



Recommendations of Three Member Expert Committee on High Level Working Group Report

Submitted to Government of Kerala

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Recommendations of Three Member Expert Committee on “High Level Working Group Report”

Background

The ‘in principle’ acceptance of the Kasthurirangan (HLWG) report by MoEF, Government of India sparked violent protests and unrest among the people of the Western Ghats, in particular and Kerala in general. The Government of Kerala immediately convened an all party meeting in which it was decided to appoint a committee to study the people’s concerns on HLWG report and to advise the Government to submit its reply on HLWG report to Government of India. A three member committee was constituted through a Government Order (Ordinary) no.162/13/Env. dated 29.10.2013 with Dr. V.N. Rajasekharan Pillai, Executive Vice Chairman, Kerala State Council for Science, Technology and Environment, Shri.P.C.Cyriac, Former Rubber Board Chairman as members and Dr. Oommen V. Oommen, Chairman, KSBB as convenor.

Preface

The Committee gratefully acknowledges the support given by Hon. Chief Minister Shri. Oommen Chandy by providing time for discussions and giving necessary instructions to officials for arrangements regarding the sittings of the Committee. This reveals his commitment towards the environment as well as the common man of the State. The Committee had many discussions with Hon. Minister for Environment, Shri. Thiruvanchoor Radhakrishnan and Hon. Minister for Rural Development and Culture, Shri. K.C. Joseph and Additional Chief Secretary, Shri. P.K. Mohanthy IAS.

Central Ministers, MPs, Chief Whip, MLAs, Representatives of District Panchayats, Block Panchayats and Grama Panchayats, religious leaders, environmental activists, representatives of farmer's organisations, farmers, representatives of Chamber of Commerce and Merchants Organisations and common men living in Western Ghats areas participated in the sittings. About 30,000 people expressed their views directly and in writing before the Committee and we gratefully acknowledge this. The District Collectors and Revenue, Forest and Police Department officials played an important role in the arrangement of sittings. Huge public participation was observed in all the sittings and people from all walks of life expressed their grievances and suggestions.

Arrangements of basic facilities and tour programmes of the Committee, preparation of Malayalam translation of Kasthuri Rangan Report, functioning of help desk and all sorts of overwhelming support was received from the officials of Kerala State Biodiversity Board. The services of Member Secretary Dr. K.P. Laladhas, Senior Administrative Officer K. Mini, Scientific Officer G.S.Unnikrishnan Nair, V. Sivanesan, C.G. Pradeep, L.R. Ashalatha and K.K. Jithin of KSBB are worth special mention.

Sd/-
Dr. Oommen V. Oommen
Convener

Sd/-
P.C. Cyriac
Member

Sd/-
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Member



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ACKNOWLEDGEMENTS

I gratefully acknowledge the support and faith extended to us by the Hon. Chief Minister of Kerala Shri. Oommen Chandy, Hon. Minister for Environment and Forest Shri. Thiruvanchoor Radhakrishnan, Hon. Minister for Rural Development and Culture, Shri.K.C.Joseph and MP's, MLA's and Presidents and officers of LSG's.

The public of Kerala had extended their full cooperation during the sittings conducted in different districts to the three member committee constituted by Govt of Kerala with Dr. Oommen V. Oommen as Chairman. I am grateful to Dr. V.N. Rajasekharan Pillai, Executive Vice-President of the Kerala State Council for Science, Technology and Environment, and Dr. P.C. Cyriac for their valuable suggestions while preparing the report. I would like to thank Shri. P.K. Mohanty, IAS, ACS Forest department, Director of Kerala State Remote Sensing and Environment Centre, Land Revenue Records and PCCF, Forest department and all officers in Environment department for helping us in this endeavor and making available their facilities and records to us. The five member committee constituted for preparing the maps in each of the panchayats had extended their full support by undertaking such a colossal task in a speedy way. Moreover I am grateful to the staff of Kerala State Biodiversity Board for working tirelessly to ensure that the report is completed on time.

Dr. K.P. Laladhas
Member Secretary
Kerala State Biodiversity Board

Recommendations of Three Member Expert Committee on “High Level Working Group Report”

1. INTRODUCTION

Western Ghats is the second important mountainous area in India after the Himalayas. It affects the climate, atmospheric temperature and soil fertility of the country. Being the treasure trove of Biodiversity, the Western Ghats are essential for the existence of the country.

Biodiversity is the basis of all life on earth. As man is an important component in the chain of biodiversity he also has the responsibility to conserve it. When each component of this chain gets lost, the existence of human being also is danger. Biodiversity is a complex subject with multiple dimensions, and hence the issues connected with Western Ghats conservation should be approached with this concept in mind.

Western Ghats is one of the eight hottest biodiversity hotspots of the world. 27% of all species present in India are found in the Western Ghats. Many wild relatives of crops such as Pepper, Cardamom, Mango, Jack Fruit and Banana also occur in the Western Ghats. Many rivers and water bodies which are the source of drinking and irrigation for above 250 million people, also originate from the Western Ghats. The Western Ghats also substantially influence the climate of India. The destruction and pollution of the Western Ghats can never be permitted. At the same time, the livelihood and the habitat of people who live in the Western Ghats areas, engaged in activities such as farming for generations should also be protected. It is with this outlook in mind that the three member expert committee has gathered public opinion regarding Kathuri Rangan Report and formulated the recommendations accordingly.

2. GADGIL COMMITTEE REPORT AND KASTHURI RANGAN COMMITTEE REPORT

Various research reports revealed that the Western Ghats, which is the abode of a variety of eco systems and organisms is facing biodiversity loss due to the interferences by human beings. Subsequently, Government of India appointed a committee (WGEEP) headed by Prof. Madhav Gadgil. The mandate of the committee was to demarcate ecologically sensitive areas of Western Ghats, declare them and to formulate recommendation for conservation of Western Ghats with people's participation. Gadgil Committee started functioning in March 2010 and submitted their report to MoEF in August 2011. The committee divided Western Ghats area as Ecologically Sensitive Zones I, II and III and imposed various degrees of restrictions accordingly.

But complaints and grievances were raised by various state governments as well as public and Government of India decided to reevaluate the report. In order to reevaluate the report and to prepare an action plan for implementation of the recommendations, Government of India appointed a High Level Working Group headed by Dr.K.Kasthuri Rangan vide a Government Order dated 17.08.2012. The mandate of the committee was to suggest measures for preventing loss of the fragile eco system of the Western Ghats. Government directed the Committee to take a consensus approach to protect the interests of people who has been living the Western Ghats area traditionally, while suggesting ways for conservation of ecology and biodiversity of Western Ghats. By this, Government put forward the view that development and people's progress will be taken into consideration with the participation of people.

Kasthuri Rangan Committee submitted their report on 15, April 2013. In the report, they suggested to demarcate about 40 percent of Western Ghats area as ESA (Ecologically Sensitive Area) and conserve it. Committee found 123 villages in Kerala as ESA. Kasthuri Rangan Committee also pointed out certain defects in demarcation of ESA put forward by Gadgil Committee Report. *(using criteria with incomplete back-up information, identifying ESZs without taking into account human cultural component which is part of biodiversity, livelihood and development needs of human population and the large grid size used for zonation – Page 46 of the report).*

The decision of Kasthuri Rangan Committee was to solve the issues connected with demarcation of ESA by adopting a scientific as well as logical approach. For this they utilised remote sensing technology. For extracting information regarding biodiversity and fragmentation the committee depended on the data of Department of Space, Govt. of India and Dept. of Biotechnology. This comprehensive data was utilised for finding out the Ecologically Sensitive Area.

The Committee divided Western Ghats into “Cultural Landscape” and “Natural Landscape”. Natural Landscape included forests, protected areas and areas which are to be protected as forests, while Cultural Landscape included human inhabited areas, agricultural lands and plantations. The Committee considered the following factors also for demarcating areas as Natural Landscape; richness of biodiversity, fragmentation of forest areas, less human density, presence of protected forests, world heritage sites and elephant and tiger corridors. Each of these factors was given a particular value and Ecologically Sensitive Areas demarcated accordingly.

Kasthuri Rangan Committee also adopted the policy that if at least 20 percent area of the village is found to be Ecologically Sensitive Area (ESA), the whole village will be considered as ESA. The Report says that “*This approach is much more conservative and indeed meaningful than treating an entire Taluk as ESA*” (Page – 57). It is based on these factors that the committee recommended to declare 123 villages in Kerala as ESA. The area of villages and ESAs demarcated by the committee in various states may be seen.

State	Total Geographic Area of State	Western Ghats Taluka Area	No. of Villages	Natural Landscape	Cultural Landscape	PA + WHS	Village Sharpened ESA	ESA to WG Taluka
Goa	3,702	1,749	99	1,558	191	655	1,461	83.57%
Gujarat	1,96,024	5,977	64	2,553	3,423	64	449	7.52%
Karnataka	1,91,791	44,448	1,576	21,529	22,919	5,660	20,668	46.50%
Kerala	38,863	29,691	123	12,477	17,214	4,913	13,108	44.15%
Maharashtra	3,07,713	55,345	2,159	21,185	34,161	2,242	17,340	31.33%
Tamil Nadu	1,30,058	27,069	135	8,947	18,122	3,369	6,914	25.54%
Grand Total	8,68,151	1,64,280	4,156	68,249	96,031	16,902	59,940	36.49%

In other States area of ESA is less than the Natural Landscape, while in Kerala the area of ESA is higher than that of the Natural Landscape that means a part of the Cultural Landscape including human inhabited areas and agricultural land is in ESA. Naturally, this resulted in lot of complaints from the public. The Kasthuri Rangan Committee has earlier raised many complaints against Gadgil Committee Report. But now the public began to raise the same complaints against Kasthuri Rangan Committee itself.

When the Kasthuri Rangan Report was published, many complaints were raised against it by the public, especially farmers. They were of the apprehension that if the areas are declared as ESA, they will be forced to live under strict regulations and development activities will be stand still. Subsequently agitations began in these areas. Under the above circumstances Hon. Chief Minister convened an all party meeting, in which it was decided to resolve the complaints and grievances of people living in these areas.

3. CONSTITUTION OF EXPERT COMMITTEE

The mandate of the committee was to study the draft Office Memorandum of MoEF in detail, seek the opinions of people's representatives, NGOs, farmer's organisations, and general public and to submit their opinions and suggestions to the State Government, which will be further conveyed to the Central Government.

The Hon. Chief Minister also instructed to prepare a Malayalam version of Kasthuri Rangan Committee Report in a book form and to post it in the website of Kerala State Biodiversity Board for the public.

4. SITTING OF THE EXPERT COMMITTEE

The first meeting of the Expert Committee (Dr.Oommen V. Oommen, Dr.V.N. Rajasekharan Pillai and Shri.P.C.Cyriac) was held on 08.11.2013, 11 a.m. at Government Guest House, Thycaud. In this meeting it was decided to visit the Western Ghats areas and seek the opinion of people's representatives, farmers, NGOs, farmer's organisations, and general public. For this it was decided to convene sittings in Pathanamthitta, Kottayam, Thrissur, Malappuram, Idukki, Wayanad, Kozhikode, Kannur, Palakkad, Kollam and Thiruvananthapuram. It was

also decided to give wide publicity regarding the sittings through media and the concerned District Collectors.

Meanwhile, on 13.11.2013 and 16.11.2013 MoEF issued two Office Memoranda approving the recommendations of Kasthuri Rangan Committee in principle. Question was raised whether the Expert Committee has any relevance under the above circumstances. Subsequently, C.M. of Kerala approached Central Government and adjournment was given for submitting the recommendation of State Government.

As per the direction of Expert Committee, the officials of Kerala State Biodiversity Board translated parts of the report relevant to Kerala and posted it on the website; keralabiodiversity.org. About one lakh persons visited the site. Other than this, 10,000 copies of the Malayalam book prepared on Kasthuri Rangan Committee Report by the Board was distributed free of cost. A 24 hour helpline with 4 telephone numbers also functioned through which about 4,000 persons contacted the Board for clarifications on the report. This helpline was operated by the employees of KSBB. KSBB also gave wide publicity regarding the report through print media, so as to eliminate the apprehensions of people in this regard. Arrangements for publicity regarding sittings of the Committee, convening of the sittings, compilation of opinions raised during the sittings and assistance for preparation of the final report were all done by the Kerala State Biodiversity Board.

Expert Committee also decided to conduct discussions with Members of Parliament, MLAs and NGOs (on Kasthuri Rangan Committee Report). Committee had many discussions with the Chief Minister Shri.Oommen Chandy. The Chief Minister suggested that recommendations should be formulated in such a way so that the life of common people living in the Western Ghats will not be affected.

5. MEETING OF MLAs AND MPs

The Meeting held on 13.11.2013 was chaired by Dr.Oommen V Oommen, Convenor of the Expert Committee. Member of the Expert Committee Dr.P.C.Cyriac also participated. 26 persons including MPs, Chief Whip and MLAs participated and expressed their opinions. Union Ministers intimated their opinions in writing.

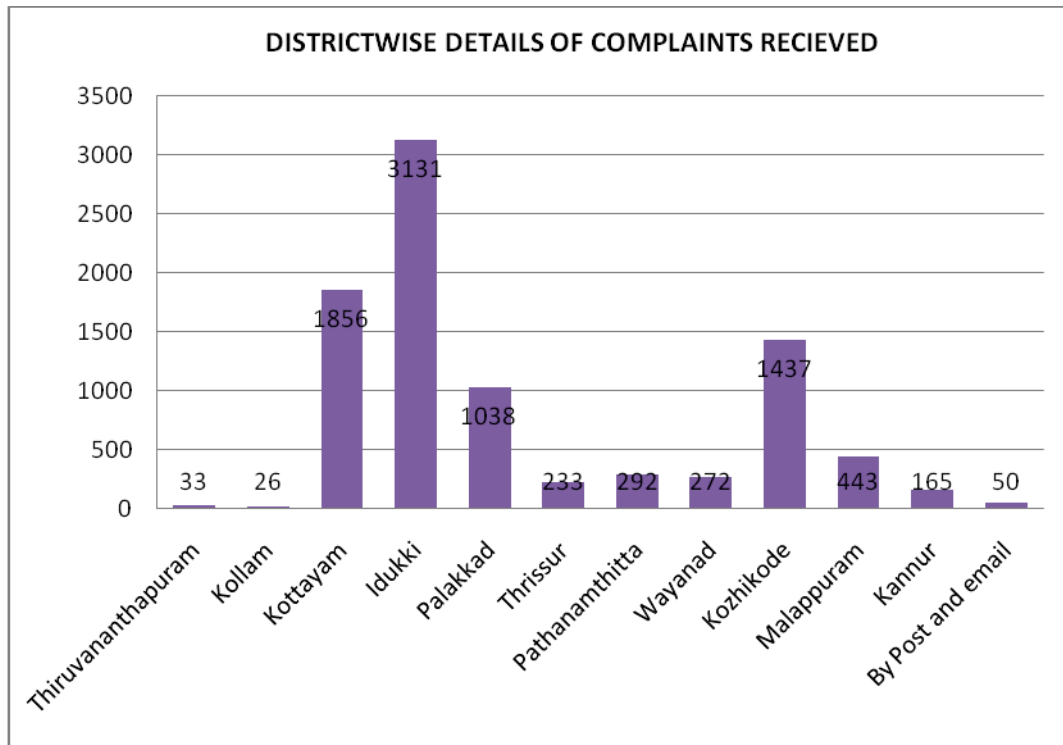
The important suggestions put forward by the people's representatives are:

- Thickly populated areas and agricultural lands which are demarcated as ESAs should be exempted.
- Restrictions should not be imposed on housing and other construction activities of common people.
- Banning activities initiated by Forest Department related to suggestions in the report should be stopped.
- Taking villages as the unit for demarcation of ESA should not be accepted.
- Forest boundaries should be the criteria for demarcation of ESA.
- Those lands which have been assured title deed by the Government should not be included in the ESA.
- Areas in possession of Forest Department should be notified.
- The construction activities which are going on now in Western Ghats areas should not be stopped.
- The villages having population of more than hundred per Km. Sq. area ($100/\text{km}^2$) should be exempted from ESA.
- There should be clarification regarding eco friendly housing scheme proposed in the Kasthuri Rangan Report.
- No one should be evacuated from the Western Ghats areas.
- The possibility of putting rock and sand mining in public sector should be explored.
- The conditions in the report that restrict local development activities should be cancelled.
- The recommendation to seek NOC of Gram sabha for all development activities in Western Ghats should be cancelled.
- Western Ghats should be conserved with all possible efforts.
- The recommendation to prevent red category industries such as thermal power plants in Western Ghats will not affect farmers.
- 100 metre buffer zone should be formed bordering the forest areas for protection of forest environment.
- Organic farming should be promoted.

6. DETAILS OF EXPERT COMMITTEE SITTINGS

No.	Date	Place
1.	26.11.2013	Aralam Panchayat Office, Kannur
2.	26.11.2013	Kottiyoor Panchayt, Kannur
3.	26.11.2013	Cheruvanchery, Patyam Panchayat
4.	26.11.2013	Mananthavady Panchayat, Community Hall, Wayanad
5.	27.11.2013	Kalpetta Collectorate, Wayanad
6.	27.11.2013	Kodenchery Panchayat Officer, Marian Auditorium, Kozhikode
7.	27.11.2013	Thiruvambady Anurag Auditorium, Kozhikode
8.	28.11.2013	Kavilambara Panchayat, Kozhikode
9.	28.11.2013	Koorachund Panchayat, Kozhikode
10.	28.11.2013	Nilambur Municipality, Malappuram
11.	28.11.2013	Kalikavu Community Hall, Malappuram
12.	28.11.2013	Karuvarakkundu Panchayat Officer, Malappuram
13.	29.11.2013	Mannanarkkad Block Panchayath, Palakkad
14.	29.11.2013	Nenmara Panchayat Office, PWD Rest House, Palakkad
15.	03.12.2013	Adimali Panchayat Town Hall, Idukki
16.	03.12.2013	Devikulam Taluk Office, Idukki
17.	03.12.2013	Nedumkandam Taluk Office, Idukki
18.	03.12.2013	Vanasree Auditorium, Kumili, Idukki
19.	04.12.2013	Kattappana Town Hall, Idukki
20.	04.12.2013	Cheruthoni, Idukki
21.	04.12.2013	Thodupuzha Municipal Hall, Idukki
22.	07.12.2013	Koottikkal Panchayath, Kottayam
23.	07.12.2013	Earattupettah Block Panchayat, Kottayam
24.	07.12.2013	Pathanamthitta Collectorate
25.	09.12.2012	Amboori, Maliparambil Memorial Hall, Thiruvananthapuram
26.	09.12.2013	Thenmala Panchayat office, Kollam
27.	12.12.2013	Chalakkudi, Pariyaram Community Hall, Thrissur
28.	13.12.2013	Science and Technology Museum Hall (for Environmental activists)
29.	18.12.2013	Sasthra Bhavan, Thiruvananthapuram (for Environmental activists)
30.	18.12.2013	Meeting with Additional Chief Secretary & Agricultural Production Commissioner

Huge public participation and response was observed during different sittings conducted by the Expert Committee. About 30,000 persons participated and expressed their concerns and opinions. 8976 complaints were received in writing. A district wise comparison of the complaints received is given below



7. IMPORTANT OPINIONS EXPRESSED BY THE PUBLIC

7.1. Opinions against the Kasthuri Rangan Committee Report

- The agricultural land and human inhabited areas included in ESA should be excluded.
- There should be no restrictions on short duration crops, which are being cultivated by the farmers after adopting necessary soil conservation measures.
- There should be no restrictions on farming and day to day life in these areas.
- Necessary schemes to increase the income from farming should be implemented in these areas.
- Those areas which are demarcated as forest should only be included in ESA.
- The areas which are having population density of more than 100 per square km should be exempted from ESA without considering any other factors.

- The application of remote sensing technology for demarcating ESA is not accurate. Hence field survey should be undertaken for demarcation of ESA boundaries.
- At present permission of the Environment Department is required for digging of wells and ponds, this condition should be cancelled.
- There should be no restriction on soil conservation measures adopted by the farmers using traditional techniques.
- There should be no restriction for small and marginal farmers for excavation of sand and rock from their own land for construction of houses.
- There should be no restriction on rearing of farm animals.
- There should be no restriction on traditional fishing.
- Felling of trees from their own farm land should be considered as farmer's rights.
- No restriction should be imposed on construction of rain water harvest measures and river bunds.
- No restriction should be imposed on construction of public utility structures like hospitals, roads and bridges.
- No restriction should be imposed on transaction of land and availing of loans.
- No measures should be taken for evacuation of people from Western Ghats areas or impose stringent conditions on their day to day life so that people will be forced to evacuate themselves from these areas.
- The report should not adversely affect the decision to give title deed to those lands which are in possession before 1977 January 1.
- The EFL Rule 2003 should be cancelled.
- Assurance should be given that ESA will not be converted as EFL in future.
- 2011 census should be relied for assessing the population density.
- No restriction should be imposed to the effect that farmers should live and do farming according to the forest Rules and Acts.
- The nature and environmental protection measures done by the farmers should also be taken in to account while preparing Expert Committee Report.
- Many Rules and Acts are there for conservation of forests, they should be implemented effectively, rather than formulating new ones.
- The recommendation to prevent cultivation of annual crops on lands having more than 30 degree elevation is formulated without knowing that the farmers do Contour bunding in these lands.

- The recommendation to ban single crops like Eucalyptus in these areas, may affect cash crops like rubber, coffee, tea and cardamom.
- The recommendation to have a buffer zone of 10 km around ESA should not be accepted.
- There should be clear demarcation between forest and farm land. Solar/ electric fencing should be erected around forest boundaries and put under the supervision of security force (Environmental policing). Migration of animals from forest land to human inhabited areas should be prevented and people saved from animal attack.
- Environmental conservation programmes should be discussed in Gram Sabhas and implemented under the leadership of Panchayats and Biodiversity Management Committees, Forest Department should never be entrusted with this work.
- Minimum Rs.3,000 should be given as pension for farmers who have completed 60 years.

7.2. Suggestions and Recommendations in support of the Kasthuri Rangan Committee Report

- Unscientific and over mining of rock will result in landslides, and hence should be banned.
- Planting of trees like Eucalyptus should be restricted to sustain the natural ecosystem.
- Sand mining may be regulated in Western Ghats region.
- Environmental conservation programmes should be implemented with people's participation.
- Water shed based conservation activities must be undertaken.
- Panchayats should render the assistance of technical support group of Kerala State Biodiversity Board for the development of Master Plans.
- Reassessment is needed for certain areas which has not been included in the ESA category even though they fulfill the criteria.
- Illegal mining must be banned even in areas which are not included in ESA category.
- Construction of new roads, dams, buildings and other human interventions are to be prohibited in forest areas falling under ESA.
- Action must be taken against persons spreading unnecessary and wrong propaganda about the Kasthuri Rangan report.

- Gradual reduction of pesticide use should be done at ecologically sensitive areas and poly house vegetable farming should be promoted in all panchayats.
- Restrictions regarding giving permission for buildings in ESA having an area of 20,000 m² and townships having an area of 50 acres should be re-examined.
- Usage of machines like JCBs should be regulated not only in ecologically sensitive, but also in other areas, as they exert severe impact on the landscape.
- Functioning of mineral water bottling units should be regulated in Western Ghats region.
- Number of vehicles should be regulated.
- Kasturirangan committee has identified 63% of the Western Ghats area as Cultural Landscape. But the report doesn't contain any information or suggestion regarding ecological exploitation in that area. This is a drawback.
- Construction of dams, industrialization and mining may lead to the deterioration of water level in the Western Ghats region. Necessary steps have to be taken to prevent water shortage which Kerala may experience in future.

8. MEETING OF THE VOLUNTARY ORGANIZATIONS AND RECOMMENDATIONS SUGGESTED BY THEM

Sittings were held to invite suggestions from Voluntary Organizations on 13-12-2013 at Priyadarshini Planatorium and on 18-12-2013 at Sasthra Bhavan, Thiruvananthapuram. Members from 13 organizations attended. Recommendations were submitted directly and by post. Famous environmentalists like Smt. Sugathakumari, Dr. R.V.G Menon, Dr. V.S Vijayan, Prof M.K. Prasad and representative of Kerala Sasthra Sahithya Parishat submitted their suggestions. The suggestions are:

- Prohibit the use of genetically modified crops in Western Ghats region.
- Use of plastics should be banned within three years in Western Ghats region.
- Construction and development of road networks in these areas should be done subjected to ecological impact assessment studies.
- Construction of buildings should be done in an eco-friendly manner.
- Eco-friendly power generation such as solar power must be promoted.
- Incentives should be given for the maintenance of natural vegetation on private lands.

- Subsidy should be given to farmers who turn from chemical to organic farming.
- Subsidy should be given for the installation of biogas plants to farmers having at least two cows.
- Incentives should be given to farmers adopting eco-friendly farming methods.
- There should be complete ban on mining, quarrying and sand mining in ESA.
- Economic benefits should be provided to farmers for the construction of bunds in water bodies.
- Protection measures should be adopted for protection of the river banks destroyed due to mining.
- Kasturirangan committee has excluded majority of the ecologically sensitive areas of Western Ghats regions by including them in cultural landscape. These areas are affected by large scale mining activities. Kasturirangan committee has not examined present status of the areas and gave green signal for such activities.
- Utilizing satellite survey for demarcation of ESA is a wrong concept. Kasturirangan committee has not considered other important aspects such as slope of the area and topography of the region for identification of ESA.
- Decision for giving approval for the construction of buildings of 20000 m² area should be re-considered.
- The committee failed to assess the actual status of ecologically sensitive areas as the report was prepared without any consultation with the Grama Sabhas of the area.
- The Kasthuri Rangan report may not be approved owing to the anti ecological and anti social perspectives in the report. Gadgil report, which was prepared in consultation with Grama sabhas may be implemented.
- Discrimination should not be created between people, by restricting development and imposing environmental conservation measures.
- The proposed Western Ghats Authority should be strengthened.
- Gadgil committee has given special emphasis on the concept of ecological conservation through people's participation, which is appreciable.
- The major reason for the water scarcity in Kerala is the lack of conservation of water resources of Western Ghats region.
- Tuber crops are one of the important food sources for Kerala people. To assure food security, tuber crops like tapioca are being cultivated in slopes. Hence cultivation of tuber crops in such areas shall not be prohibited.

- Apprehension occurred in connection with EFL since land of small farmers was acquired under the provisions of EFL Rule without giving any compensation. There is no further relevance for this rule and hence it may be cancelled.

9. GENERAL VIEW OF EXPERT COMMITTEE

Eco-friendly sustainable development is getting increased attention globally. Developmental activities should focus on the improvement in lifestyle of people and should also regulate over exploitation of natural resources. We must realize the consequences of over exploitation of natural resources and at the same time there should not be any difficulty to those people who rely on farming and other activities for their livelihood in these areas.

Some parts of the Western Ghats region were converted to cultivated lands by virtue of the traditional farming practice adopted by the predecessors of today's farmers. They struggled against epidemics like malaria for survival and many of them even died. The present generation has an emotional attachment with the land by virtue of this reason. Also, there may occur a social imbalance between people residing in ESA and other areas upon the implementation of high level working committee report and may lead to even violation of constitutional rights.

People especially farmers play an important role in the conservation of biodiversity. Majority of Western Ghats regions are suitable for spice cultivation and plantation crops especially Tea, Cardamom, Coffee, Rubber etc. These plantations also play a key role in carbon sequestration, biodiversity conservation and cleaning of atmosphere. Around 6 to 10 tonnes of carbon can be stored by one hectare of coffee plantation. Homestead farming is traditional farming method in Kerala, which is not common in other states. Homestead farming, a key factor in agro-biodiversity conservation, includes different varieties of crops, cattle breeds, poultry, aquaculture, apiculture, medicinal plant cultivation etc. by which natural organic cycling happens.

Kerala is the most populated among the states through which Western Ghats traverses. The population density of Kerala was 749 in 1991 and has increased to 819 in 2001 and 859 in 2011. As per the Census Data of India, per capita land is 32.5 cents and agricultural land

holding is 25 cents. In a state like Kerala, where per capita land is negligible, increase in agricultural production is a major mandate, government itself promoted the farmers to cultivate in high range areas. During the Second World War, “Grow more Food’ campaign was implemented to eradicate poverty. Government also prompted people to cultivate crops in hilly areas. During 1950s government allotted 5 acres of land for each family to promote their migration to high range areas. As high range areas are suitable for spices cultivation more foreign currency flowed in to the state. Farmers had to overcome several problems to convert these high range areas to flourished agronomic zones. The expert committee’s view point is that hurdles that may arise for the inhabitants of Western Ghats areas due to the implementation of Kasthuri Rangan report, must be avoided.

Kerala is a state having strict regulations on forest conservation and strict implementation of forest related regulatory mechanisms. As per the MoEF statistics, India’s forest coverage is 21.5% and that of Kerala is 29.1%. Kerala has 6 national parks, 17 protected areas and 1 community reserve. Of the total green cover of 11309.5032 km², 3213.24 km² falls under the protected forest area (Kerala Forest and Wildlife Department). Rate of forest fragmentation in Kerala is less when compared with other states. Even though forest department strictly enforces forest conservation activities, there must be a consensus approach between ecological conservation and livelihood of people.

Hundreds of people have attended the hearings conducted by the expert committee and expressed their fear and apprehensions regarding the Kasthuri Rangan report. The committee has examined all these complaints and formulated the recommendations accordingly. The main apprehension was that the whole village (including farm lands and human inhabited areas) demarcated as ESA. If such condition arises there will be restrictions for doing various livelihood activities. The value of the land may get reduced drastically and nobody could tolerate it. Living under stringent conditions will also be a bad experience. In Western Ghats areas, when the lands were identified as ESA, the sale of land came to a standstill. Many economical problems arose due to this and even marriages were cancelled. Shri. Pranab Sen, Former Chairman, Planning Commission has given recommendations regarding the measures to be taken before declaring an area as ESA, which is relevant in this context.

Pranab Sen, etc., Committee:- *The committee knew that the eco-sensitive areas identified by it “would receive protection under the Environment (Protection) Act, 1986 (EPA)”. This awareness had two major implications. First, a balance had to be struck between the protection of ecologically sensitive areas and the needs of national development, particularly in the context of a country like India, with low levels of income & high levels of poverty. Therefore the parameters had to be selected and defined in such a manner that they represented only the critical elements of ecological preservation and did not impinge unduly on the process of development and efforts at eradication of poverty.*

“The nuances of ecological sensitivity are such that excessive rigidity on this count could defeat the very purpose of this exercise, which seeks to strike a balance between preservation of our ecological endowments and the needs of development.”

The Pranab Sen etc. has stressed the importance of “wide public consultation on the nature and manner of regulation of economic activities in the identified areas” before notifying the areas under the EPA, 1986. “In view of the limited knowledge base that exists at present, it is preferable to err on the side of caution and be liberal” in notifying sensitive areas.

Pranab Sen makes it clear that ESA should be declared only after detailed and deep analysis discussions.

Kasthuri Rangan Committee has considered the above aspect. While Gadgil Committee demarcated the whole Western Ghats as Ecologically Sensitive Areas and categorised into three, the Kasthuri Rangan Committee was of the opinion that only 40% of the Western Ghats area should be protected as ESA. For making their decision logical, the committee divided Western Ghats into two; Natural Landscape and Cultural Landscape. Forest, protected areas and areas which were to be protected as forests were included in Natural Landscape while human inhabited areas, farm lands and plantations were included in Cultural Landscape.

For demarcating these two, the Kasthuri Rangan Committee depended on remote sensing technology. But in Remote Sensing, coffee plantations and cardamom plantation may often

be considered as forests and hence classified as Natural Landscape. The HLWG Committee itself has pointed out this ‘*The Committee took note of the environmentally friendly practices in coffee plantations, Kodagu and Cardamom Plantations in Idukki and Wayanad, where integration of natural landscape with human settlement exists.*’ (From Kasthuri Rangan Committee Report, Preamble).

On the page number 96 of the report it is said that “*The remote sensing derived vegetation maps are not without limitations. For instance Understory plantations (for eg. Cardamom) or naturalized forest plantations cannot be discriminated*”. That means, the committee approves the fact that certain defects may occur while using remote sensing for mapping ESA.

During our visit to Western Ghats areas we could see and realise that many thickly populated areas and farm lands are included in the ESA. For clearly determining forests, human inhabited areas, farm lands, plantations and areas which are to be protected as forests, the only precise method is to conduct actual physical verification. Hence the committee recommends to conduct actual physical verification in 123 villages identified as ESA by Kasthuri Rangan Committee and about 120 panchayats that are identified as ESZ I and II by Gadgil Committee, and find out the present status of these areas. Thus the human inhabited areas, farm lands and forests in the 123 villages and about 120 panchayats must be demarcated. The sacred groves, ponds, meadows and hills in these villages and panchayats should also be considered as ESA and protected along with the forest. At the same time, human inhabited areas, farm lands and plantations should be exempted from ESA.

10. RECOMMENDATIONS OF THE EXPERT COMMITTEE

10.1. Demarcation of Ecologically Sensitive Areas

- The Kasthuri Rangan Committee identified whole village as ecologically sensitive, if at least 20% of ESA is contained in that village. Even if 80% of the remaining area is urbanised, the committee considered that the whole village is Ecologically Sensitive. This cannot be justified.
- As far as Kerala is concerned, villages are demarcations for better governance only, but in most other states villages are separate cultural and social entities.

- As far as other states are concerned, considering villages as basic units for demarcation of ESAs can be justified. In those States there is good detachment between villages, towns and forest areas. But Kerala is a rural urban continuum, which occur intermittently.
- In many of the villages in Kerala identified by KR committee as ESA, there are many large educational institutions including Engineering Colleges and many hospitals also. Many villages are partially urbanised. Towns like Munnar, Kumili, Kattappana and Nedumkandam are examples for this. Many banks, hotels, bus stands, religious institutions, etc. are there in these busy towns. Living in this area according to the conditions and restrictions put forward by forest and environment Acts and Rules is impracticable and unjustifiable. It will be natural only that the inhabitants of this area wish to retain the material gains and standards that they have acquired.
- Plantations of Cardamom, Black Pepper, Rubber, Coffee and Garcinia (Malabar Tamarind) are often mistaken as forests and wrongly marked in satellite maps as ESA in Kasthuri Rangan Report.
- It was also understood by the expert committee that, even though KR committee has demarcated villages having population of less than 100 per km square as ESA, certain villages that fall in this criteria has been excluded by the KR committee. Wagamon, Kodassery, Malayattoor, Peechi and Vazhani are some examples.
- Among the Western Ghat states Kerala has the highest population density. Even in Idukki District which is having maximum number of ESAs, according to 2011 census the population density is 250 / km. Sq. area. During 2001 it was 259/ km. Sq. The HLWG recommendation, not to consider areas having less than 100 population density as ESA was not followed completely as far as Kerala is concerned.
- The recommendation to demarcate an area of 10 km around ESAs as buffer zone and placing these areas under the purview of Environmental Protection Act may lead to a condition where large towns may even be considered as ESAs. This may lead to apprehensions in the mind of people living in this area that the basic developments will come to a standstill.

- Many organisations and estates including the Kannan Devan Plantation Association have represented before the Expert Committee that such plantations are centuries old and follow eco-friendly cultivation practices.
- According to representations received from the Cardamom farmers; during the expert committee sittings it is clear that an agro forestry ecosystem is prevalent in these plantations. Eco friendly water and soil conservation is adapted in these plantations and this fact is mentioned in the KR Report. But these plantations have been misinterpreted as forests and included in ESA.

