

*Ministry of Panchayati Raj,
Govt. of India*

SPATIAL PLANNING FOR GRAM PANCHAYATS

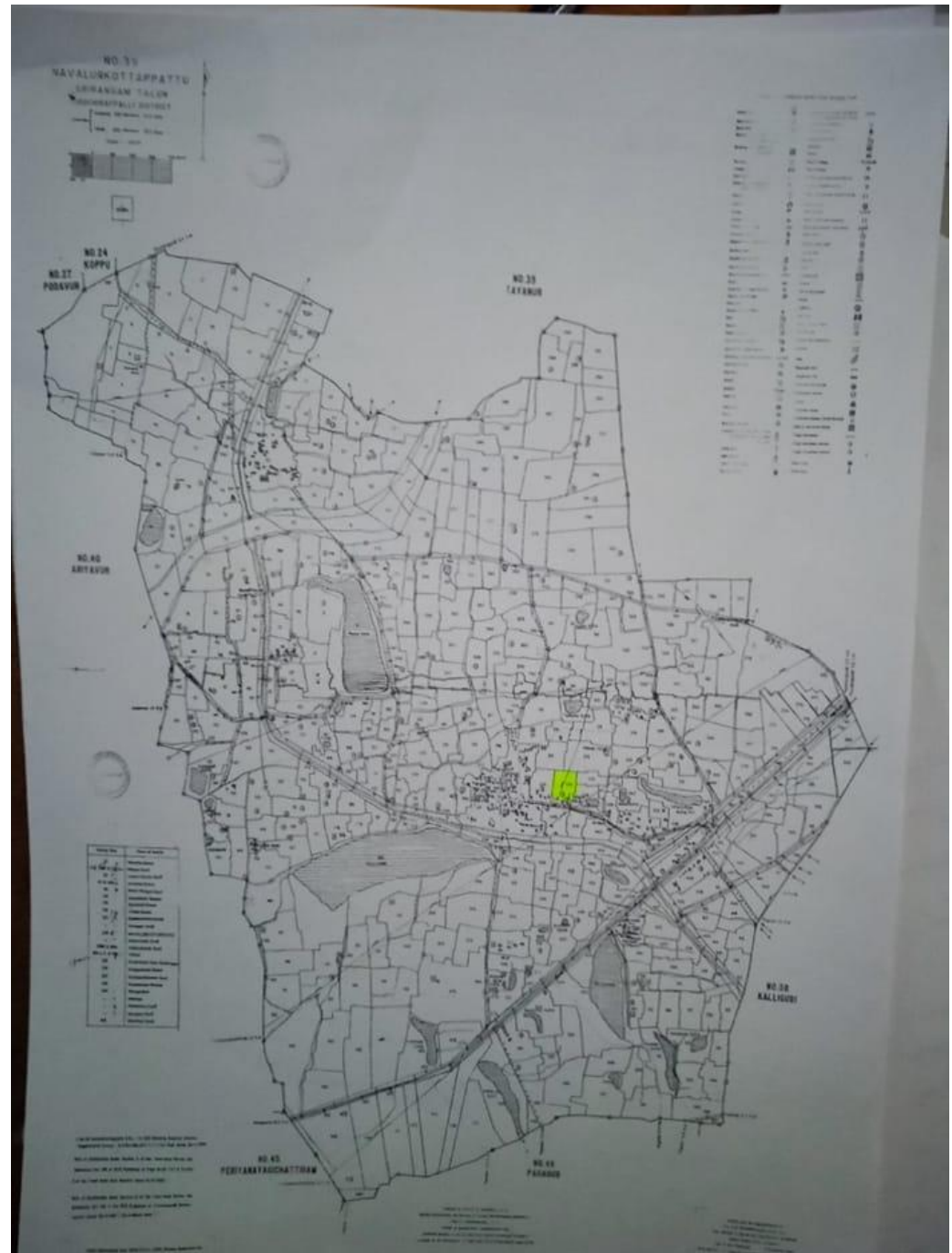
Village: NAVALUR KOTTAPATTU

*Institute: Department of Architecture,
National Institute of Technology
Tiruchirappalli*

NAVALUR KUTTAPATTU GRAM PANCHAYAT

- Location: **12 km to the west of Tiruchirapalli**
(on Tiruchirappalli to Dindigul National Highway)
- Panchayat Union: **Manikandam**
- Taluk: **Srirangam**
- District : **Tiruchirappalli**
- Assembly constituency : **Srirangam Assembly Constituency**
- Lok Sabha constituency : **Tiruchirappalli Parliamentary Constituency**
- Serpanch Name :
- Total geographical area of village: **1125.35 hectares**
- Total population: **5,310 peoples**
- Total houses: **1,589 houses**

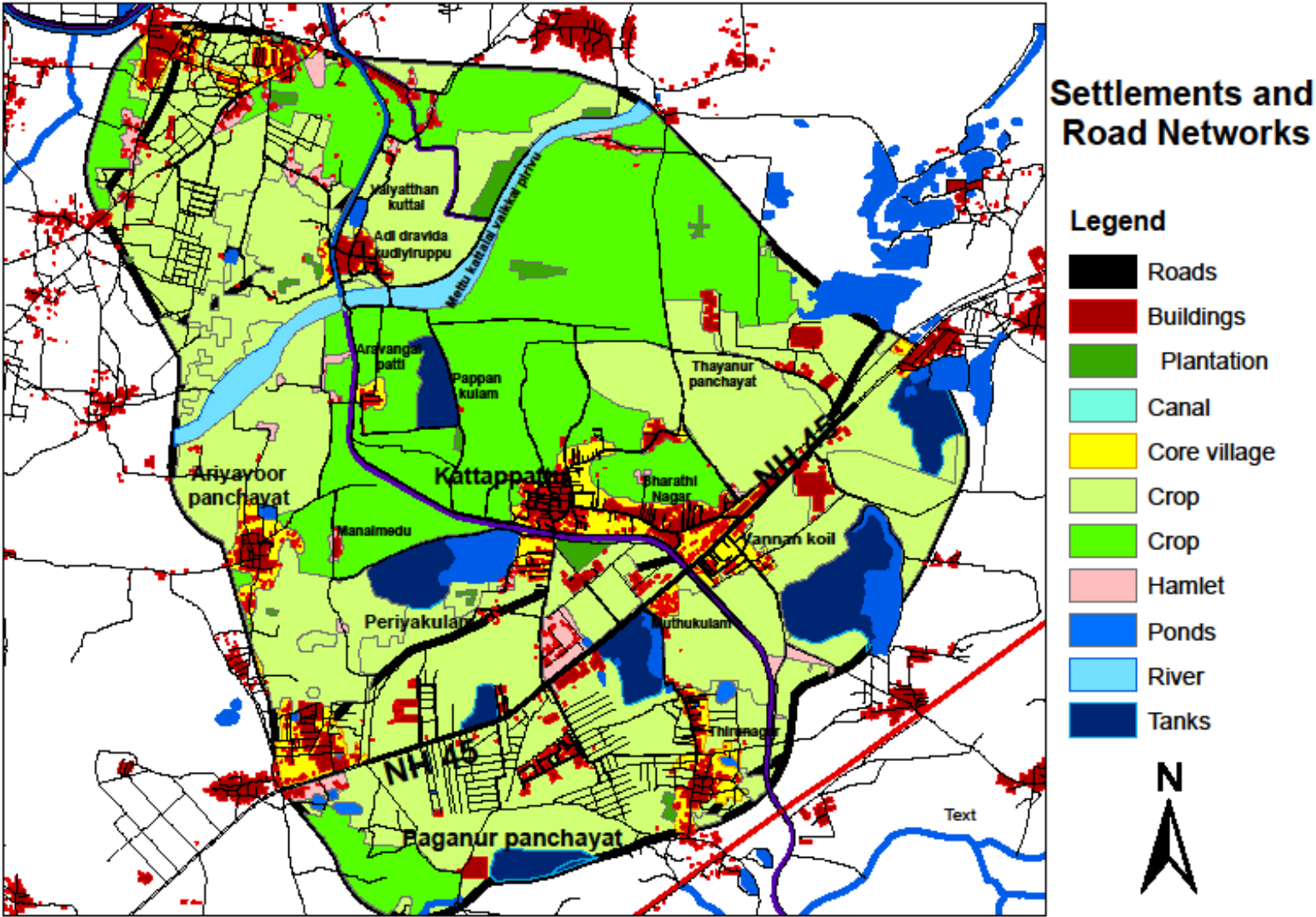
NAVALURKUTTAPATTU GRAM PANCHAYAT



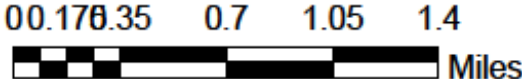
NAVALUR KUTTAPATTU GRAM PANCHAYAT

Sl. No.	Habitation Name	Total Houses	%	Total Population	%
1.	Navalur	179	11.26	560	10.49
2.	A. D. Kudiyiruppu	063	03.96	210	03.93
3.	Aravangalpatti	062	03.95	350	06.55
4.	Manamedu	022	01.38	115	02.15
5.	Anbu Nagar	111	06.99	270	05.05
6.	N. Kuttapattu	122	07.68	442	08.28
7.	Kuttapattu	387	24.35	960	17.98
8.	Keelakkadu	032	02.01	180	03.37
9.	Ambedkar Nagar	070	04.41	325	06.08
10.	Bharathi Nagar	192	12.08	710	13.30
11.	Vannankoil	131	08.24	420	07.86
12.	Santhosh Nagar	033	02.08	270	05.05
13.	Gandhi Nagar	041	02.58	118	02.21
14.	Muthukkulam	060	03.78	228	04.27
15.	Thirunagar	084	05.29	182	03.40
TOTAL		1589		5340	

SETTLEMENTS AND ROAD NETWORKS



NAVALUR KOTTAPATTU



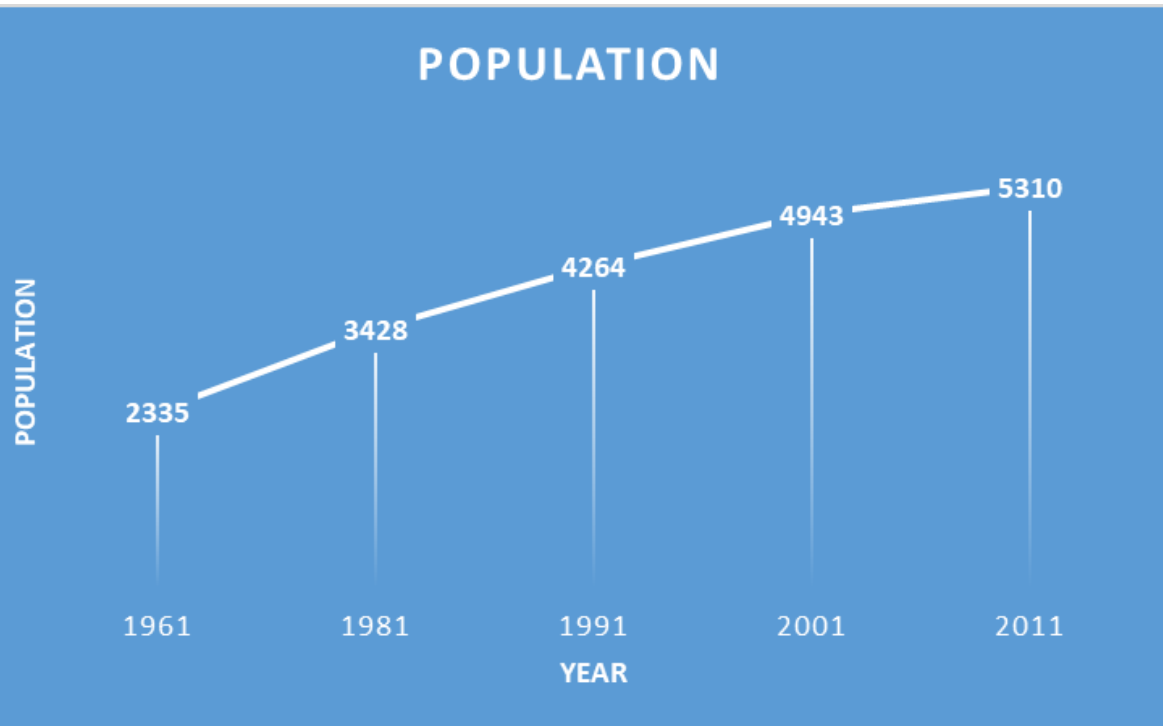
RRSC-South, Bangalore,
NRSC

DEMOGRAPHY

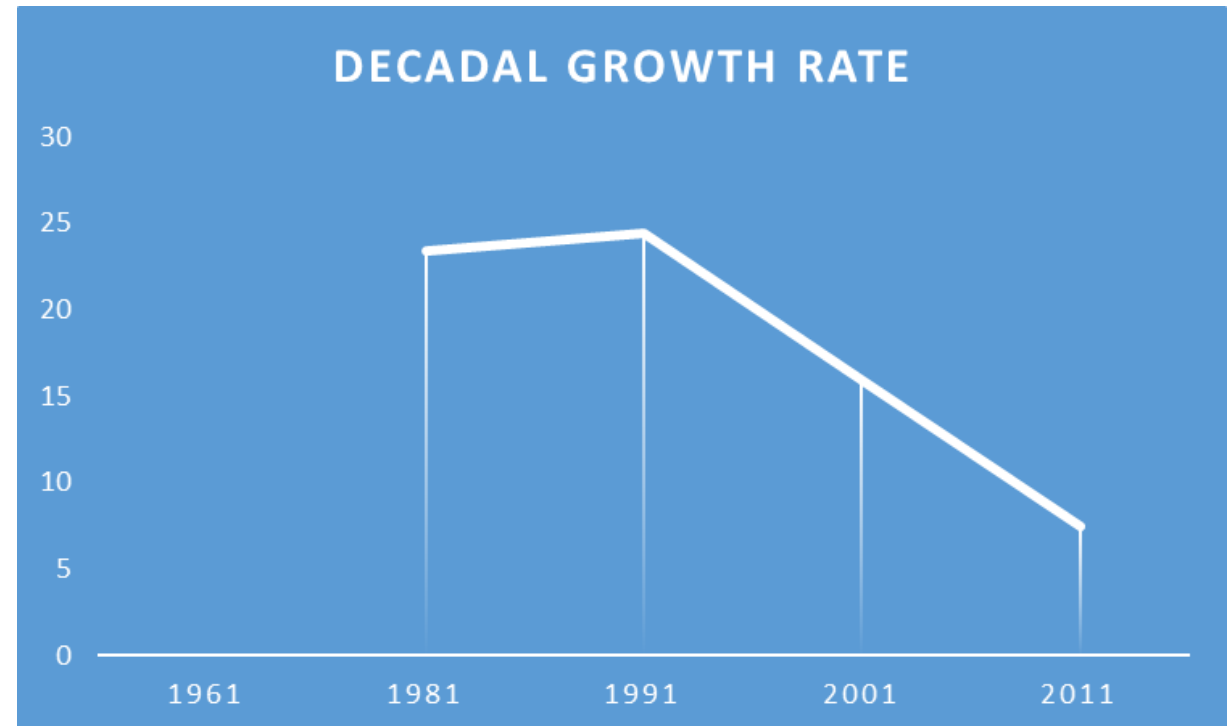
Year	Households	Total Pop.	Decadal Growth Rate	Household size	Male	%	Female	%
1961	494	2335		4.72	1172	50.20	1163	49.80
1981	731	3428	23.40	4.69	1719	50.15	1709	49.85
1991	968	4264	24.38	4.40	2155	50.54	2109	49.46
2001	1146	4943	15.92	4.31	2481	50.20	2462	49.80
2011	1307	5310	7.42	4.09	2629	49.51	2681	50.49

