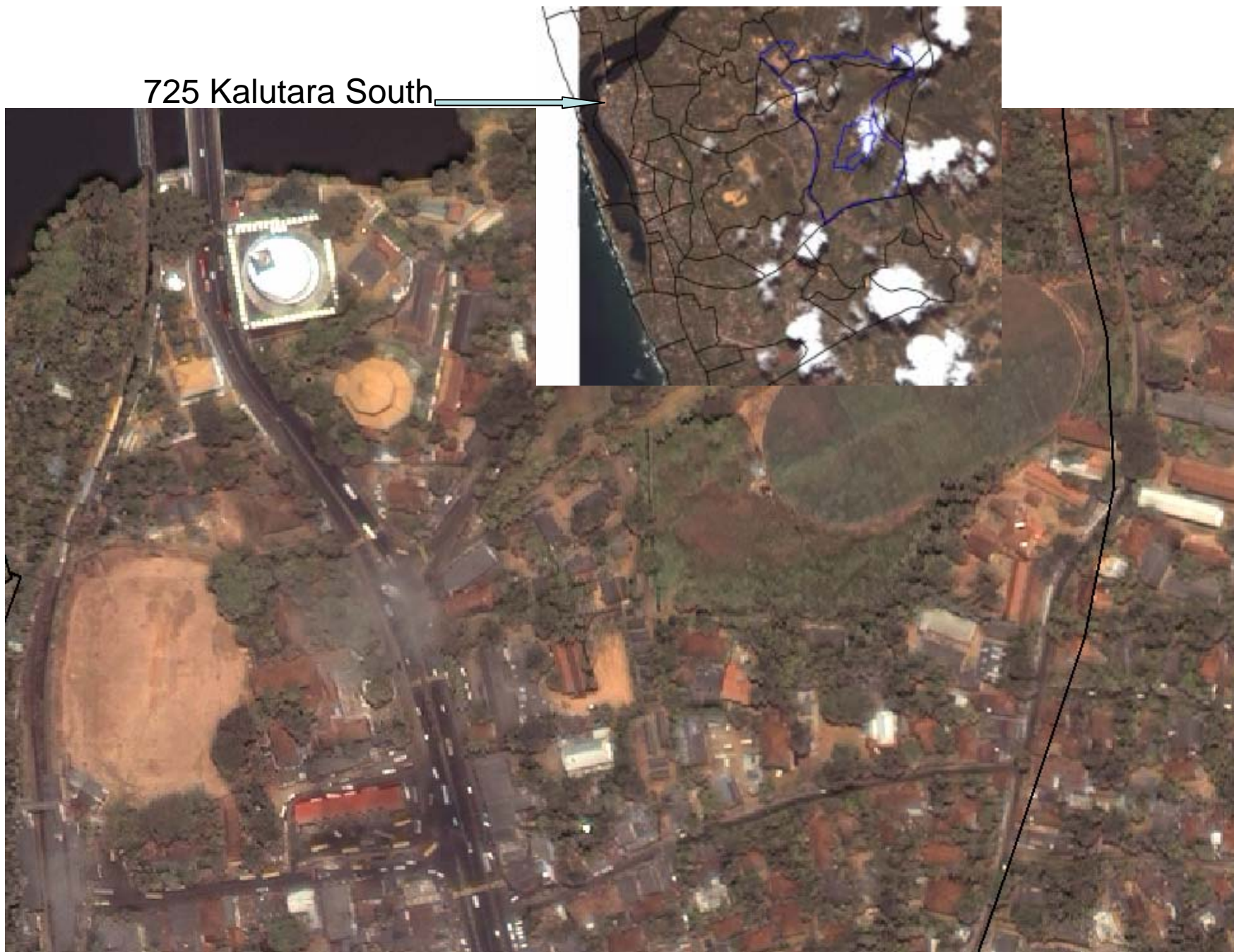
Existing Boundary



COMPLETED THREE GN BOUNDARY



725 Kalutara South



Final Objective:

Editing & Rectification of Grama Niladhari Boundary Database Using High Resolution Satellite Images

PHASE ONE

This process indicates the UDA GIS Centre involvement in developing National Spatial Data Infrastructure to facilitate e-Governance and Business Processes Re-engineering programme of UDA under e_Planning

Shifting of Boundary occurred due to Variation of two different source data in two different scales