“The Working Group also took note of the environmentally friendly practices in coffee plantations in Kodagu and cardamom plantations in Idduki and Wayanad where integration of natural landscapes with human settlements exists. Indeed, it is because of this harmony between people and nature in the Western Ghats, the HLWG recommended policies to incentivize green growth that promotes sustainable and equitable development across the Western Ghats region.” (Kasthuri Rangan Committee Report - Preface page iii)

Recommendations

- *Kasthuri Rangan Committee has divided the Western Ghats area in to Natural Landscape, which includes biodiversity rich ecosystem and Cultural Landscape, which includes human inhabited areas. This demarcation is justifiable. But for the demarcation of the Western Ghats area into Cultural and Natural Landscape, the Committee has adopted satellite mapping (Vol. I, page 52, 53 Methodologies). The Kasthuri Rangan Committee itself has pointed out that this kind of demarcation may have some defects. (Page 96 of the report).*
- *In order to rectify the above defect the only option is to conduct actual physical verification of the area to find out the present status. Hence, the Expert Committee recommends to Government for conducting an actual physical verification in all the 123 ESA villages demarcated by Kasthuri Rangan Committee and 120 Panchayats identified as ESZ I and ESZ II by Gadgil Committee. Thus, the actual Natural Landscape and Cultural Landscape can be demarcated. The Expert Committee also*

recommends verifying the population density of these areas. By doing this, the ESAs including forest areas, human inhabited areas and agricultural lands can be clearly marked without any doubt and it can also be understood that how farming and biodiversity co-exists in this area. For the conduct of field verification, the Expert Committee recommends the following strategies:

- *Conduct physical verification in all the 123 ESA villages identified by the Kasthuri Rangan Committee and exclude human inhabited areas, farm lands and plantations from ESA. The protected areas and ecologically susceptible areas, which deserve protection, are to be included in the ESA.*
- *In Western Ghats ESZ I and ESZ II villages (as reported in Gadgil Committee), there may be forests areas, sacred groves, grass lands, rocky areas and hilly areas which deserve protection. They have to be demarcated and included in ESA.*
- *In order to conduct field level verification, a team may be constituted in all Panchayats with the following persons as members:*
 - *Panchayat President, Panchayat Members and BMC members*
 - *Village Officer – Revenue Department*
 - *Representative – Forest Department*
 - *Representative – Agriculture Department*
 - *Secretary – Panchayat Secretary*

This team has to visit all the ESA villages (Kasthuri Rangan Committee) and ESZ I and ESZ II (Gadgil Committee) Panchayats during a fixed period and demarcate the areas as described above. Conflicts if any, regarding demarcation may be finalised according to the decision of the Revenue department and mark accordingly.

- *Physical verification maps and data of the above committee will be part of the State Expert Committee report.*
- *In order to ensure the survival of the wild animals in the natural landscape and people and their livelihood in cultural landscape, formulation of stringent government policies & rules and strengthening of existing rules are to be done.*

- *Since all the ecosystems like forests, sacred groves, grass lands etc. which are outside the ESAs will be demarcated through physical verification and protected as ESA, there is no further relevance in providing 10 km buffer zones outside ESA. Hence this committee recommends not to have buffer zones outside ESA.*
- *The Tea, Coffee and Cardamom plantations in these areas are very old. Eco-friendly measures like organic farming, water conservation and soil conservation are also practiced in these plantations. Agriculture products produced from these plantations fetch foreign exchange as well as economic benefit to the State. By physical verification, plantations, farm lands and forest areas will be separated and hence, these plantations will naturally be exempted from ESA. The Committee assumes that the apprehensions of people regarding this will be resolved by this.*
- *Since after physical verification the human inhabited areas, agricultural lands and plantations will be excluded from the ESA, the concern of people leading a restricted life in ESA will thereby be addressed.*

10.2. Apprehensions related to Farming

- Most of the populated areas in Western Ghats play an important role in the economy of the country. Since long back, Kerala was famous in Rome and Middle East countries due to the production of spices. Malabar Pepper and Alleppy Green Bold Cardamom are among spices having high demand in the international market. Kerala leads in the production of Black Pepper, Cardamom and Rubber in the country. Most of these spices are produced in the hill tracts near Western Ghats. The Coffee produced in Wayanad is world famous for its taste, flavour and quality, in the world market.
- The recommendation of KR Committee to stop the cultivation of monocrops may affect Tea, Rubber and Coffee plantations. This will not only affect the economy of the farmers but also the country.
- While proposing shift from chemical farming to organic farming, the major limitation is that alternate technologies for chemical pesticides has not been developed. For example no alternatives have been developed against chemical pesticides used in Cardamom Estates of Idukki. No research organisations or departments are functioning under State

or Central Governments for the promotion of organic farming. Existing organisations are promoting highly productive chemical farming only. Under the above situation, the transition from chemical to organic farming will result in high economic loss for the farmers.

- There is anxiety among the farmers that there will be limitation for cultivation of high yielding crop varieties in Western Ghats areas and they will be forced to cultivate less productive indigenous crop varieties only, which will lead to economic loss. In Kanayakumari District of Tamil Nadu, rubber plantations were identified by the Government as private forests and acquired. If the KR report is implemented, the Rubber farmers of Kerala think that the same situation will happen here also.
- Farmers are of the apprehension that they can't cultivate food crops according to their own preference in elevated lands in their possession.

Recommendations

- *The Committee is of the opinion that, even though both mining and farming are human interferences, they cannot be viewed alike. Since the farmers in the Western Ghats areas are environmentally conscious and give special emphasis on soil conservation methods, they should be considered as “landscape farmers” and given all possible encouragements and financial assistances for eco-friendly farming practices. In Switzerland, the farmers who practice farming in mountainous areas are given status as landscape farmers and financial assistance is given for attracting them to eco-friendly farming.*
- *Instead of turning to organic farming directly, promote “Good Agricultural Practices” in Western Ghats areas as an initial step. (Good Agricultural Practices is promoted by Government of India). “Good Agricultural Practices” include soil test for metal contamination, use of high quality seeds, application of fertilizers and pesticides in recommended dosage, physical control of weeds, integrated pest management, etc.*
- *Subsequently encourage farmers to adopt Organic Farming Practices. During the transition period from Chemical to Organic farming (10 years) the financial loss incurred by the farmers are to be completely compensated by the Government. Necessary*

fund for this has to be gathered and suitable schemes formulated. Agricultural Department should equip itself to provide necessary technical support to farmers for adopting organic farming. If traditional vegetable producing areas in Kerala such as Vattavada in Idukki District are converted in to organic farming, there is better chance of producing organic vegetables for the consumers of the State. It has been found out by agencies including Kerala Agricultural Universities that the vegetables that come from outside Kerala contain high amount of pesticide residual toxicity.

- *The vegetables, spices and other products produced in Western Ghats areas are to be given proper branding and marketed, so that they will fetch higher price. These products should be effectively procured and marketed by Government agencies. Ultimately the farmers should realize that organic farming will improve the soil condition, biodiversity and productivity of the land, thus improving income from farming.*
- *An evaluation about the pesticides used at present in these areas should be done and the farmers persuaded to use pesticides with less residual toxicity. Awareness programmes should be undertaken to convince the farmers that pesticides with high toxicity will cause even deadly diseases like cancer in those who are in frequent contact with them. Agencies like Agriculture Department should also take up awareness programmes in order to gradually avoid persistent use of pesticides with high residual toxicity from these areas.*
- *The Coffee Plantations are home to many species of birds, butterflies and other organisms. These agro-forestry systems contain water conservation structures such as eco friendly check dams made of mud and soil. Construction of check dams (mud bunds) and water conservation systems should be promoted in coffee plantations. Government assistance should be given for this, as well as for planting indigenous trees in these plantations.*
- *There should be no ban on cultivation of high yielding varieties. Decision should be taken by Government to formulate necessary rules and policies regarding Genetically Modified crops. It may be noted that prominent agricultural scientists like Dr.M.S.Swaminathan are of the opinion that GM crops should be promoted for food*

security. At the same time local varieties should also be encouraged in farm lands and awareness regarding their importance and ability to withstand adverse climatic conditions should be created among the farming community.

- *The farmers of this area adopt Contour bunding and traditional water harvesting structures while planting short duration crops in slanted areas for prevention of soil erosion. Even then financial incentives should be given to farmers for shifting from short duration crops to long duration crops on lands having more than 30% slope.*

10.3. Apprehension on EFL – Ecologically Fragile Land

- The farmers are of the anxiety that the areas identified as ESA will be converted into EFL (Ecologically Fragile Land) in the future, leading to their land being acquired by the Government without giving any compensation.
- As per the provisions of EFL, the land of many small farmers was acquired by Government without giving any compensation. Many such farmers affected by EFL Rule have expressed their grievances before the Expert Committee. Even environmental activists represented before the Committee that EFL Rule has fulfilled its purpose and should be abolished.

Recommendations

- *As EFL rule has almost fulfilled its purpose, it may not be implemented in any new cases from now on. However, cases pending in courts connected with this matter, be continued to its logical conclusion.*

10.4. Apprehensions regarding the grant of title deed (Pattayam)

- As per the decision taken during all party meetings Government have promised to give Pattayas to the lands in Western Ghats areas which is under cultivation before 1977 January 1. The farmers are worried that this promise will not be fulfilled if the KR report is implemented.

- *The Government decision to give Pattayam (title deed) for those lands in high range areas, which are in people's possession before 1977 January 1, should be implemented immediately.*
- *Regarding those Pattaya lands, which are surrounded by forests, the Government may acquire these lands giving proper compensation.*
- *Kasthuri Rangan Committee has pointed out the need for forest Departments to facilitate the mobility of wild animals from one to another area. If farm lands and other areas are necessary for wild animal corridors, the Government may acquire these lands after giving necessary compensation and implement rehabilitation schemes for those affected by this acquisition.*

10.5. Issues regarding integrated farming

- *Instead of putting ban on monocrop, intercropping with medicinal plants should be promoted, schemes for promotion of medicinal plant cultivation and their procurements should be implemented, thus increasing the economic status of local population. These are some of the recommendations put forwarded by the State Medicinal Plant Board.*
- *The farmers of Western Ghats area fear that if KR report is implemented, farm animal rearing, one of the main livelihoods of the people of this area will be negatively affected. Some of the apprehensions put forward by the farmers before the committee were that there will be a total ban on dairy farming and grazing on grasslands if Kasthuri Rangan Report comes into effect.*

Recommendations

- *Cultivation of medicinal plants should be promoted in the Western Ghats areas as a component of integrated farming, with the support from State Medicinal Plant Board.*
- *The Committee expects that as the farm lands and human inhabited areas become excluded from ESA, the apprehensions of farmers regarding restrictions in cattle rearing will be resolved.*

- *Farm Animal rearing, Horticulture, Floriculture, Apiculture, etc. should be promoted in these areas so as to increase farmer's income. Integrated farming should be promoted in areas wherever it is feasible.*
- *2014 being the "Year of Family Farming", family farming should be promoted in Western Ghat areas. Dr.M.S.Swaminathan has proposed a "Panjasheel for family farming; water for irrigation, technology and other farm inputs, loan, marketing and management"*
- *Fodder cultivation should be promoted in these areas.*

10.6. Promotion of native cattle breeds

- *The farmers are of the apprehension that rearing of cross-bred cattle breeds will be banned in Western Ghats areas and this will lead to economic loss to them.*
- *There should be no ban for rearing hybrid cows. The apprehension of farmers regarding this should be removed; otherwise this will affect the milk production of the State, which is already deficient in this sector.*
- *At the same time the indigenous breeds like Vechur Cow, High-range Dwarf and Kasaragod Dwarf having high adaptability towards hot, humid climate and water scarcity, should be promoted in these areas. Production of organic manures and biogas should be promoted along with this.*

10.7. Monocrops

- *The large scale planting of Acasia, Teek and Eucalyptus is becoming common. Such plantations negatively affect the environment and farming. This crop draws ground water from upto 10 meters and prevents recharging of water to the dried up bottom soil layers. Further these crops cause soil erosion, loss of nutrients from the soil and biodiversity loss. They also lead to a situation known as allelopathy (in which one crop prevents other plants/ crops from growing near it) while the forest borders are*

destroyed and planted with these crops the situation may emerge in which wild animals will be denied access to water and food, thus migrating to human inhabited areas. They cause heavy loss to farming. Elephants and wild boars are the main animals that cause loss to agriculture crops.

Recommendations

- *Monocrops like Eucalypts, Acasia and Teak cause ground water depletion, soil erosion and biodiversity loss in these areas. Forest Department may stop planting of these monocrops. Instead, they should plant forest trees, so that the natural forest ecosystem will be formed in these areas, thus giving shelter to animals. But the farmers should be assured by the Government that this ban on monocrops will not affect the cultivation of cash crops like rubber, coffee and tea in the future.*

10.8. Human wildlife conflict

- The Expert Committee has realized the damage caused by wild animals to the life and farming of people living near forest borders. During the sittings, many farmers have urged that the people and their farm should be given protection from wild animals and compensation should be provided for crop loss due wild animal attack.
- Till the forest areas and areas to be protected as forests are identified and permanently protected in Western Ghats areas, it is the responsibility of the Forest Department to keep wild animals protected within the forest.

Recommendations

- *In order to prevent wild animal attack on human beings and farm lands, V shaped trenches having 2 meter depth and 4 meter width should be constructed and surrounded by solar powered electric fence.*
- *Sufficient financial compensation should be given for crop loss due to wild animal attack.*

- *Farmers should be permitted to stare away wild animals (which are not facing extinction) which cause loss to their life and crops.*
- *Forest Department should take interest in planting fruit trees in forest areas so that wild animals like monkeys won't occupy human inhabited areas.*

10.9. Tribals in Western Ghats

- The socially and economically backward Tribals who have been living in the Western Ghats, for many generations are worried that the implementation of KR Report will affect their life and livelihood. They are also on fear that they will be forced to leave the forest.

Recommendations

- *Kasthuri Rangan committee report should not affect the existence or livelihood of indigenous tribal community in Western Ghats areas.*
- *Representatives of tribal hamlets should be included in those committees which take decision regarding implementation of eco-friendly development activities in Western Ghats areas.*
- *Schemes for promoting organic farming and market support for organic produce thus assuring good price for them, should be implemented in tribal areas.*
- *Employment should be provided for tribal communities in eco-friendly tourism projects of Western Ghats areas.*

10.10. Fisheries

- In the Western Ghats area, unscientific and environmentally harmful methods of fishing with dynamites, explosives, poisons etc. are followed by some people. Such type of fishing results in heavy loss of biodiversity in water bodies, especially during the fish breeding season.

Recommendations

- *Fish catching using explosives and toxic chemicals should be banned completely in Western Ghats areas. Invasive fish species should be completely discouraged.*

10.11. Tourism in ESA

- Eco tourism and farm tourism are among the main source of income for people living in the Western Ghats areas. People fear that the implementation of the report will lead to restrictions on tourism, thus resulting in economic loss for those who are engaged in this sector. At the same time there is a tendency for deforestation and construction of large buildings for large scale tourism resorts which results in ecological losses.

Recommendations

- *Eco-friendly tourism projects and farm tourism projects should be promoted in Western Ghats areas. This will improve the financial status of farmers living in this area. Eco friendly buildings (height should be restricted to 8 meters), marketing of indigenous products, employment for local communities etc. should be promoted as part of the project. Integrated farming with emphasis to indigenous cattle breeds should also be promoted. Programme to attract the local tourists to these farm tourism enterprises should be implemented.*
- *Farm Tourism is being widely implemented in Wayanad and Idukki Districts of the State at present. Eco-friendly transportation should be promoted as a part of Farm Tourism Enterprises. Government should supply pollution free solar and battery vehicles at subsidized rate for these tourism projects.*

10.12. Felling of Trees in Private Properties

- The Committee could realize that the people who live in Western Ghats areas for generations have apprehensions that, there will be restrictions for felling of trees in private properties.

Recommendations

- *For those who do environmental conservation activities such as planting of forest, sacred groves, conservation of wetlands, heronries, conservation of indigenous cattle breeds etc., ecosystem service fees should be given by the Govt., after assessing the ecological value of the activity.*

10.13. Appreciation for Environmental Protection

- Many individuals and groups in ESAs do various environmental conservation activities such as conservation of mangroves, forests, wetlands, afforestation activities, providing habitat for birds, conservation of indigenous crop varieties, cattle breeds and fishes. They should be rewarded so that an eco friendly generation will emerge on this land.

Recommendations

- *Awards should be given to farmers, individuals and groups who are involved in eco-restoration activities.*

10.14. Quarrying in Western Ghats Area

- In Western Ghats area there are many unauthorized as well as licensed quarries. Quarrying is done unscientifically and causes heavy environmental impacts such as loss of biodiversity and greenery, soil erosion, reduction in ground water level, atmospheric pollution, sound pollution, fear for wild animals, human calamity, landslide, etc.

Recommendations

- *The quarries which are functioning in Western Ghats areas without permit should be stopped immediately. For this, a vigilance squad comprising of representatives from DoECC, SEAC, KSBB and Dept. of Mining and Geology should be formed.*

- *Quarries may be permitted at least 500 meters away from the forest borders.*
- *SEIAA clearance should be made compulsory for quarry activities in these areas.*
- *An expert committee should evaluate the functioning of quarries in ESA areas and see whether any lapse has occurred in giving permit by Local Self Government and other Agencies. Permission should be given for quarrying rocks for private purpose from inhabited areas in an eco-friendly manner.*
- *Present status of quarries functioning in Western Ghats areas should be verified and those functioning in areas to be protected as forests, should be stopped immediately after giving notice.*
- *Regarding quarrying in areas which are not rich in biodiversity, Government may take suitable decision after the expert study of SEIAA. Otherwise there will be acute shortage for building materials in Kerala.*
- *Schemes for restoration of abandoned quarries by planting trees and plants, promoting fish farming, converting them into water storage facilities etc should be undertaken.*

10.15. Sand Mining

- Unscientific sand mining is done in rivers of Western Ghats area. This results in biodiversity loss, loss in water quality and preventing accumulation of organic residues in river basin.
- At the same time the local population demands that they require sand and rock for private construction activities.

Recommendations

- *Controlled sand mining in reservoirs and water bodies may be permitted subject to expert opinion and sand auditing. Eco-friendly technologies should be used for such sand mining. The sand thus excavated by Govt. agencies should be sold to the needy at a*

reasonable price. This will further increase the water holding capacity of the reservoirs. The Thenmala Grama Panchayat has submitted a memorandum to the Committee stressing the above aspect.

- *Eco-friendly, controlled sand mining subjected to expert advice may be permitted in other water bodies also and eco-friendly technologies that cause minimum impact on the environment should be adopted for this.*

10.16. Construction of Bore Wells

- Large scale digging of bore wells in Western Ghats areas results in over exploitation of ground water, loss of green cover and atmospheric pollution.
- Every year thousands of bore wells are being dug by the Ground Water Department. The committee found that other than this, over exploitation of ground water is being done by private agencies also. It is seen that in bore wells constructed unscientifically, water level depletes after about 2 years.

Recommendations

- *Government should take appropriate decision regarding regulations to be imposed on uncontrolled and unscientific digging of bore wells.*
- *Ground water level and topography of the land should be assessed before permitting bore wells in an area with the permission of Ground Water Department.*
- *Bore-well construction by private agencies is to be discouraged.*
- *Ground water Department should undertake programmes for recharging of dried bore-wells.*

10.17. Construction of Buildings

- * It is not desirable to do large scale construction activities such as piling, removal of soil from elevated areas, digging of trenches, etc. Such activities will adversely affect the environment and biodiversity of the area and lead to natural calamities such as landslide.

Recommendation

- *Rain water harvesting should be made compulsory not only in Western Ghats areas, but also in each and every homestead and farm land of the state.*
- *In Western Ghats areas having an elevation above 500 meter MSL, height of buildings should be restricted to 8 m.*
- *In all buildings including resorts, the height of should be restricted as above.*
- *Decentralized and Eco-friendly Waste management, solar power, rainwater harvest, Biogas production etc should be made compulsory in these buildings.*
- *Rain water harvesting and ground water conservation should be promoted in buildings of Western Ghats areas and other parts of the state through suitable technologies and public awareness programmes.*
- *Pollution auditing should be conducted in resorts of the Western Ghats areas.*
- *The above eco-friendly measures should be implemented in other parts of the state also, though awareness programmes.*

10.18. Red Category Industries

- * Industries that cause large scale pollution results in heavy loss of biodiversity in Western Ghats area, especially pollution of water bodies that results in death of wild animals. Lack of scientific pollution treatment plants further aggravates the situation.
- * Meat Products of India, a public undertaking has intimated that the Government has sanctioned 2 crore rupees for the construction of modern meat processing plant and slaughter house in Pariyaram Village of Chalakkudy. They have requested that these should be exempted from restrictions imposed for red category industries.
- * Malabar Cements, a public sector undertaking has requested that their lime stone mining activities should not be affected by the report. They have given a

representation saying that if their cement production gets affected, a situation may arise when the cost of cement in Kerala will be artificially boosted up by the cement companies in other states.

Recommendations

- *Hospitals, Educational Institutions, Religious institutions and food and milk processing units should be given special consideration and exempted from the restriction proposed for red category industries, other development activities should be given clearance only subjected to SEIAA clearance.*
- *Public sector undertakings such as Malabar Cements and Meat Products of India should be provided exceptions for continuing their industrial activities, which are essential for the State.*

10.19. Construction of Townships

- * It is not desirable to construct large townships in Western Ghats areas, which are to be protected. Atmospheric pollution, water pollution, sound pollution, light pollution and biodiversity loss may occur due to this.

Recommendations

- *The Panchayats in Western Ghats should prepare Master Plans incorporating eco-friendly building construction, water conservation, utilization of eco-friendly energy sources etc. Measures for avoiding pollution and environmental degradation should be included in these Master Plans.*
- *The local self governments should adopt waste management measures in order to be a model to others.*
- *Usage of plastic carry bags should be completely banned in Western Ghats area within 3 years.*

10.20. Biodiversity Fund

Recommendations

- *The levy collected for various ecosystem services in Western Ghats including levy from large-scale Tourism Resorts should be deposited in the biodiversity fund of local self governments as well as state biodiversity fund and utilized for biodiversity conservation activities under the guidance of BMC's.*
- *Cess should be imposed on large scale tourism enterprises in Western Ghats areas and the amount deposited in the Biodiversity Fund of Local Self Governments. This fund should be utilized for biodiversity conservation activities under the guidance of BMC's.*

10.21. Environmental Watch Group

- * *There is lack of monitoring of environmental degradation activities at grass root level in Western Ghats areas. Often these activities are reported to the higher authorities after a long time.*

Recommendations

- *Government of Kerala has authorized BMC's as Environmental Watch Groups as per G.O. No.04/13/Envvt. dated 13.05.2013. As per the order BMCs are authorized to report any activities that may cause environmental degradation and violation of Acts and Rules regarding environmental consideration to higher authorities. It is desirable to strengthen the activities of BMC's and provide more working facilities to them.*
- *Transparent guidelines should be followed for selection of BMC members and strictly followed. The members should be nominated (6 nos.) according to their educational qualification and background in environmental related activities. The present BMCs may be reconstituted in such a way. The performance of these BMCs should be assessed every 3 years.*

PROCEDURE FOR DEMARCATING ESA IN 123 VILLAGES

On the basis of these sittings a detailed report was prepared both in English and Malayalam and submitted to the Kerala Government and to MoEF. The expert committee in its report proposed a physical verification at local level. A committee was constituted at Gramapanchayat level as per No 188/2013/ Env't dated 21.12.2013 to demarcate Agricultural land, forest areas, sacred groves, rocky areas, grasslands etc. and to identify areas to be declared as ESA. The committee comprises of Panchayat president, Secretary, Revenue officer, Agricultural officer and Forest range officer. It was directed to make available a panchayat wise map demarcating ESA and forest areas and a report of area, population, population density, forest area, operating quarries, polluting industries, hospitals, dairy farms etc. If the area is less than ward level clear geographical demarcation should be provided. In case the ESA in a particular village fall in more than one Gramapanchayat a combined committee of the local level verification committee may fix the boundaries. In order to identify and fix exact boundaries of ESA in the 123 villages notified by MoEF, the forests areas and ESA outside forest are to be distinctly demarcated in cadastral level maps to be obtained from Survey and Land record department. The district collectors were asked to make the necessary arrangements to facilitate the boundary fixing works and demarcating it in the cadastral maps made available to villages. All revenue authorities were asked to render required help and complete the works within five days from day of receipt of Cadastral maps. The local level verification committee will be the forum to fix the boundaries. Services of surveyor of Department of Survey and land records were made available as required by local verification committee.

A detailed map of 123 villages demarcating Agricultural land, Built up land, Forest, Forest plantations, wastelands and water bodies was uploaded in the website of Kerala State remote sensing and environment centre, Thiruvananthapuram. A report on the cultural landscape within the ESA in the 123 villages in HLWG report was submitted by Kerala State Remote sensing and Environment centre to Government of Kerala.

Village level committee submitted its physical verification data which was validated by KSBB with data from Kerala State Remote sensing and Environment centre and Forest department with the help of other experts also.

A team of officers from KSBB, KSREC and Department of Survey and Land records were authorized to demarcate the actual boundaries of ESA now identified and lead the works of digitization of the cadastral maps. The expert committee further vetted the ESA as demarcated by local level committee in comparison with the maps they have prepared and maps are being digitized. Uniform procedure and norms including color codes were adapted for all cases.

As per GO (Rt) No 63/2014/ Evt dated 08.04.2014 a committee was constituted with Chairman, KSBB as convener and PCCF, Thiruvananthapuram, Director Survey and Land records, Thiruvananthapuram, Director KSRSE, for finalizing of cadastral maps of ESA villages with clear demarcation of ESA boundary.

Cadastral maps of ESA villages with clear demarcation of ESA boundary is given in Annexure II.

Government Orders related HLWG report is given in Annexure II.

MEETINGS WITH MOEF OFFICIALS AND OF NATIONAL GREEN TRIBUNAL

Data were presented in the meeting with Officials of MoEF including Dr. V. Rajagopalan, Secretary (E & F), MoEF , Shri. Ajay Tyagi, Joint Secretary, MoEF, Dr Amit Love, Deputy Director, MoEF .

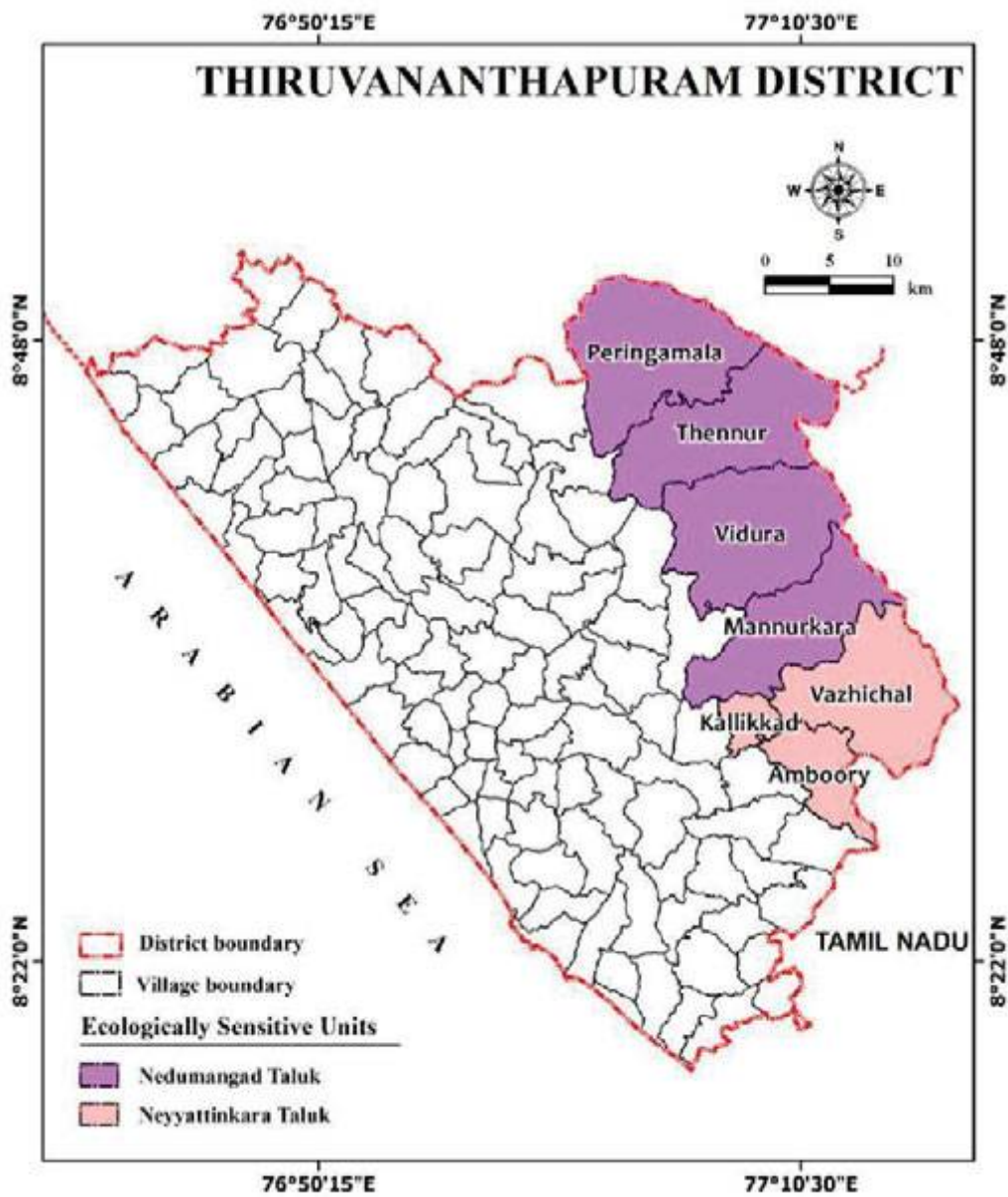
- 1) Dr. Oommen V. Oommen attended the meeting of National Green Tribunal in New Delhi on 16-17 December 2013.
- 2) As directed by the Chief Minister of Kerala, Member Secretary Dr. K.P. Laladhas and Chairman Dr. Oommen V. Oommen visited the Minister and officials of MoEF on 11th, 12th and 13th of February 2014 to submit the three member committee report and to have further discussions.
- 3) As directed by the Chief Minister of Kerala, Member Secretary Dr. K.P. Laladhas and Chairman Dr. Oommen V. Oommen visited Delhi on 27-02-2014 to meet the MoEF Secretary and other officials to consolidate the discussion on Kasturirangan Committee report on WG Conservation. They met the Secretary, Jt. Secretary and Dy. Director along with ACS Sri. P.K.Mohanty IAS.
- 4) As per instructions of the Chief Minister of Kerala, Chairman Dr. Oommen V. Oommen went to Delhi to meet the counsels and be present in the National Green Tribunal (NGT) on 24-03-2014.

Annexure I

- * The images presented here are the scanned copies of cadastral maps provided by the village level committee. The quality of the images depends on the given maps.
- * The quality and color of cadastral map sheet depend on the provided sheet and the scanner.
- * The demarcation of ESA is fully based on the Cadastral Data Sheet Informations (Sample data sheet is given in Appendix III)