DEMOGRAPHY

POPULATION

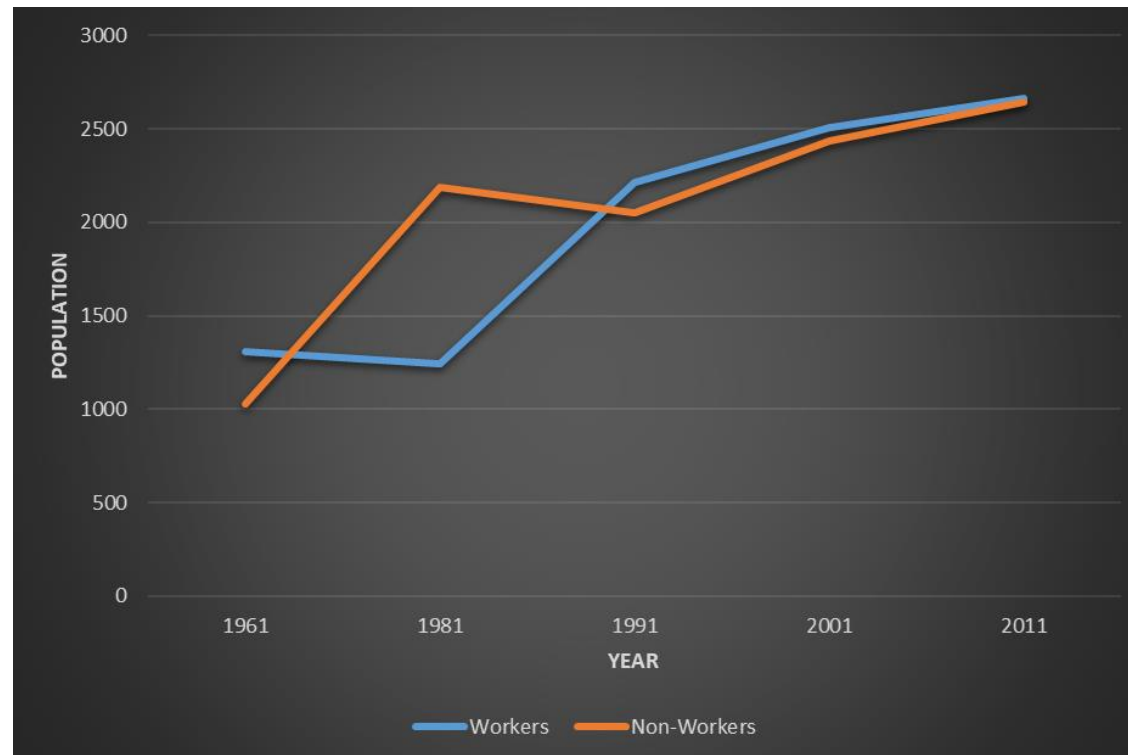


DECADAL GROWTH RATE



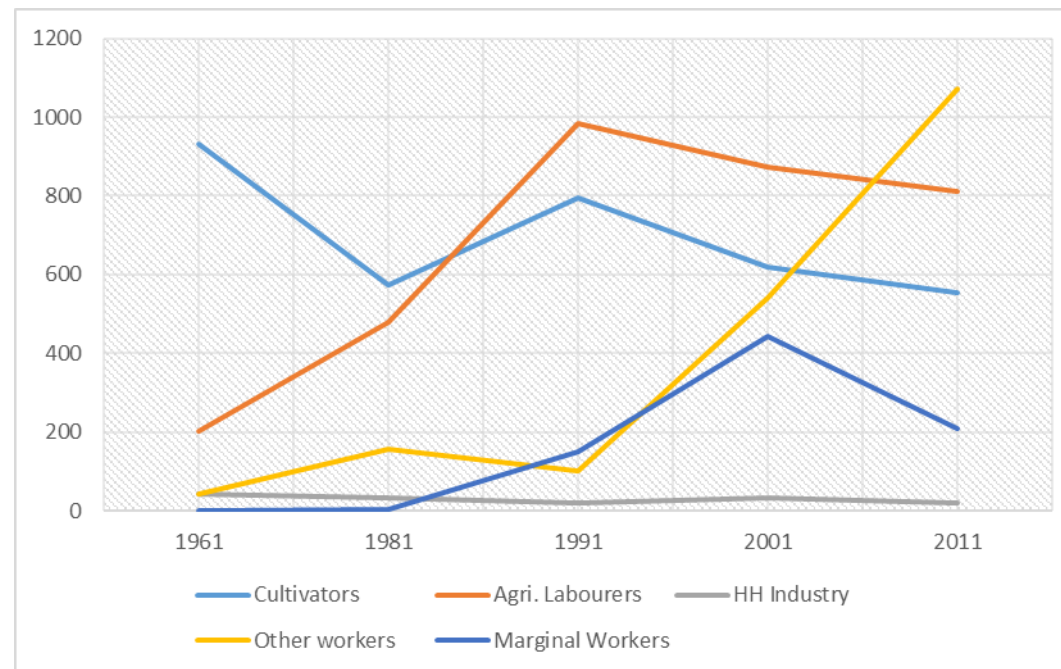
WORKERS Vs. NON-WORKERS

Year	Total Pop.	Total Workers	%	Workers Male	Workers Female	Total Non-Workers	%	Non Workers Male	Non Workers Female
1961	2335	1309	56.06	774	535	1026	43.94	398	628
1981	3428	1243	36.26	955	288	2185	63.74	763	1419
1991	4264	2214	51.93	1247	967	2050	48.07	908	1142
2001	4943	2507	50.72	1417	1090	2436	49.28	1064	1372
2011	5310	2664	50.17	1593	1071	2646	49.83	1036	1610



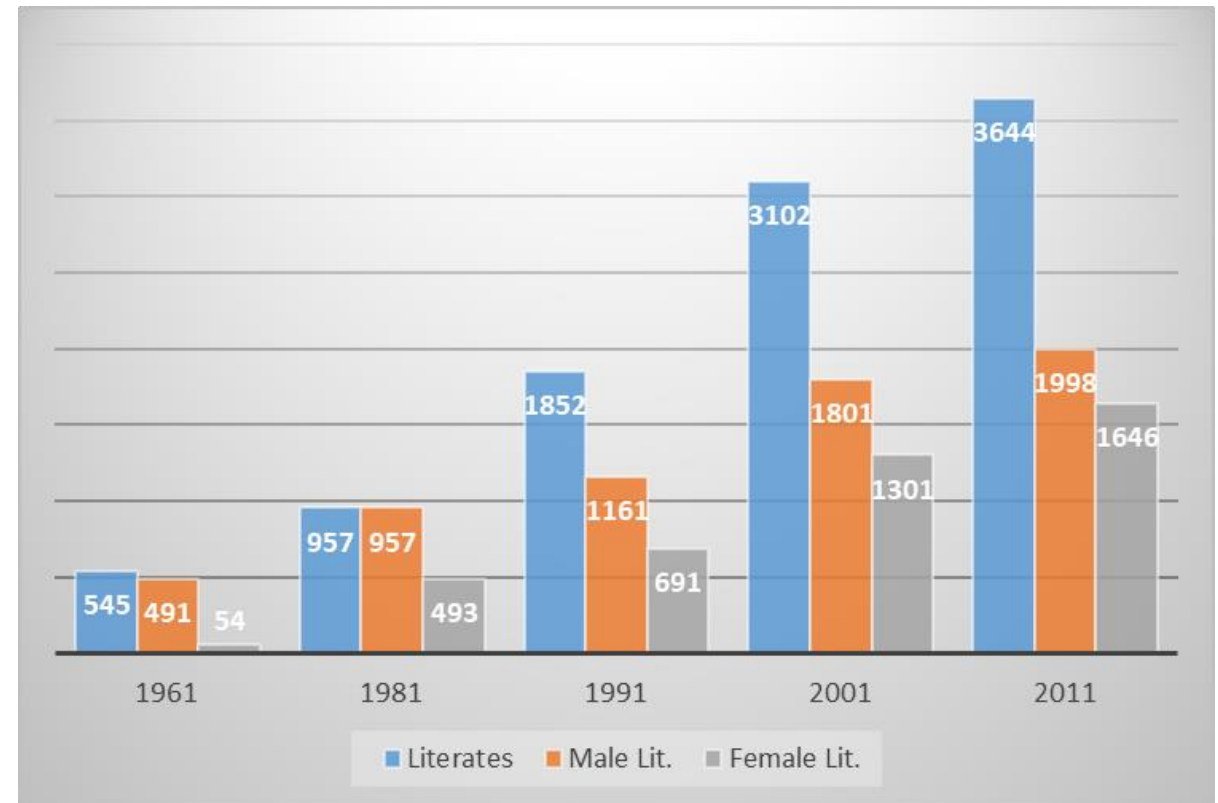
WORKERS - CLASSIFICATION

Year	Total workers	Cultivators	Agri. Lab.	Household Ind.	Other Workers	Marginal Workers
1961	1309	932	201	41	41	-
1981	1243	573	480	33	157	03
1991	2214	794	984	21	102	150
2001	2507	619	872	32	542	442
2011	2664	553	812	19	1070	210

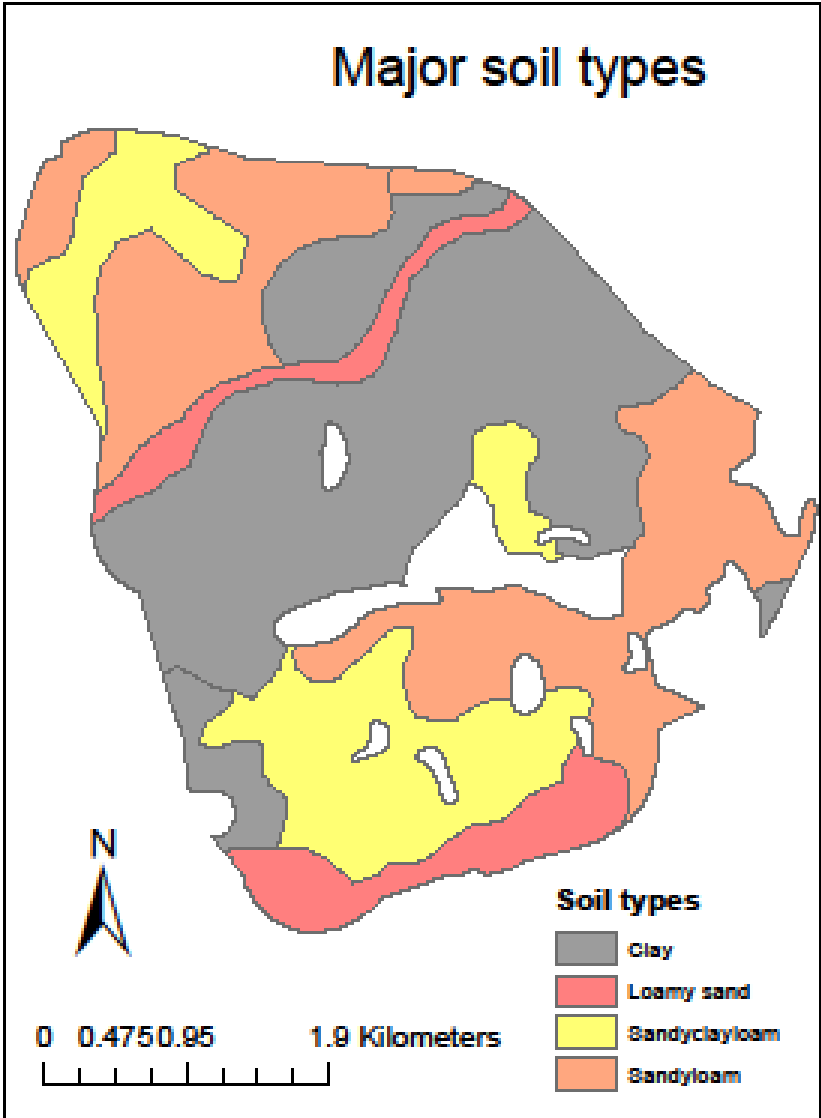
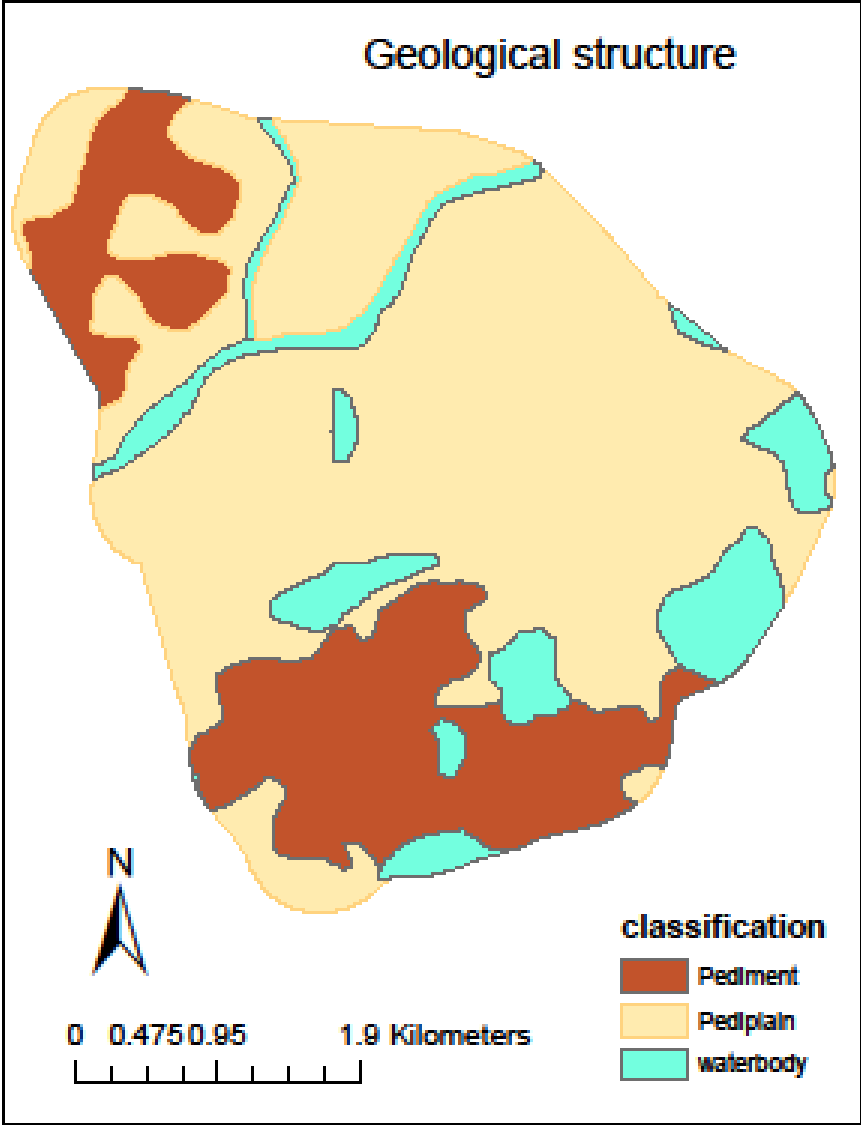