Corrected Boundaries Based on High Resolution Satellite Images

Programme started from main urban centres and areas declared under UDA

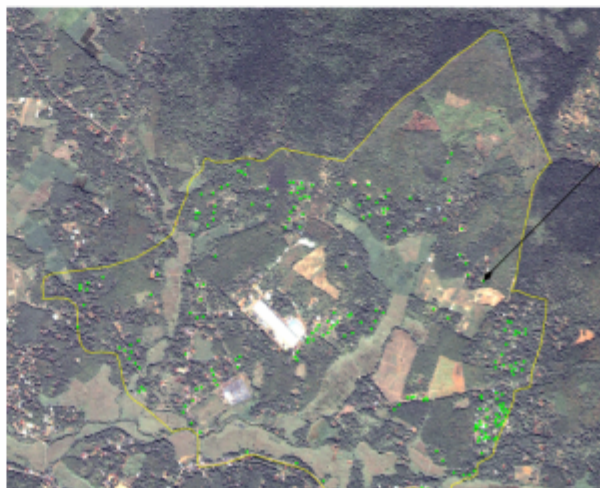
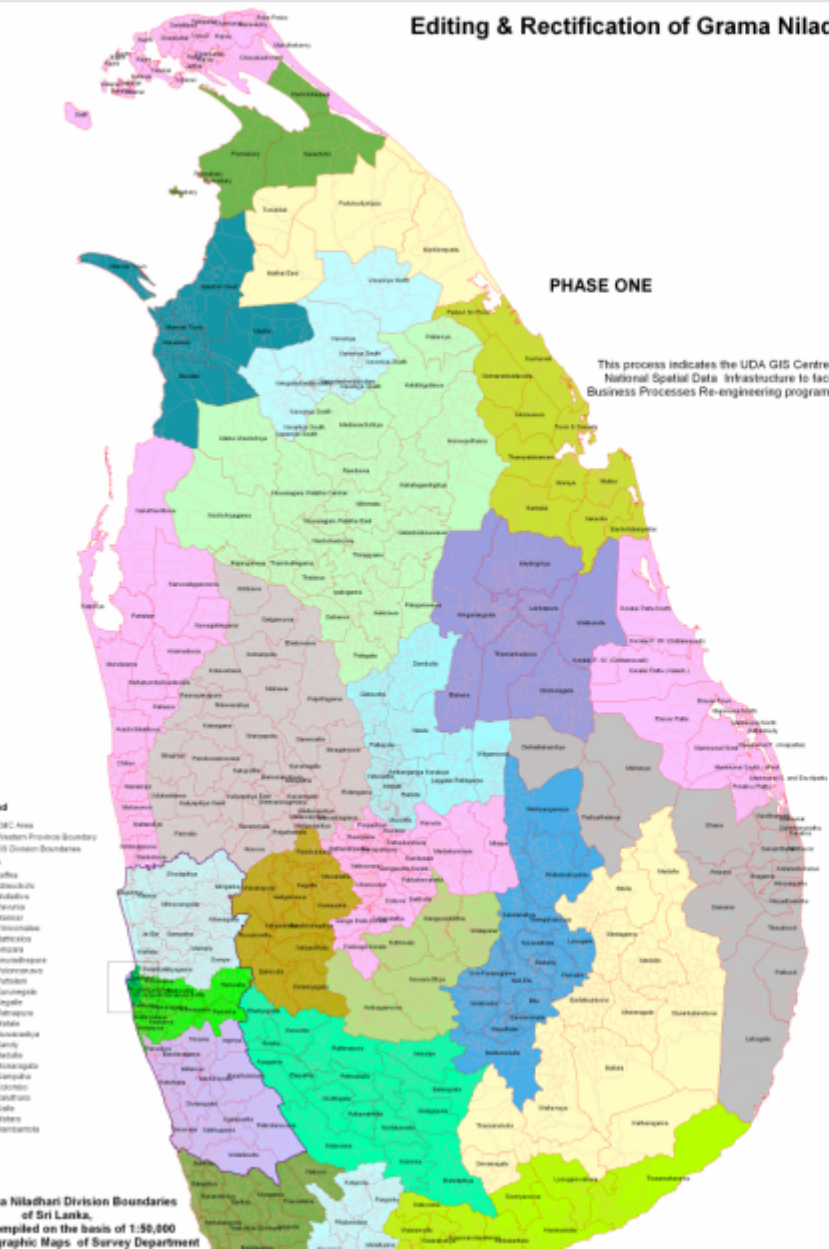
PHASE TWO

PHASE THREE

D5 Division Avissawella - GN Division No. 428, Kogama Ne
Collection of GPS Point/Control data for each Household Units in each of the GN Divisions

The point location will be identified by its Assessment Number and GN Code in order to link the details of Enumerated Form: of the 2011 Census of Population & Housing

Household No:	402A
Name of Occupants:	M. A. Jayasinghe R. A. Caroline Rose M. A. Dushan
Address:	No. 402A, Kogama, Avissawella, Kogama



Thank You very much !