CADASTRAL SCALE ESA VILLAGES

Thiruvananthapuram District, Kerala

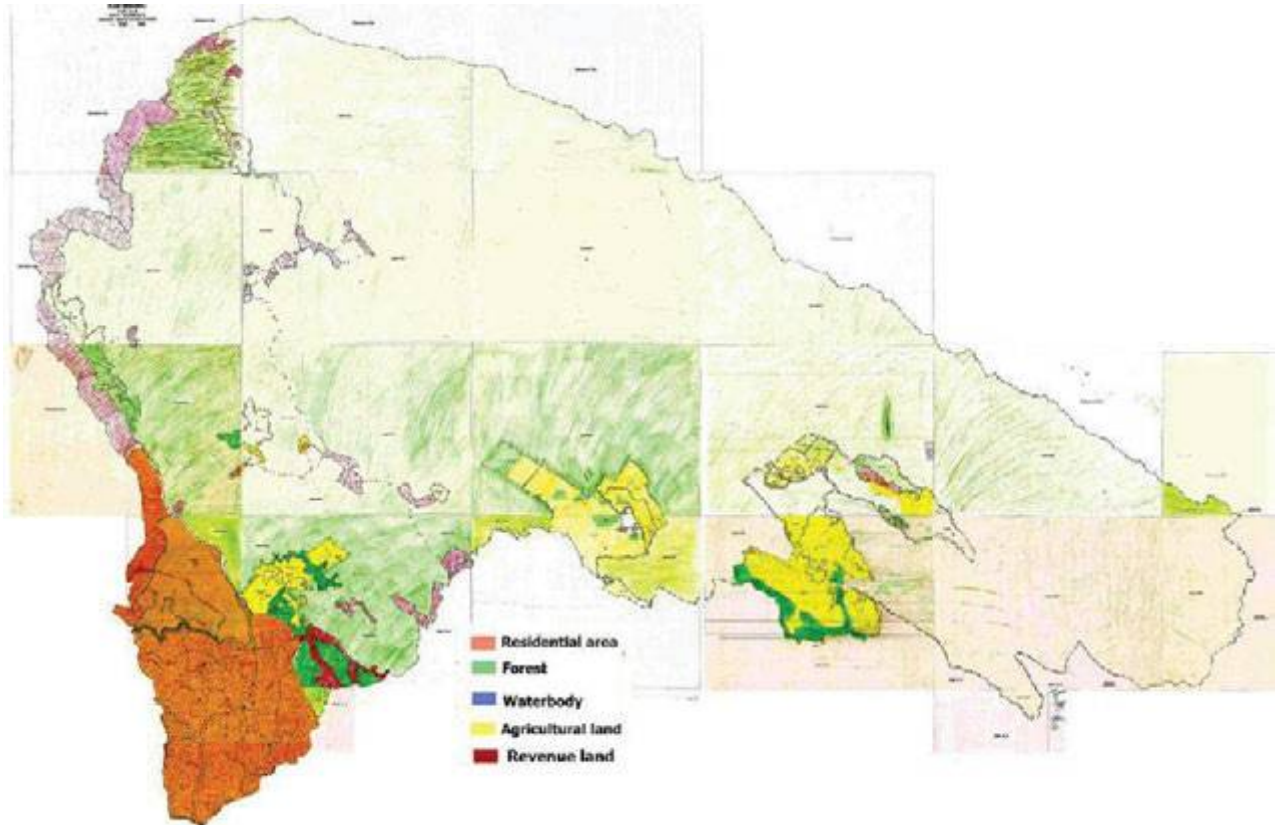


No. of ESA Villages – 7

No. of Taluks – 2

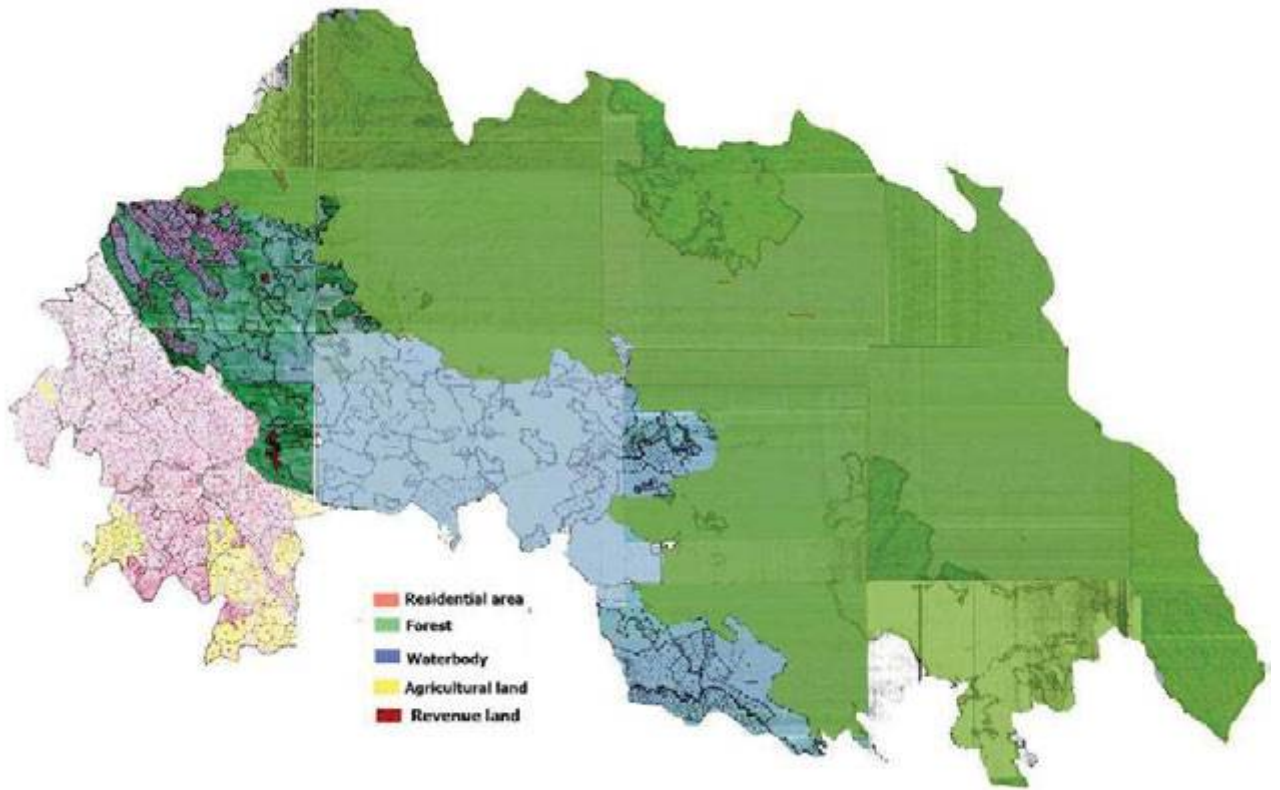
CADASTRAL SCALE ESA VILLAGES

Peringamala Village, Nedumangad Taluk, Thiruvananthapuram



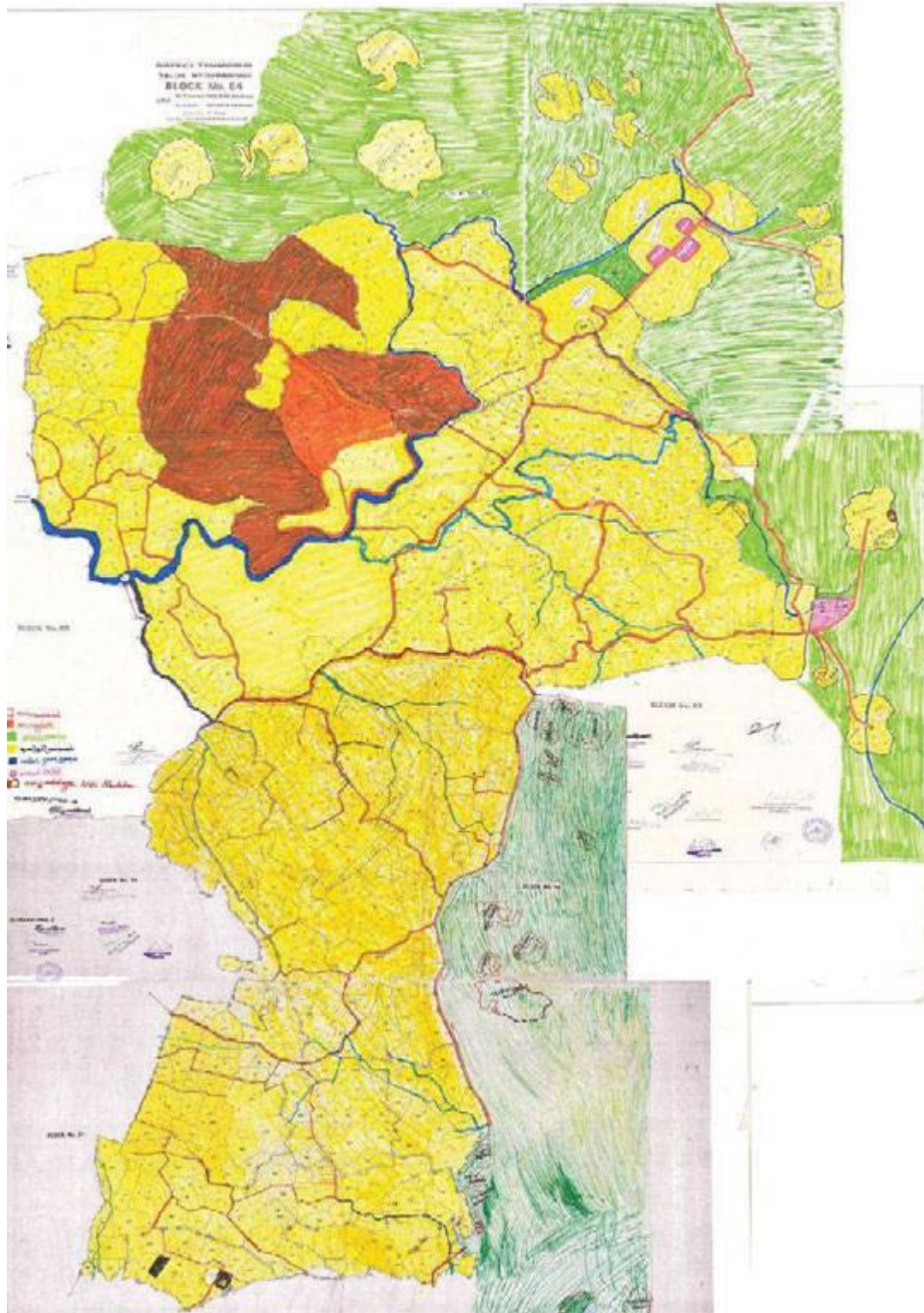
CADASTRAL SCALE ESA VILLAGES

Thennur Village, Nedumangad Taluk, Thiruvananthapuram



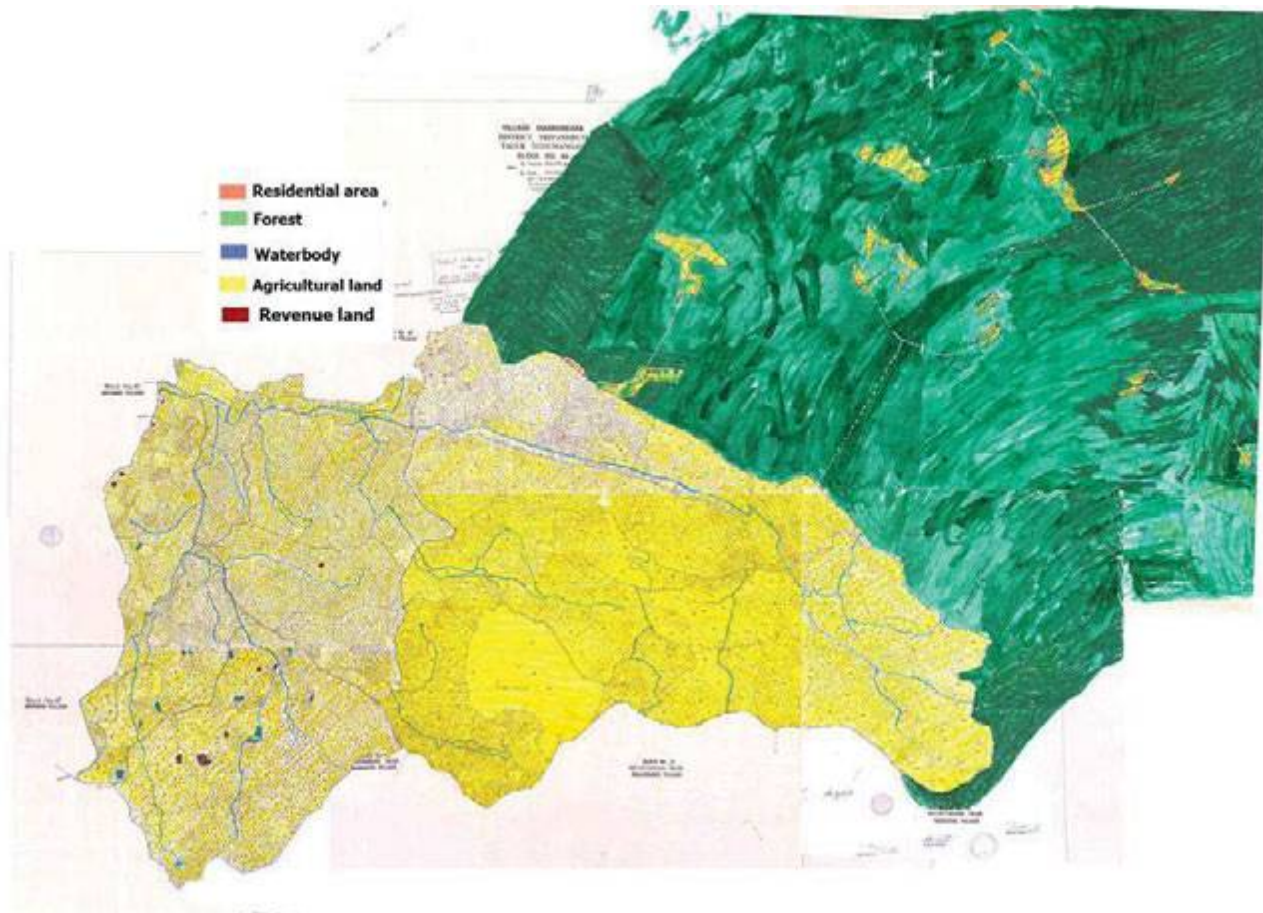
CADASTRAL SCALE ESA VILLAGES

Vidura Village, Nedumangad Taluk, Thiruvananthapuram



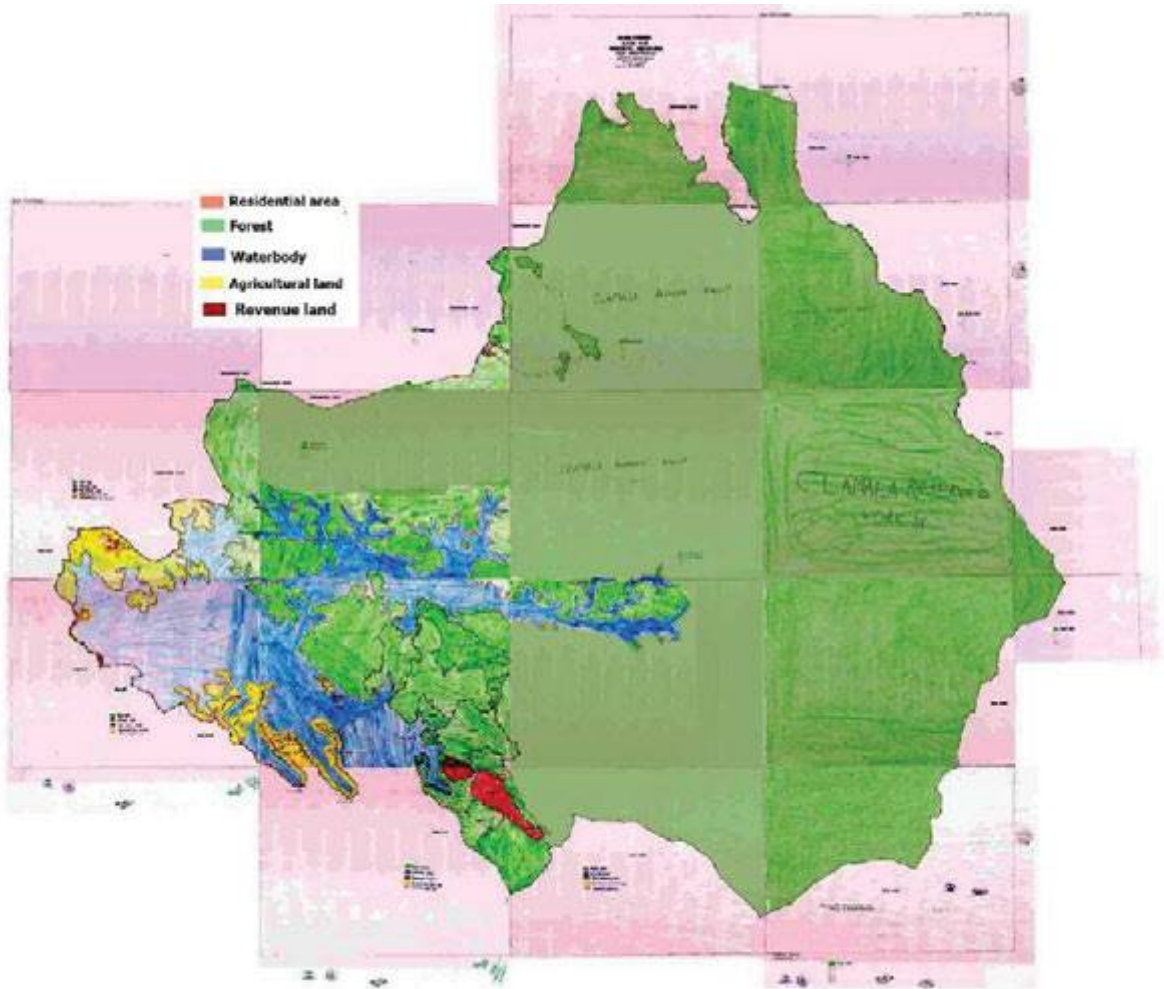
CADASTRAL SCALE ESA VILLAGES

Mannurkkara Village, Nedumangad Taluk, Thiruvananthapuram



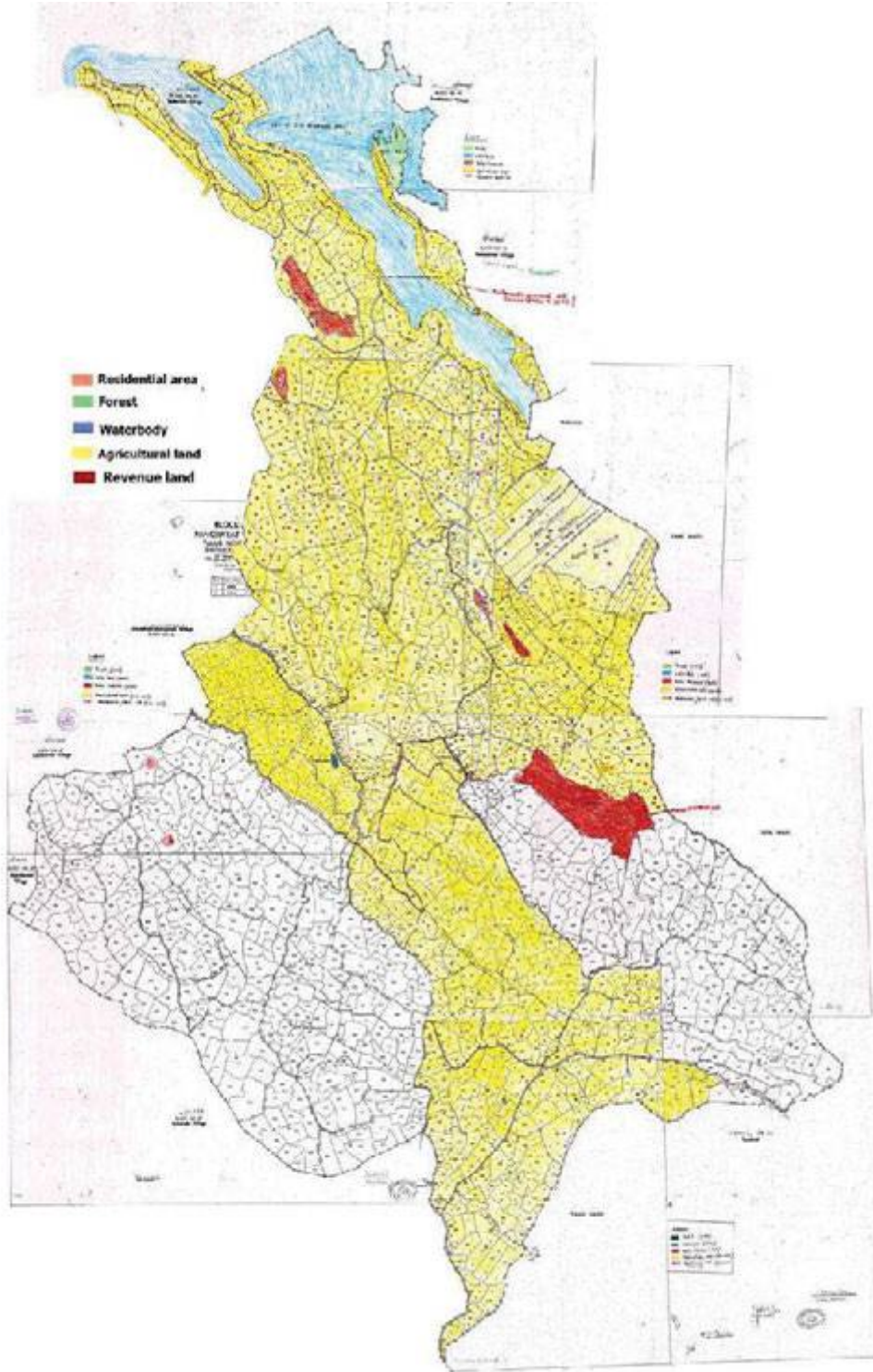
CADASTRAL SCALE ESA VILLAGES

Vazhichal Village, Nayyattinkara Taluk, Thiruvananthapuram District, Kerala



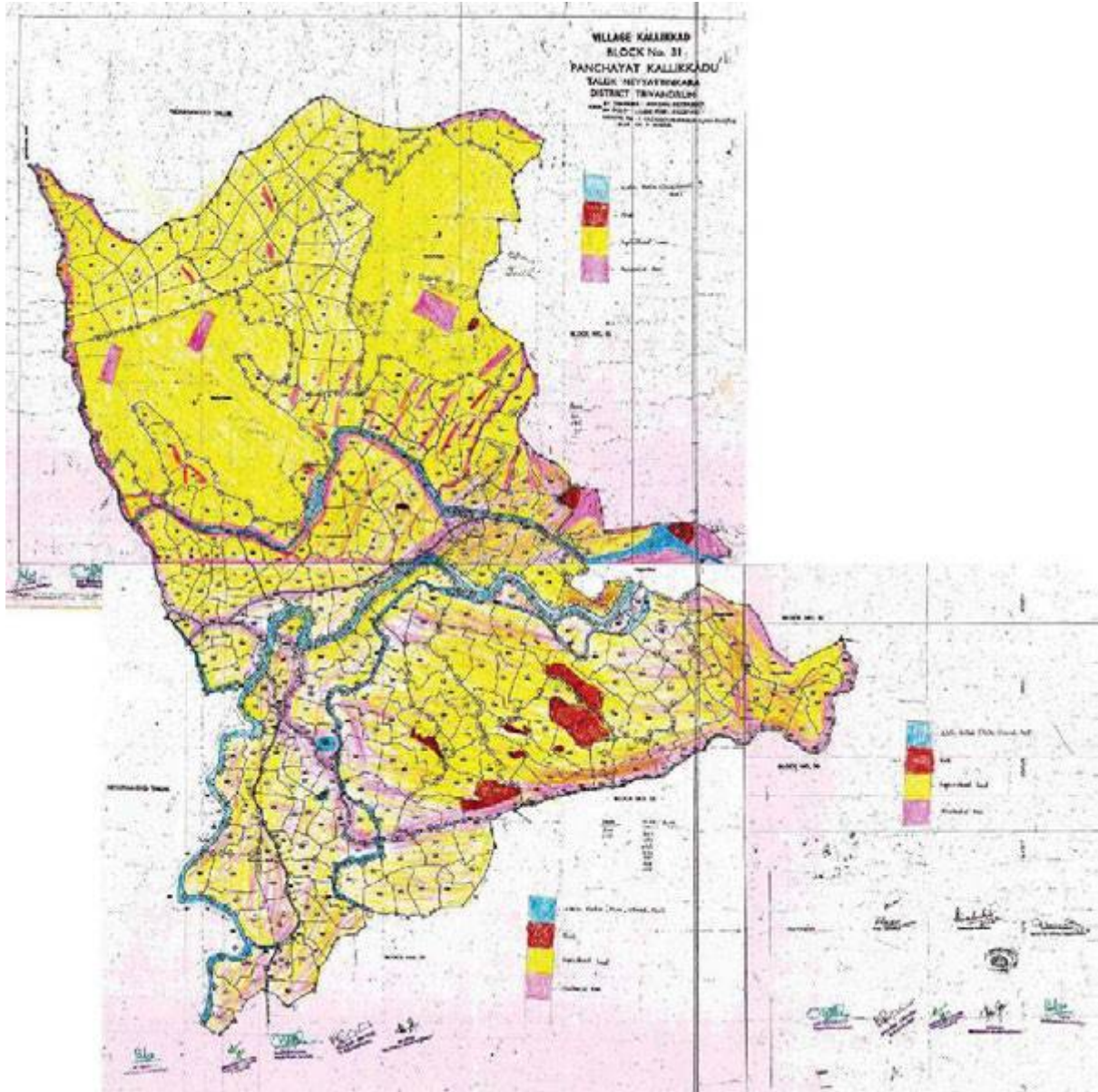
CADASTRAL SCALE ESA VILLAGES

Amboori Village, Neyyattinkara Taluk, Thiruvananthapuram District, Kerala



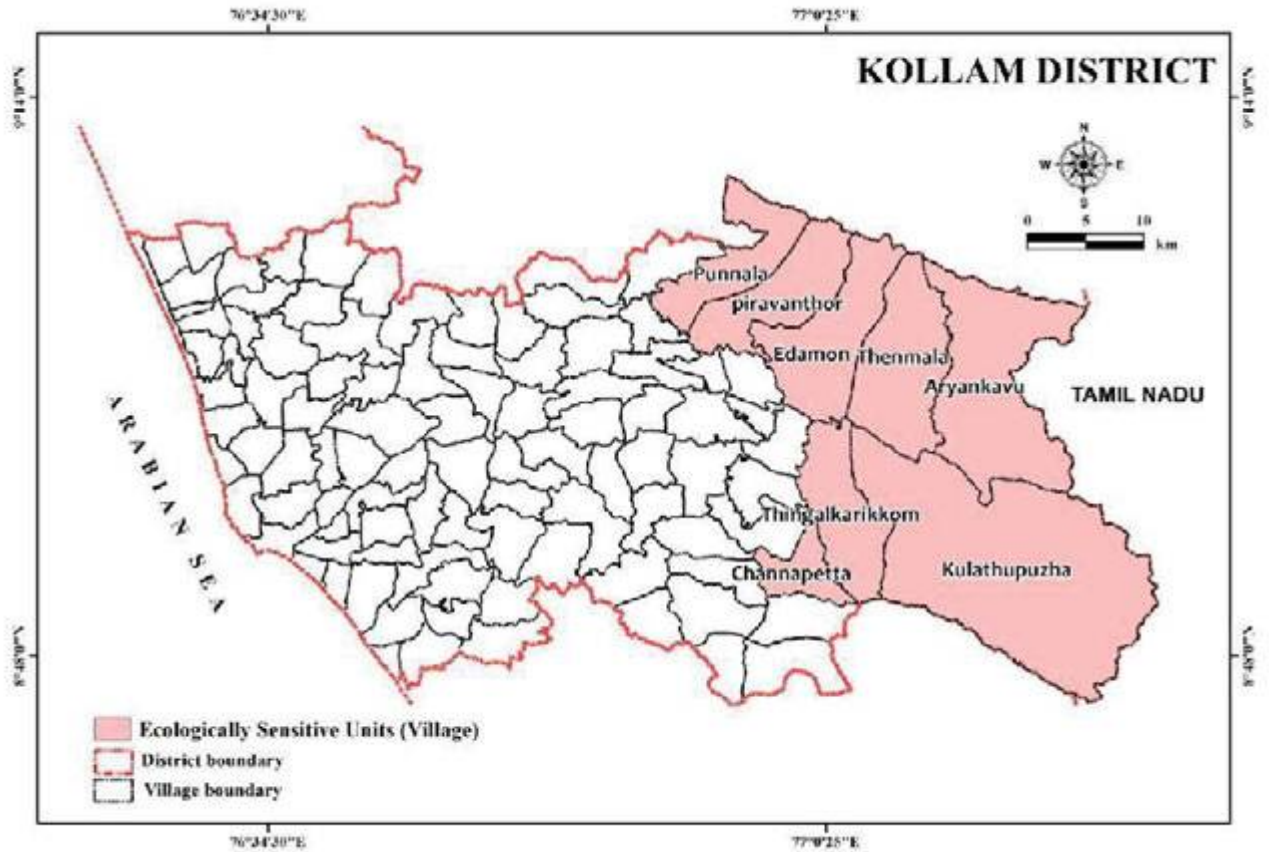
CADASTRAL SCALE ESA VILLAGES

Kallikkad Village, Nayyattinkara Taluk, Thiruvananthapuram District, Kerala



CADASTRAL SCALE ESA VILLAGES

Kollam District, Kerala

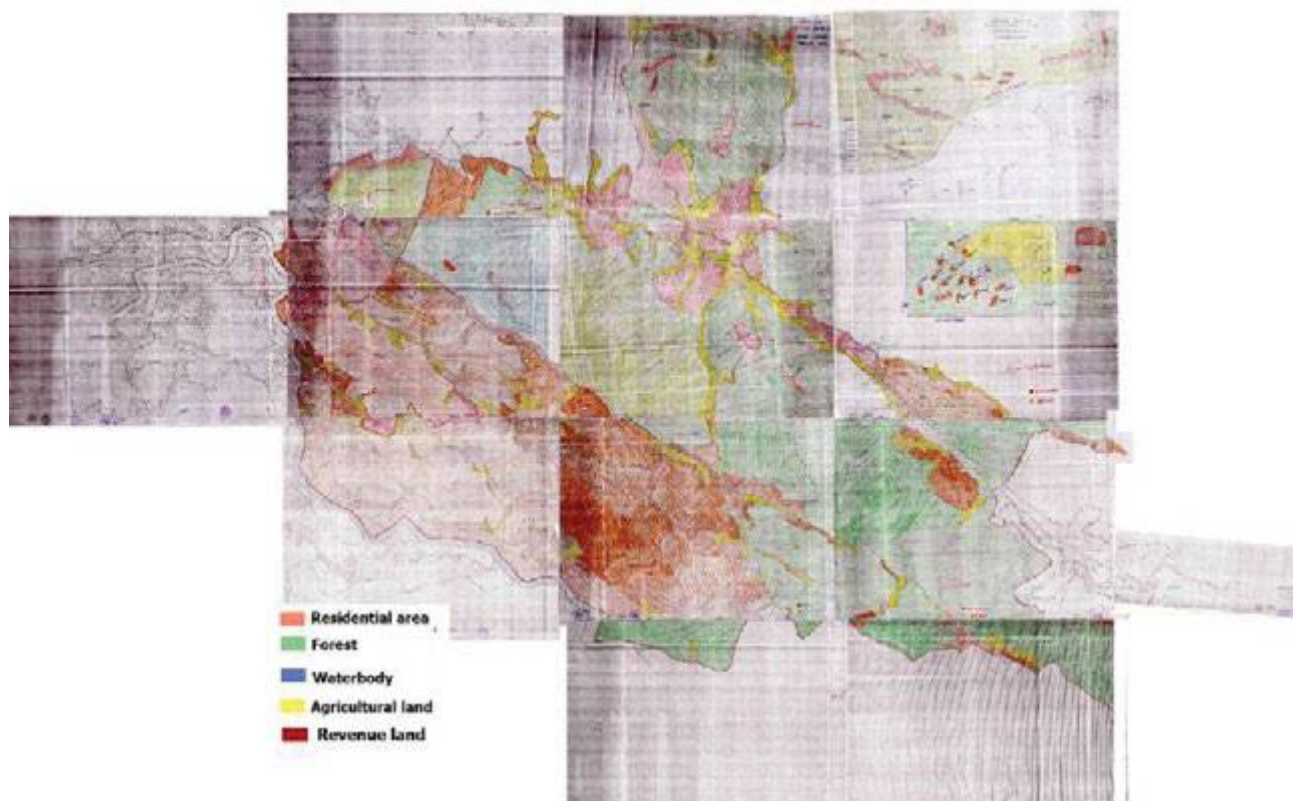


No. of ESA Villages – 8

No. of Taluk – 1

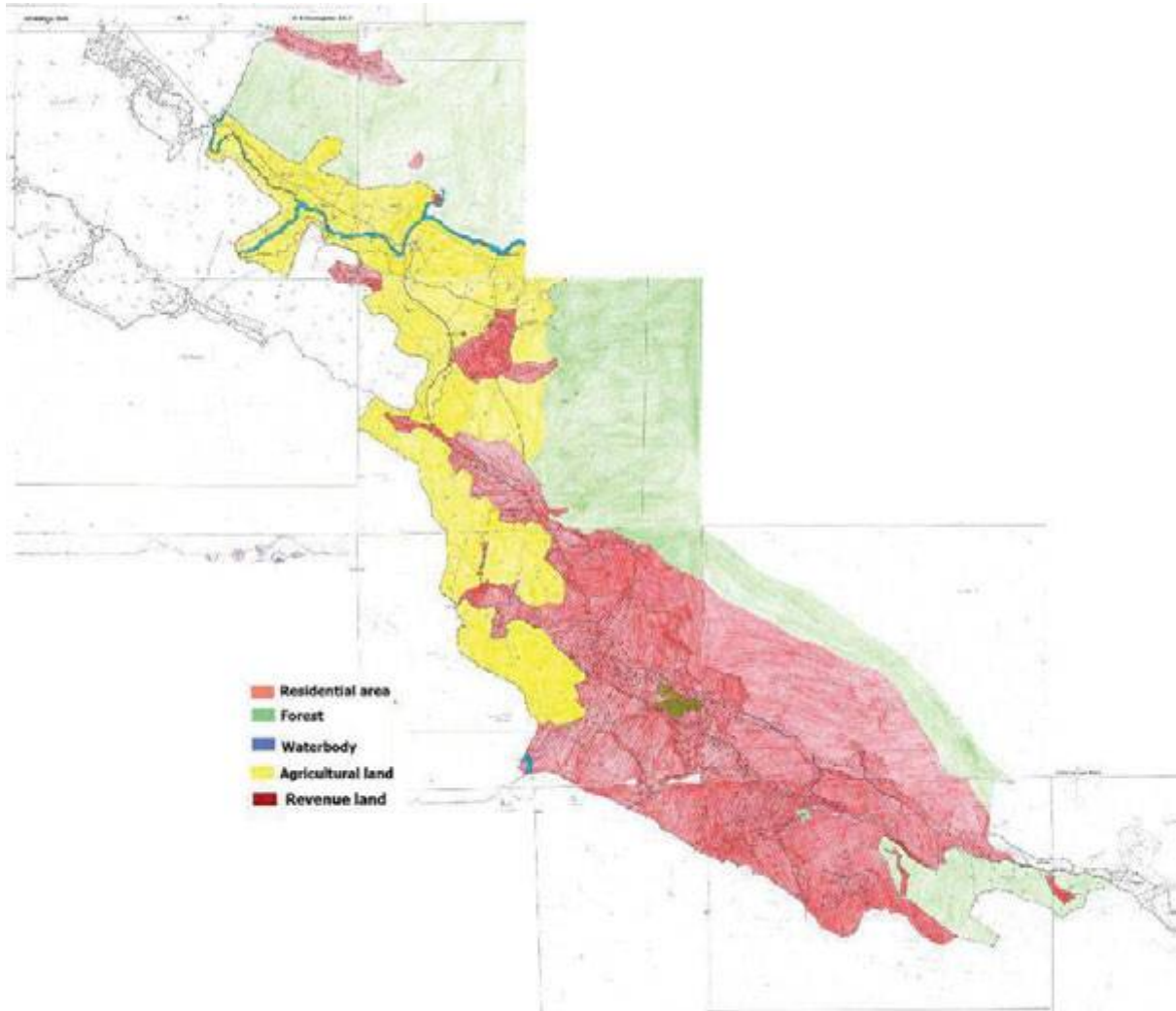
CADASTRAL SCALE ESA VILLAGES

Punnala and Piravanthoor Villages, Pathanapuram Taluk, Kollam District, Kerala



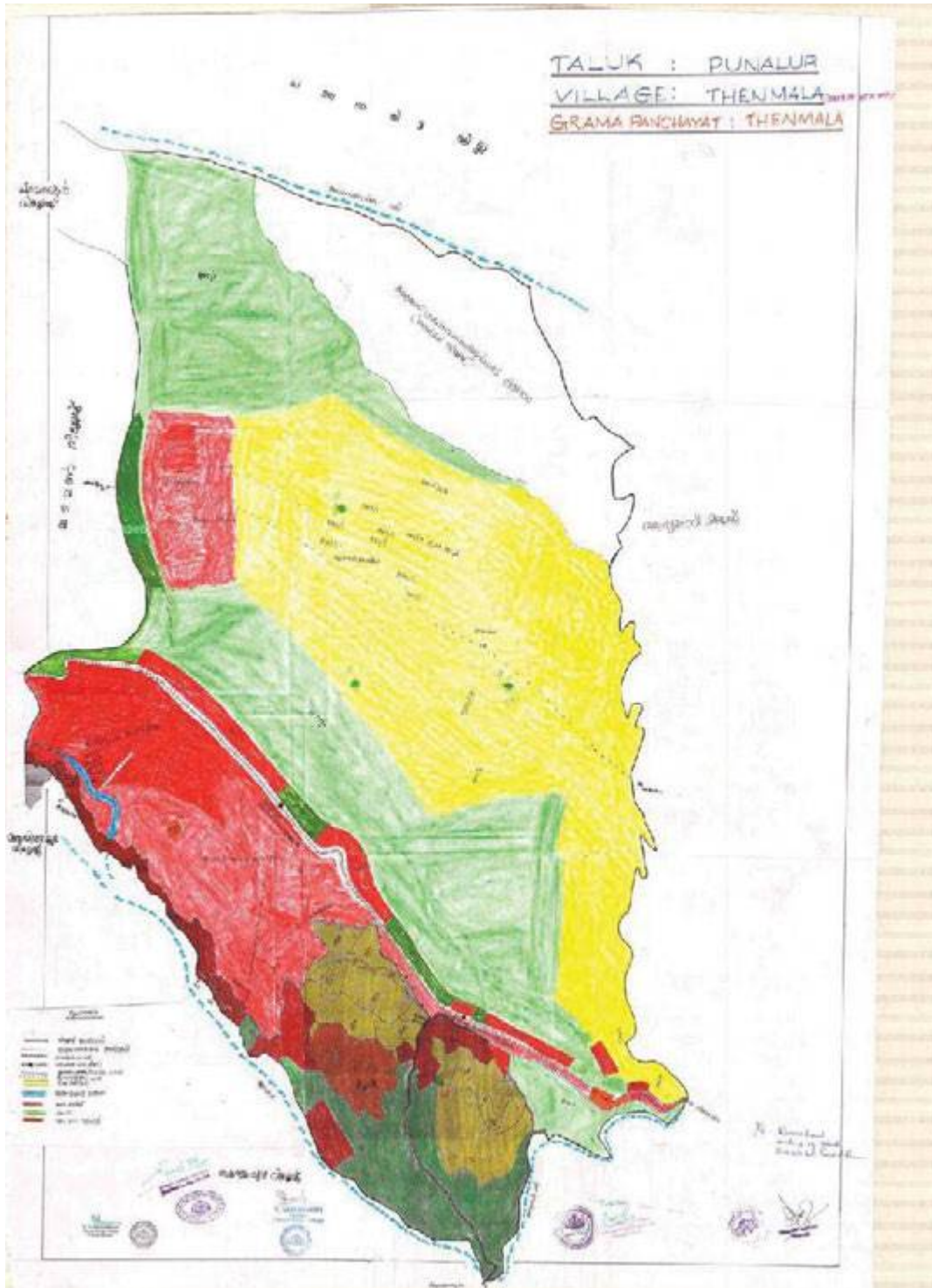
CADASTRAL SCALE ESA VILLAGES

Edamon Village, Pathanapuram Taluk, Kollam District, Kerala



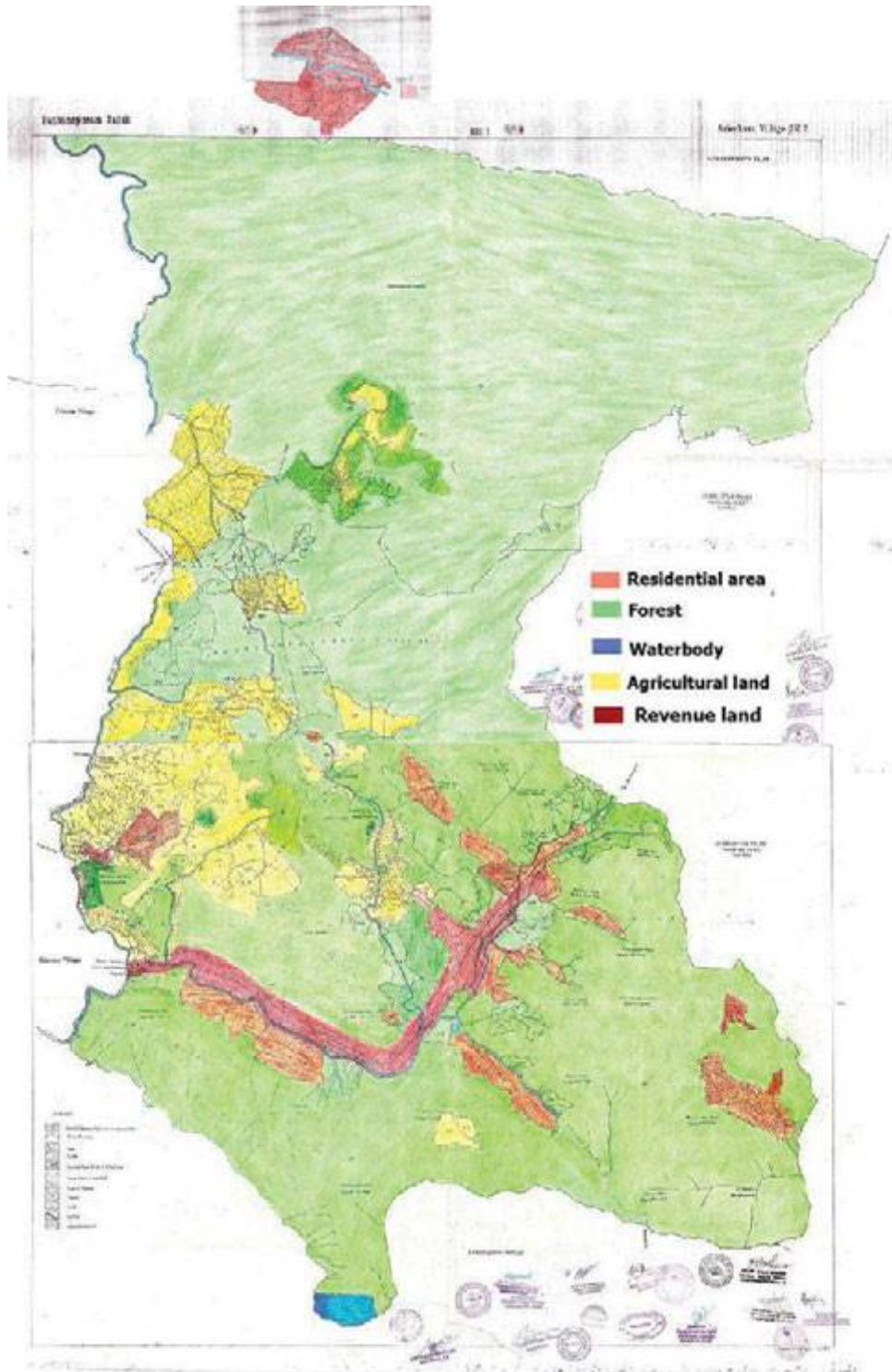
CADASTRAL SCALE ESA VILLAGES