LITERACY

Year	1961	1981	1991	2001	2011
Literates	545	957	1852	3102	3644
Male Lit.	491	957	1161	1801	1998
Female Lit.	54	493	691	1301	1646

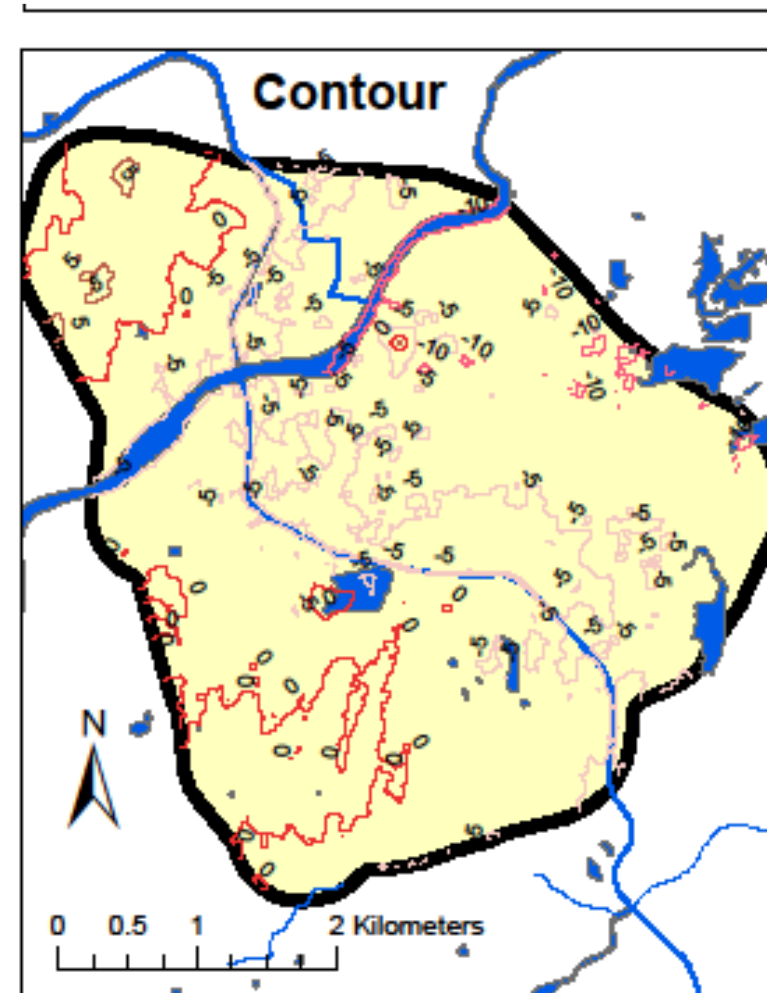
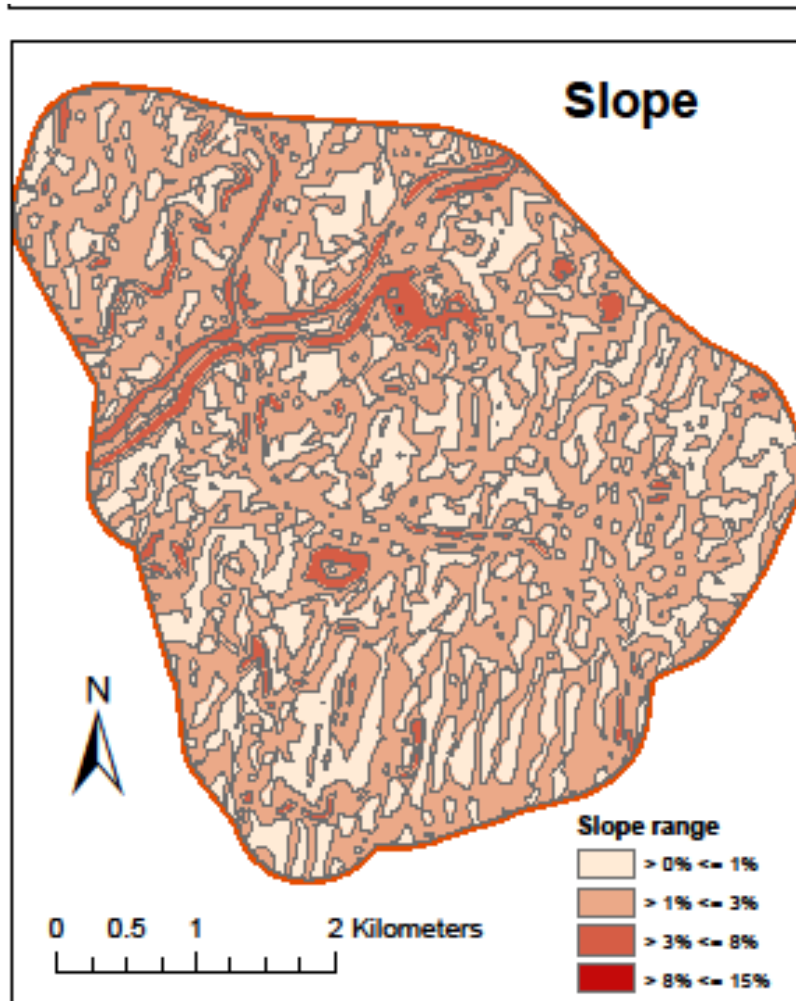


PHYSIOGRAPHY – GEOLOGICAL STRUCTURE & SOIL TYPES

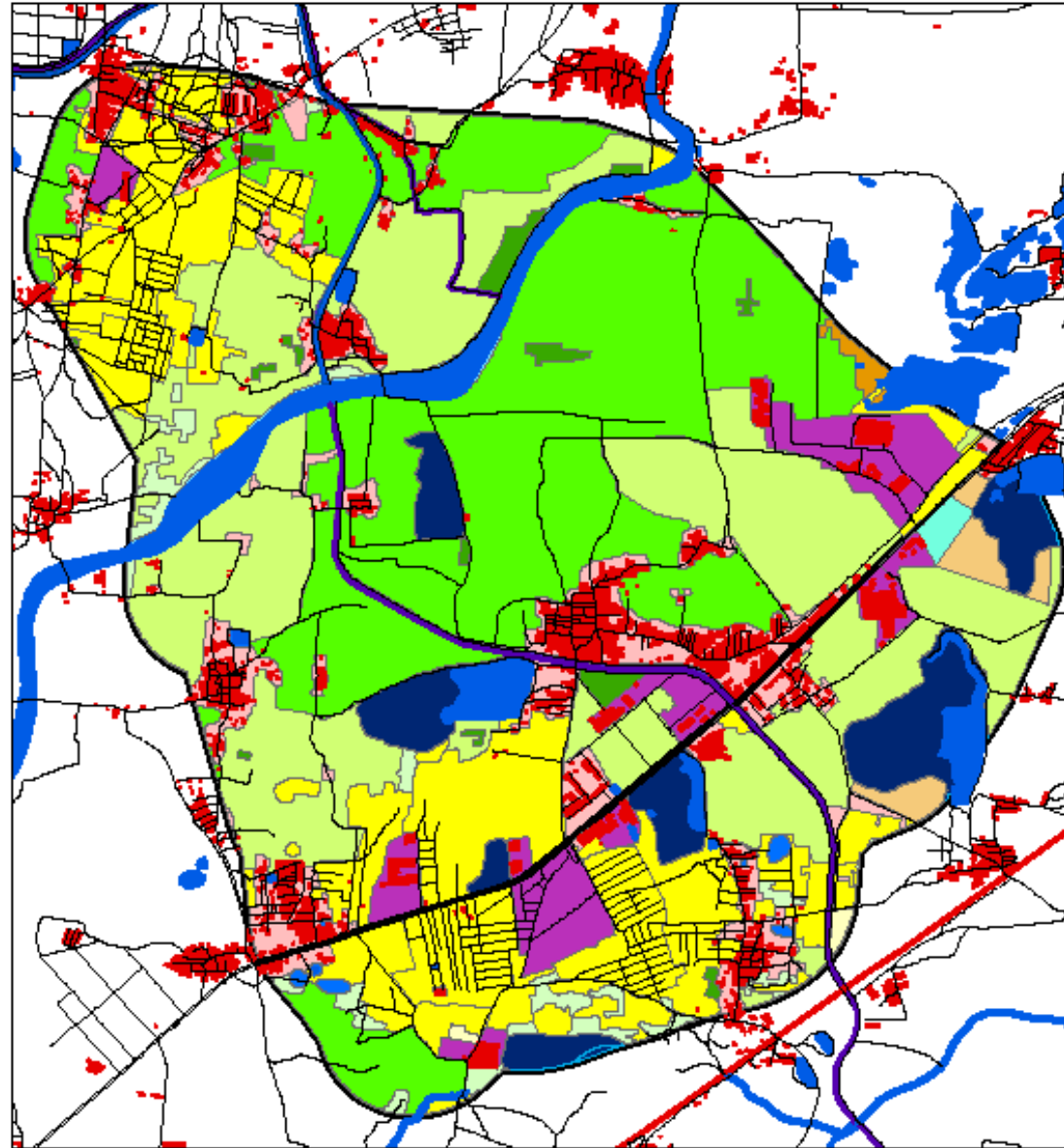


RRSC-South,
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PHYSIOGRAPHY – SLOPE AND CONTOUR



LANDUSE

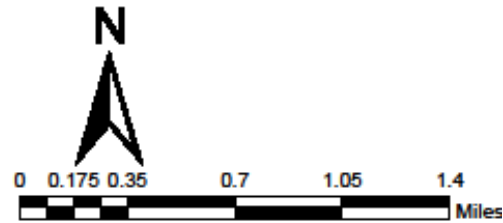


NAVALUR KOTTAPATTU

Legend

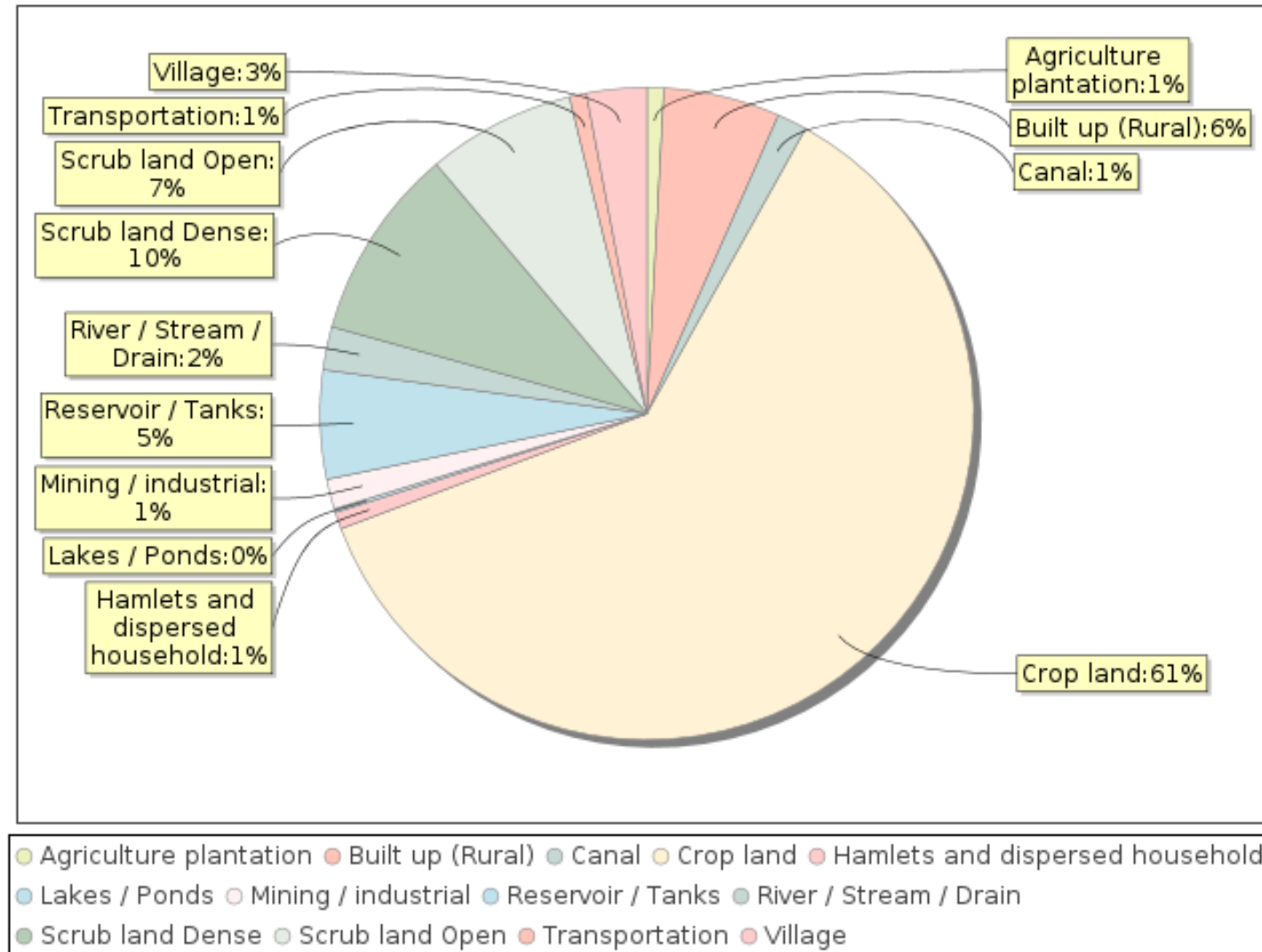
LANDUSE

- Agricultural Plantation (AP)
- Canal (CA)
- Closed (CS)
- Core village (CV)
- Cropped in 2 seasons (DC)
- Cropped in 3 seasons (TC)
- Fallow (FL)
- Hamlet & Dispersed Household (HD)
- Industrial area (IA)
- Mining – Abandoned(AB)
- Mining – Active (AC)
- Ponds (PO)
- River (RI)
- Sparse (SS)
- Tanks (TA)
- Transport
- Zaid (ZD)