Thenmala Village, Pathanapuram Taluk, Kollam District, Kerala



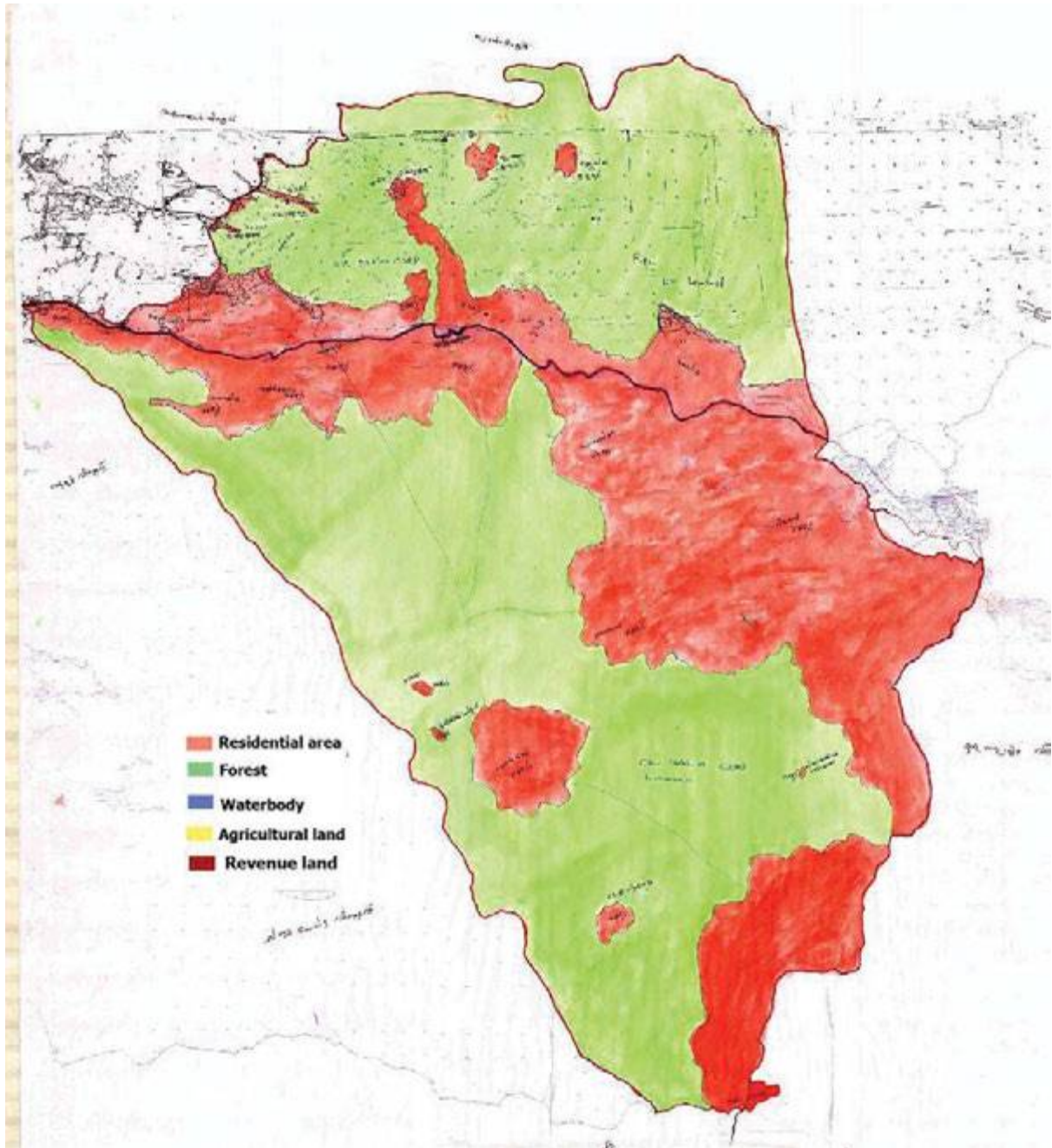
CADASTRAL SCALE ESA VILLAGES

Aryankavu Village, Pathanapuram Taluk, Kollam District, Kerala



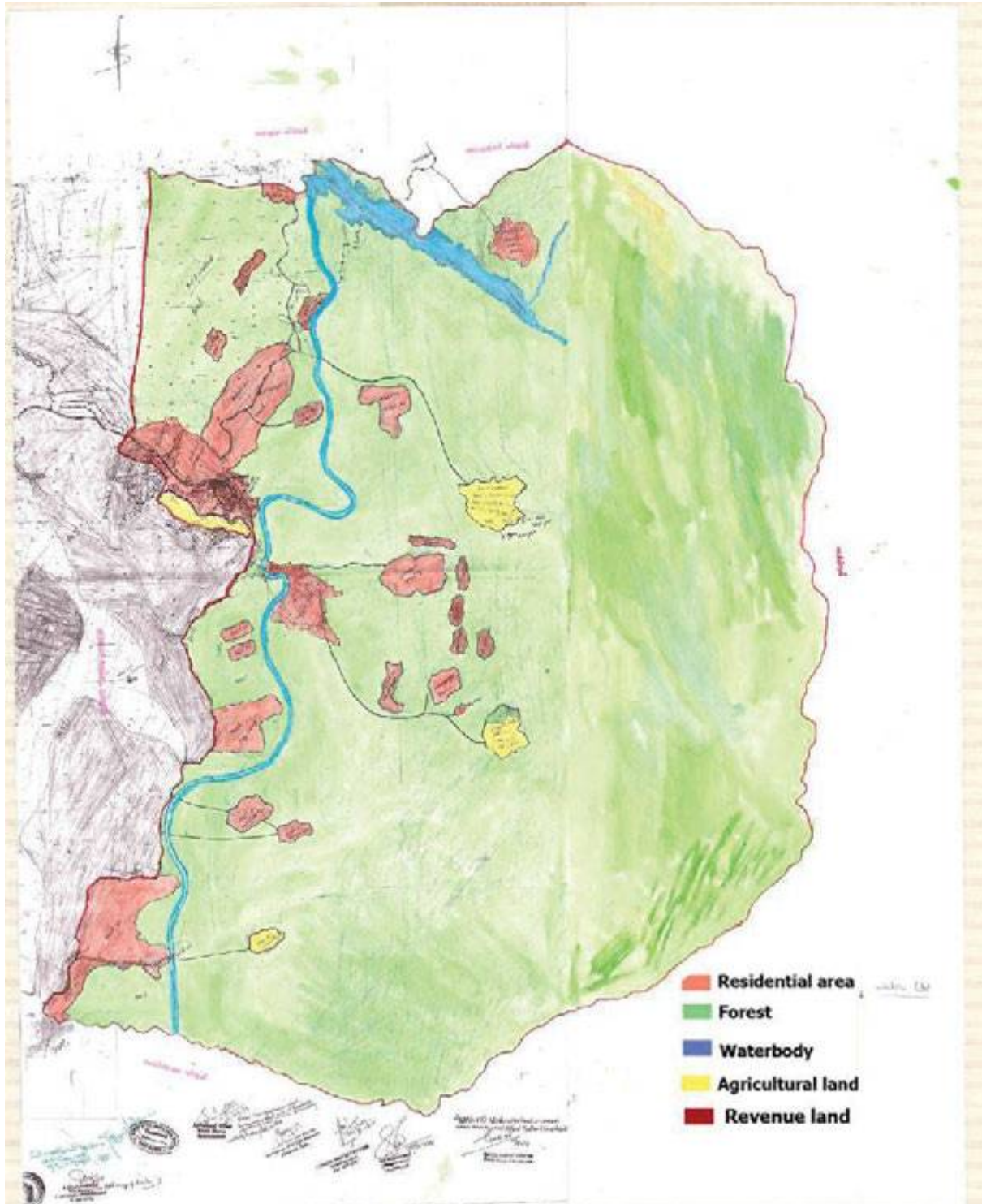
CADASTRAL SCALE ESA VILLAGES

Thingal karikkam Village, Pathanapuram Taluk, Kollam District, Kerala



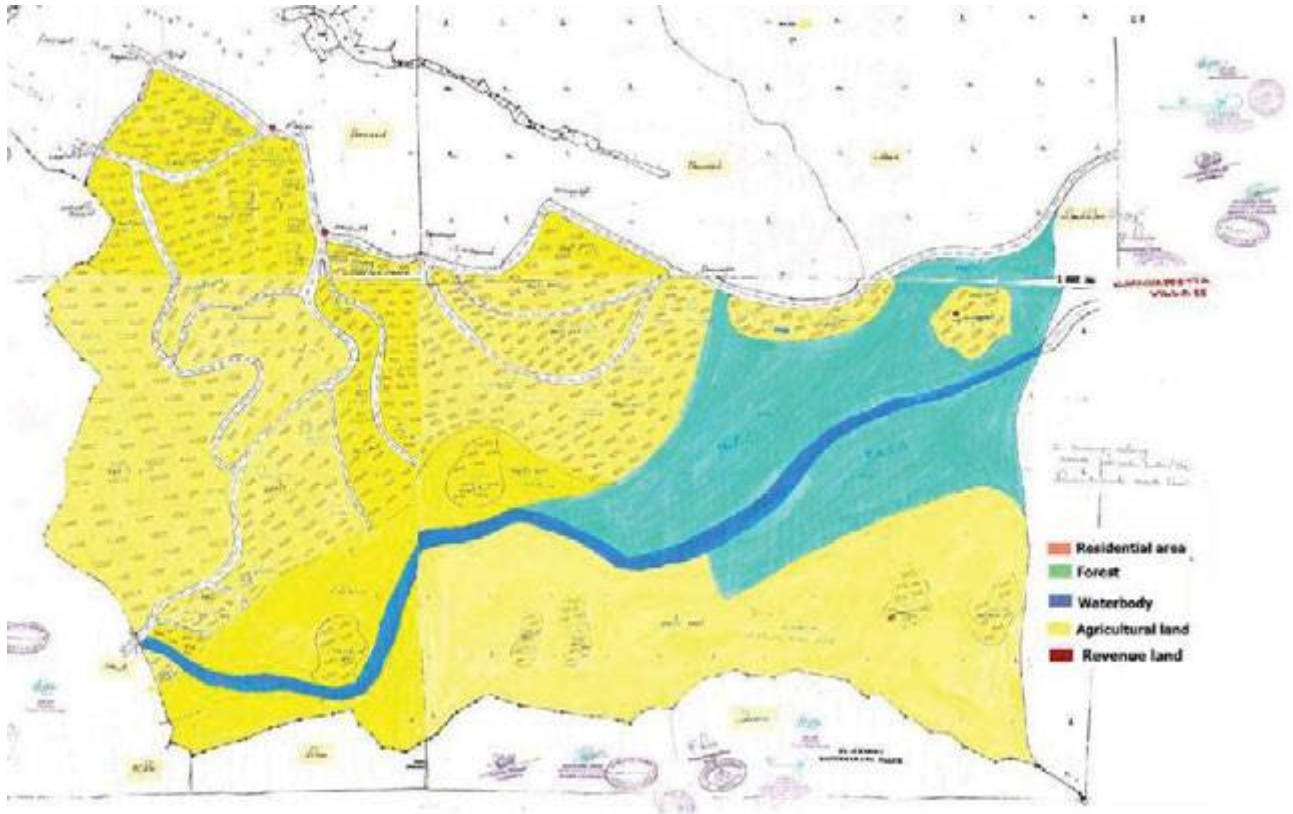
CADASTRAL SCALE ESA VILLAGES

Kulathupuzha Village, Pathanapuram Taluk, Kollam District, Kerala



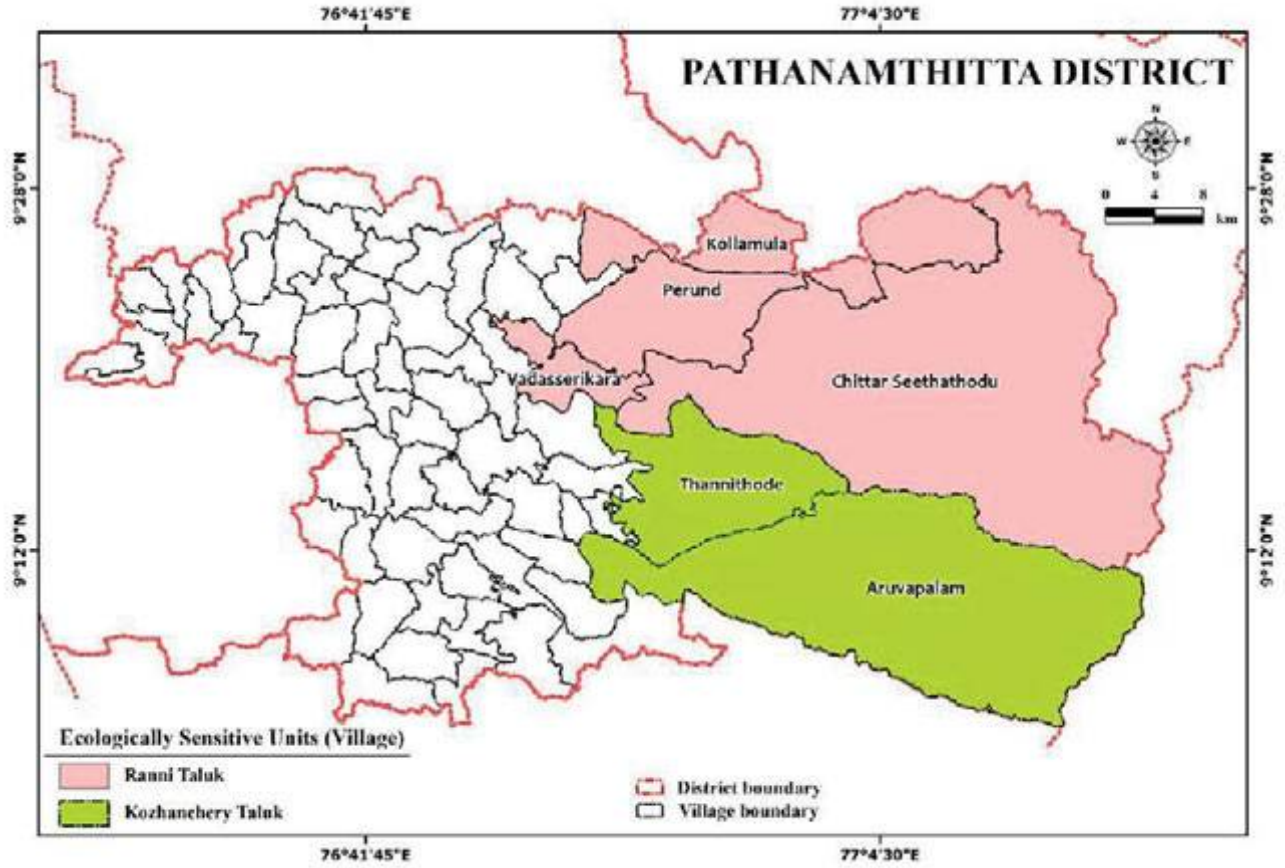
CADASTRAL SCALE ESA VILLAGES

Chennapettah Village, Pathanapuram Taluk, Kollam District, Kerala



CADASTRAL SCALE ESA VILLAGES

Pathanamthitta District, Kerala

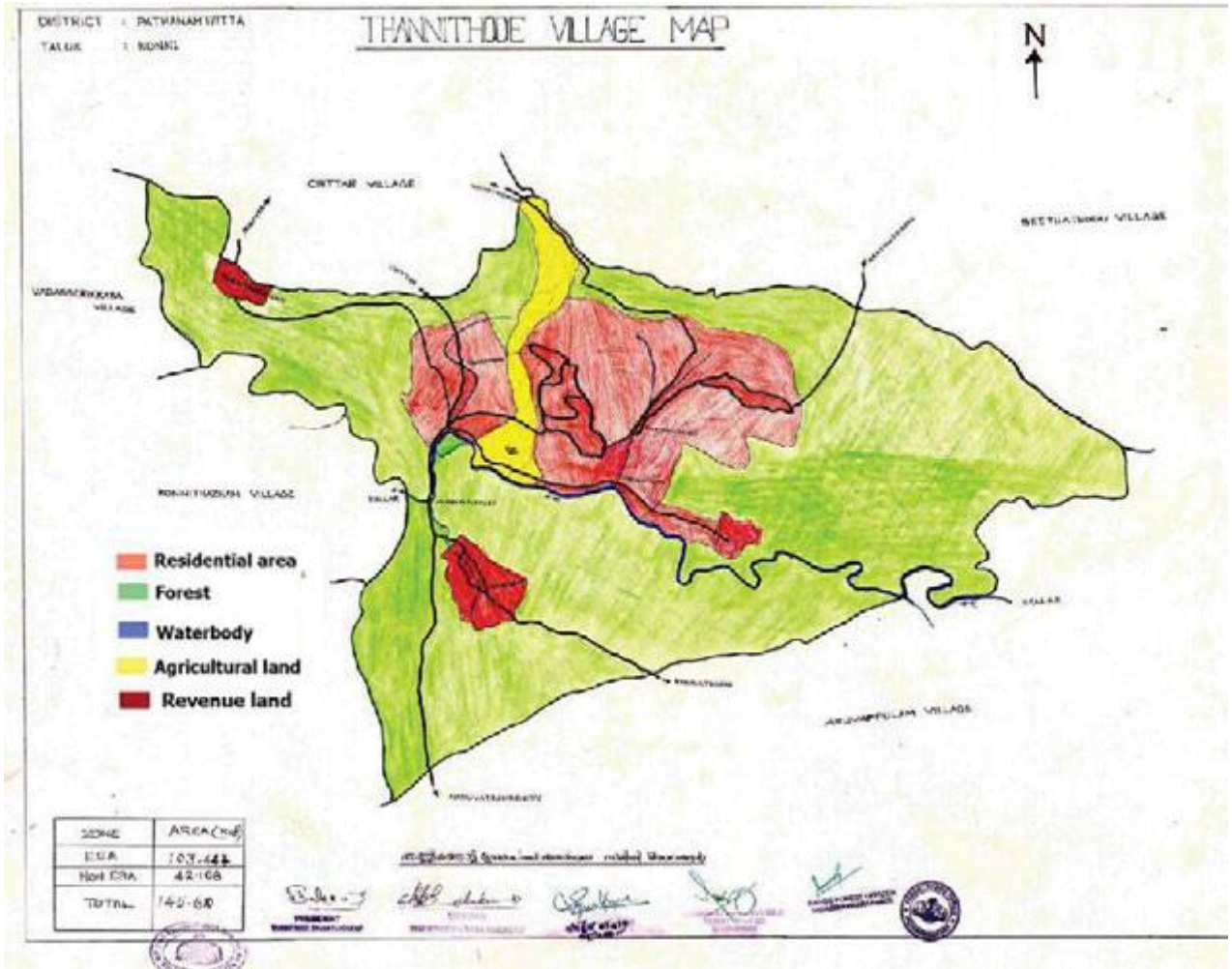


No. of ESA Villages – 6

No. of Taluks – 2

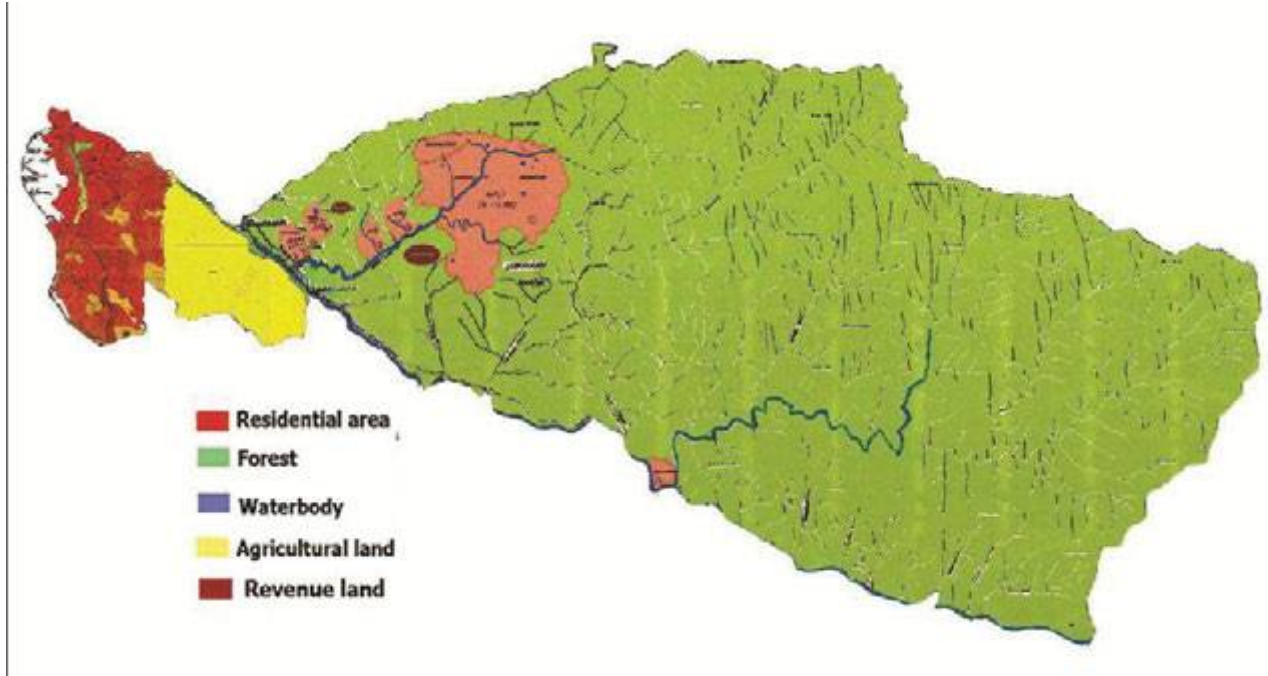
CADASTRAL SCALE ESA VILLAGES

Thannithodu Village, Kozhanchery Taluk, Pathanamthitta District, Kerala



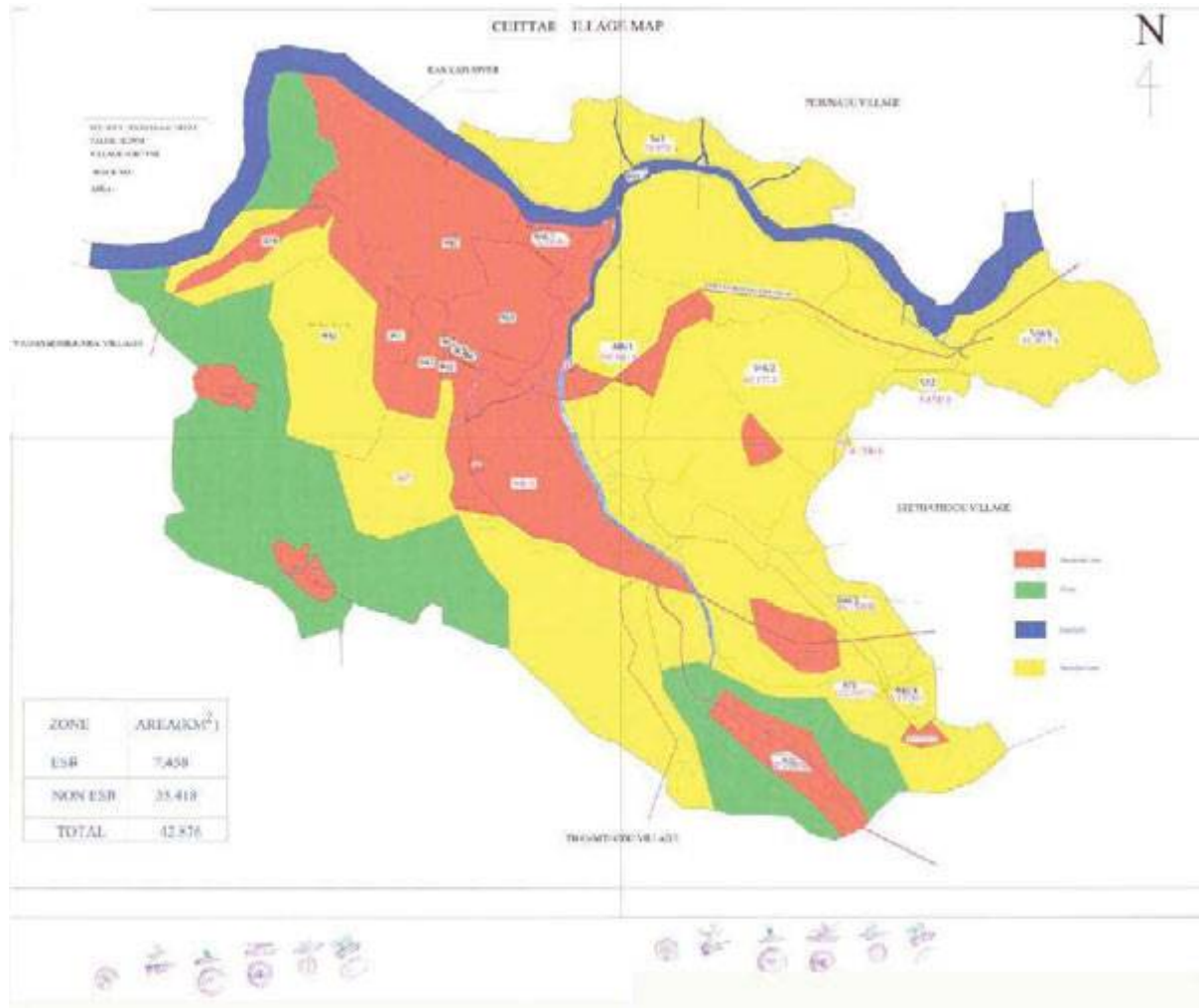
CADASTRAL SCALE ESA VILLAGES

Aruvappalam Village, Kozhanchery Taluk, Pathanamthitta District, Kerala



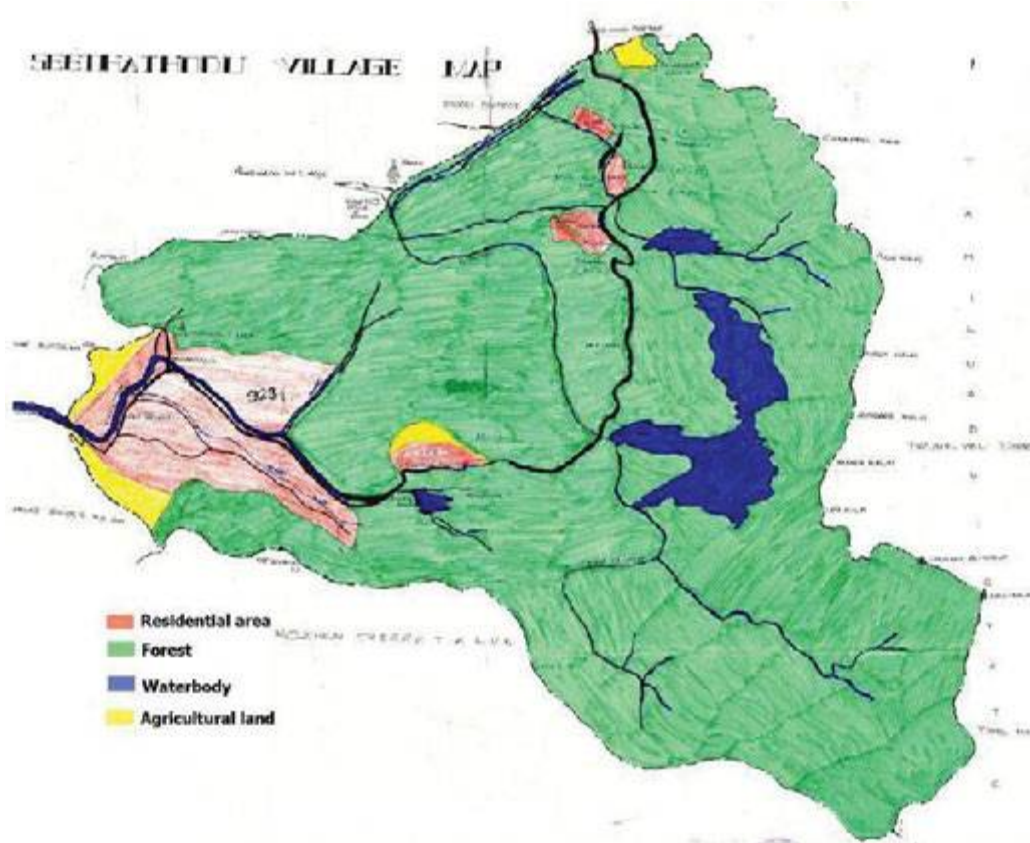
CADASTRAL SCALE ESA VILLAGES

Chittar Village, Ranni Taluk, Pathanamthitta District, Kerala



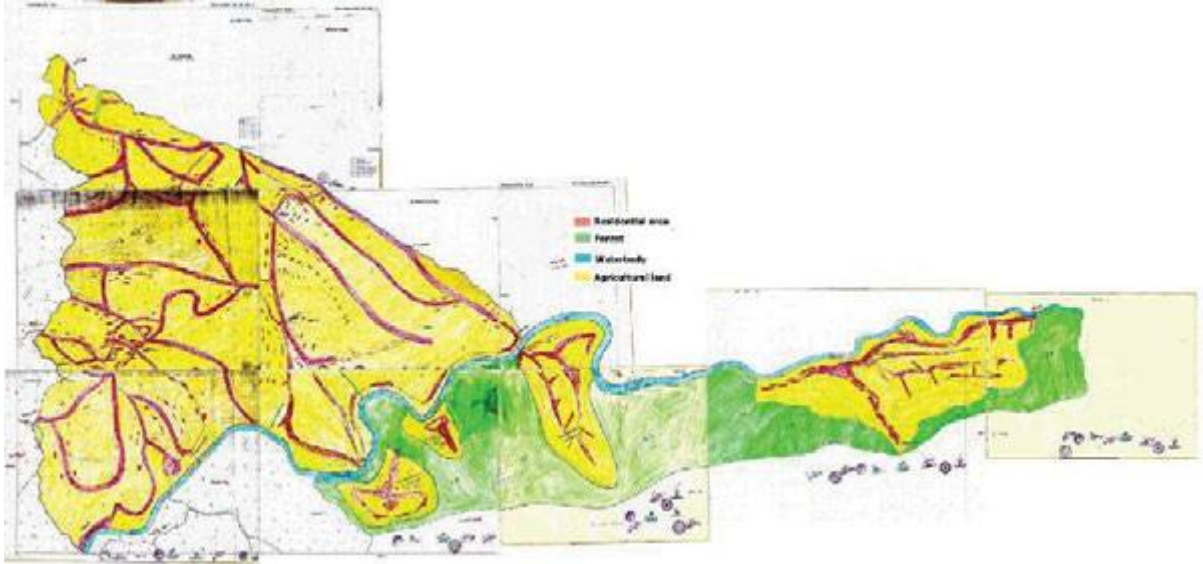
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Seethathodu Village, Ranni Taluk, Pathanamthitta District, Kerala



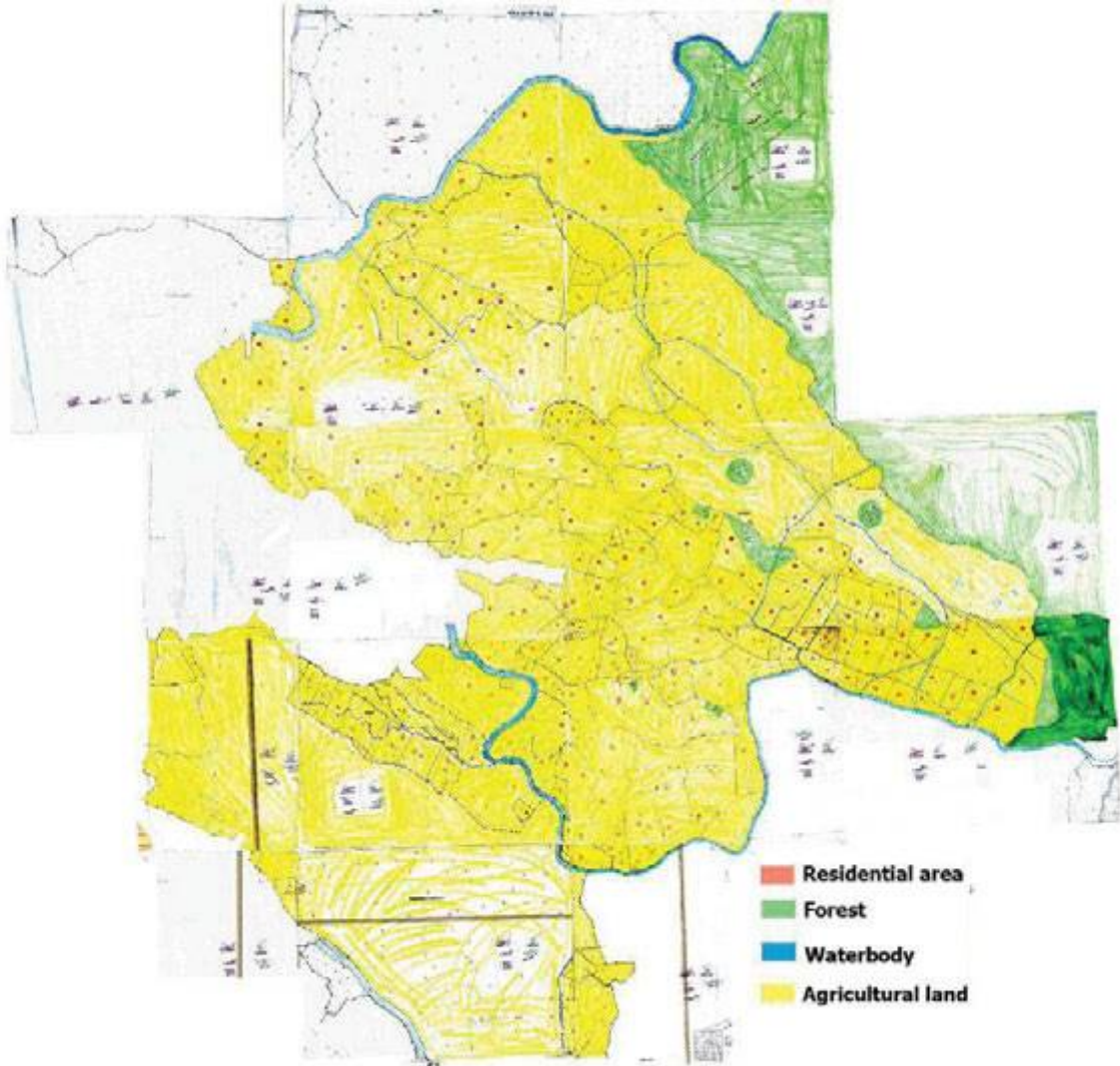
CADASTRAL SCALE ESA VILLAGES

Kollumala Village, Ranni Taluk, Pathanamthitta District, Kerala



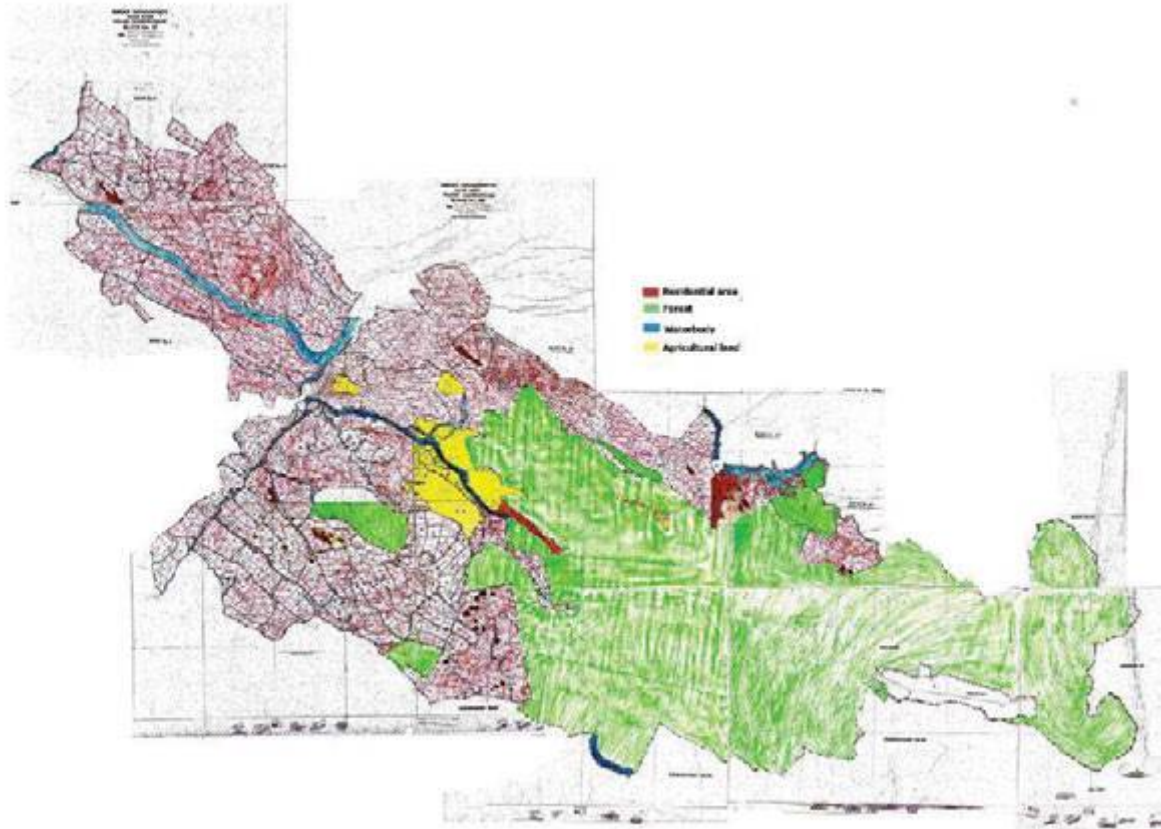
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Perunad Village, Ranni Taluk, Pathanamthitta District, Kerala



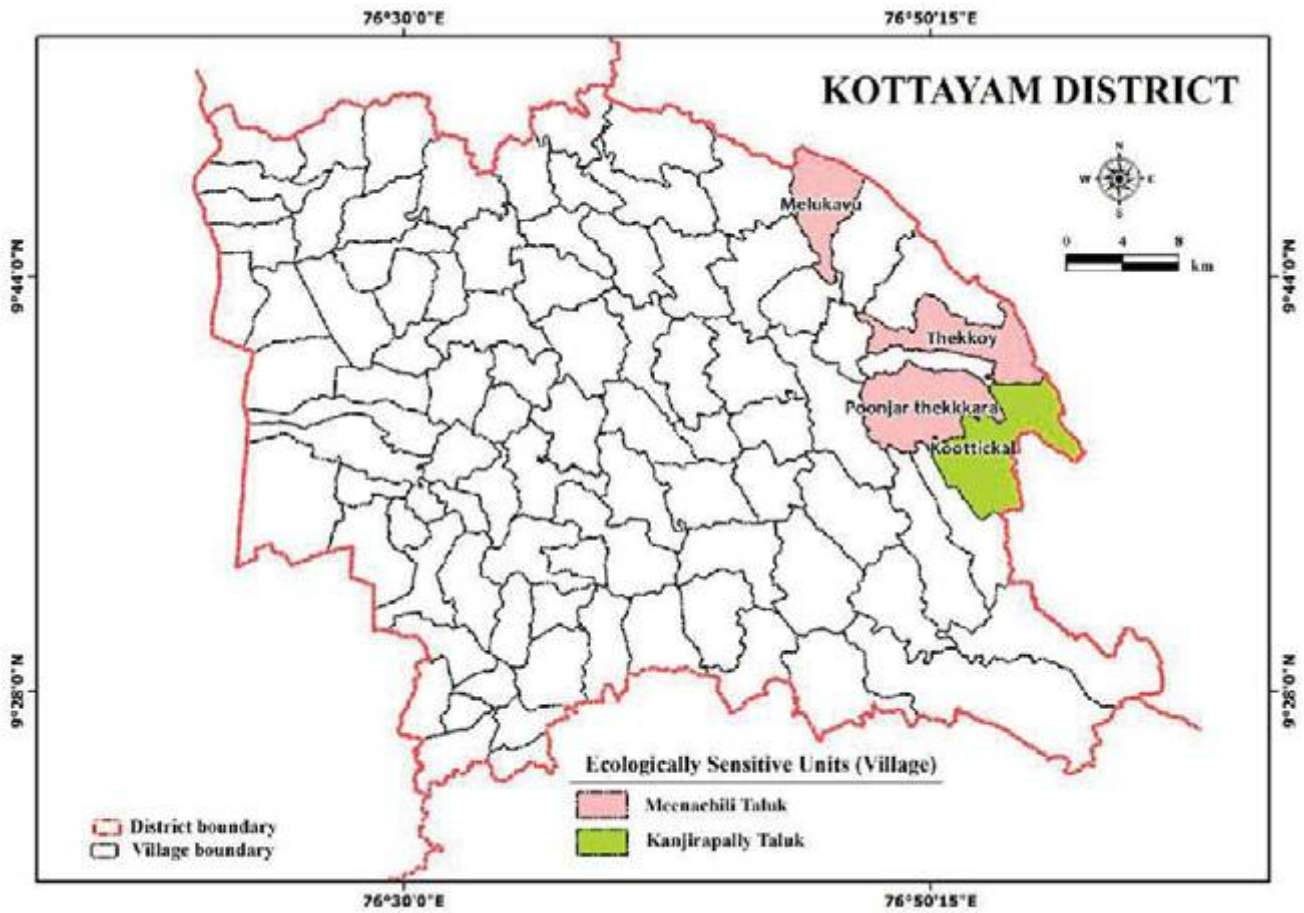
CADASTRAL SCALE ESA VILLAGES

Vadasserikkara Village, Ranni Taluk, Pathanamthitta District, Kerala



CADASTRAL SCALE ESA VILLAGES

Kottayam District

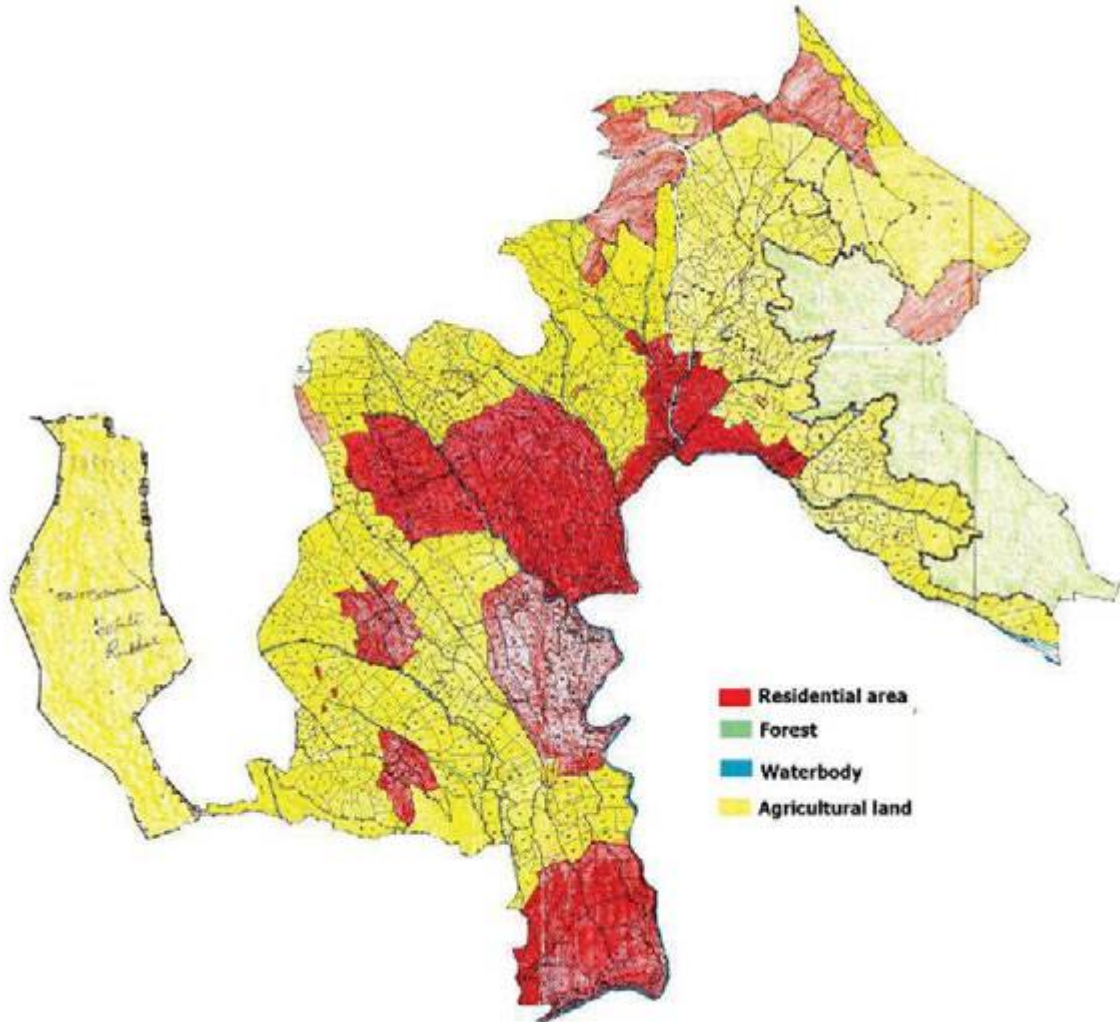


No. of ESA Villages – 4

No. of Taluks – 2

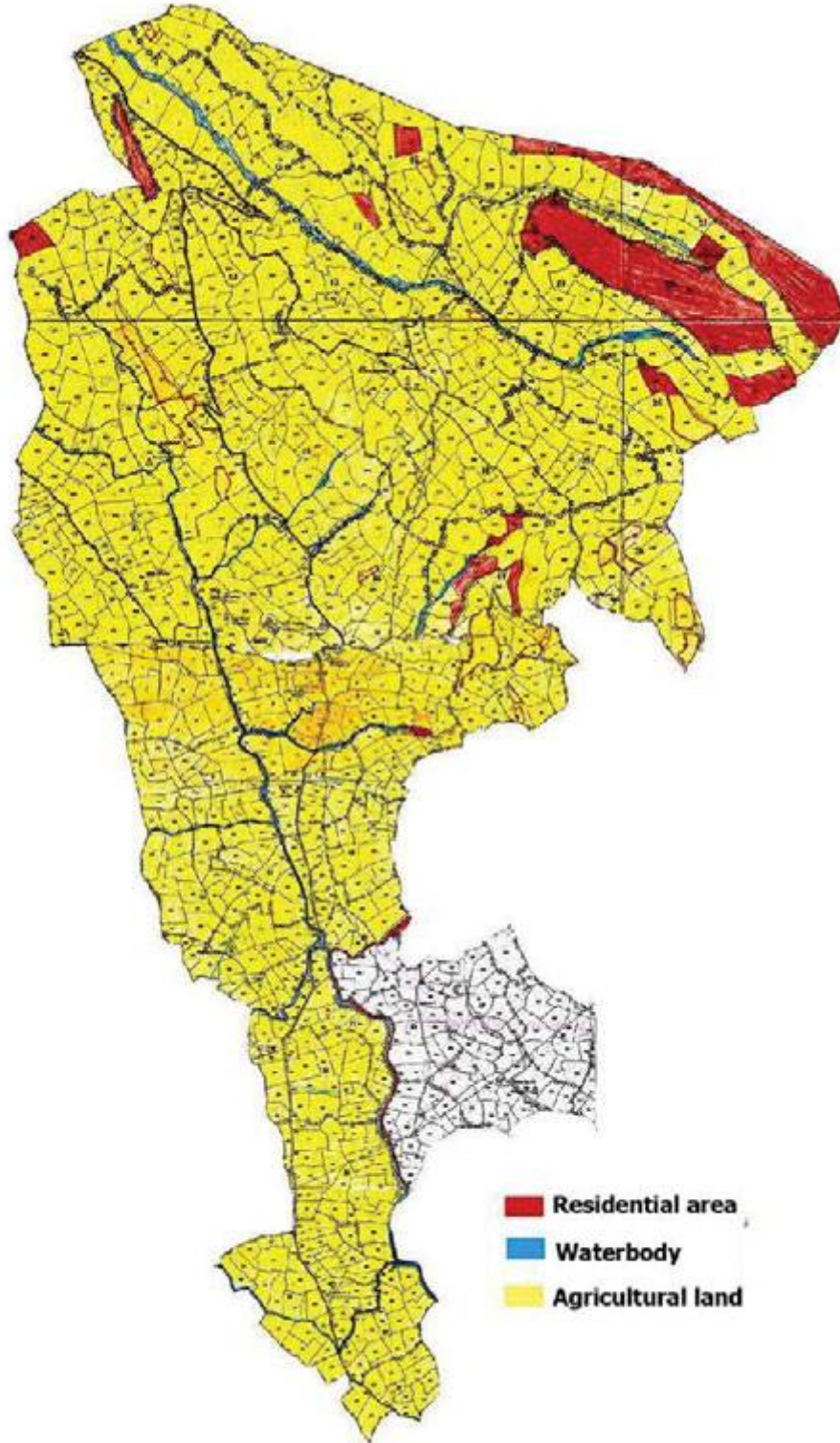
CADASTRAL SCALE ESA VILLAGES

Koottickal Village, Kanjirapally Taluk, Kottayam District, Kerala



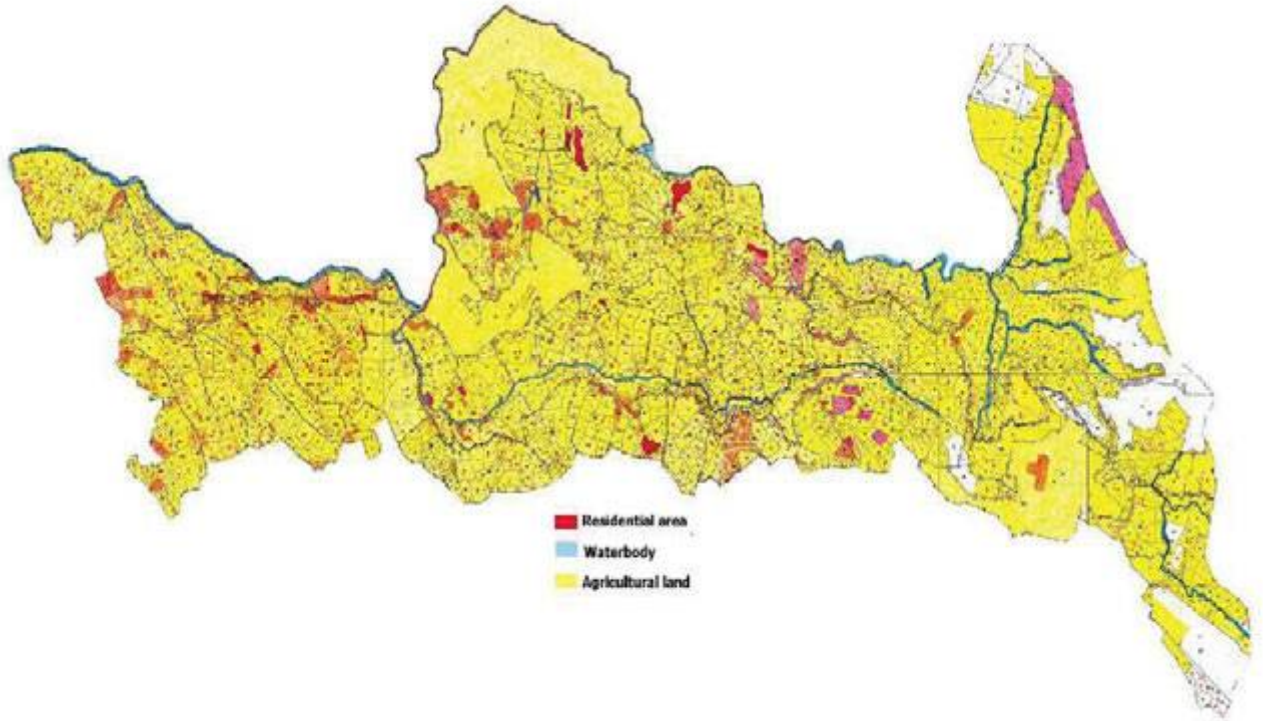
CADASTRAL SCALE ESA VILLAGES

Melukavu Village, Meenachil Taluk, Kottayam District, Kerala



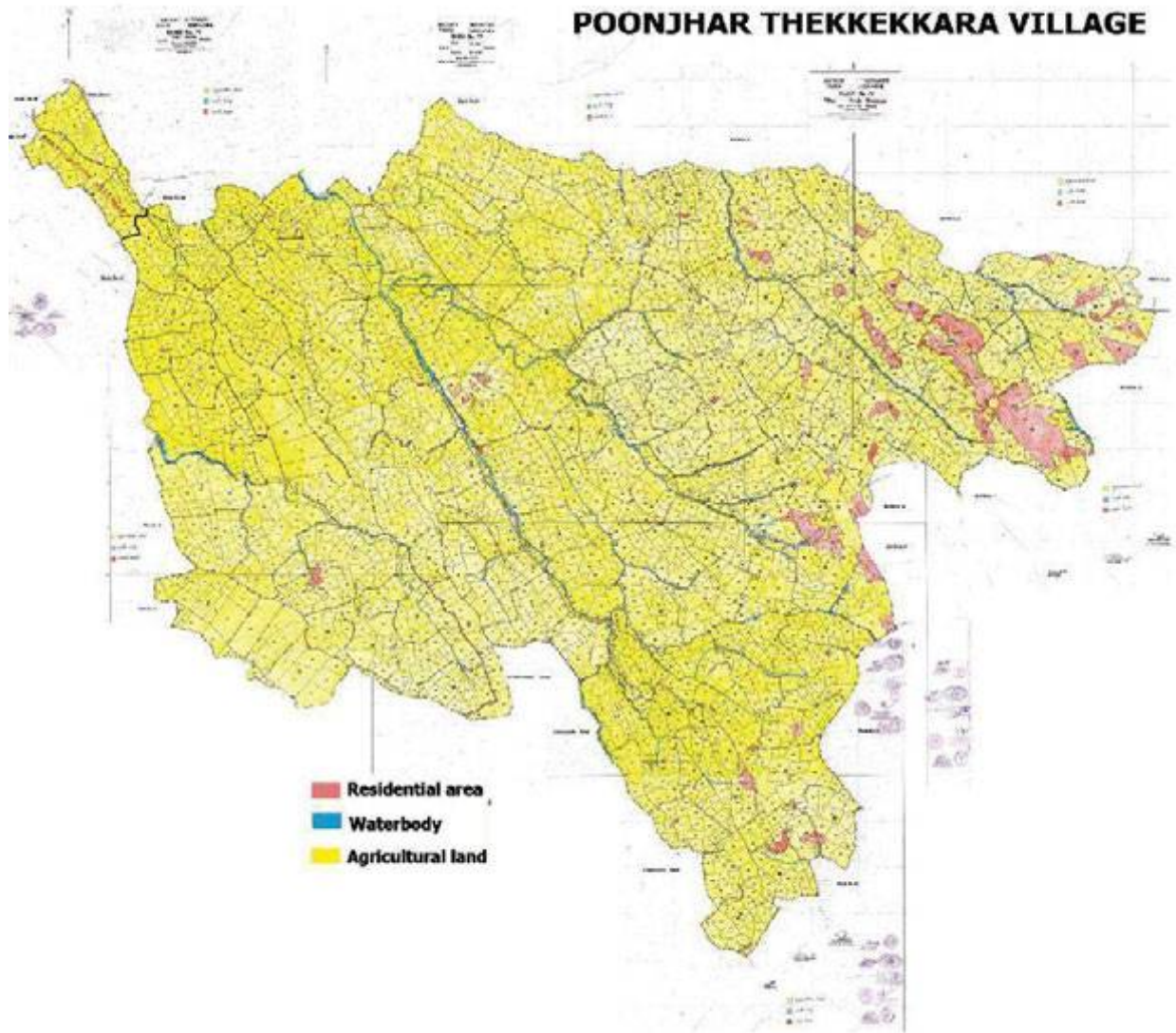
CADASTRAL SCALE ESA VILLAGES

Thekkoy Village, Meenachil Taluk, Kottayam District, Kerala



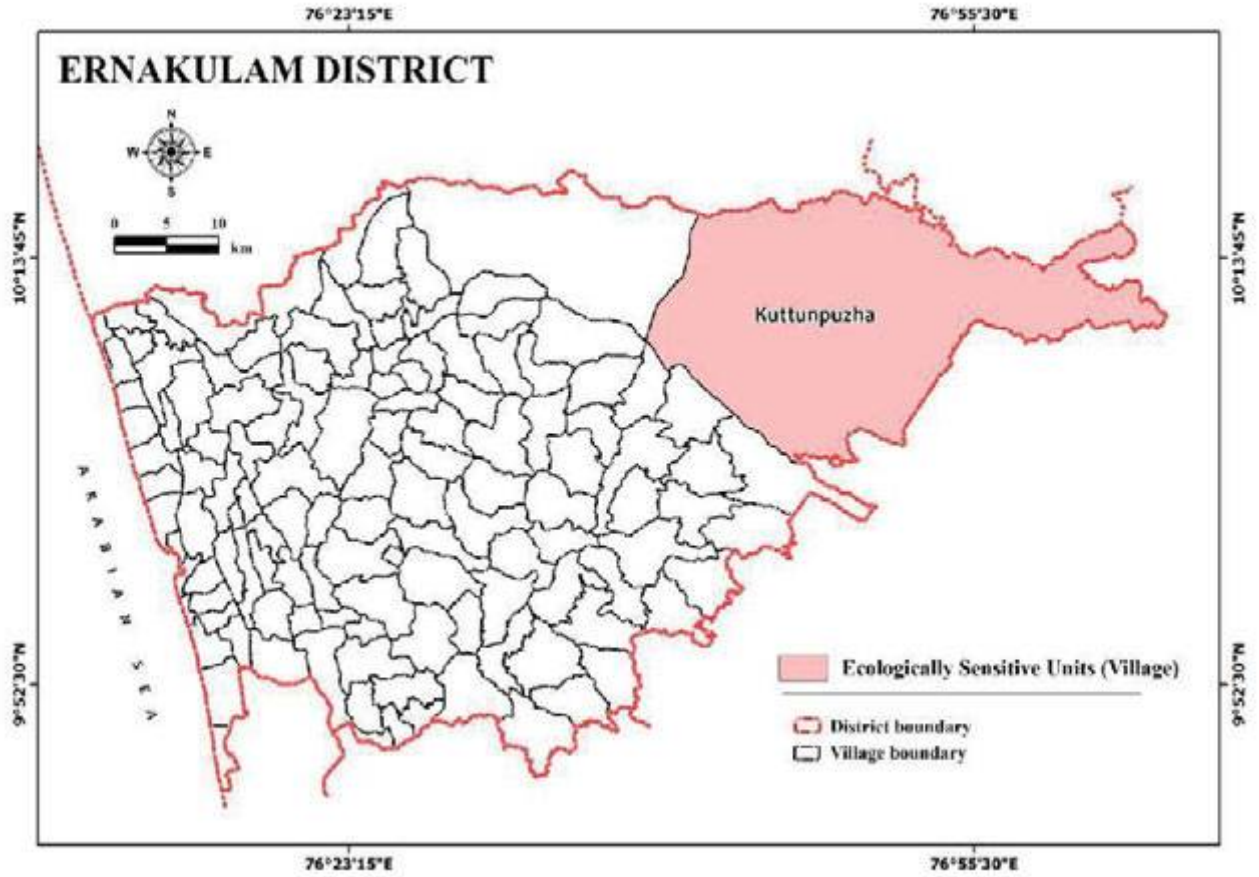
CADASTRAL SCALE ESA VILLAGES

Poonjar Thekkekkara Village, Meenachil Taluk, Kottayam District, Kerala



CADASTRAL SCALE ESA VILLAGES

Ernakulam District, Kerala

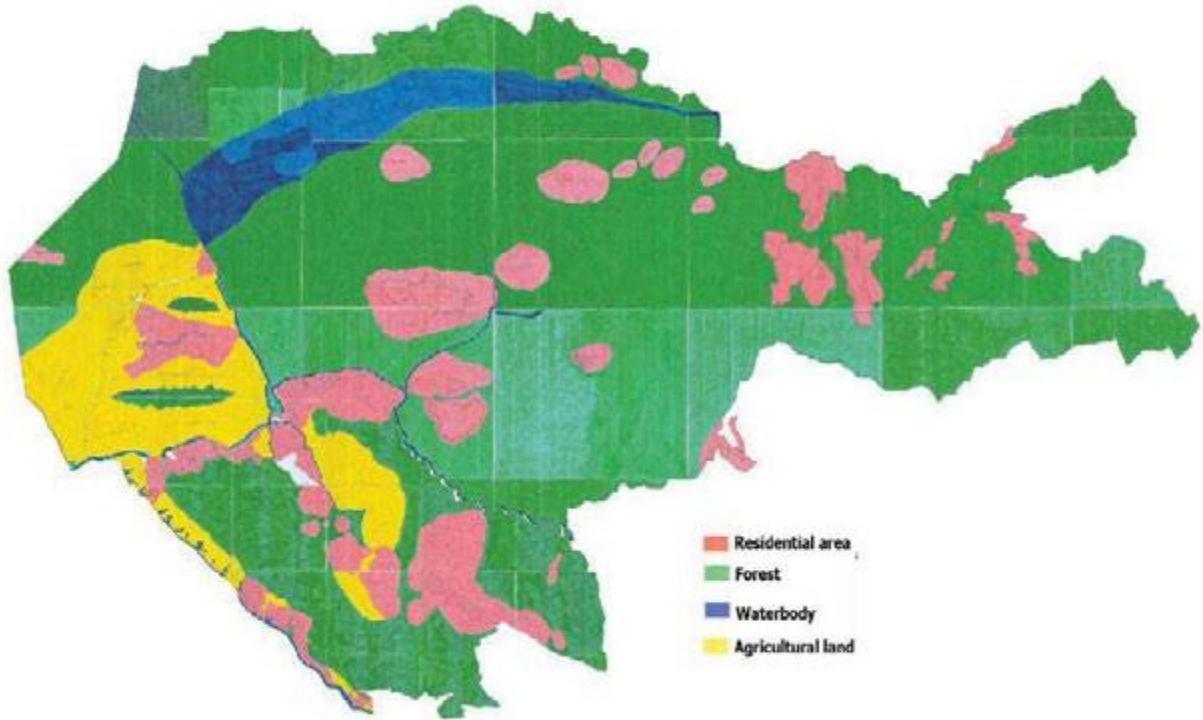


No. of ESA Villages – 1

No. of Taluks – 1

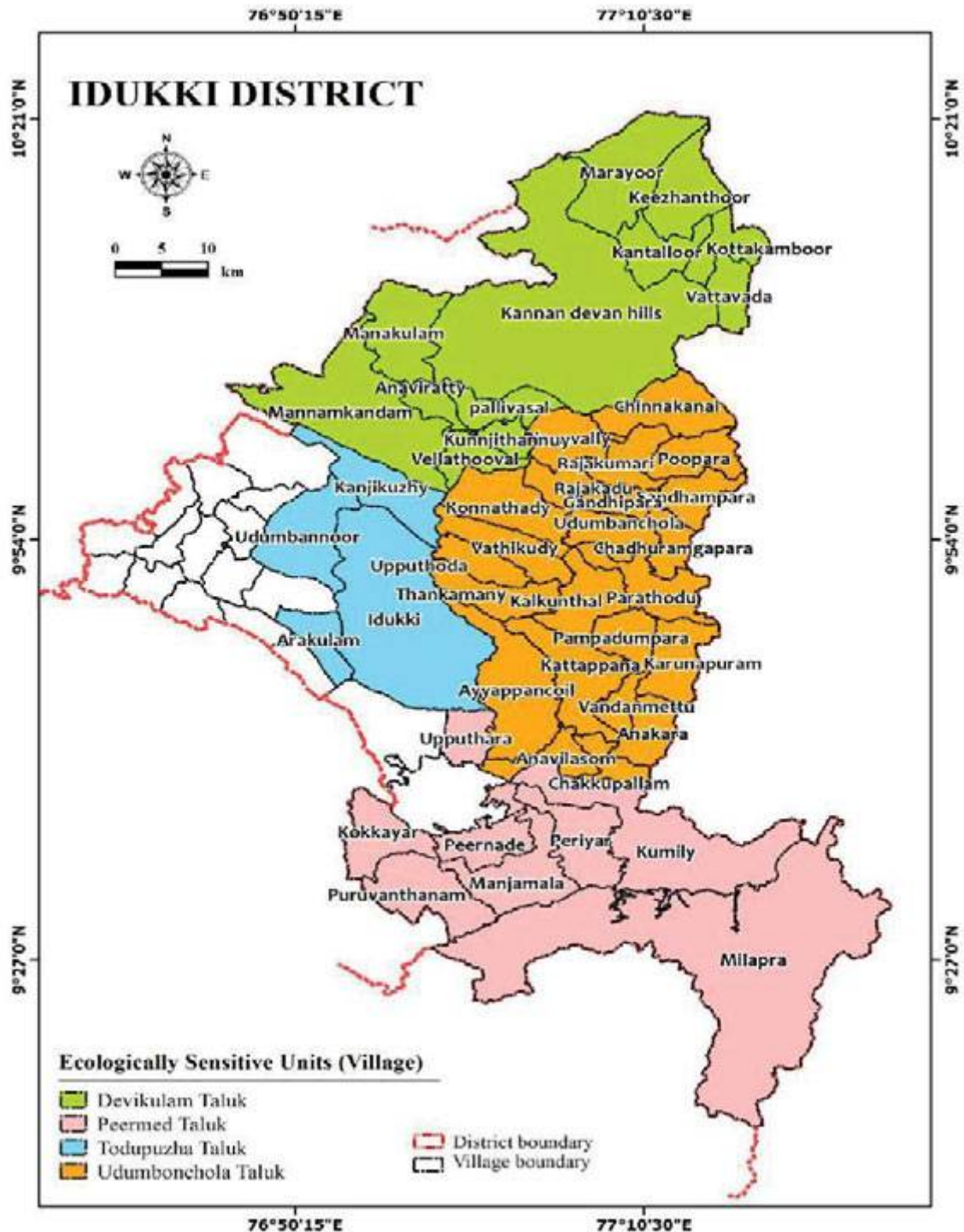
CADASTRAL SCALE ESA VILLAGES

Kuttambuzha Village, Kothamangalam Taluk, Ernakulam District, Kerala



CADASTRAL SCALE ESA VILLAGES

Idukki District, Kerala

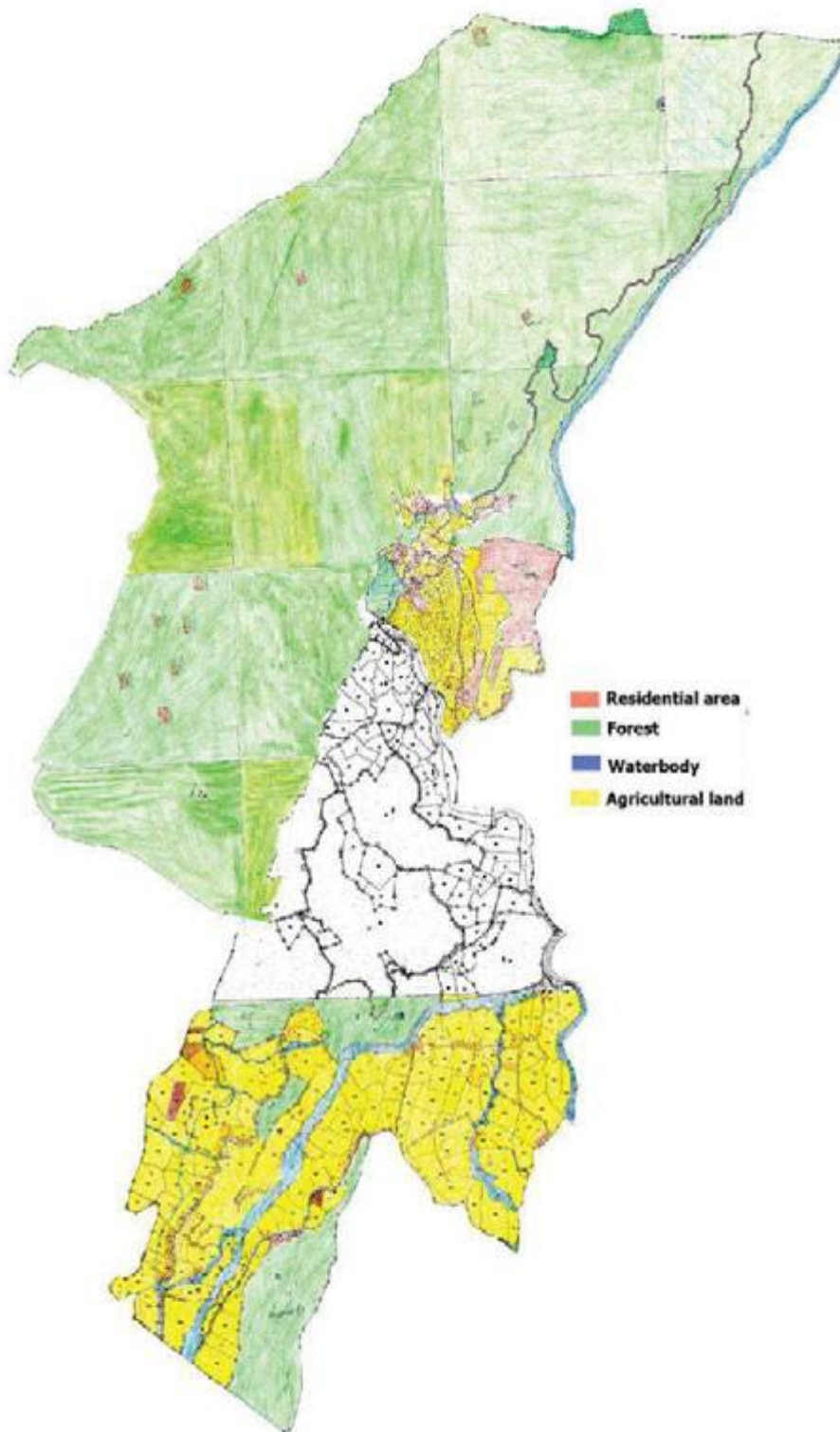


No. of ESA Villages – 47

No. of Taluks – 4

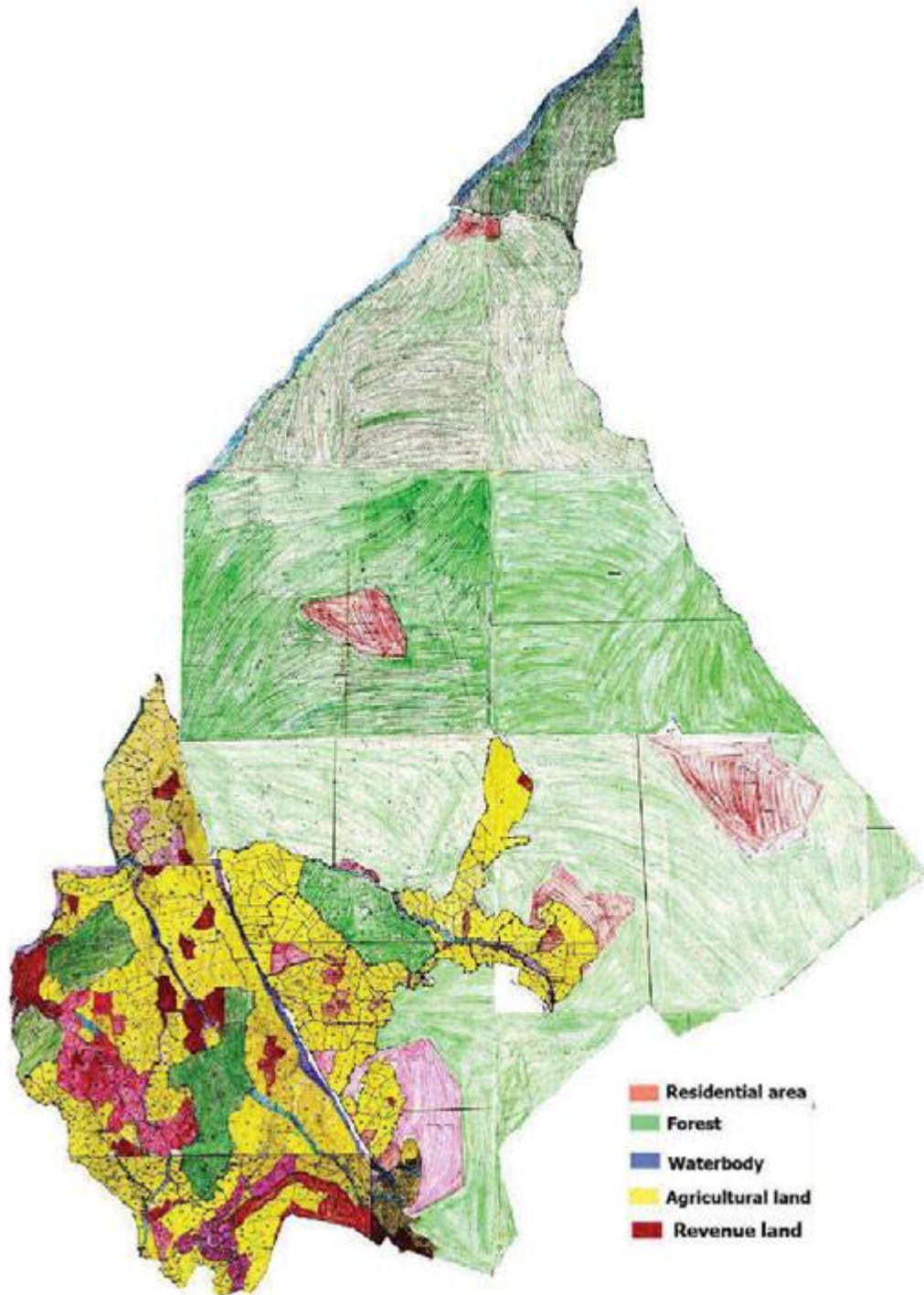
CADASTRAL SCALE ESA VILLAGES