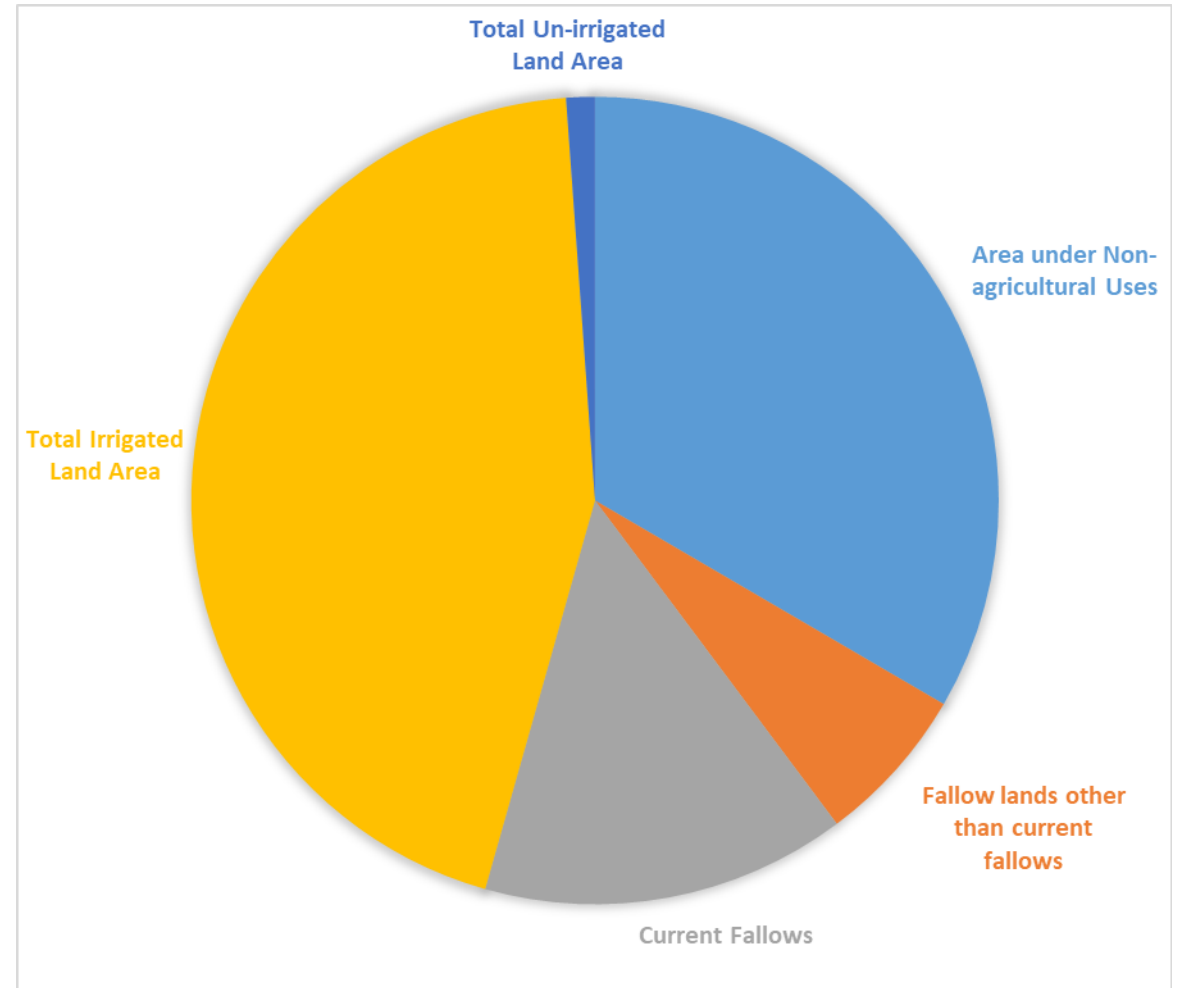
RRSC-South, Bangalore,
NRSC

LAND USE/ LAND COVER



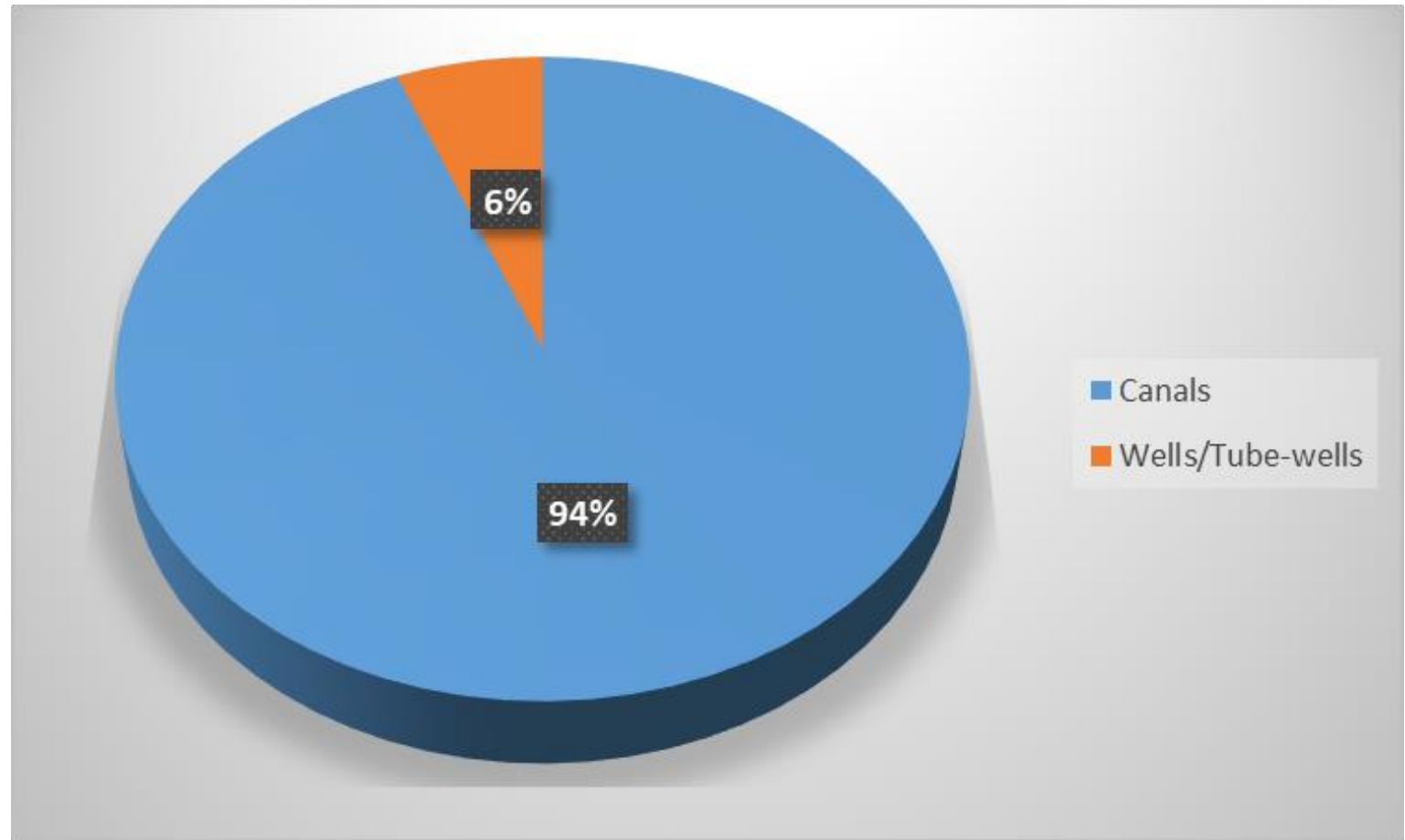
LANDUSE

Area under Non-agricultural Uses	33.41	376
Fallow lands other than current fallows	6.37	71.7
Current Fallows	14.61	164.4
Total Irrigated Land Area	44.46	500.4
Total Un-irrigated Land Area	1.15	12.9



IRRIGATED LAND AREA: IRRIGATION SOURCE

Canals	470	93.92
Wells/Tube-wells	30.4	6.08



FACILITIES/ INFRASTRUCTURE

Educational Facilities	
Pre-Primary school (PP)	3
Primary school (P)	3
Middle school (M)	3
Secondary School (S)	1
Senior Secondary school	1
Degree college of arts science & commerce	10+ kms
Engineering college(EC)	1
Medical college (MC)	10+ kms
Management institute (MI)	10+ kms
Polytechnic (Pt)	Less than 5kms
Vocational training school /ITI	1
Non-formal training centre	1
Special school for disabled	10+ kms

Health Facilities	
Community health centre	5 to 10 kms
Primary Health Centre	5 to 10 kms
Primary health sub centre (PHS)	1
Maternity and child welfare centre (MCW)	5 to 10 kms
T.B. clinic (TBC)	5 to 10 kms
Hospital-allopathic (HA)	10+ kms
Hospital-alternative medicine	10+ kms
Dispensary (D)	5 to 10 kms
Veterinary hospital (VH)	1
Mobile health clinic (MHC)	
Family welfare centre (FWC)	5 to 10 kms
Charitable non Govt. hospital/Nursing home	0
Medical practitioner with MBBS	1
Medical practitioner with other degree	3
Traditional practitioner and faith healer .	0
Medicine Shop	2

Post office(PO)	Less than 5kms
Sub post office (SPO)	Yes (2)
Post & Telegraph office (P&TO)	Less than 5kms
Bus Service	Yes
Taxis and Autos	Yes
Railway Station	Less than 5kms
Commercial bank/ ATMs	1/3
Cooperative bank	0
Milk Cooperative Society	Yes (1)
PDS	Yes (3)
Anganwadi	Yes
Sports field	01

WATER SUPPLY

- Piped Water Supply
- Water Supply connection to individual houses: 858
- Public taps: 87
- Hand Pumps: 27
- Water Tanks: 18

SOLID WASTE MANAGEMENT

- Door to Door Collection
- Collection and Segregation at 3 places
- Plastic waste is sold to external agencies
- Composting: Bio-degradable waste

DRAINAGE

- **Toilets:** At individual Houses/
Public Toilets
- **Soil Waste:** Leech Pits/ Septic
Tanks at individual houses
- **Waste Water/ Storm water:**
Open Drains to Agriculture
Fields

PUBLIC TRANSPORT

- Bus service

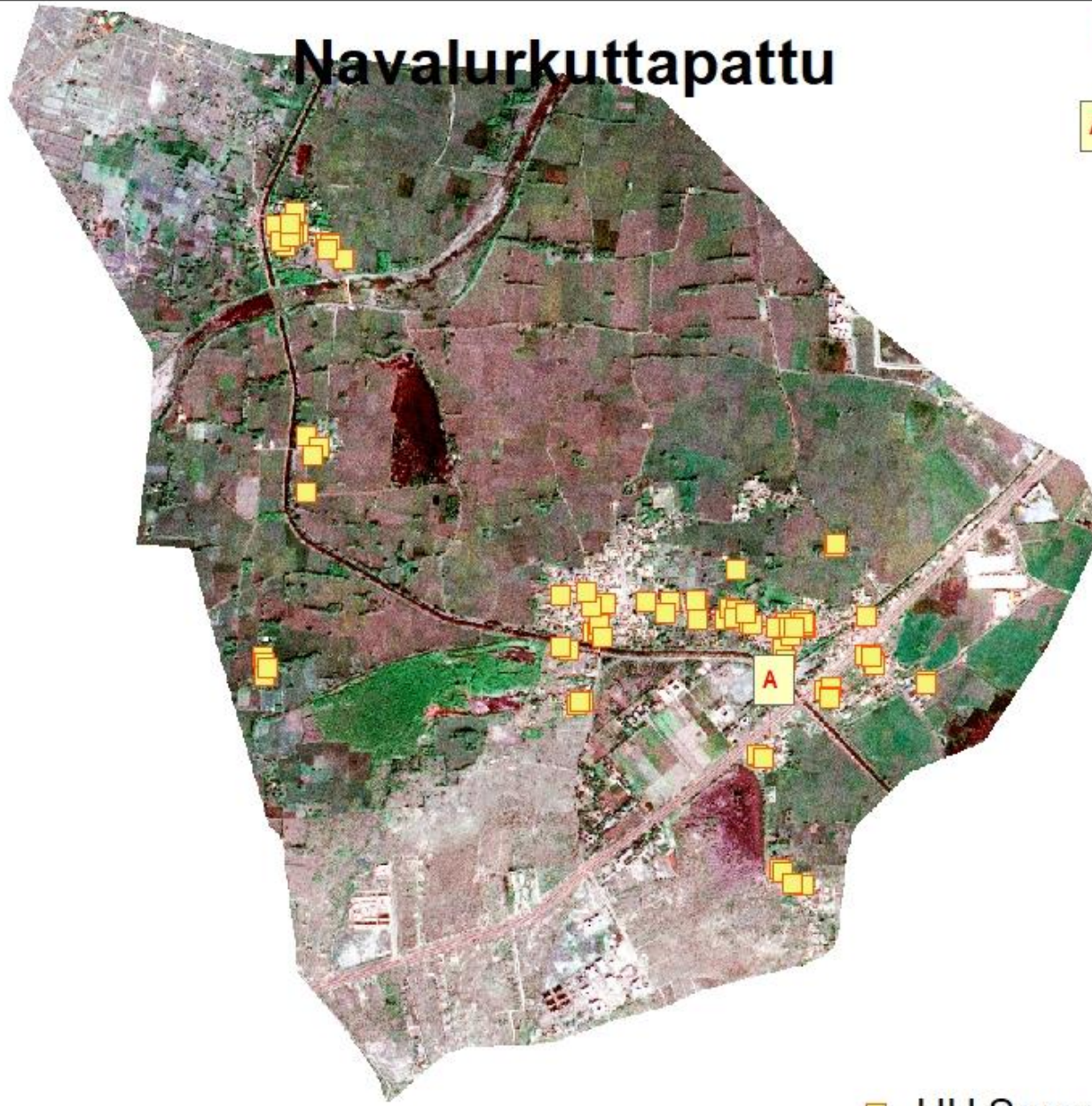
HOUSEHOLD SURVEYS

Navalurkuttapattu

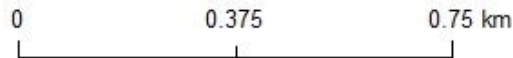
House Hold Survey data
on VHR Satellite data



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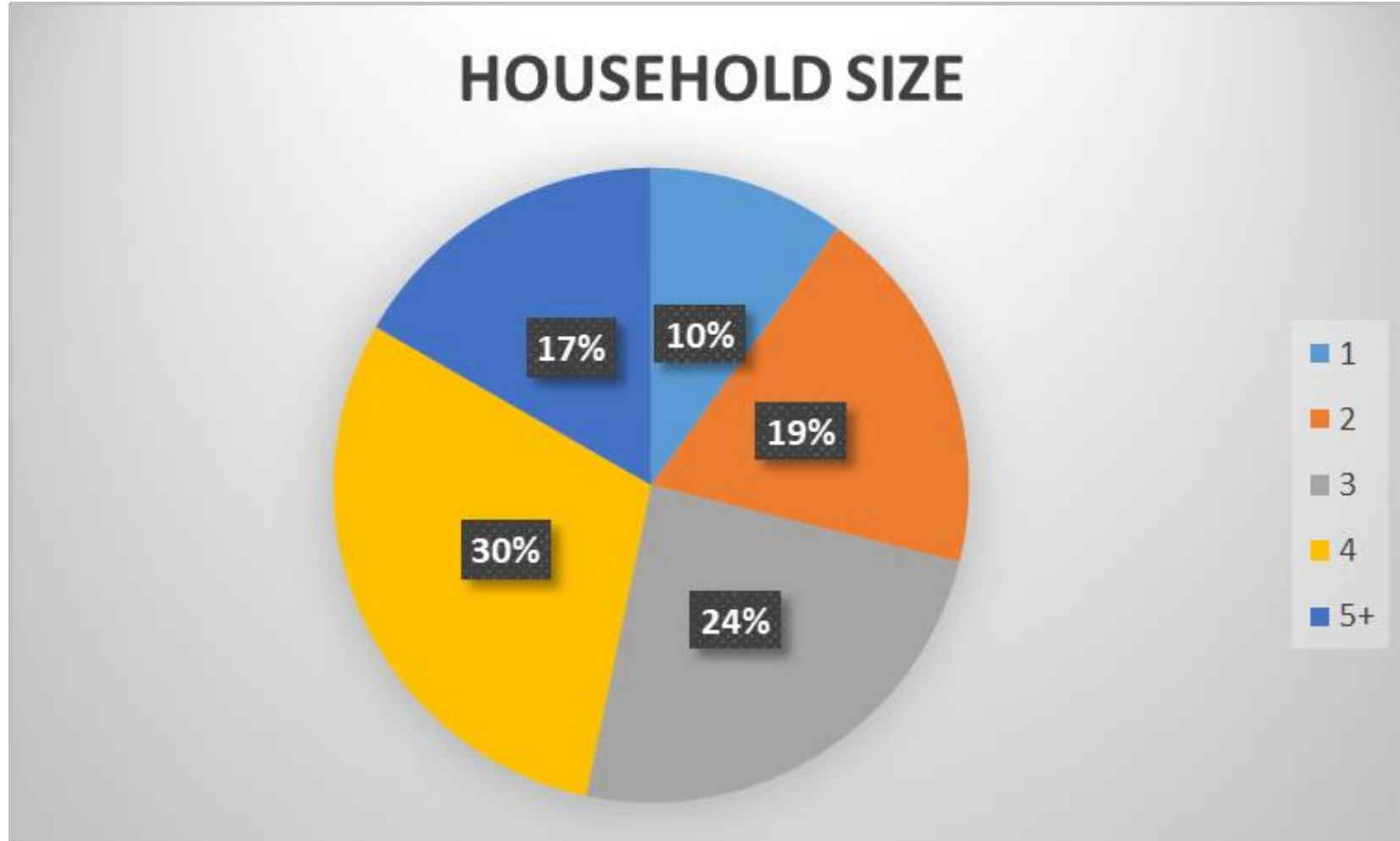


■ HH Survey Points



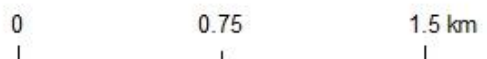
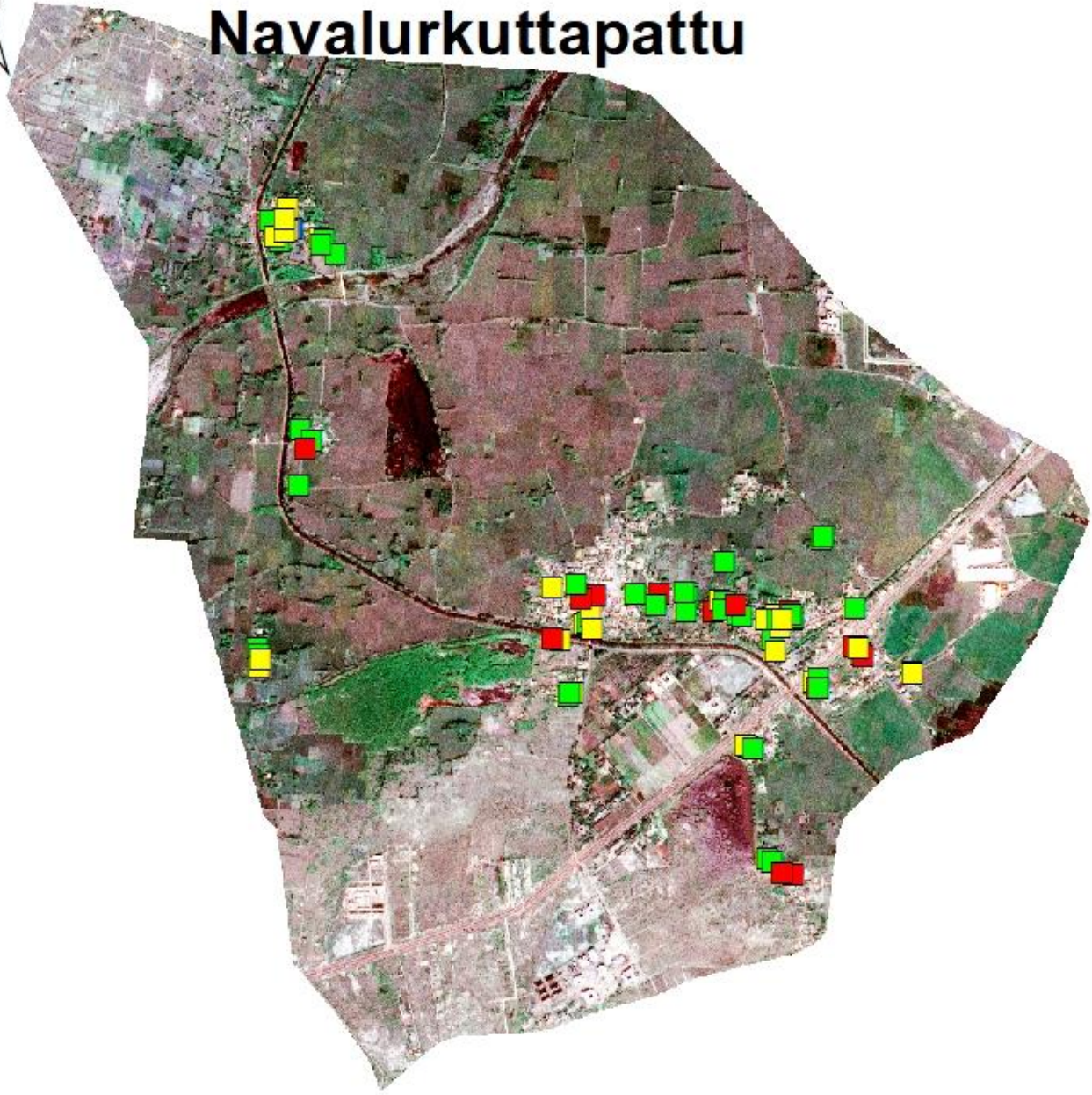
RRSCs, NRSC, ISRO

HOUSEHOLD SIZE

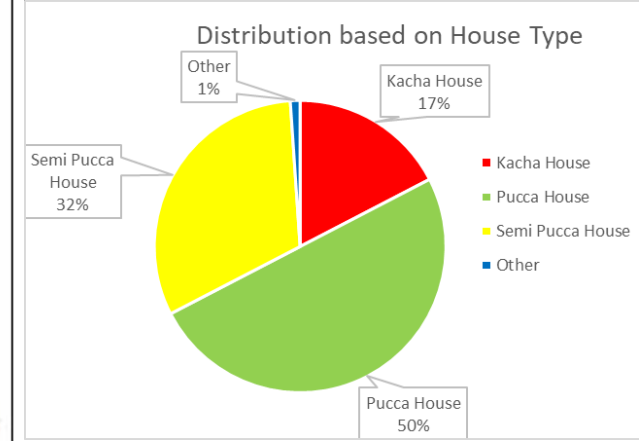








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House Hold Survey data distribution based on House Type

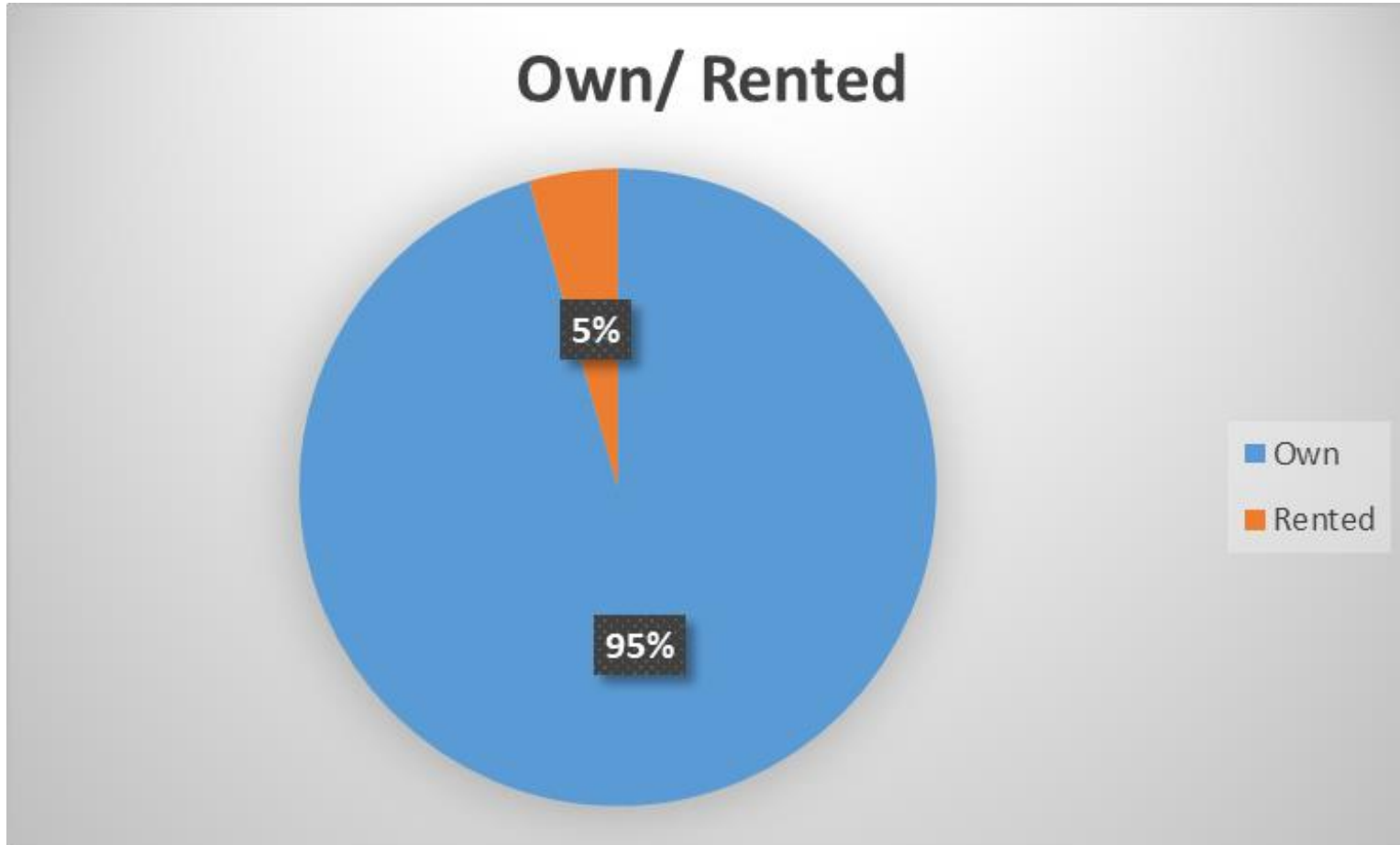


House Type

-  Pucca
-  SemiPucca
-  Kachcha
-  Other



OWNERSHIP STATUS



Rent (Rs.):

- 500
- 1000
- 2000
- 2500

RESIDENTIAL HOUSES - CONDITIONS

S.N	Residential houses	Percentage
1	Good	76
2	Liveable	21.5
3	Dilapidated	1.5

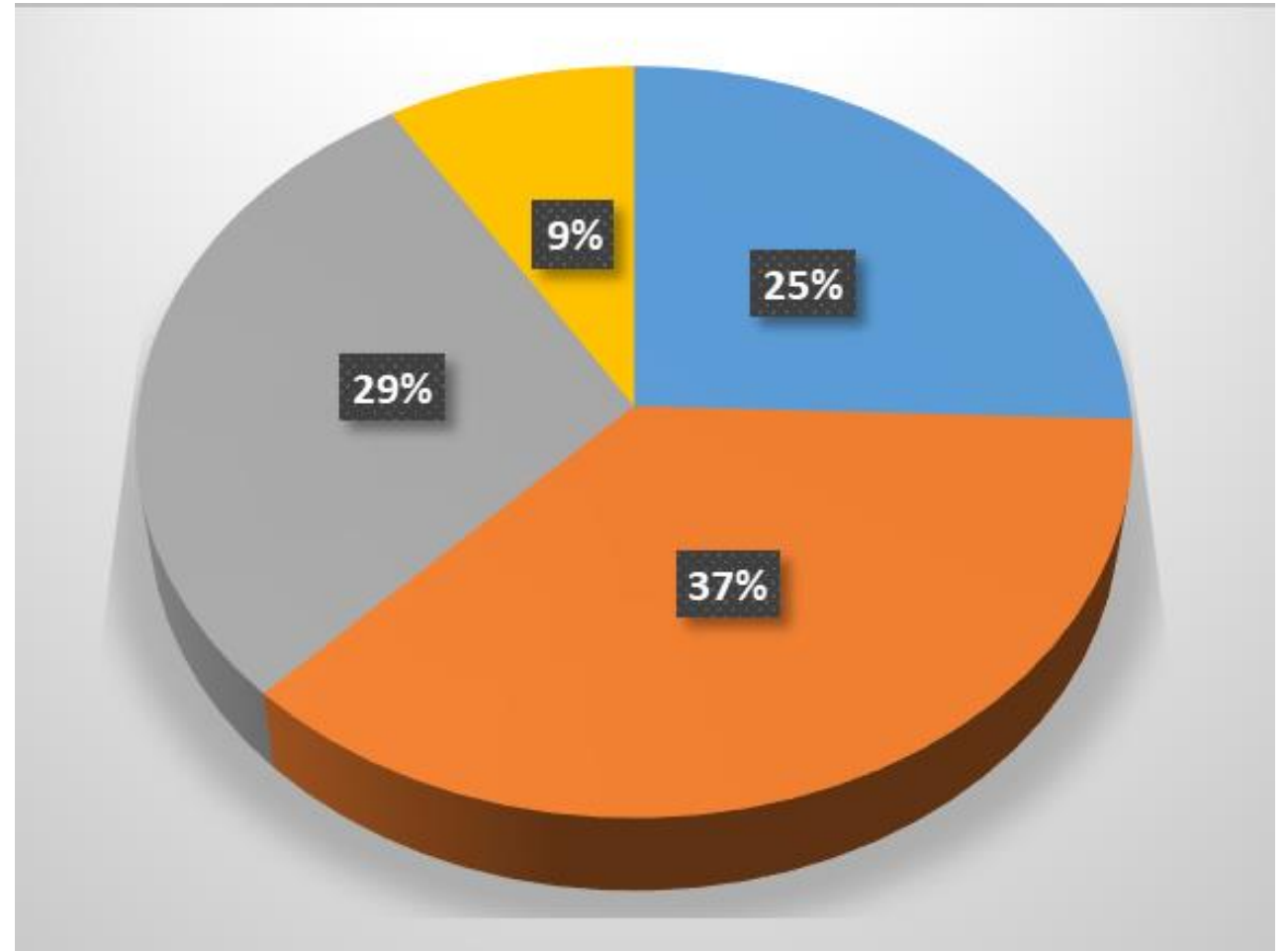
Source: <https://bhuvan-panchayat3.nrsc.gov.in/>

Sl. No.	Residential houses	Percentage
1	Good	56.66
2	Liveable	32.22
3	Dilapidated	1.11