Marayoor Village, Devikulam Taluk, Idukki District



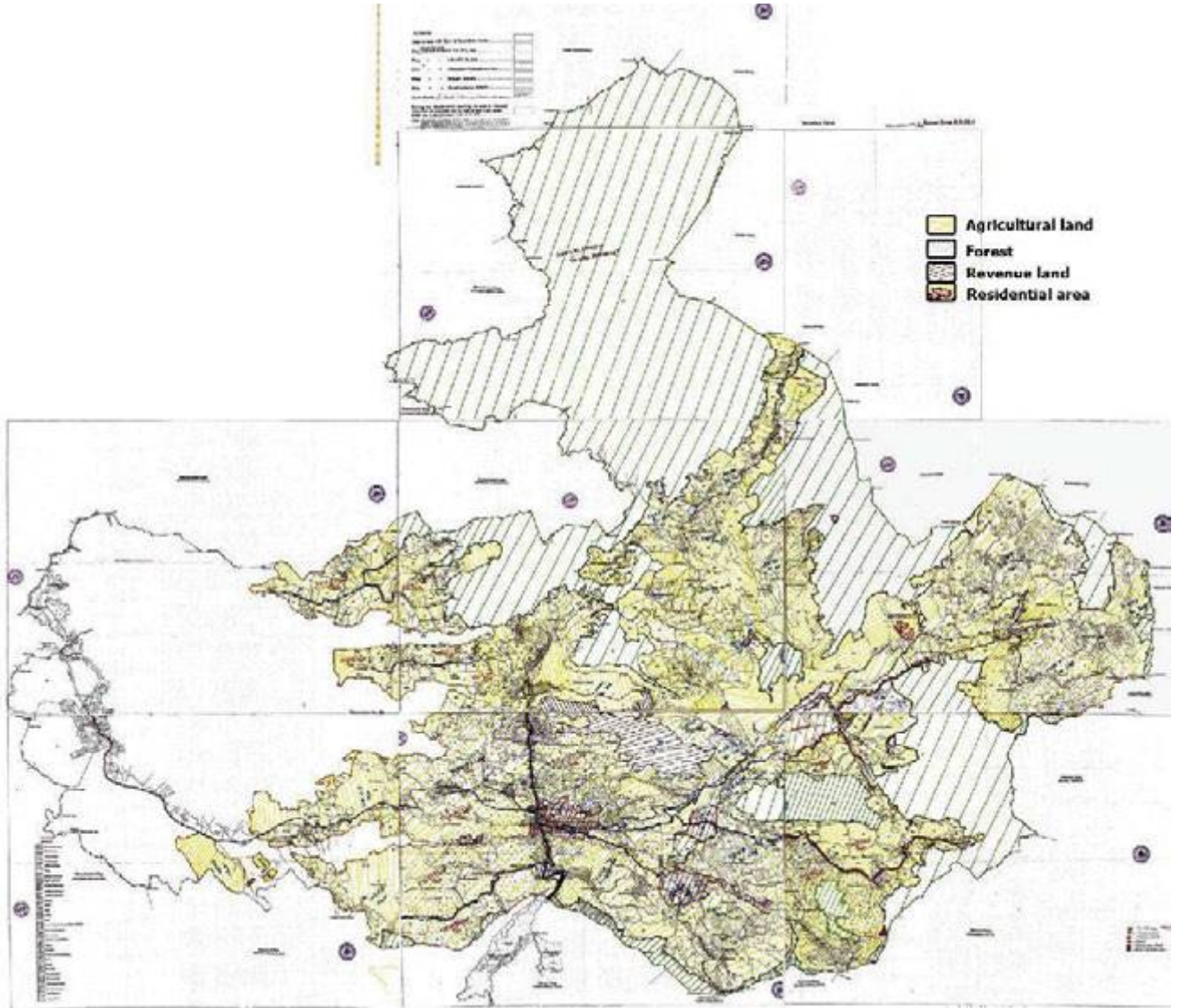
CADASTRAL SCALE ESA VILLAGES

Keezhanthoor Village, Devikulam Taluk, Idukki District



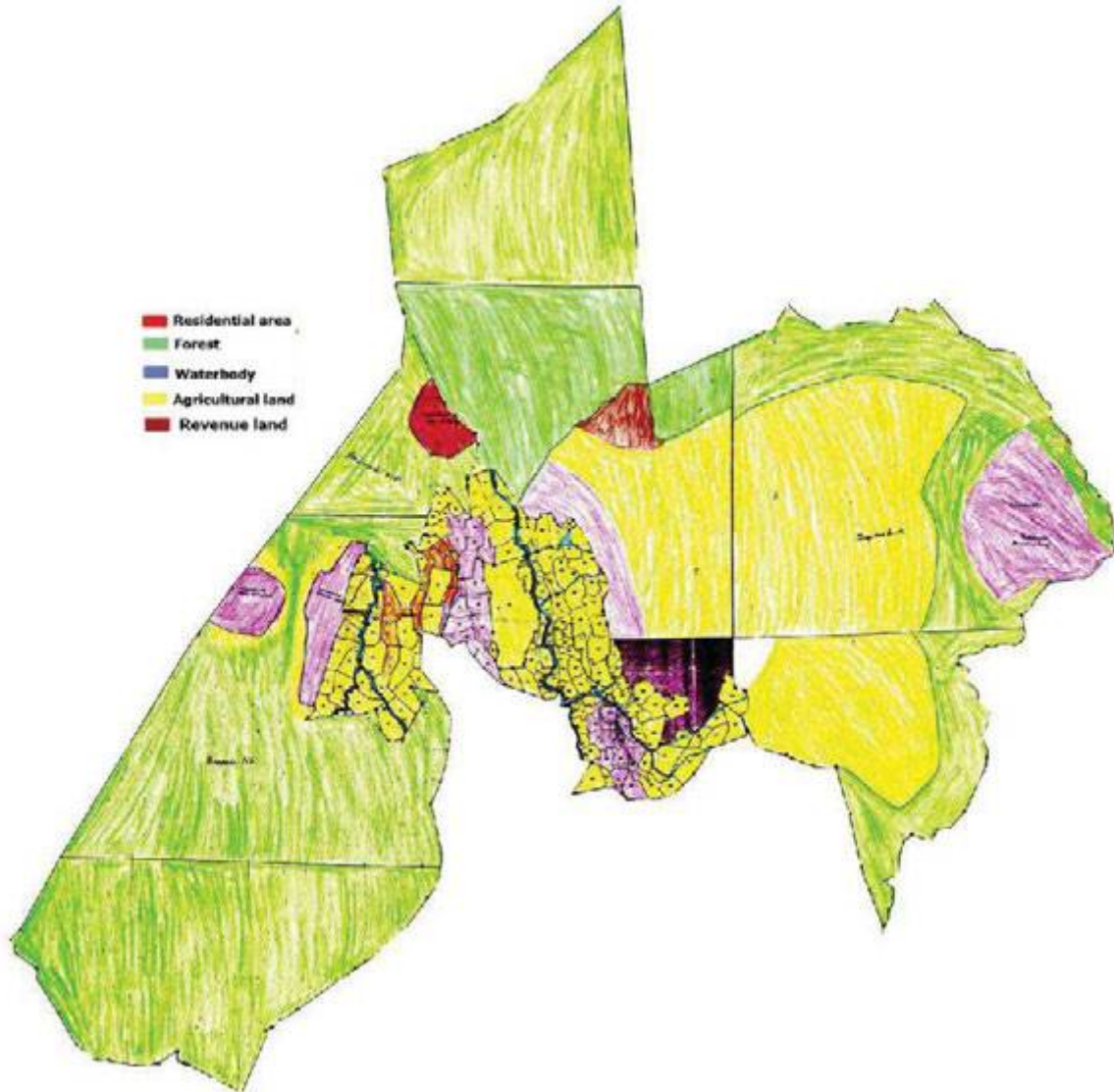
CADASTRAL SCALE ESA VILLAGES

Kannandevan Hills Village, Devikulam Taluk, Idukki District



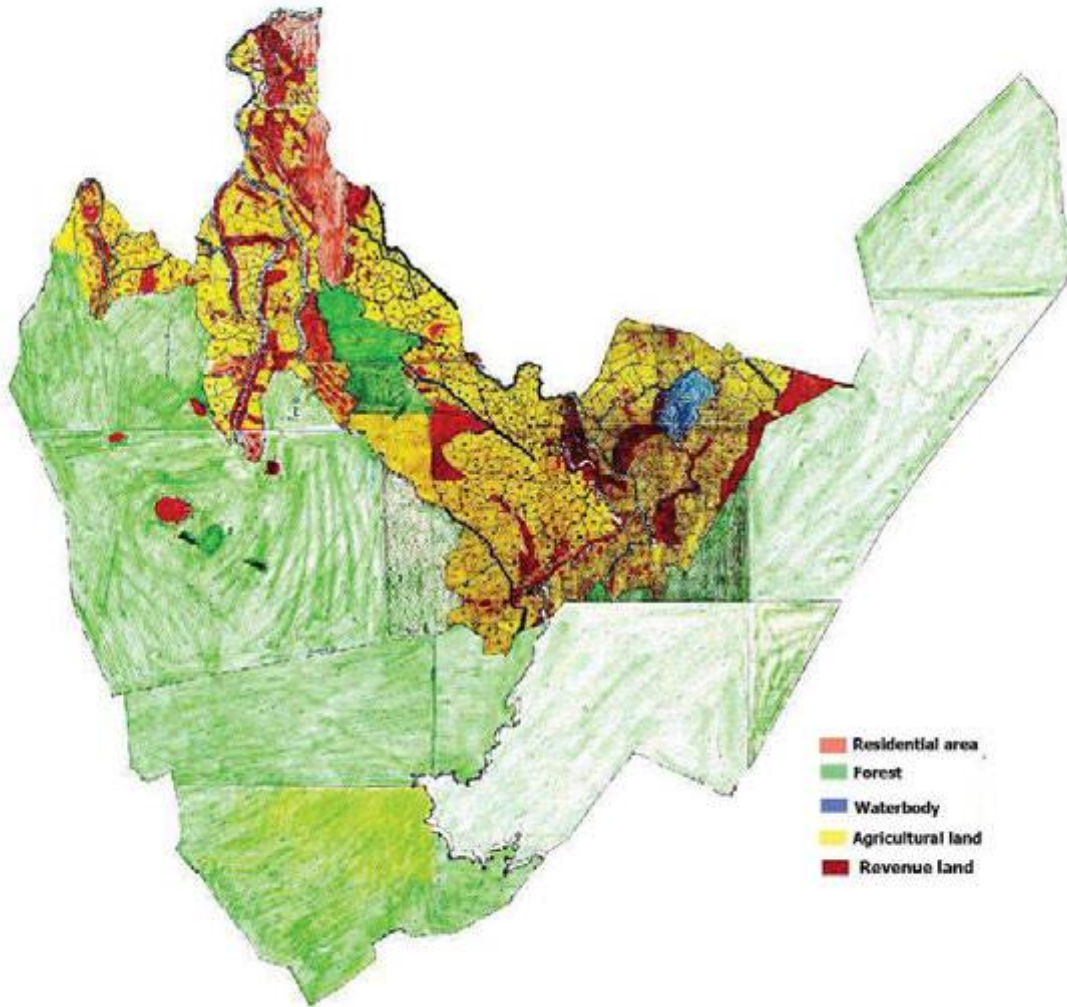
CADASTRAL SCALE ESA VILLAGES

Kottakamboor Village, Devikulam Taluk, Idukki District



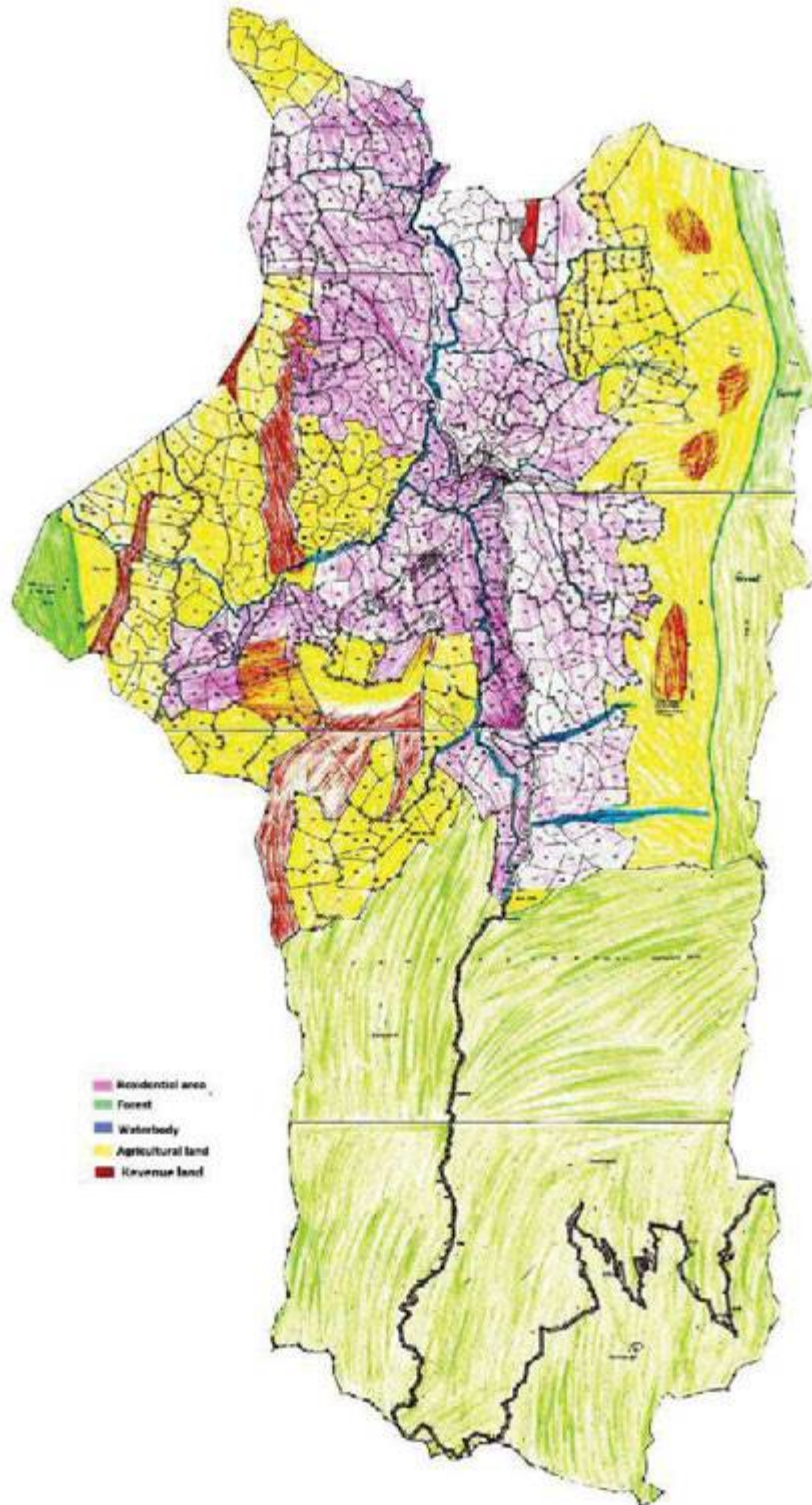
CADASTRAL SCALE ESA VILLAGES

Kanthalloor Village, Devikulam Taluk, Idukki District



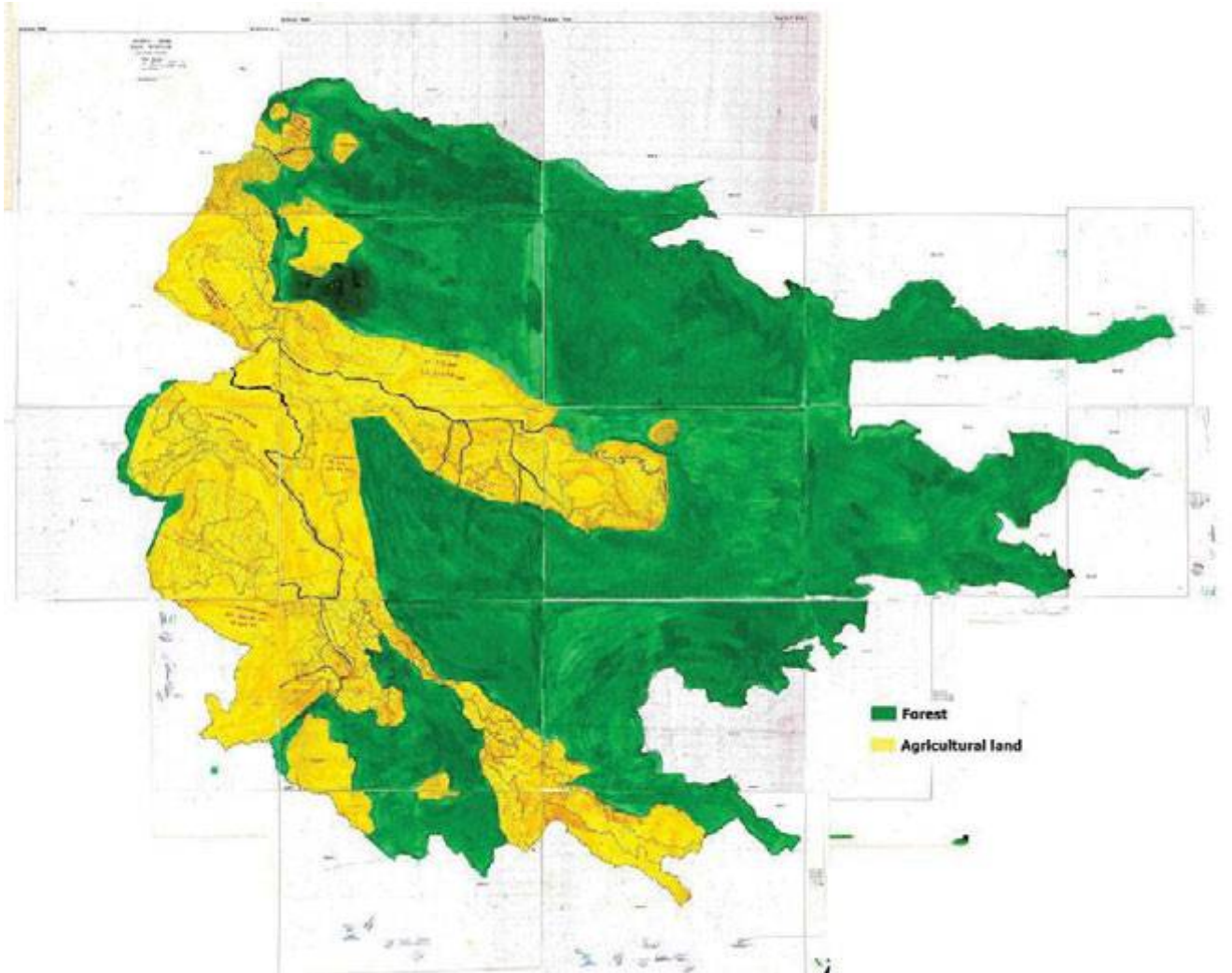
CADASTRAL SCALE ESA VILLAGES

Vattavada Village, Devikulam Taluk, Idukki District



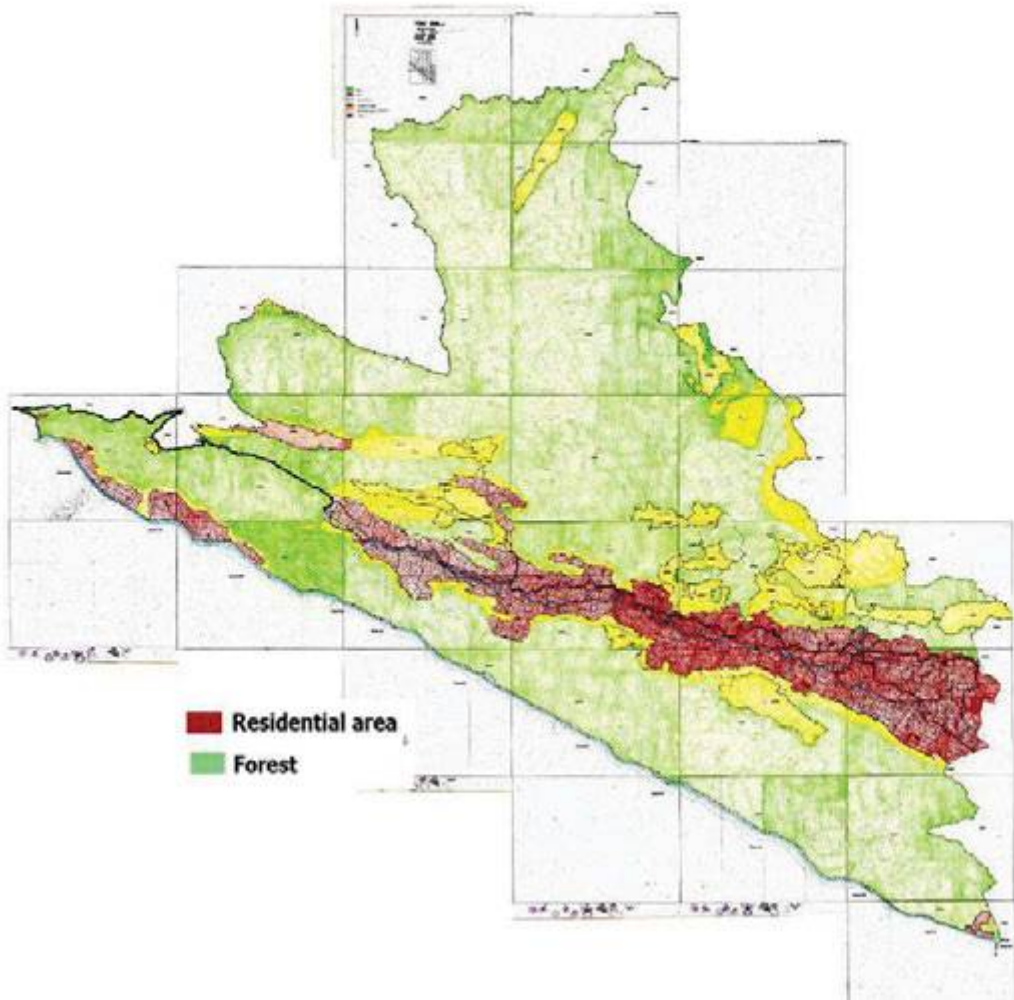
CADASTRAL SCALE ESA VILLAGES

Mankulam Village, Devikulam Taluk, Idukki District



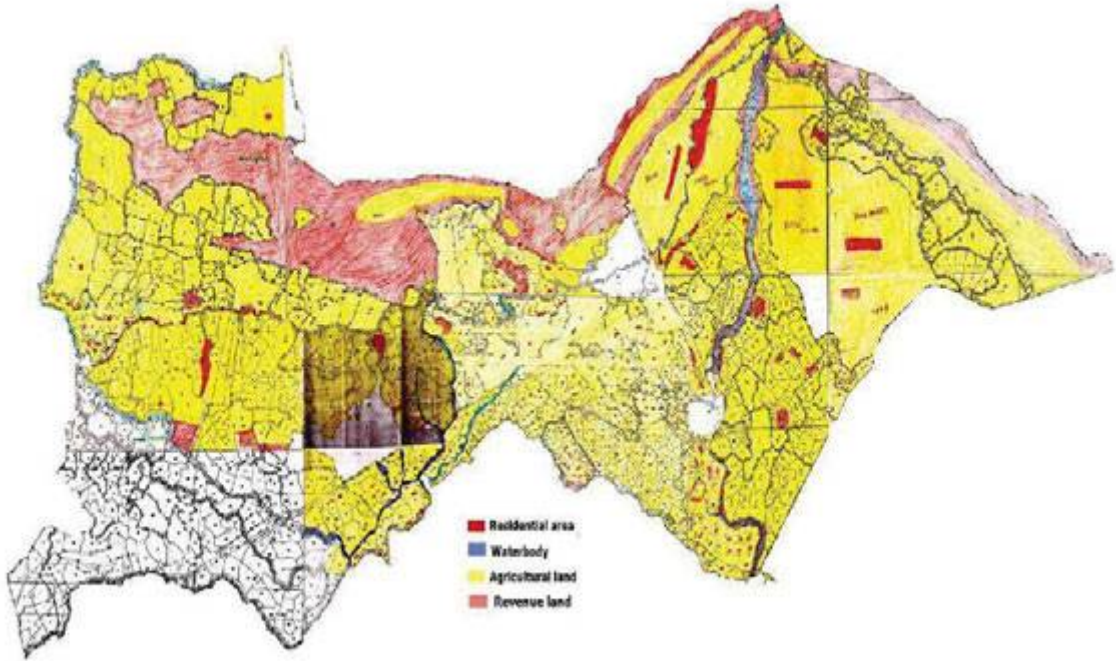
CADASTRAL SCALE ESA VILLAGES

Mannamkandam Village, Devikulam Taluk, Idukki District



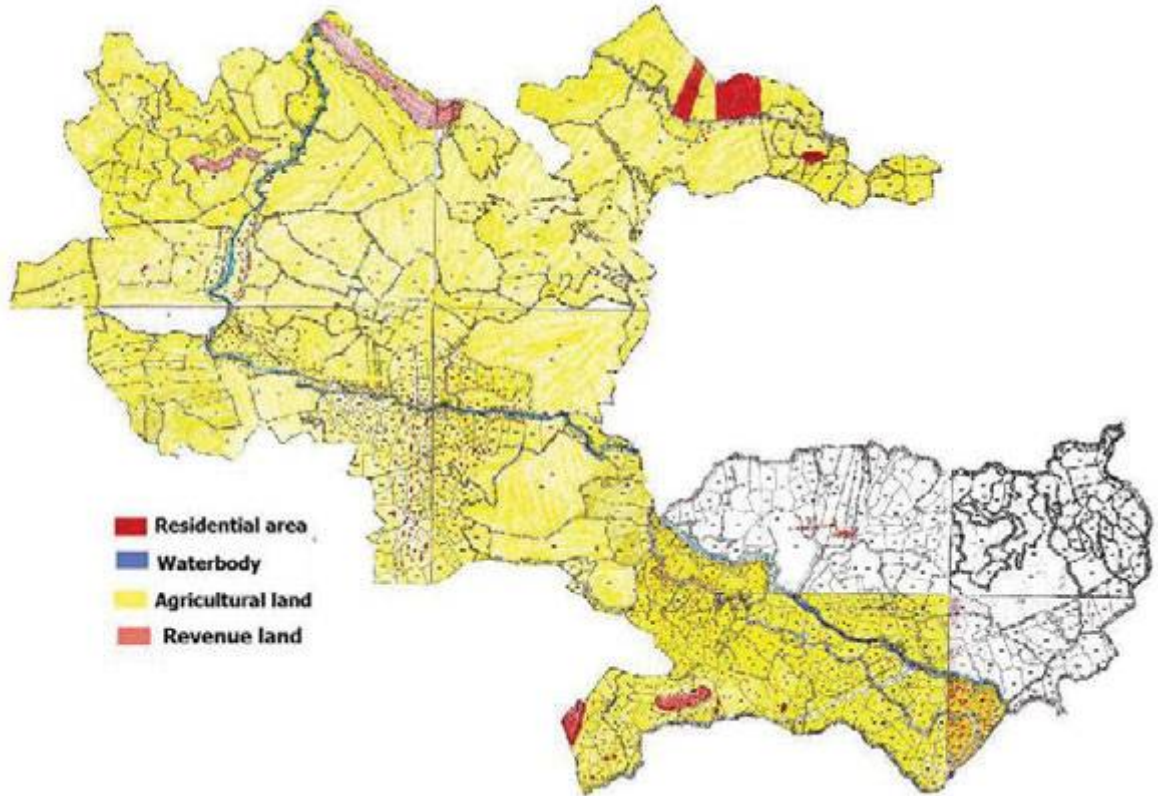
CADASTRAL SCALE ESA VILLAGES

Pallivasal Village, Devikulam Taluk, Idukki District



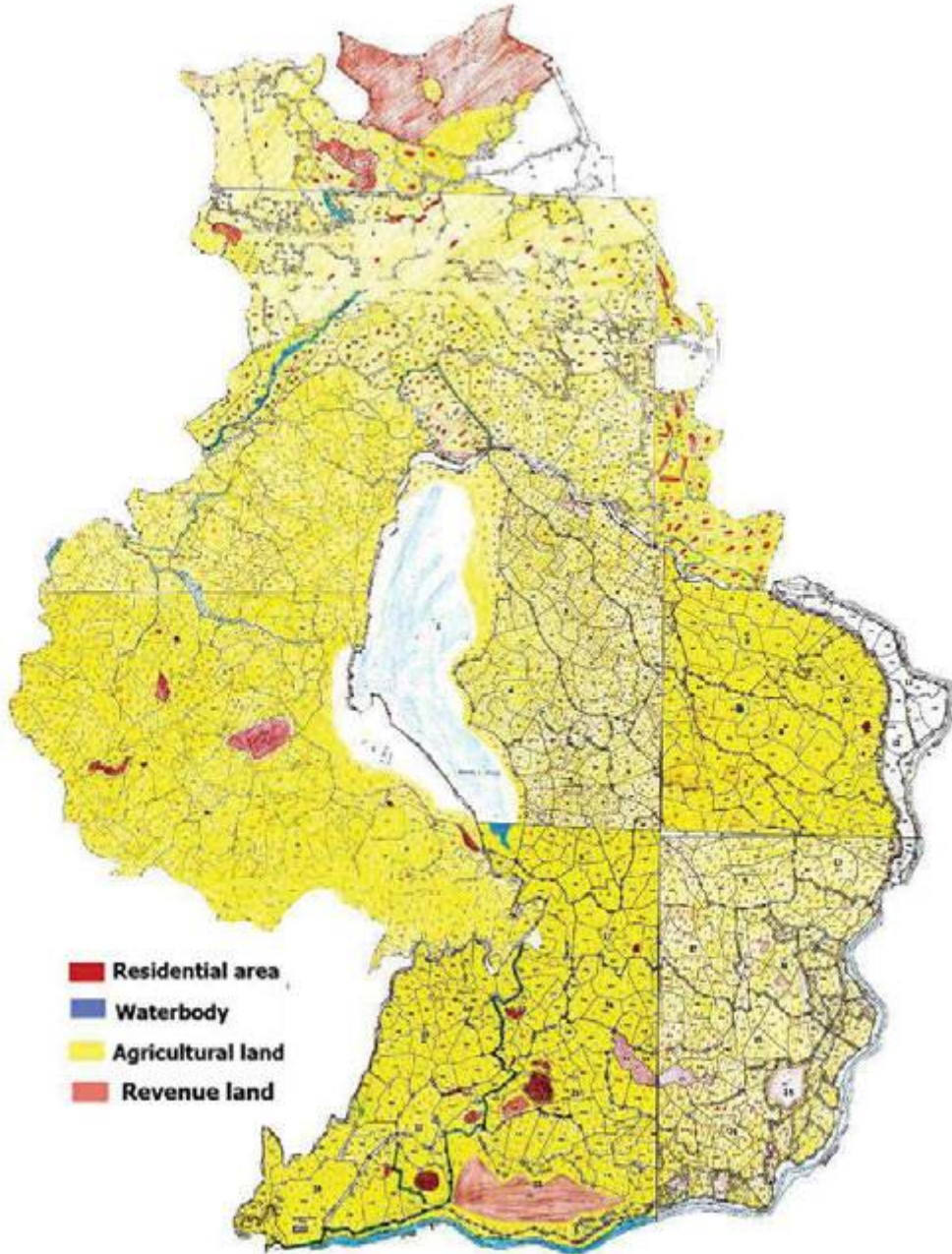
CADASTRAL SCALE ESA VILLAGES

Anaviratti Village, Devikulam Taluk, Idukki District



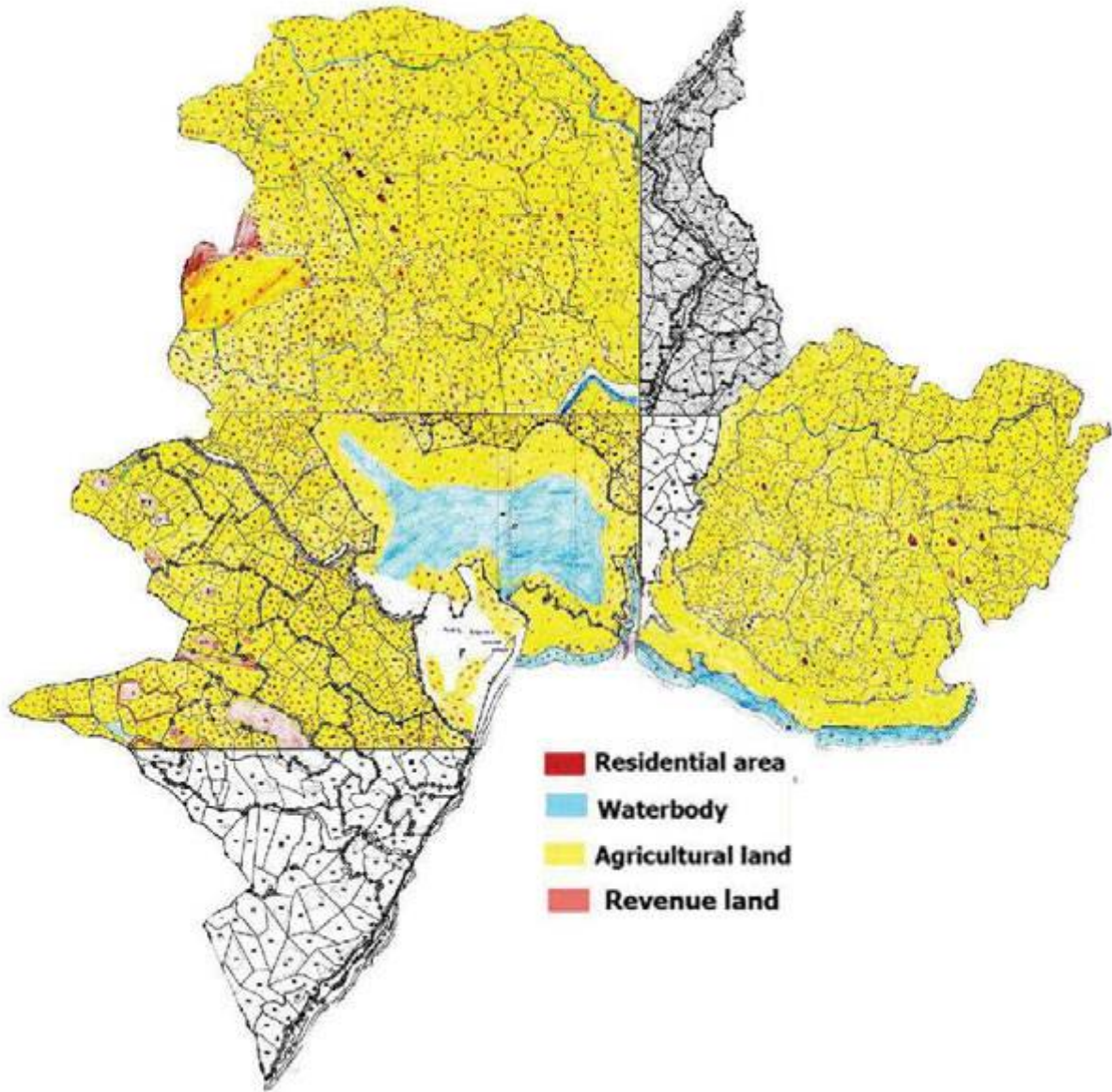
CADASTRAL SCALE ESA VILLAGES

Kunjithanni Village, Devikulam Taluk, Idukki District