Source: Household Survey

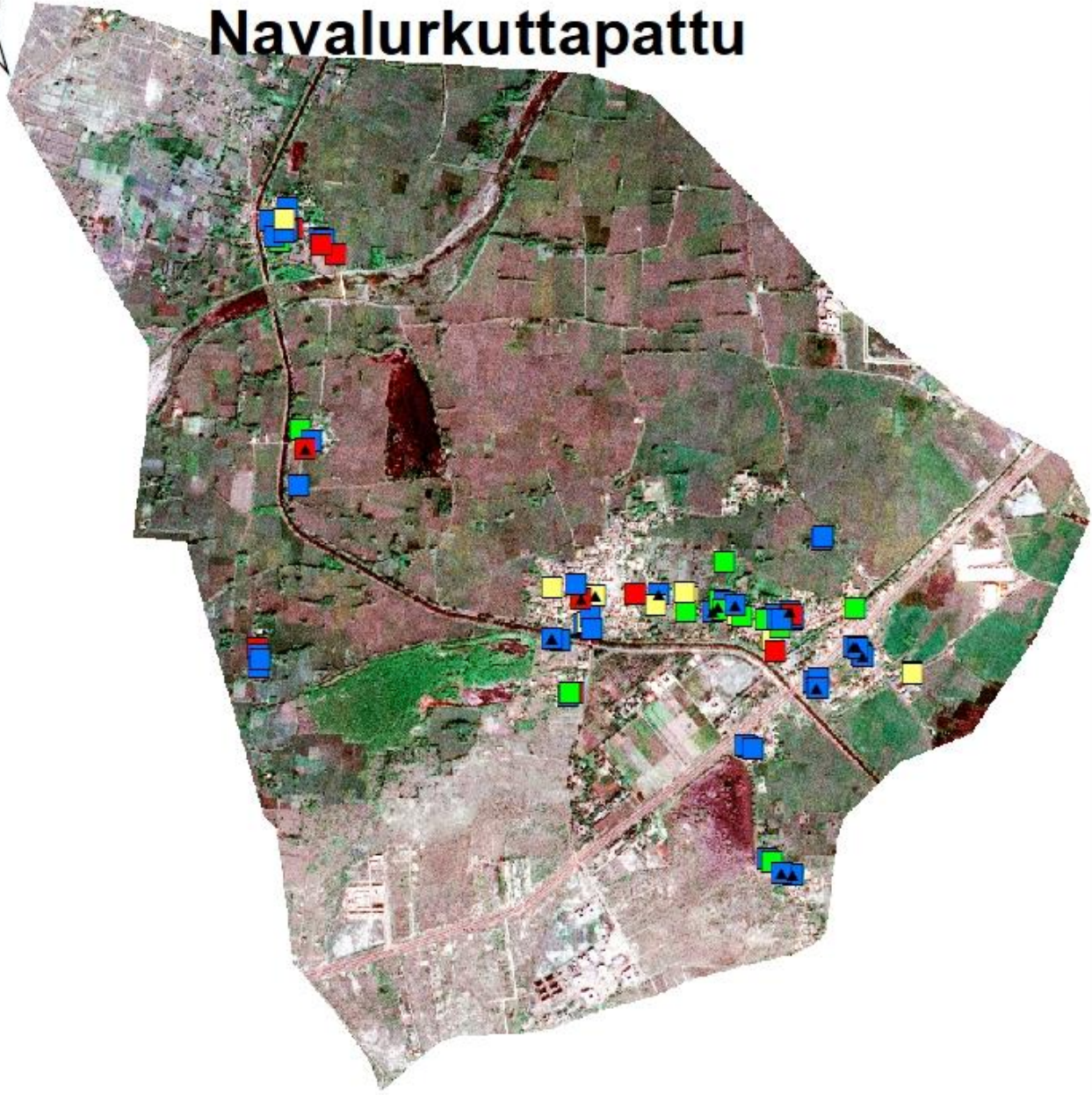
RESIDENTIAL HOUSES – AGE OF THE BUILDINGS

Sl. No.	Age of the Buildings (years)	Percentage
1	<10	25.55
2	10 - 20	36.67
3	20 - 50	28.88
4	>50	08.88



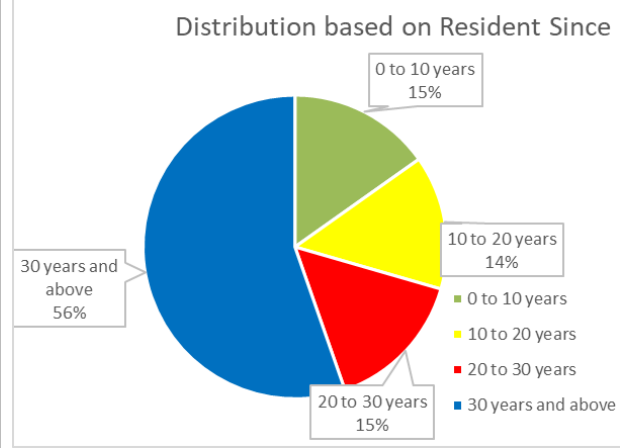


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0 0.75 1.5 km

House Hold Survey data distribution based on Resident Since Highlighting Kacha Houses



▲ Kachcha House

Resident Since

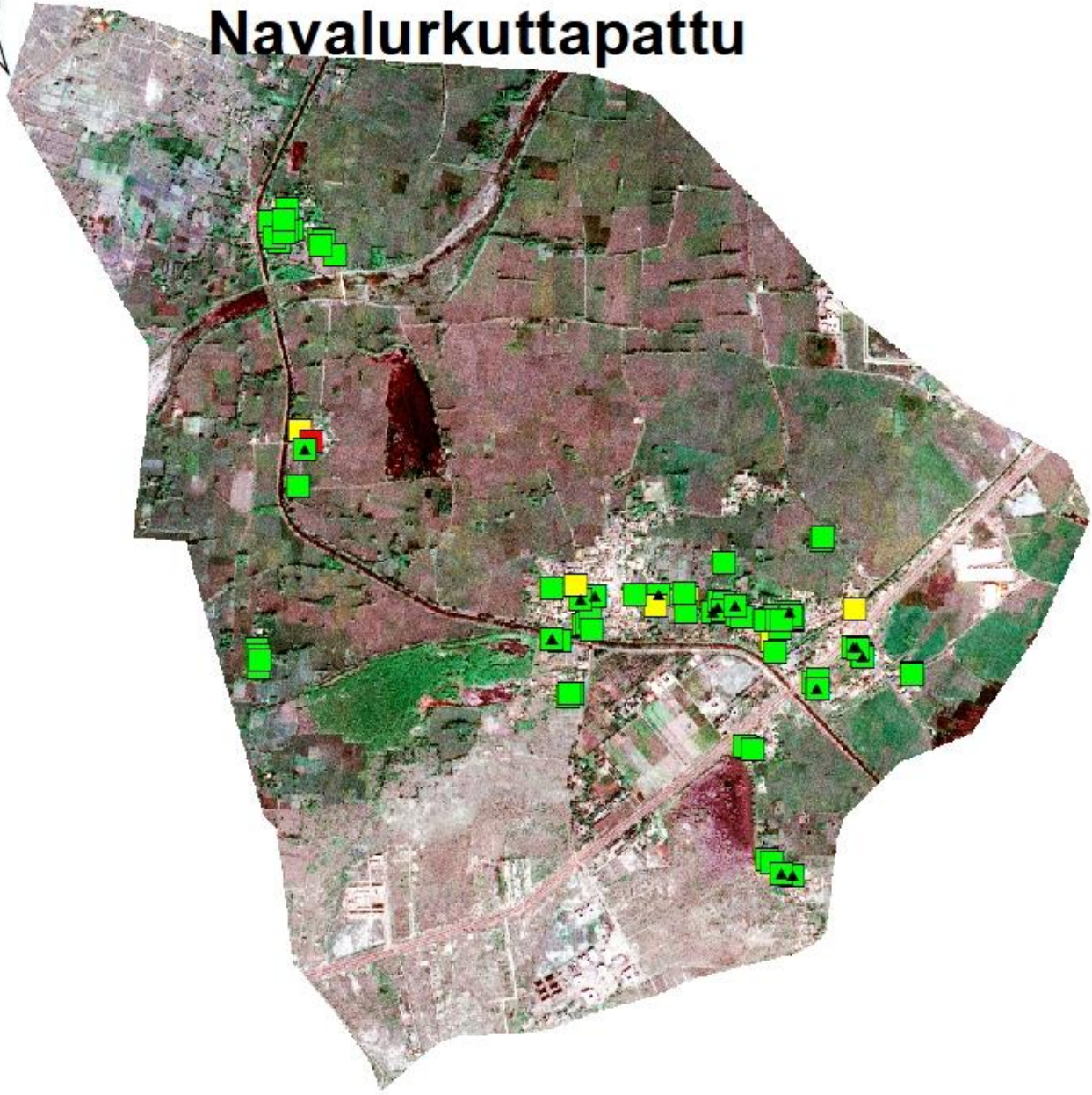
- 0 to 10 years
- 10 to 20 years
- 20 to 30 years
- 30 years and above



RRSCs, NRSC, ISRO

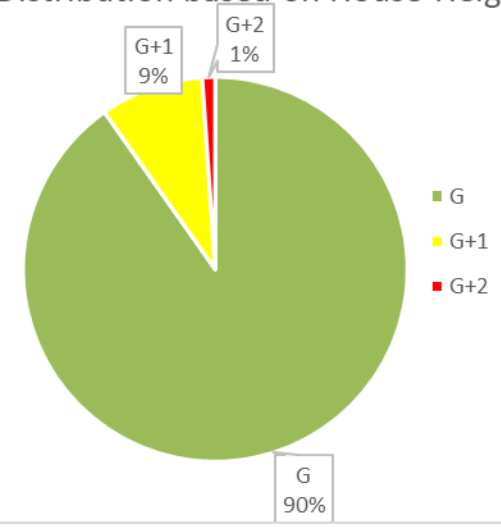


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House Hold Survey data distribution based on House Height Highlighting Kacha Houses

Distribution based on House Height



▲ Kachcha House

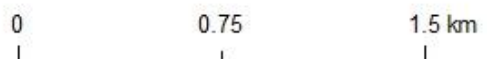
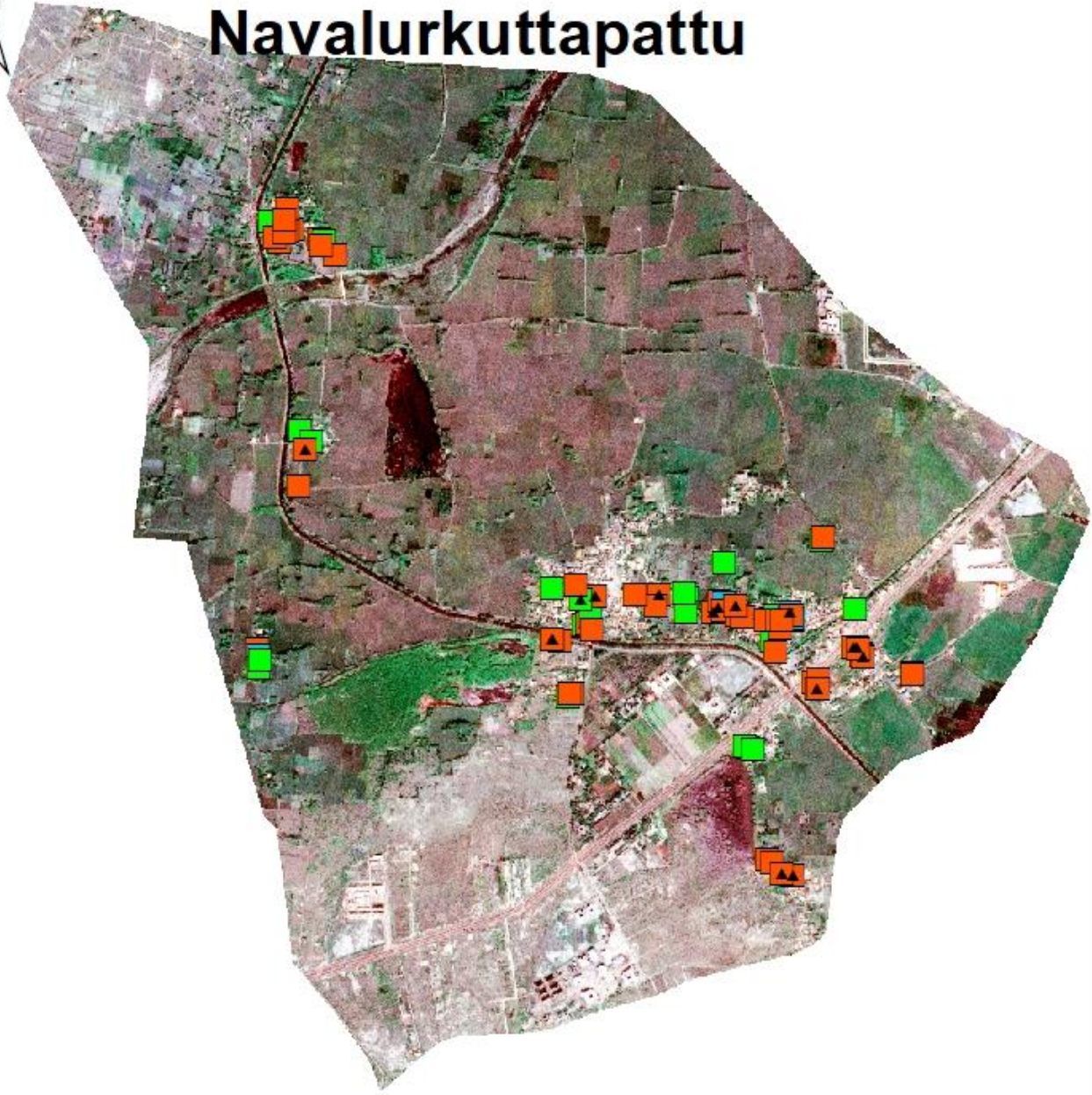
House Heig

- G
- G+1
- G+2



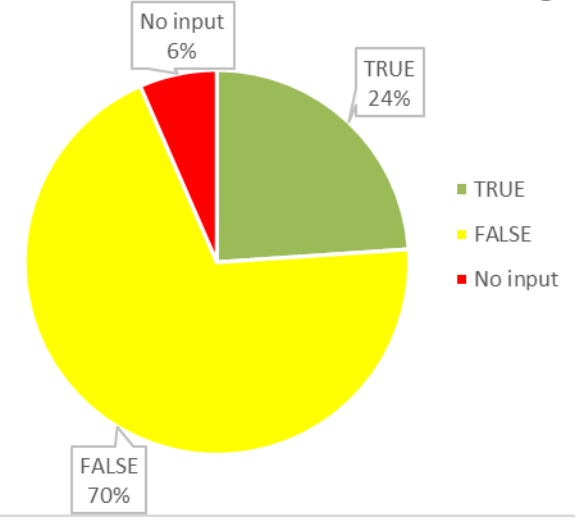


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House Hold Survey data distribution based on Land holding Highlighting Kacha Houses

Distribution based on Land Holding



▲ Kachcha House

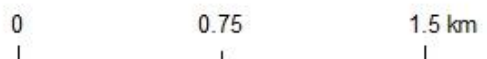
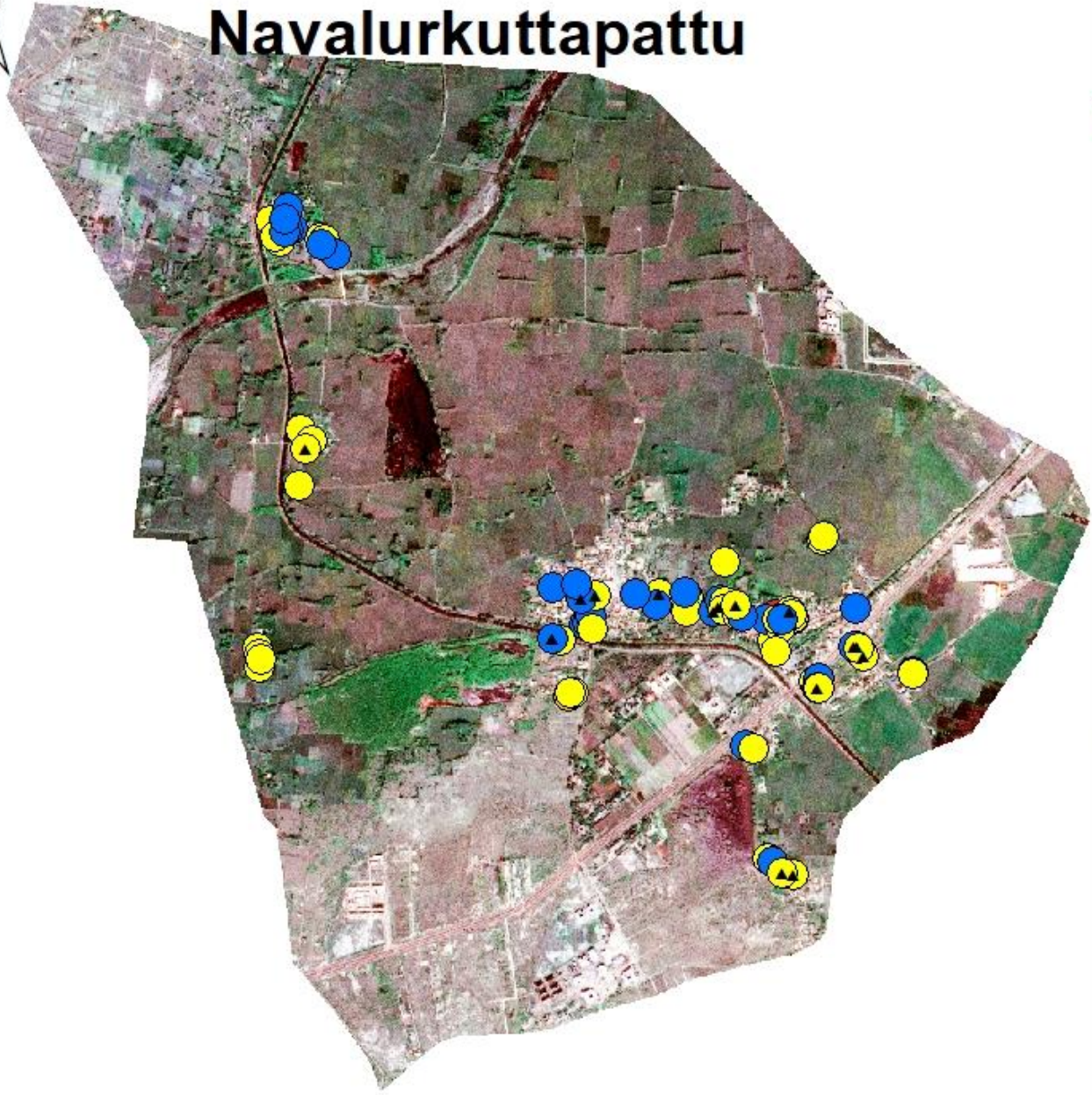
Land Holding

- True
- False
- No input





Navalurkuttapattu



House Hold Survey data distribution based on water availability Highlighting Kacha Houses

Source of Water	Percentage
Bore well	1.08
Private Tap	33.69
Public Tap	60.86
Well	1.08

▲ Kachcha House

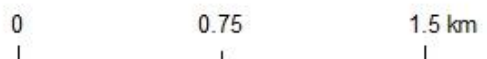
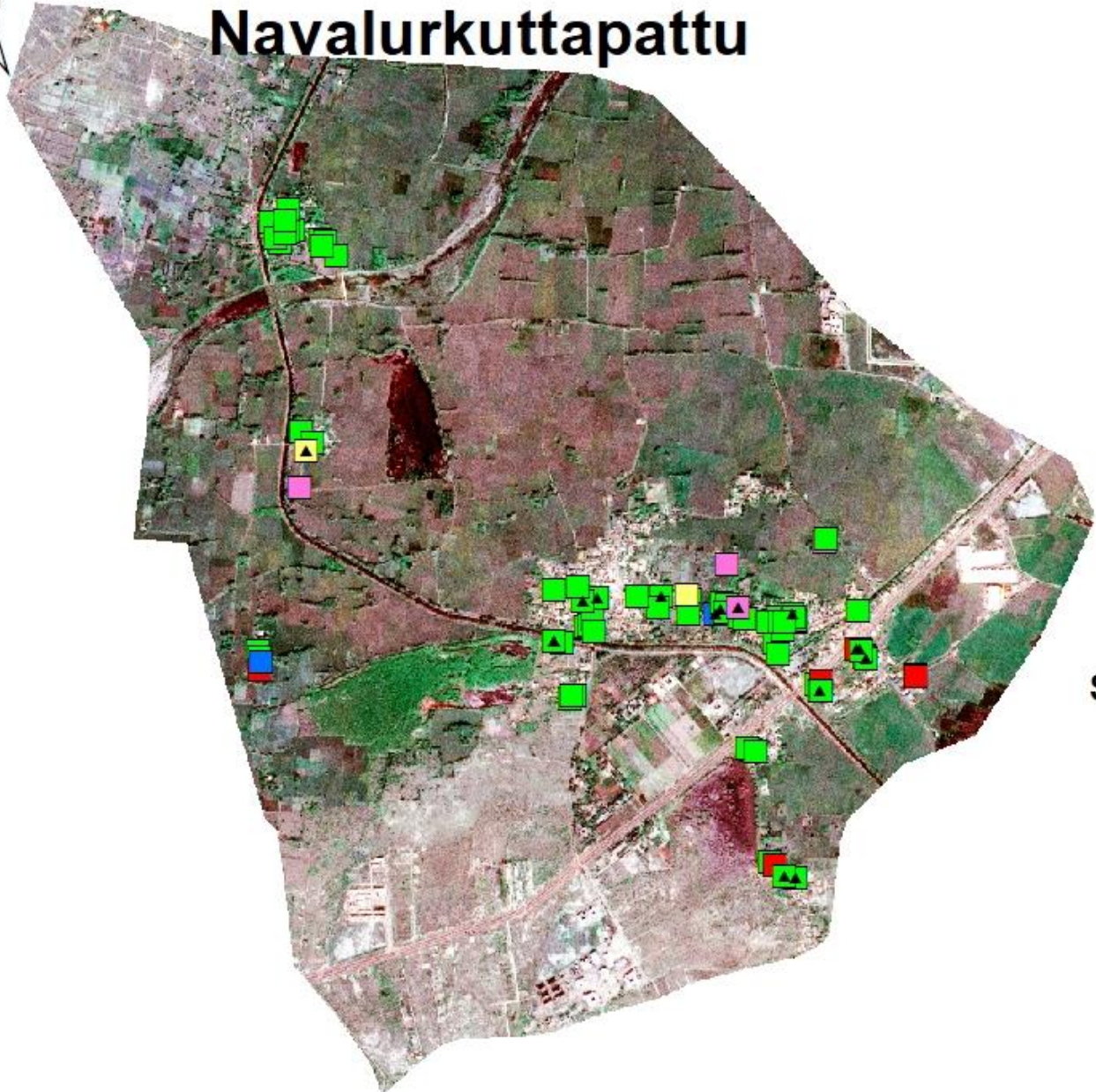
Water Supp

- BoreWell
- PrivateTap
- PublicTap
- Well

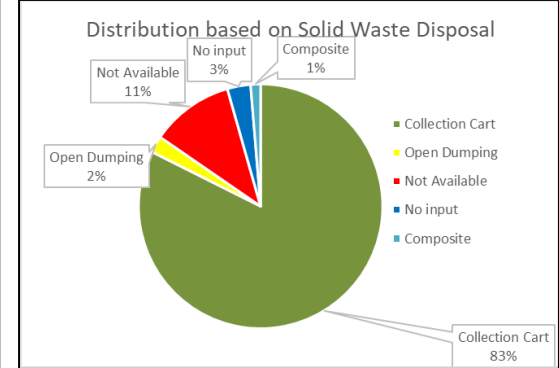




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House Hold Survey data distribution based on Solid Waste disposal availability Highlighting Kacha Houses



▲ Kachcha House

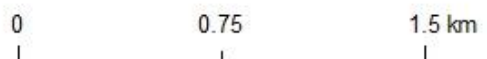
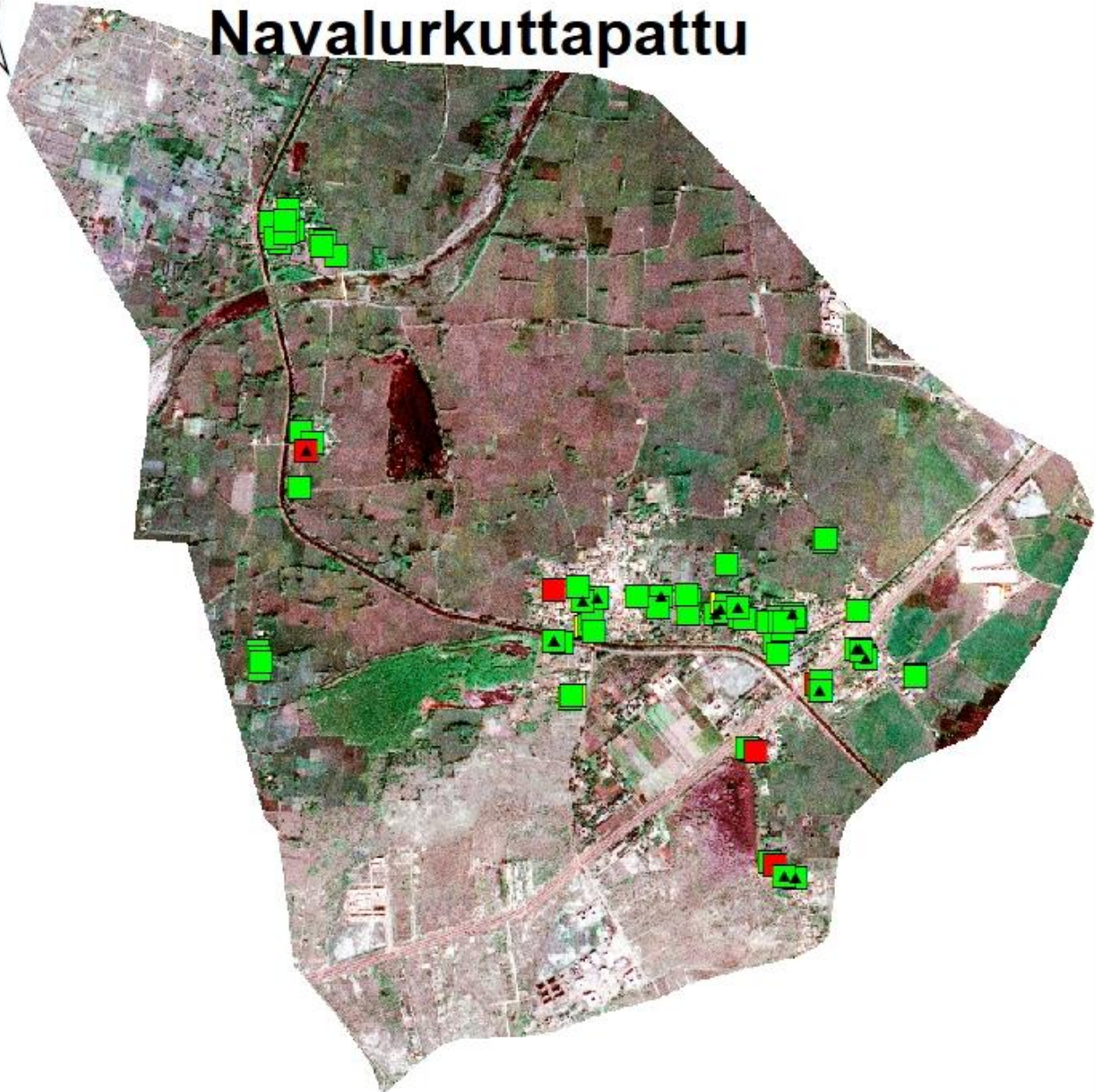
Solid Waste disposal availability

- CollectionCart
- Compost
- NotAvailable
- OpenDumping
- No input



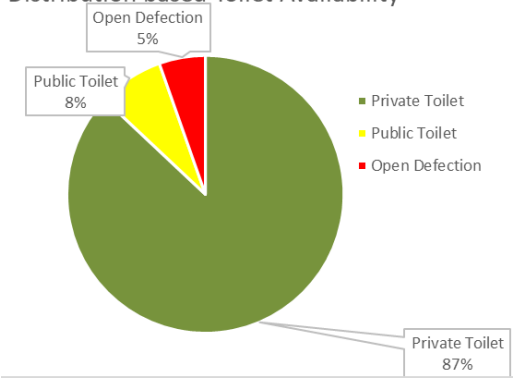


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House Hold Survey data distribution based on Toilet availability Highlighting Kacha Houses

Distribution based Toilet Availability



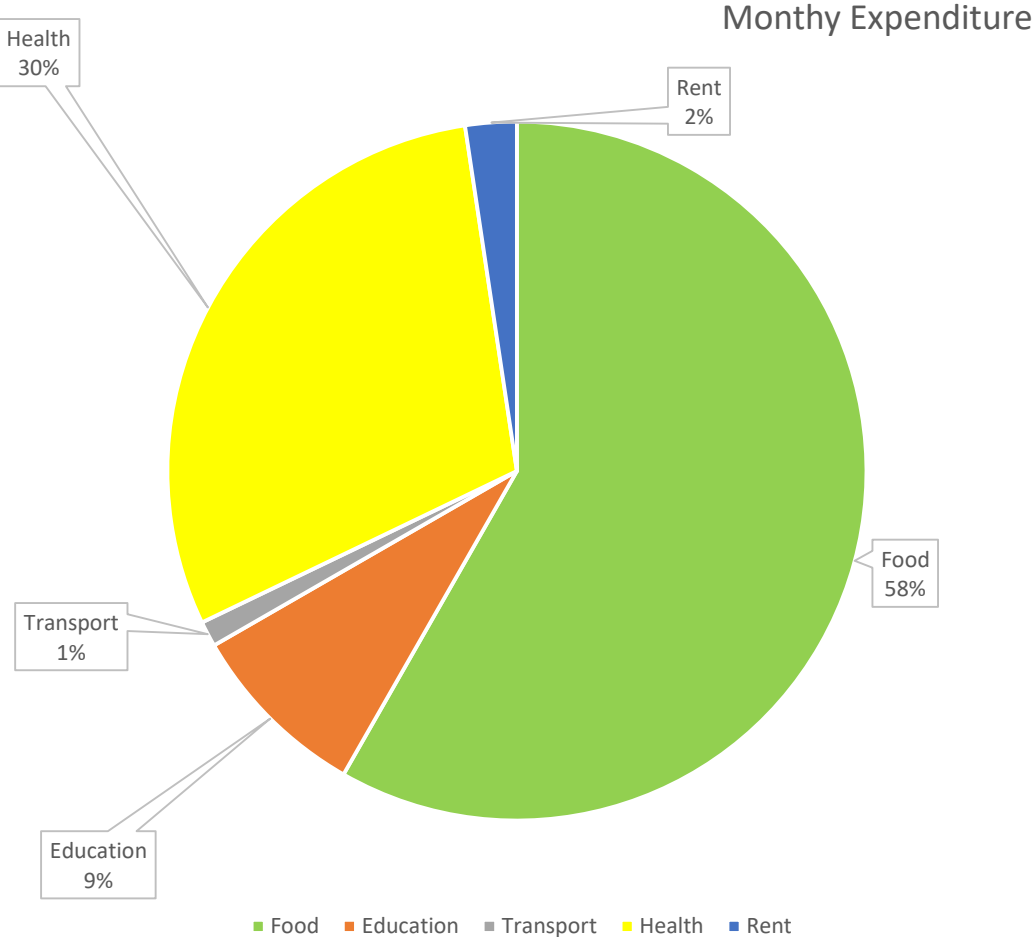
▲ Kachcha House

Type of Toilet

- Private
- Public
- OpenDefecation



MONTHLY EXPENDITURE



MIGRATION

1. Migration from Other areas to this Gram Panchayat for

(i) Permanent residency (working outside) in the last five years: **50 Families**