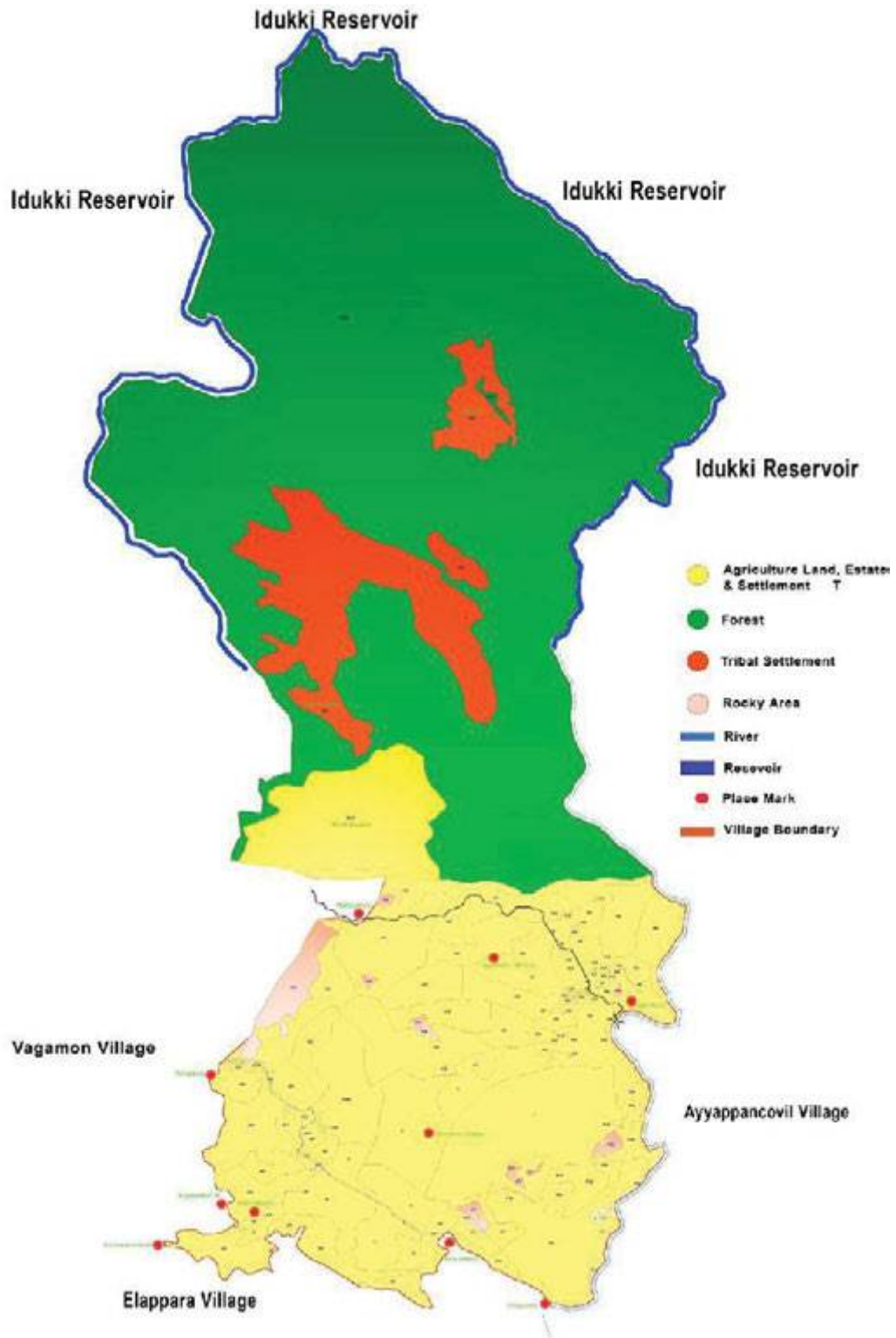
CADASTRAL SCALE ESA VILLAGES

Vellathooval Village, Devikulam Taluk, Idukki District



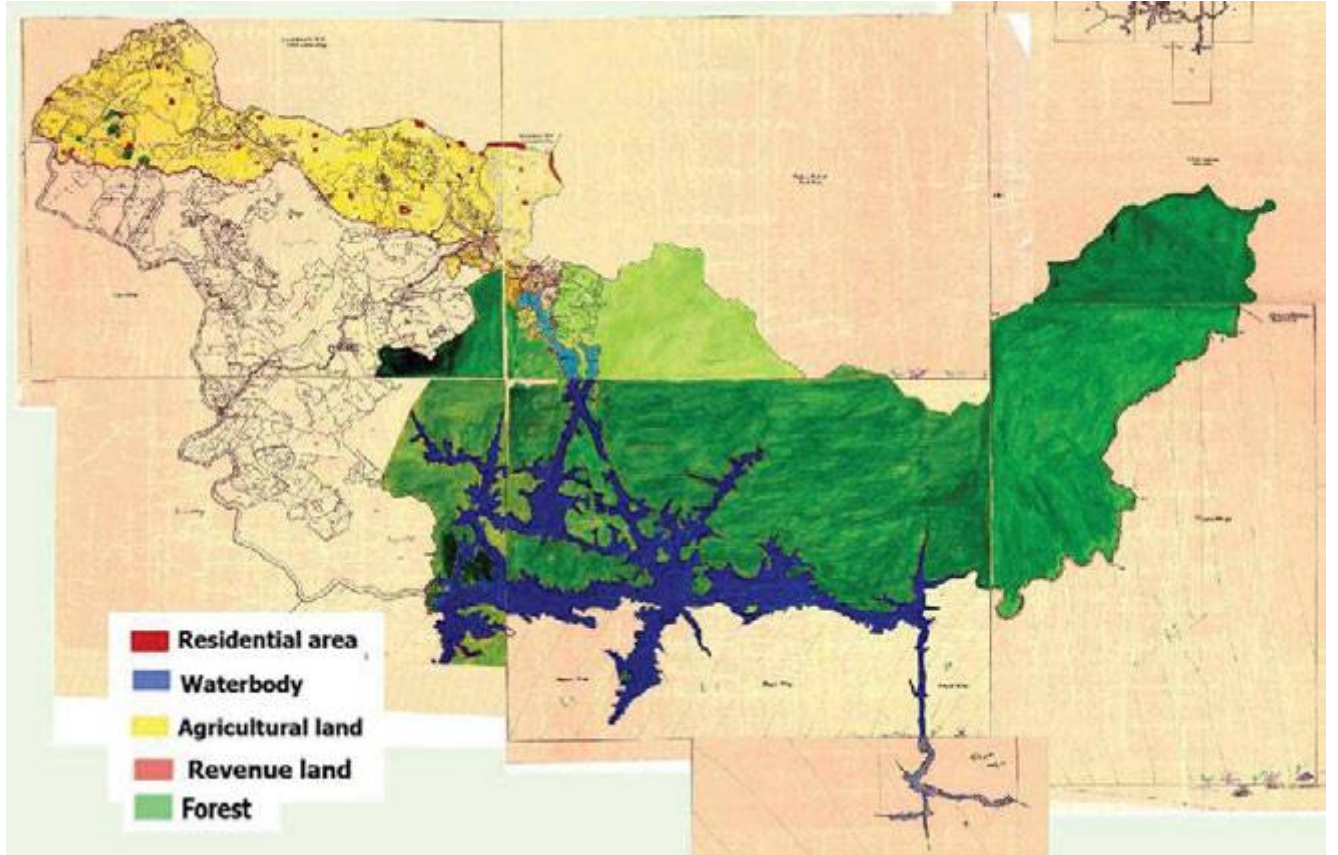
CADASTRAL SCALE ESA VILLAGES

Upputhara Village, Peerumedu Taluk, Idukki District



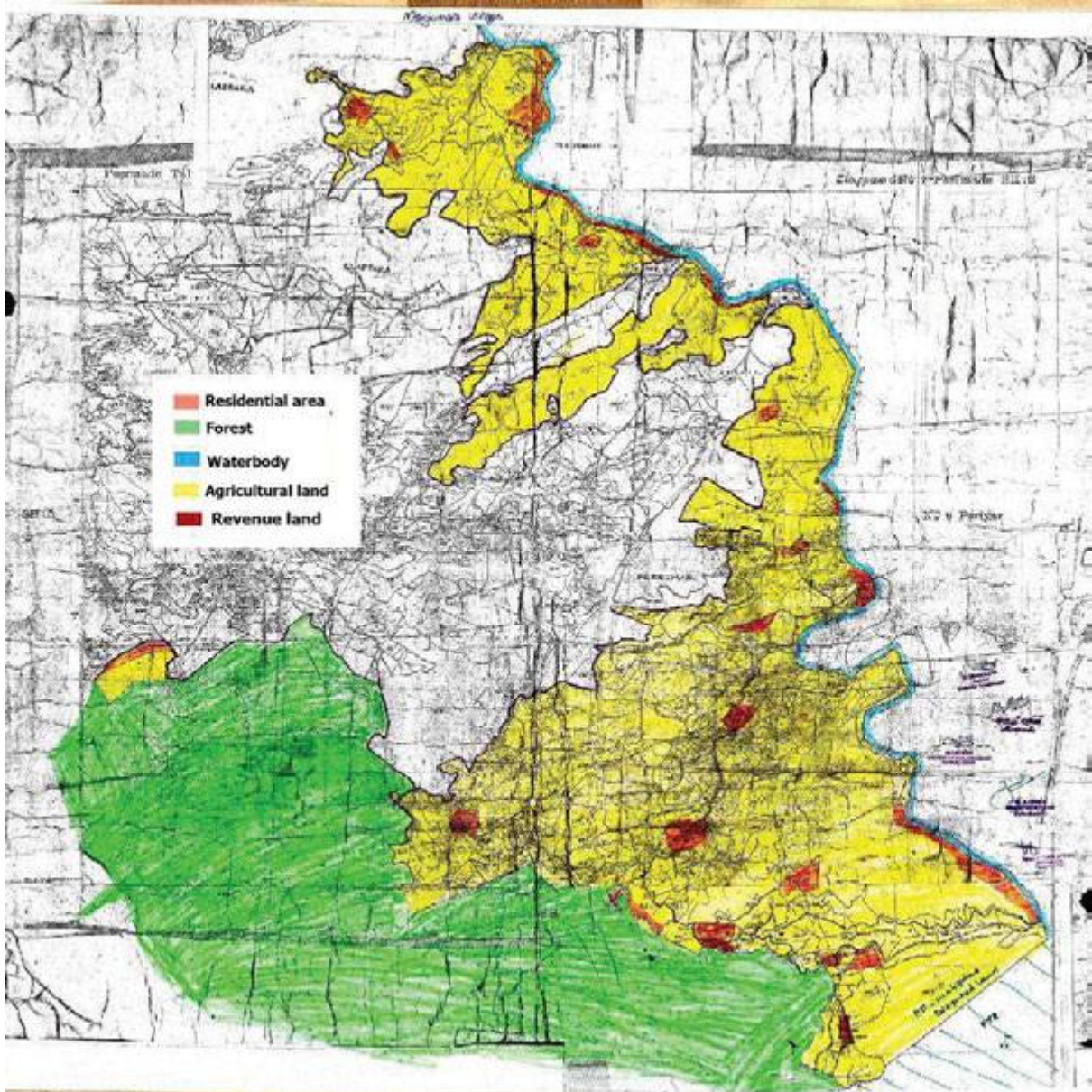
CADASTRAL SCALE ESA VILLAGES

Kumily Village, Peerumedu Taluk, Idukki District



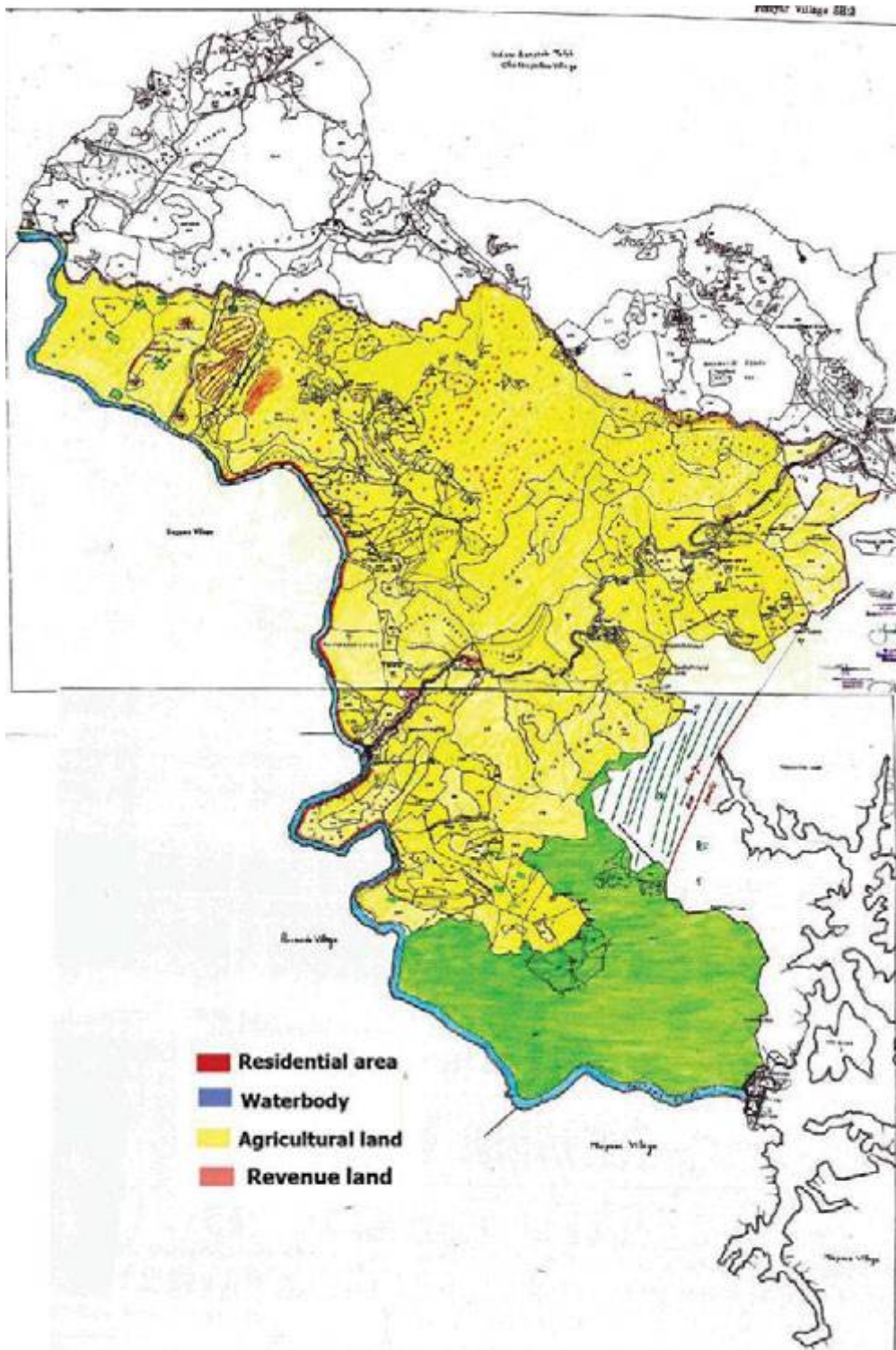
CADASTRAL SCALE ESA VILLAGES

Manjamala Village, Peerumedu Taluk, Idukki District



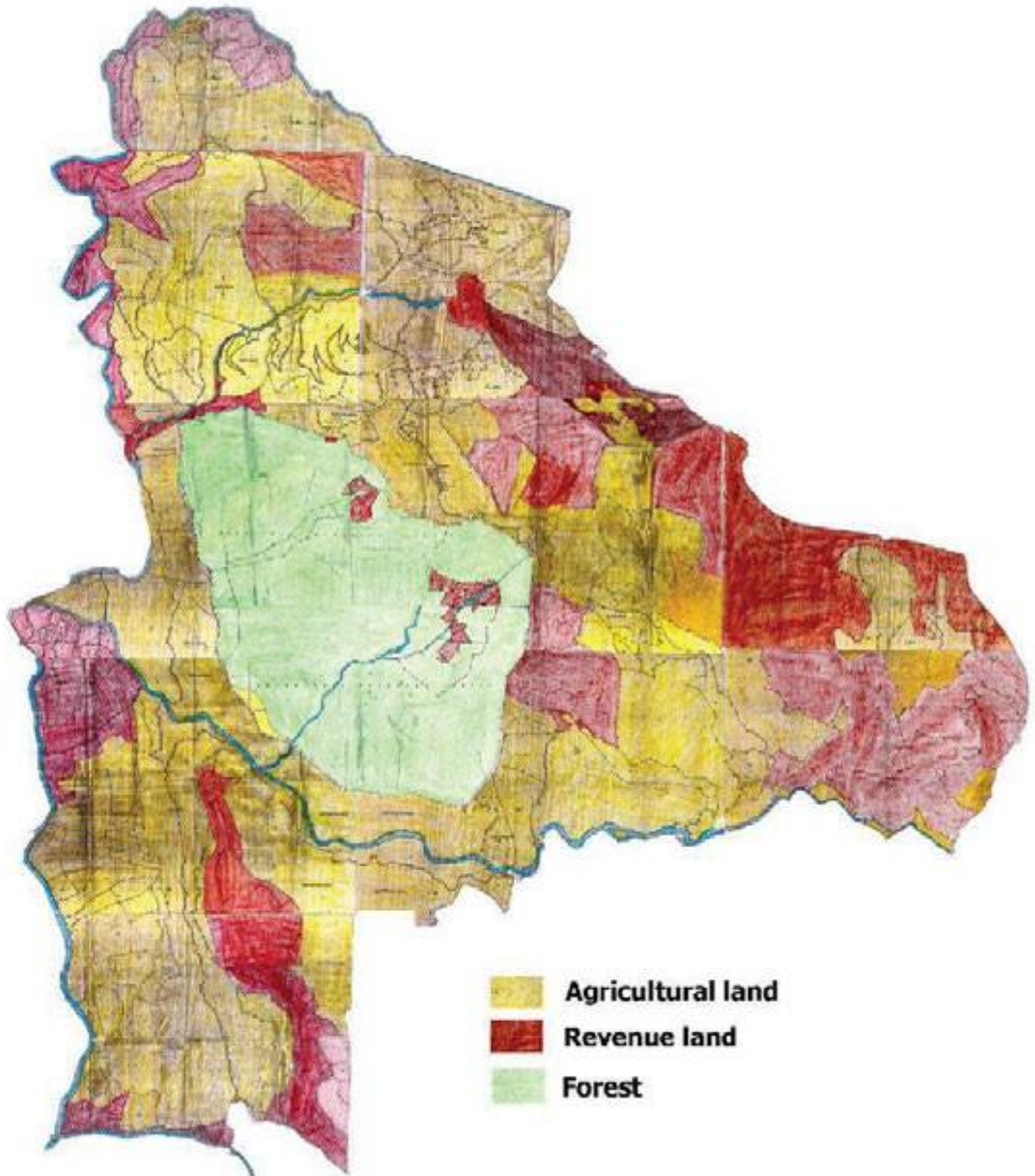
CADASTRAL SCALE ESA VILLAGES

Periyar Village, Peerumedu Taluk, Idukki District



CADASTRAL SCALE ESA VILLAGES

Kokkayar Village, Peerumedu Taluk, Idukki District



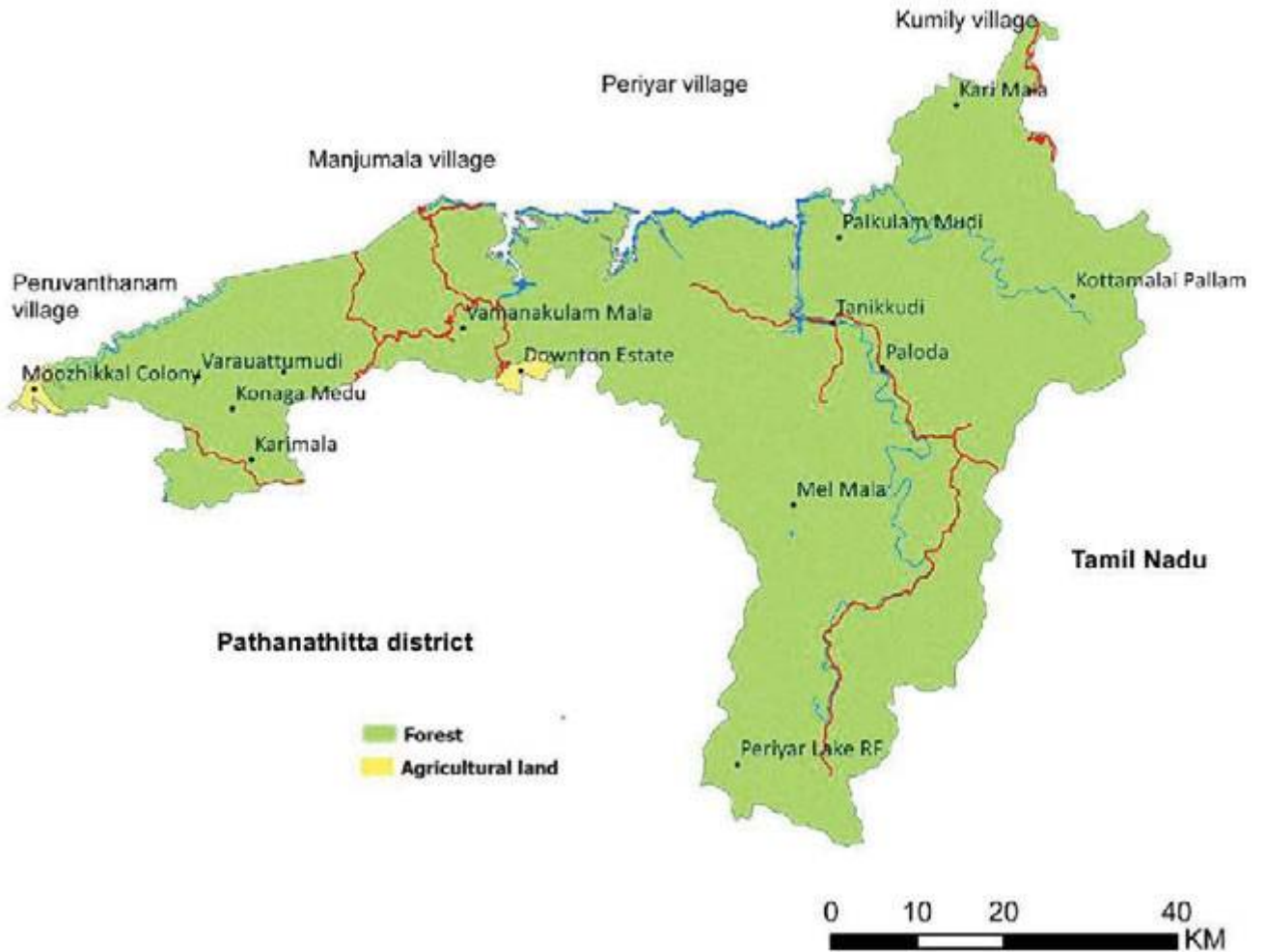
CADASTRAL SCALE ESA VILLAGES

Peerumed Village, Peerumedu Taluk, Idukki District



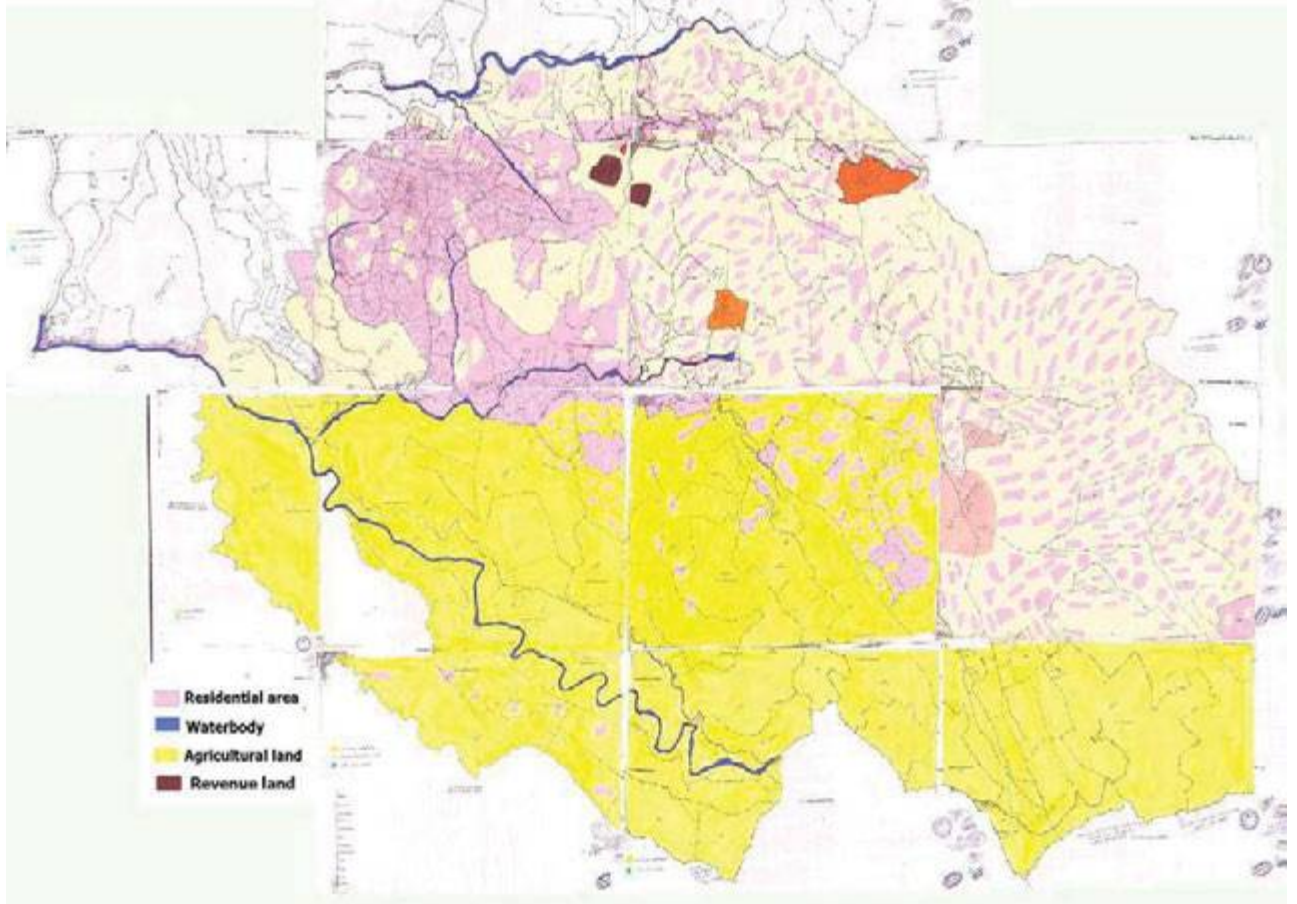
CADASTRAL SCALE ESA VILLAGES

Mlupra Village, Peerumedu Taluk, Idukki District



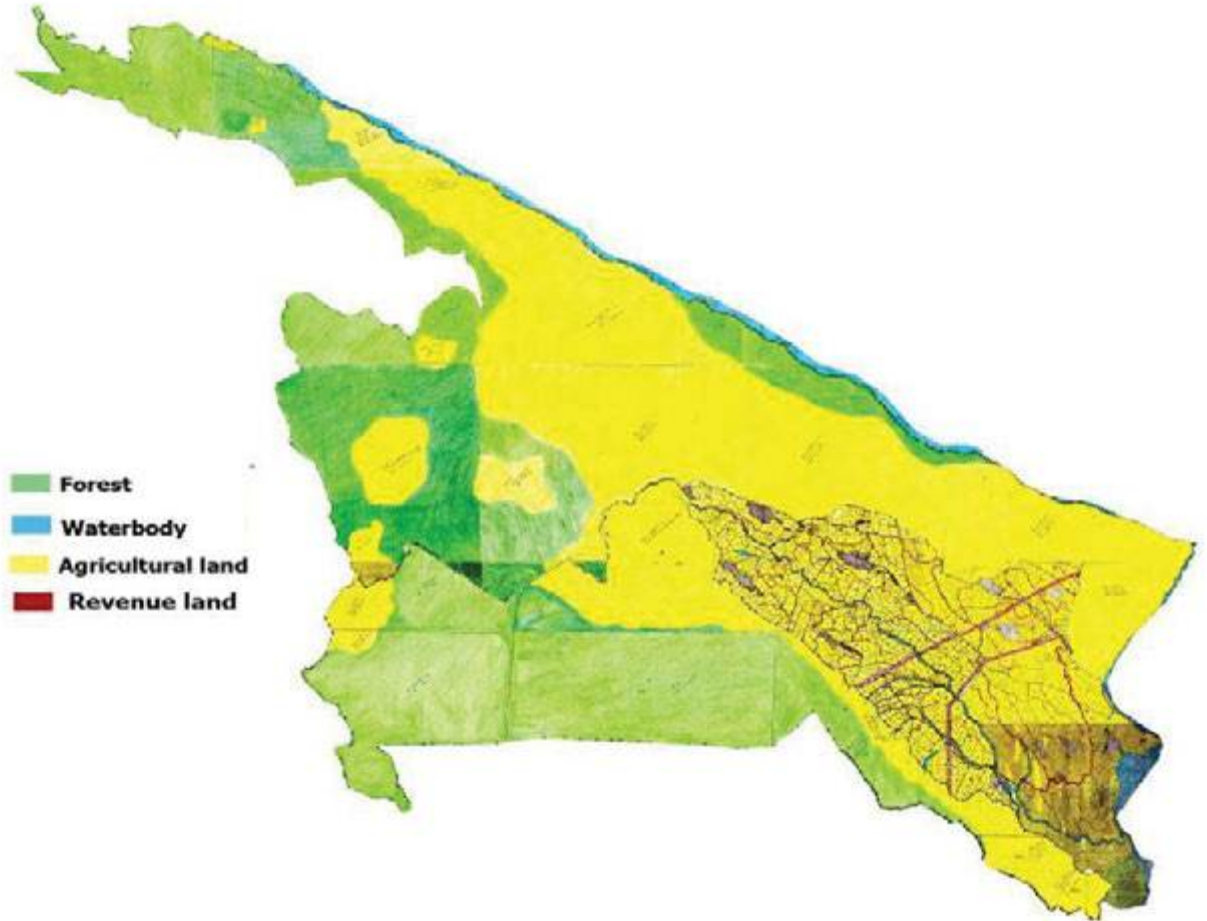
CADASTRAL SCALE ESA VILLAGES

Peruvanthanam Village, Peerumedu Taluk, Idukki District



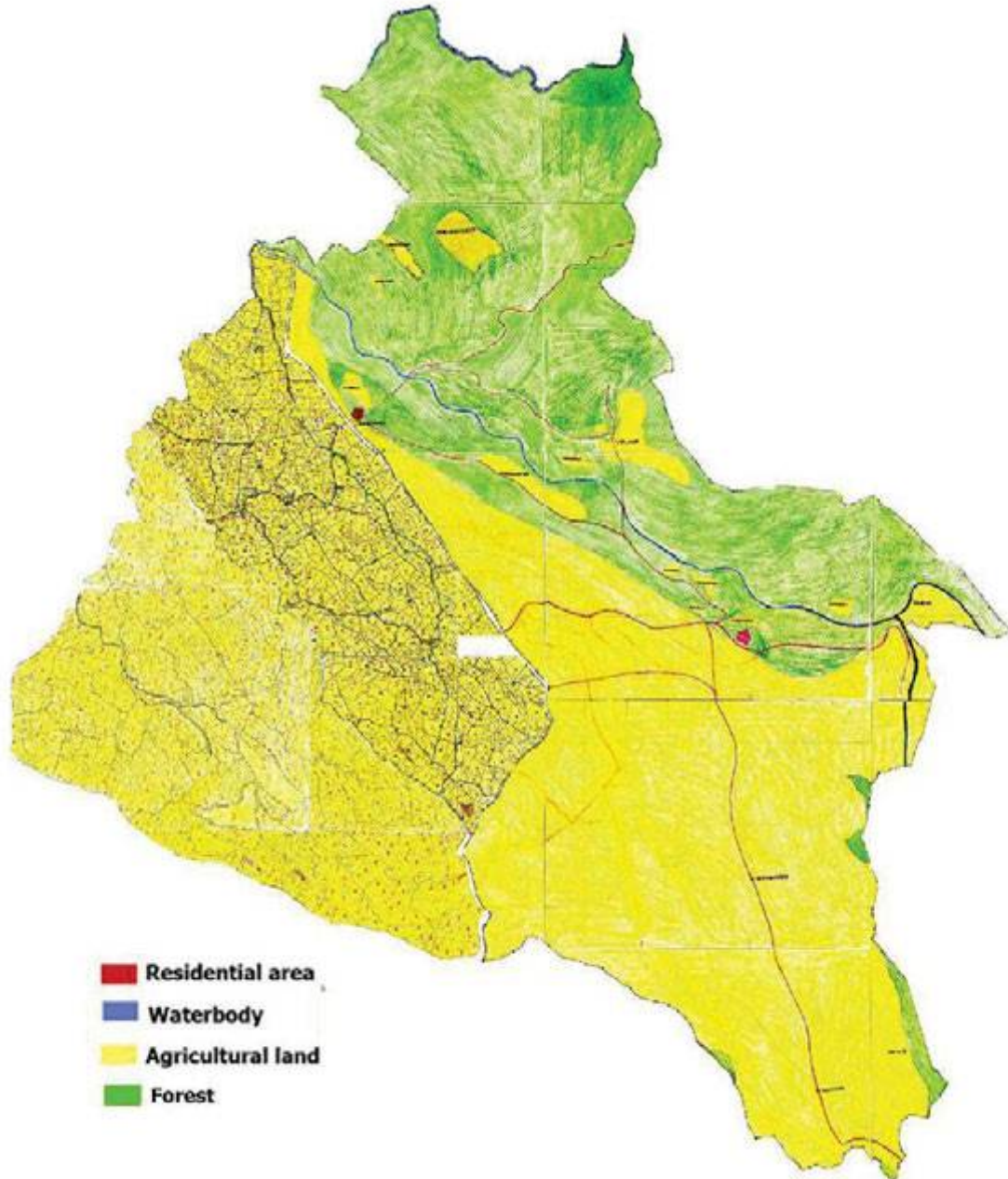
CADASTRAL SCALE ESA VILLAGES

Kanjikuzhy Village, Thodupuzha Taluk, Idukki District



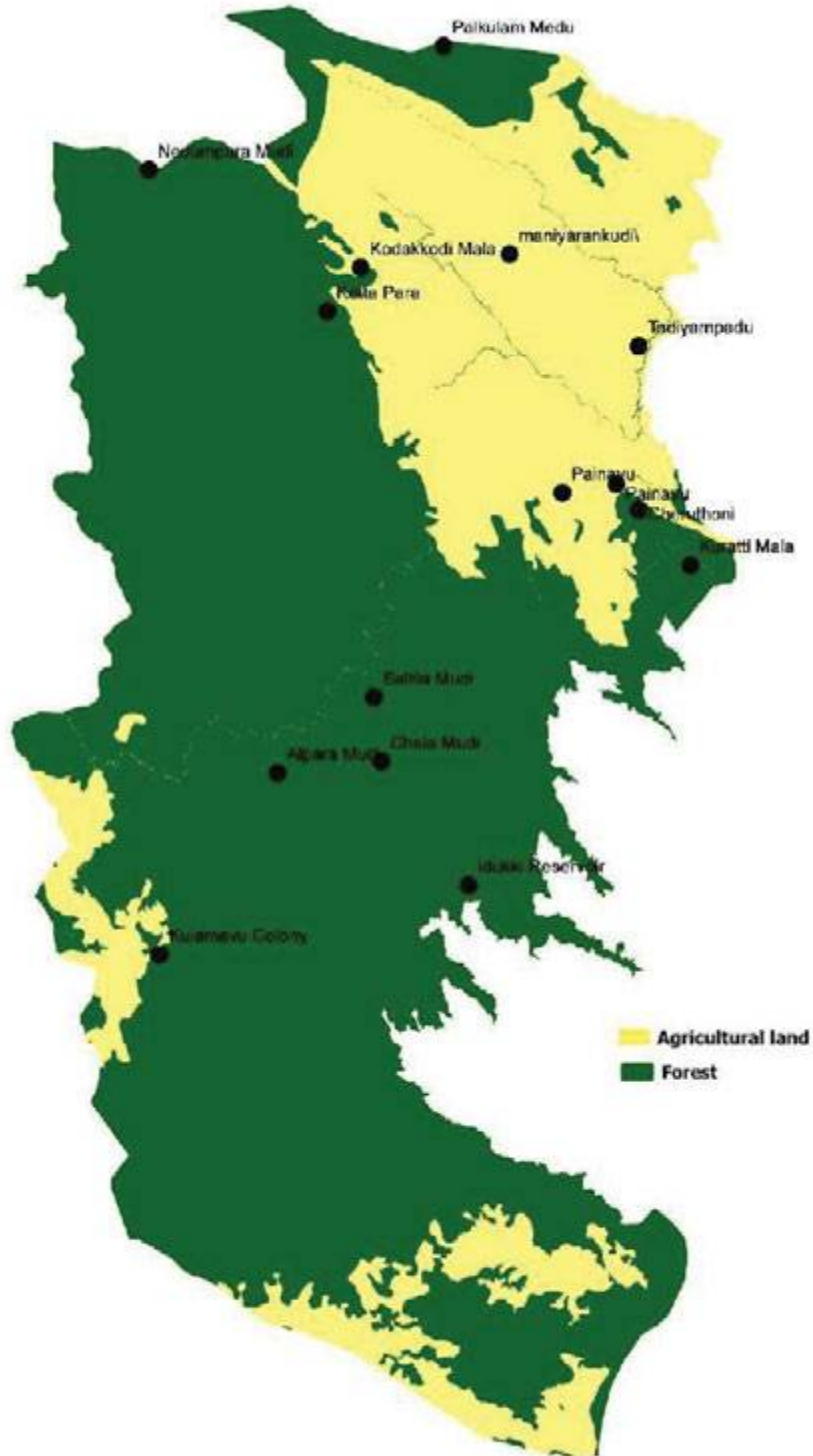
CADASTRAL SCALE ESA VILLAGES