(ii) Daily commuters to work in this village: **Working in Educational Institutions and other establishments**

2. Migration from this Gram Panchayat to Other areas for

(i) Migrated permanently to work in agriculture/ industrial /other works: **NIL**

(ii) Daily commuters - to work in other places: Yes

ISSUES

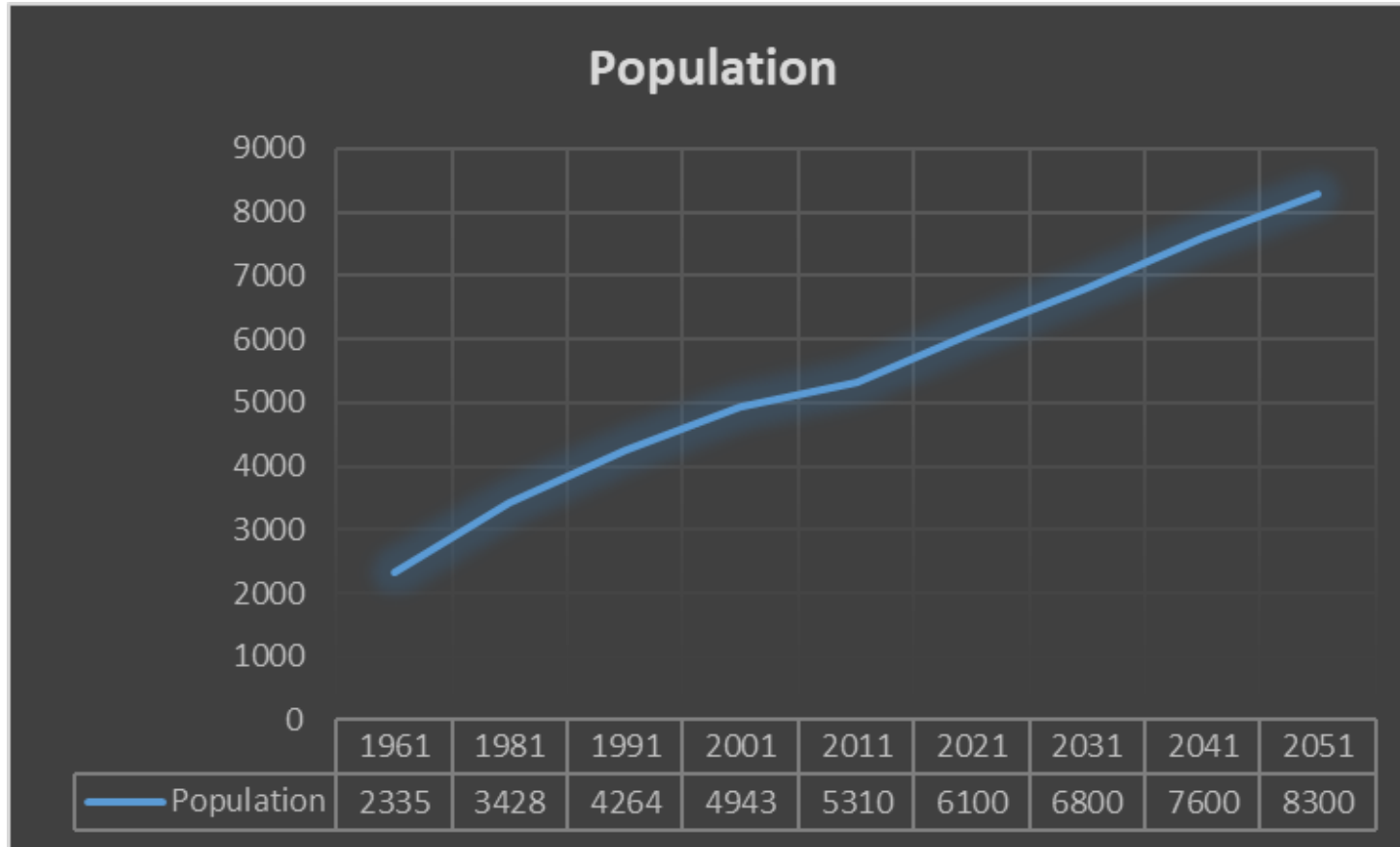
- No profit from Agriculture
- Lack of Job Opportunities (Seasonal)
- Low Wages/ No Savings
- Difficulty in getting Loans
- Health Centre
- Bus Facilities (connecting all hamlets to Tiruchirappalli)
- Common/ Public Toilets at more places
- Parks and Play grounds
- Open Drains
- Dilapidated Houses

EXPECTATIONS

- Employment/ Jobs- Whole Year
- MNREGS – More number of days
- Creation of Cottage/ Other Industries – Employment for Local People
- Job Training Centres
- Better Pricing for Agricultural Produces
- Loans/ Finance
- Health Centre
- Common/ Public Toilets at more places
- Bus Facilities (connecting all hamlets to Tiruchirappalli)
- Parks and Play grounds
- Proper Storm Water Drains
- Financing: House Construction
- Trees Plantation

PROJECTIONS AND PROPOSALS

POPULATION PROJECTION



Based on

- Natural Increase

- Migration

(Inward migration of 50 families in the last 5 years for permanent residency).
Expected to be more in the future

Institutional housing
population not included

Employment Pattern

- Increase in 'other workers' since 1991
- Decrease in Cultivators since 1991
- Decrease in Agricultural labourers

Reasons:

1. Agriculture – Less profit
2. Agricultural labourers – Seasonal
3. Move to adjoining areas/
Tiruchirappalli for other works

• Issues:

1. Low literacy rate in population group above 40 years of age.
2. Low skill level
3. Lack of Household/ Cottage industries
4. Educational institutions/
Industries: Locals – Supporting/ unskilled labourers
5. Lack of Animal Husbandry

AGRICULTURE

ISSUES

- Crop Pattern: Mostly Paddy
- Less Profit
- No Rotation / alternate crops
- 1961: Wet – Paddy, plantain, sugarcane; Dry – Coconut, Black gram, Green gram, Maize and others
- Discontinued: Difficulty in marketing and logistical issues
- Dry lands: Converted for others (Mainly areas close to NH)

• PROPOSALS (0-5 yrs):

1. Encouraging farmers for alternate crops – less water intensive, value added process (Plantain, Sugarcane, Pulses, Flowers, Vegetables)
2. Rotation crops – Less water intensive during summer

PROPOSALS (5-10 yrs):

1. Flower/ Vegetables/ pulses: Farmers market along the NH (farmers can sell directly)
2. Establishment of Storage/ Cold storage
3. Encouragement/ support from the nearby sugarcane industries

PROPOSALS (10-20 yrs):

1. Household/ Cottage industries for value added products
2. Development establishments such as Rice mill, pulse processing, etc.,

AGRICULTURE RELATED ACTIVITIES

- **PROPOSALS (0-5 yrs):**

1. Encouraging more people/ households to engage in animal husbandry related activities.
2. Govt. schemes – Subsidy/ Loans for cattle (being implemented)

- **PROPOSALS (5-10 yrs):**

1. Milk Producers cooperative Society
2. Poultry Farms (SHGs)
3. Organic manure

- **PROPOSALS (10-20 yrs):**

1. Household/ Cottage industries for value added diary/ poultry products
2. Feeds for cattle & Poultry

INDUSTRIAL/ OTHER ECONOMIC ACTIVITIES

- **PROPOSALS (0-5 yrs):**

1. Enhancing the skill level of the people by imparting training (Ex: Construction related activities: Masons, Fitters, Welding, Electrical, Plumbing, etc.,) to enhance their employability
2. Development of general Household (industries) economic activities

- **PROPOSALS (5-10 yrs):**

1. Development of Household/ Cottage industries related to Agriculture and Animal Husbandry
2. Development of service industries close to NH (with employment of local people)

HOUSING

YEAR	NO. OF HOUSES	ADDITIONAL HOUSES REQUIRED
2020	1589	32
2021	1775	186
2031	1980	215
2041	2225	245
2051	2475	250

HOUSING

- **Short – Term:**

1. Replacement of Dilapidated houses with central/ State Housing Schemes (Both schemes are being implemented)
2. Priority in schemes for kutchha and dilapidated structures in the implementation of housing schemes.
3. Need to regularize the conversion of dry agricultural land into residential plots in areas along the NH and the main access road from NH to Navalur (Areas identified and marked)

- **Long – Term:**

1. Need to identify and develop areas for future residential development mainly to accommodate migration of people for residing (Areas identified and marked)
2. No major variations in the requirement of areas for residential use in the interior hamlets
3. Institutional Housing requirement is likely to increase with the development of educational institutions in this region

INFRASTRUCTURE

• WATER SUPPLY

1. Water Supply scheme covers all hamlets – individual connections, street taps
2. Scheme need to be extended to all new developing housing areas (additional Quantity of water)

• ELECTRICITY

1. All hamlets provided with continuous (more than 12 hours) domestic supply
2. Electrical Connections need to be provided for few kutchha houses under the Govt. scheme (Free)
3. Subsidies/ Grants for use of solar panels for producing electricity to meet their requirements (Pucca houses)

• SANITATION/ DRAINAGE

1. Individual Toilets & Public Toilets
2. HH survey: 2/3rd of households constructed individual toilets using Govt. scheme

Short - Term:

1. Need for more public toilets in certain identified (selected) areas

Long – Term:

1. Construction of individual toilets in all houses using Govt. scheme (houses without toilets identified through HH survey)

INFRASTRUCTURE

• STORM WATER DRAINAGE

Open drains, water stagnation and breeding of mosquitoes

Short – Term:

1. Cleaning of drains and covering the open drains

Long – Term:

1. Creation of natural drains on either side of the roads
2. Ground water recharging/ water bodies

• SOLID WASTE DISPOSAL

Short – Term:

1. Educating the people to segregate the waste at the household level
2. Allocation of more funds – for efficient door to door collection

Long – Term:

1. Involvement of SHGs
2. Production of manure from compost yard to increase the revenue

• TRANSPORTATION

1. Bus – Mode of Transportation
2. Requirement: More Frequency & service to interior hamlets

FACILITIES

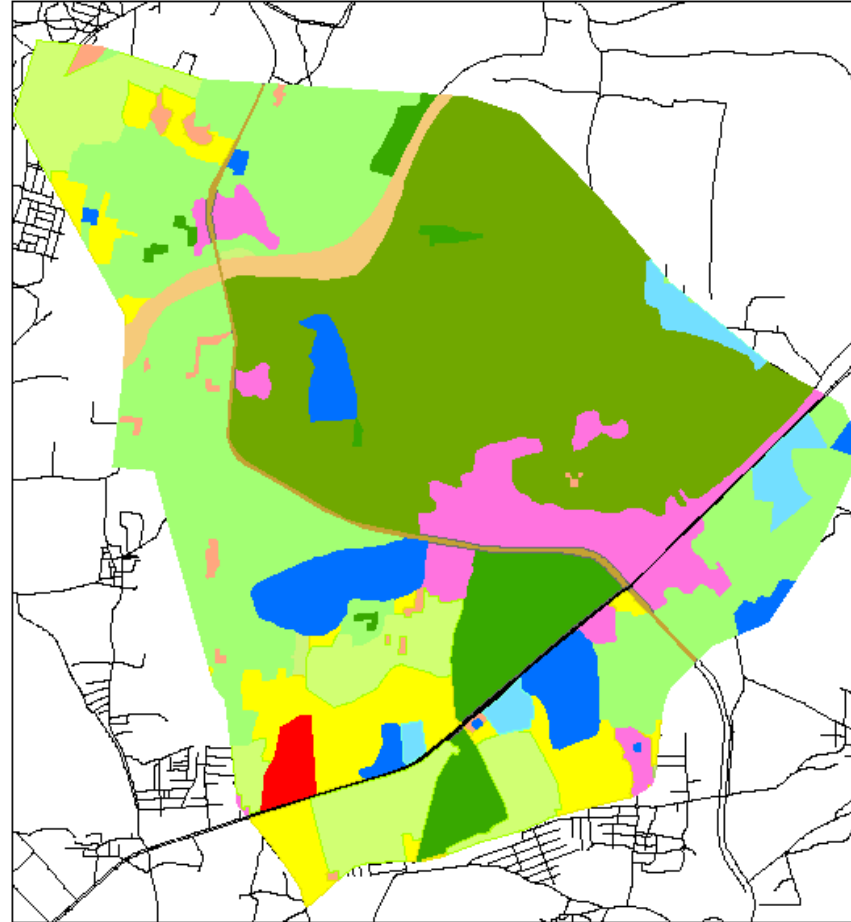
5- 10 Years

- Primary health centre (with ambulance facilities)
- Anganwadis/ Pre-primary schools in all hamlets
- Park/ Community open space in all hamlets
- Playfield in the central village
- ATM in central village
- Computer facilities (Seva center) in the central villages
- Agricultural cooperative society
- Tree Plantation on either sides of all roads/ streets/ fallow lands

10-20 Years

- Small Hospital (with ambulance facilities)
- Pre-primary/ Primary schools in all hamlets
- Computer facilities in all hamlets
- Market for Agricultural Produces/ value added products
- Park/ playfield/ Community open space in all hamlets
- Tree Plantation on fallow lands

NAVALUR KOTTAPATTU



Proposal

Suggestions

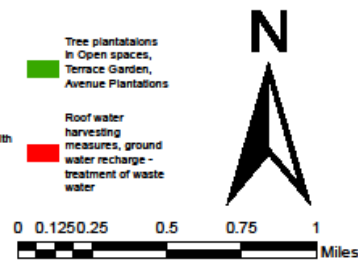
- Continuation / Intensification of cropping pattern with crop rotation
- Conservation & protection
- Continuation / Intensification of cropping pattern with crop rotation

- Crop rotation
Green gram;
Gypsum application (Sodic soil area) and green manure (Daincha and Manila Aghathi);
Grow Sodic tolerant varieties
- Desiltation & Conservation

- Development adopting environmental / pollution control norms
- Future urban area development / afforestation / reclamation
- Improvement of infrastructure & marketing facilities
- Intensification / Diversification, multi-tier cropping

- Maintenance & planned development
- Maintenance & preservation
- Planned Development with greenary
- Planned rural development
- Transport

- Tree plantations in Open spaces, Terrace Garden, Avenue Plantations
- Roof water harvesting measures, ground water recharge - treatment of waste water



THANK YOU