Udumbannoor Village, Thodupuzha Taluk, Idukki District



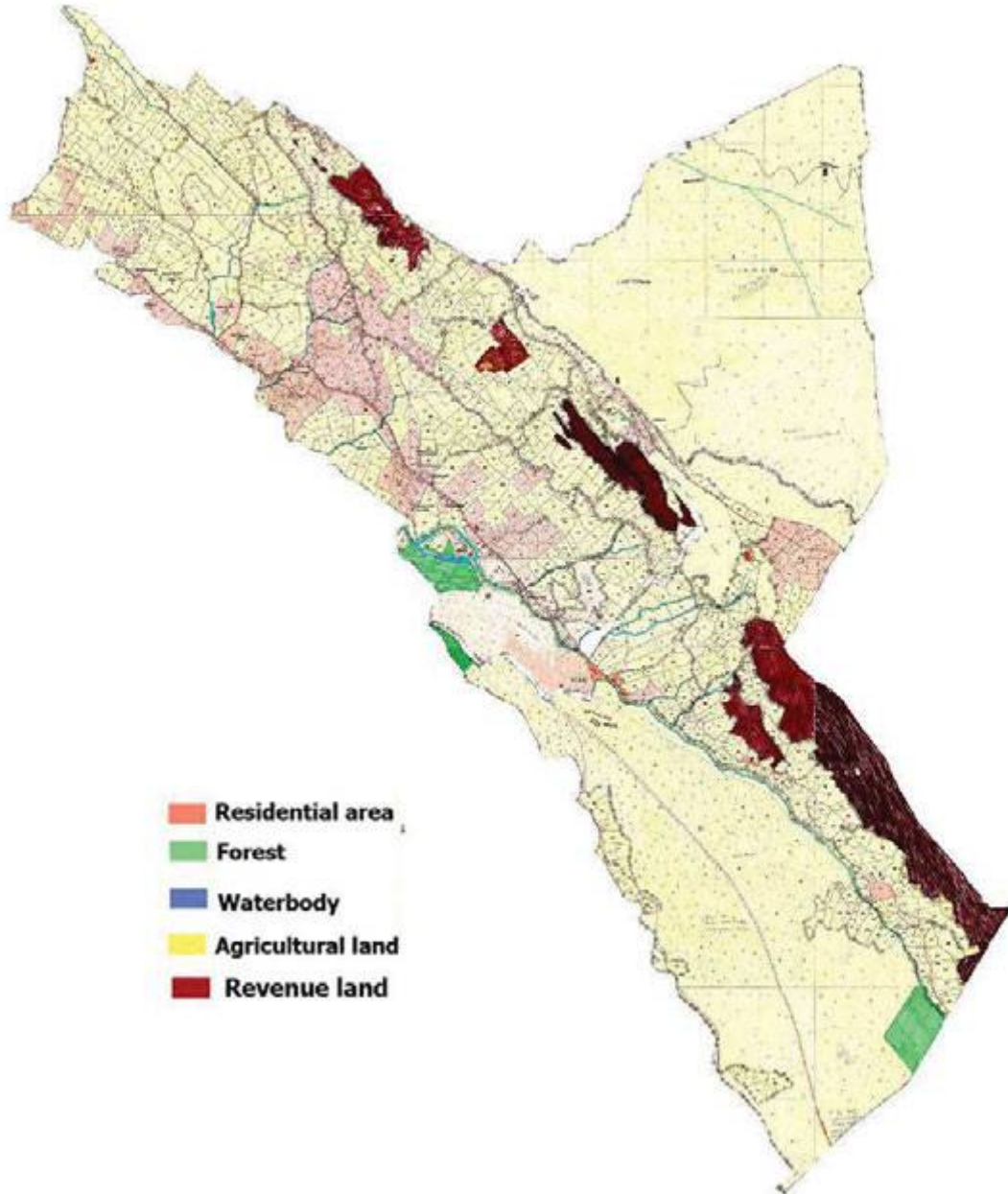
CADASTRAL SCALE ESA VILLAGES

Idukki Village, Thodupuzha Taluk, Idukki District



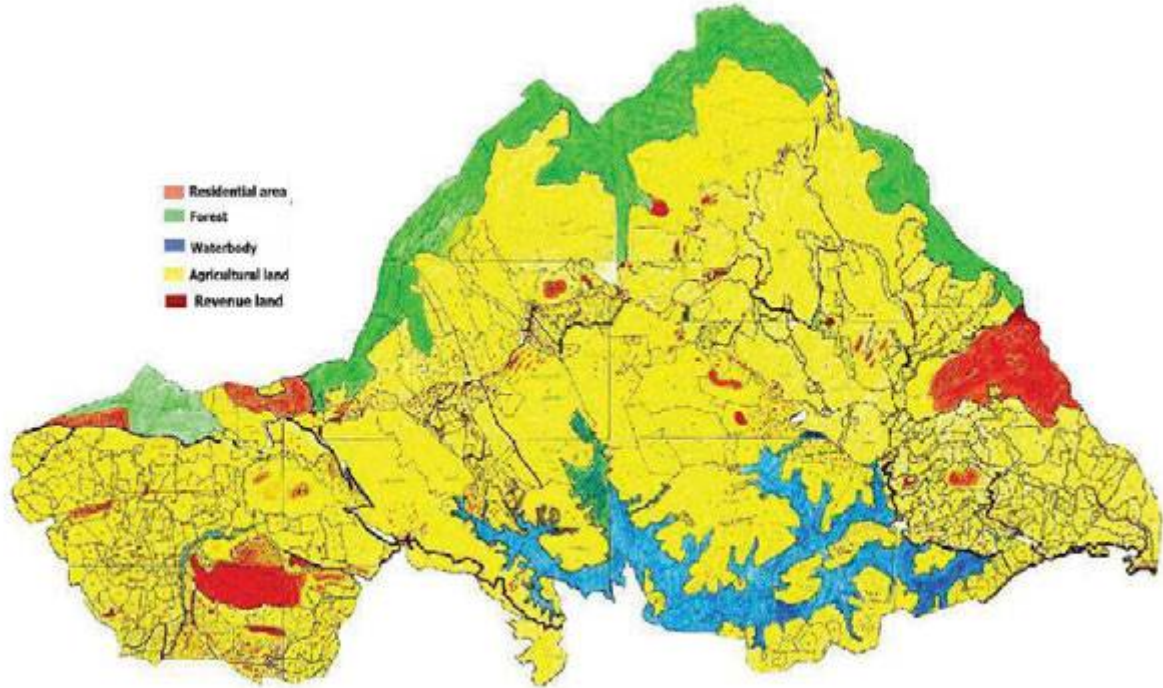
CADASTRAL SCALE ESA VILLAGES

Arakulam Village, Thodupuzha Taluk, Idukki District



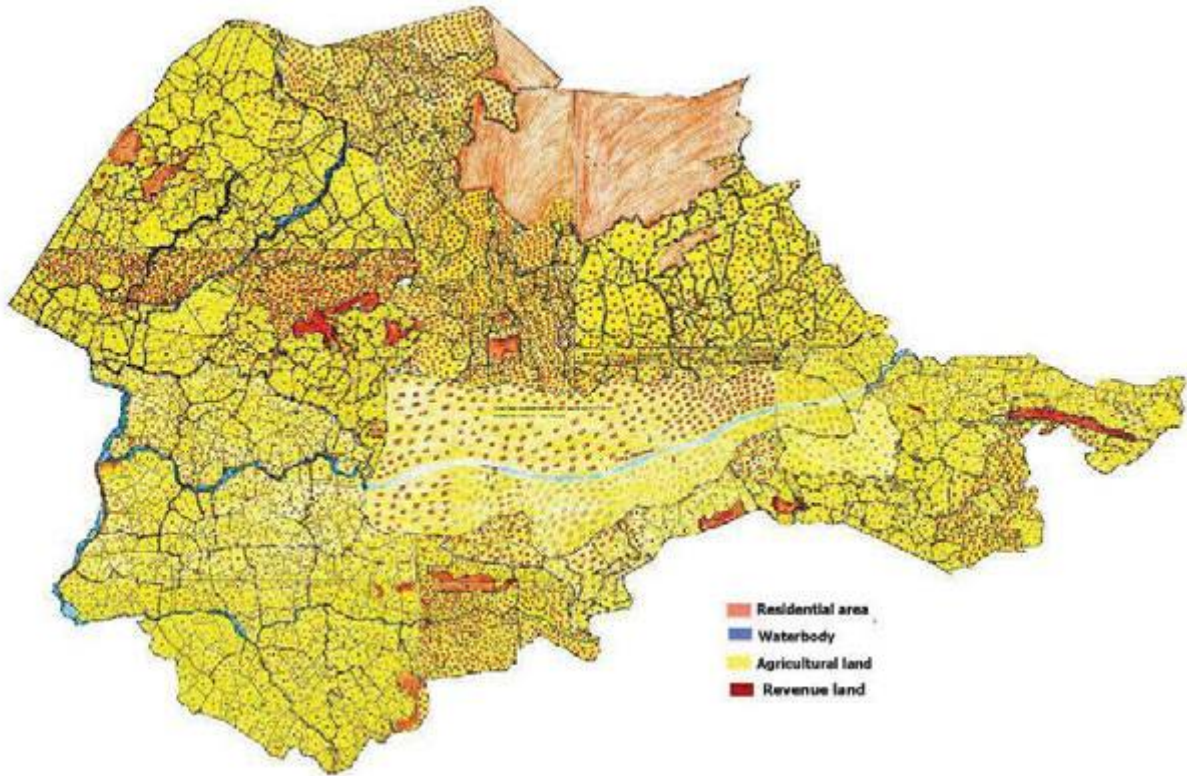
CADASTRAL SCALE ESA VILLAGES

Chinnakkanal Village, Udumbanchola Taluk, Idukki District



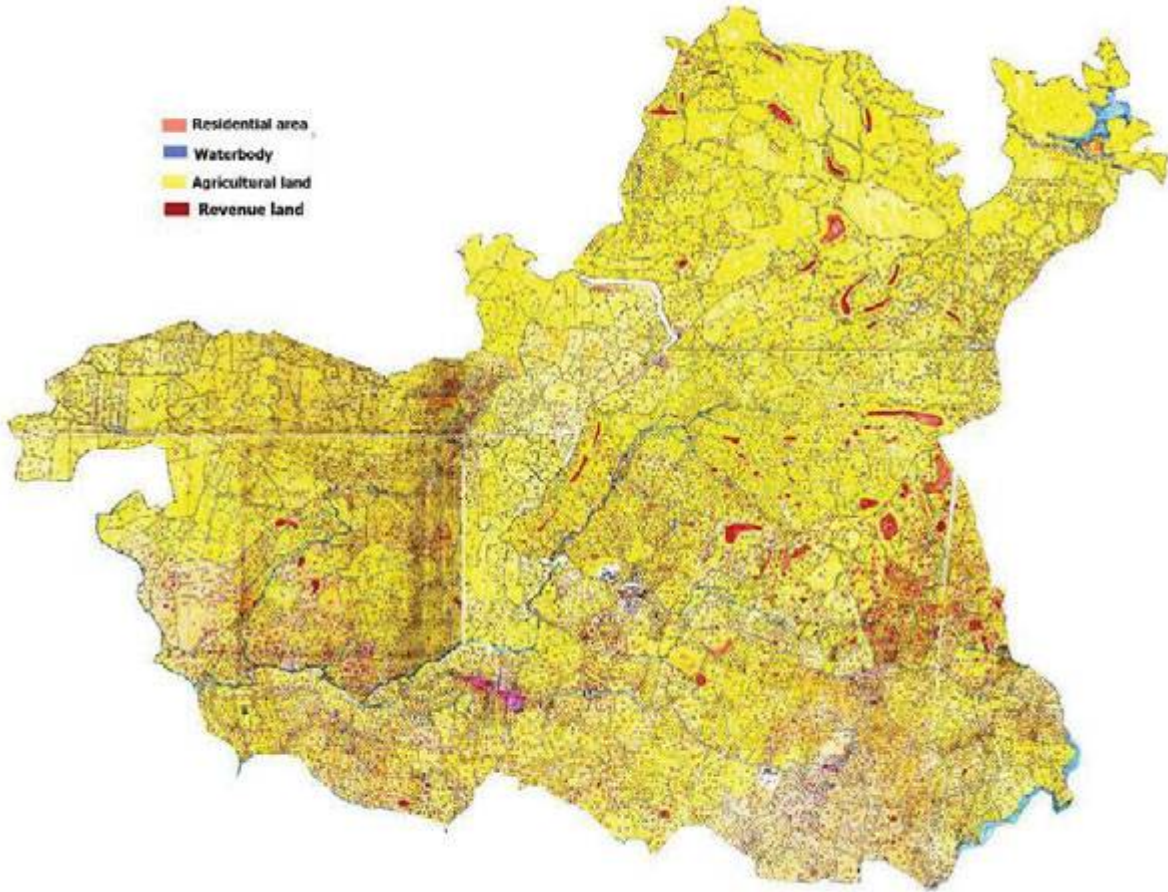
CADASTRAL SCALE ESA VILLAGES

Bisonvalley Village, Udumbanchola Taluk, Idukki District



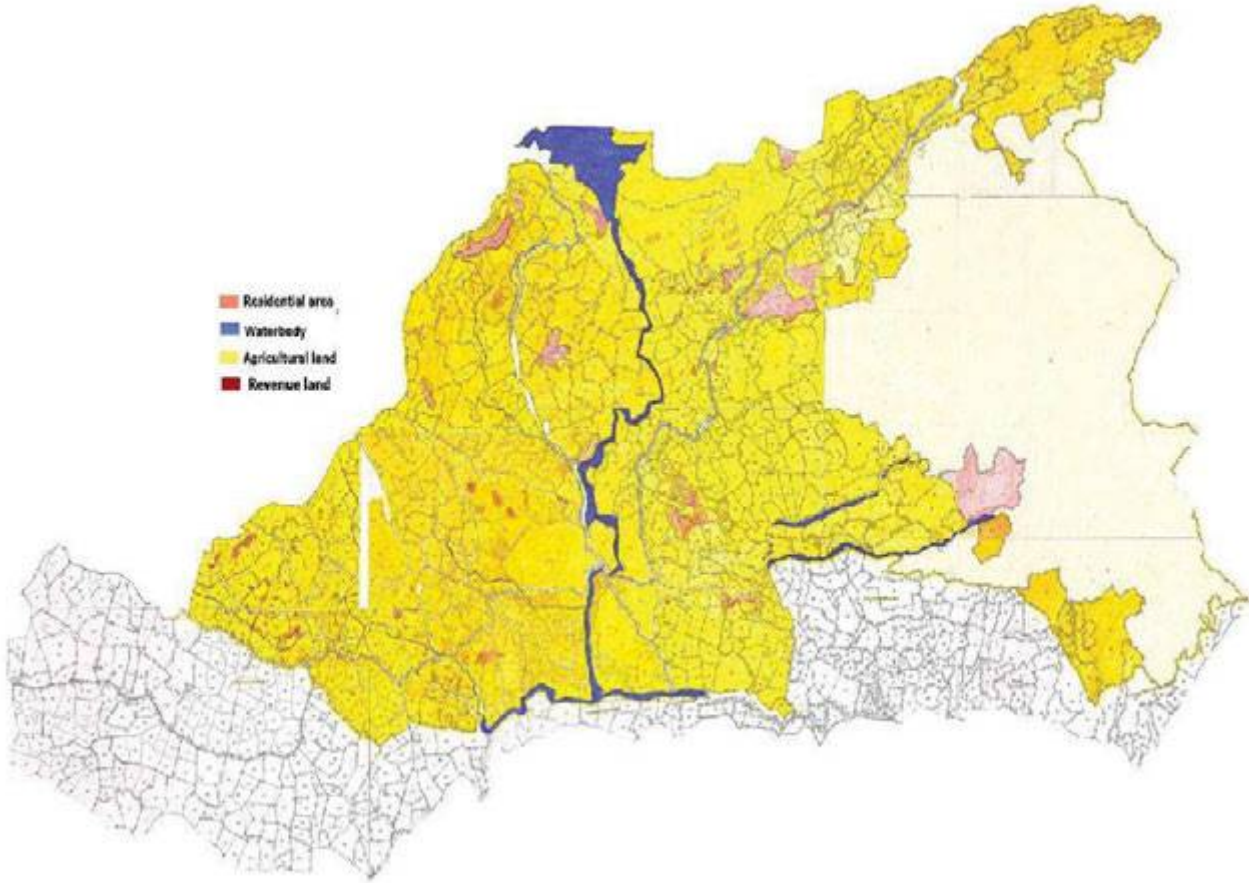
CADASTRAL SCALE ESA VILLAGES

Rajakumari Village, Udumbanchola Taluk, Idukki District



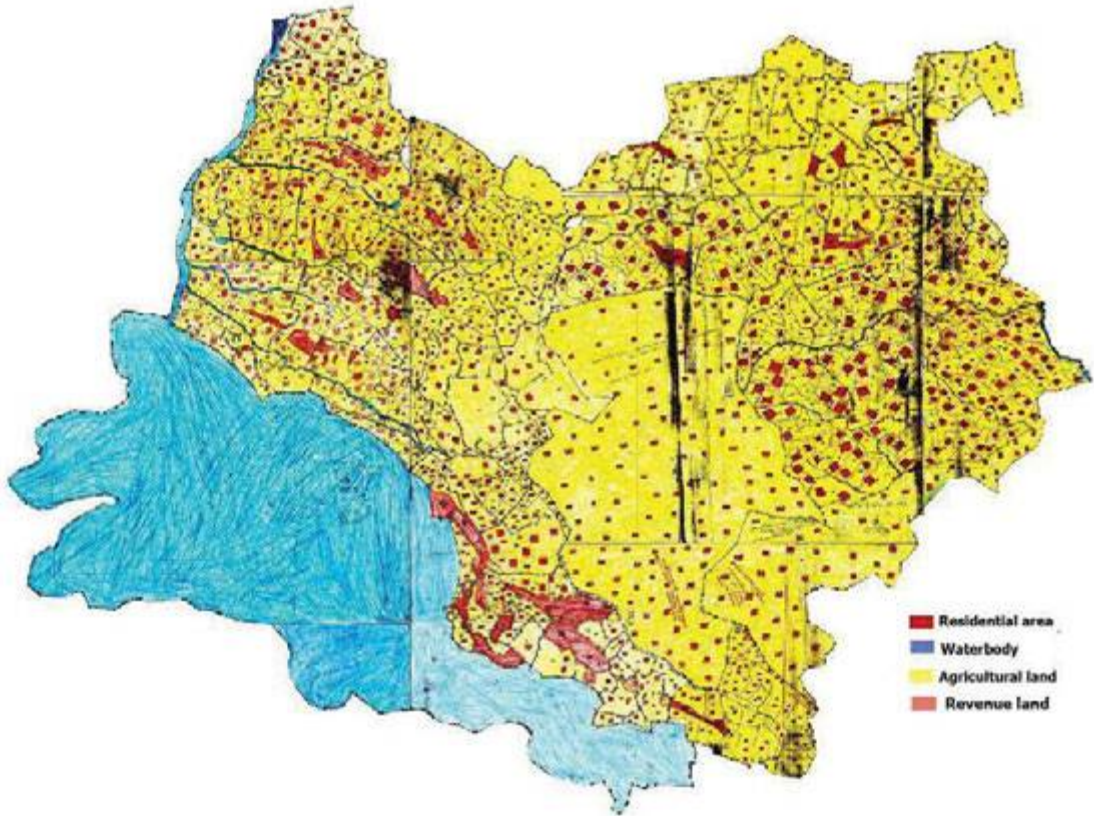
CADASTRAL SCALE ESA VILLAGES

Pooppara Village, Udumbanchola Taluk, Idukki District



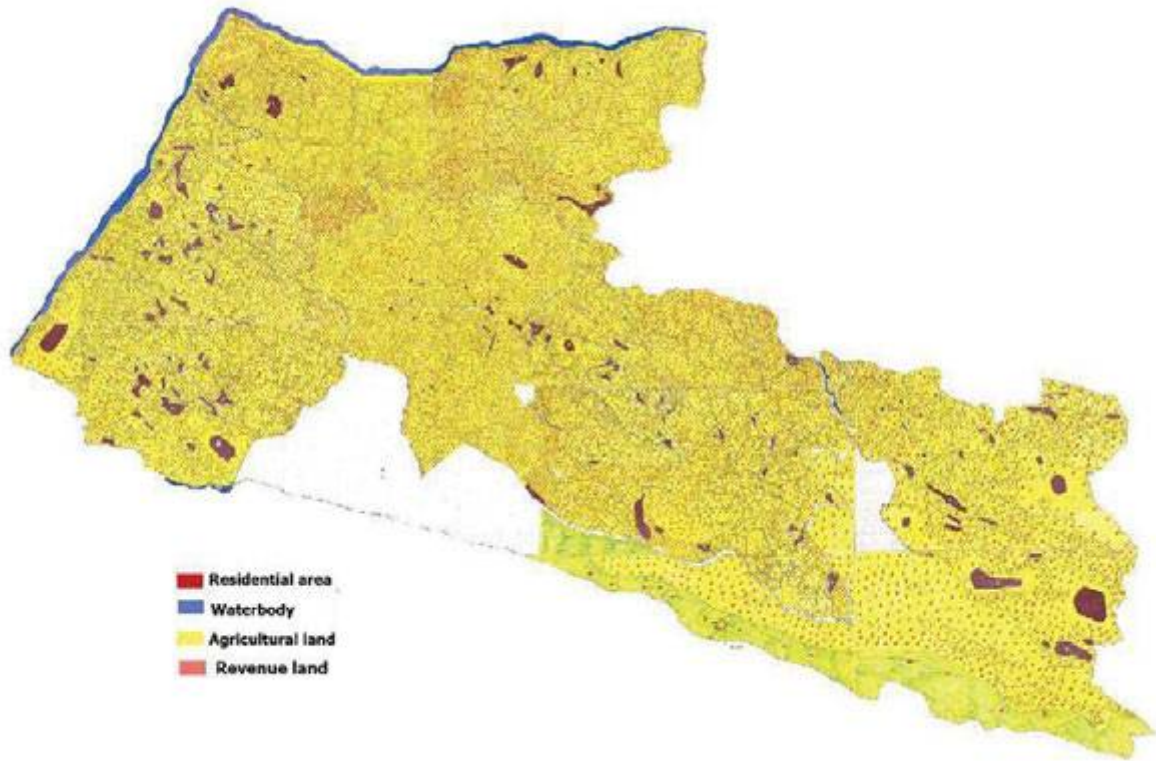
CADASTRAL SCALE ESA VILLAGES

Rajakadu Village, Udumbanchola Taluk, Idukki District



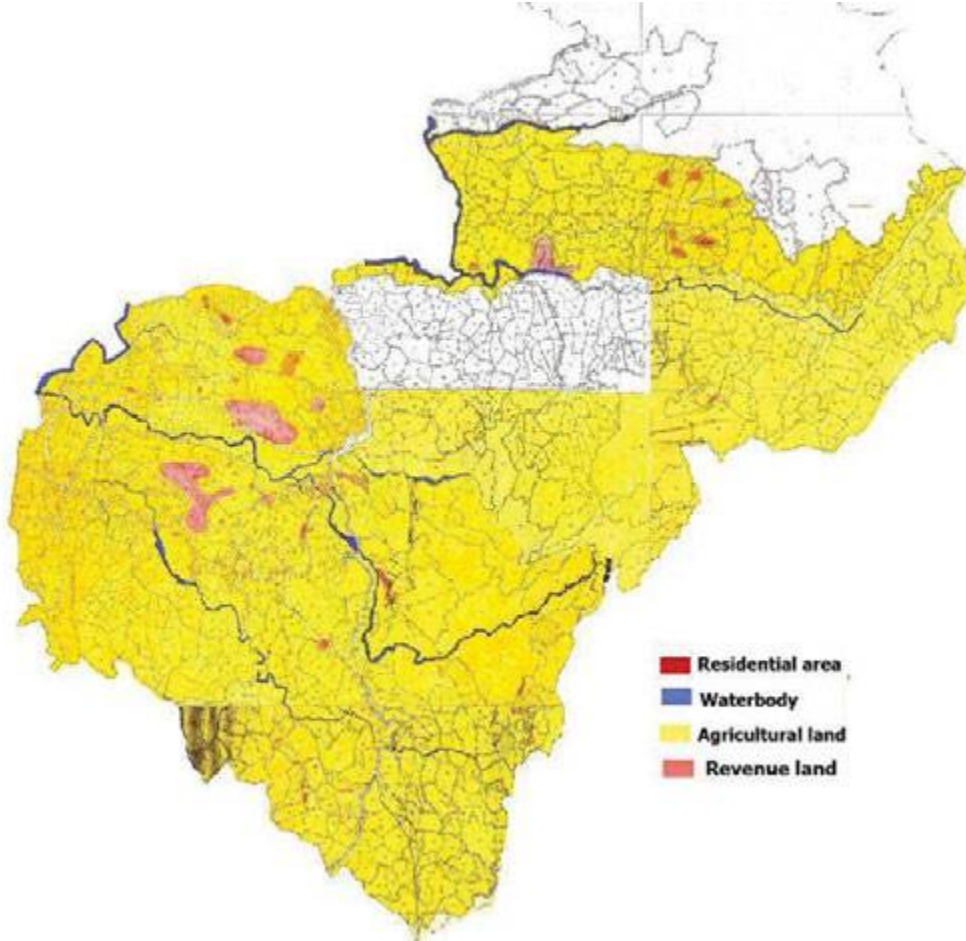
CADASTRAL SCALE ESA VILLAGES

Konnathady Village, Udumbanchola Taluk, Idukki District



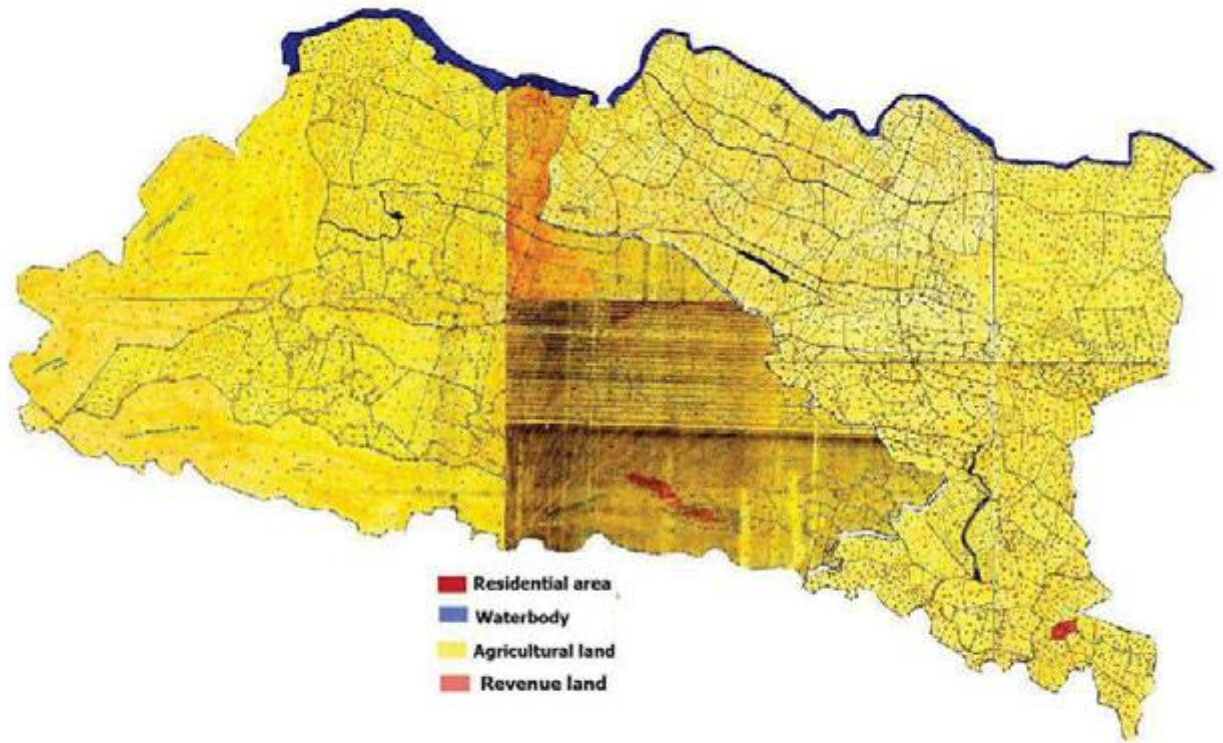
CADASTRAL SCALE ESA VILLAGES

Santhanpara Village, Udumbanchola Taluk, Idukki District



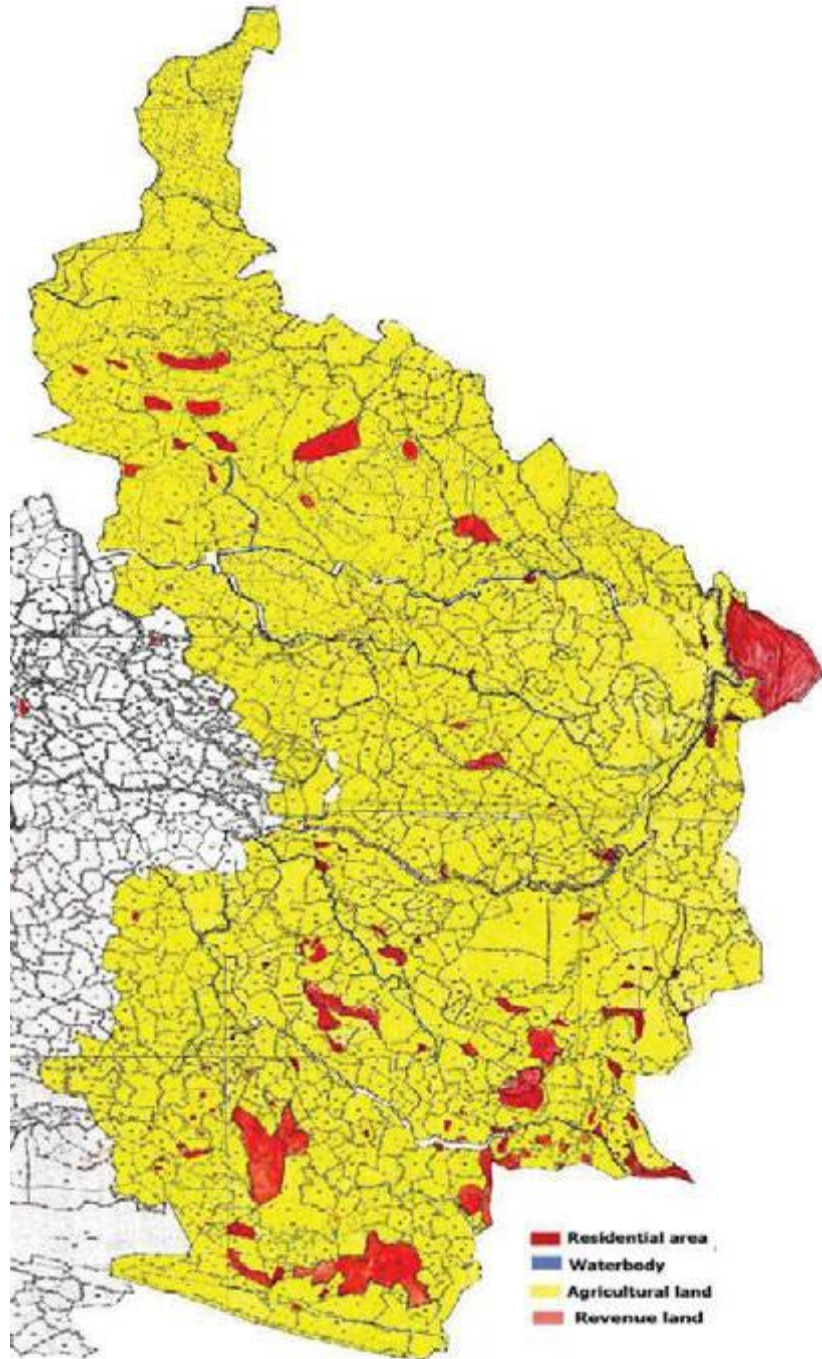
CADASTRAL SCALE ESA VILLAGES

Kandhippara Village, Udumbanchola Taluk, Idukki District



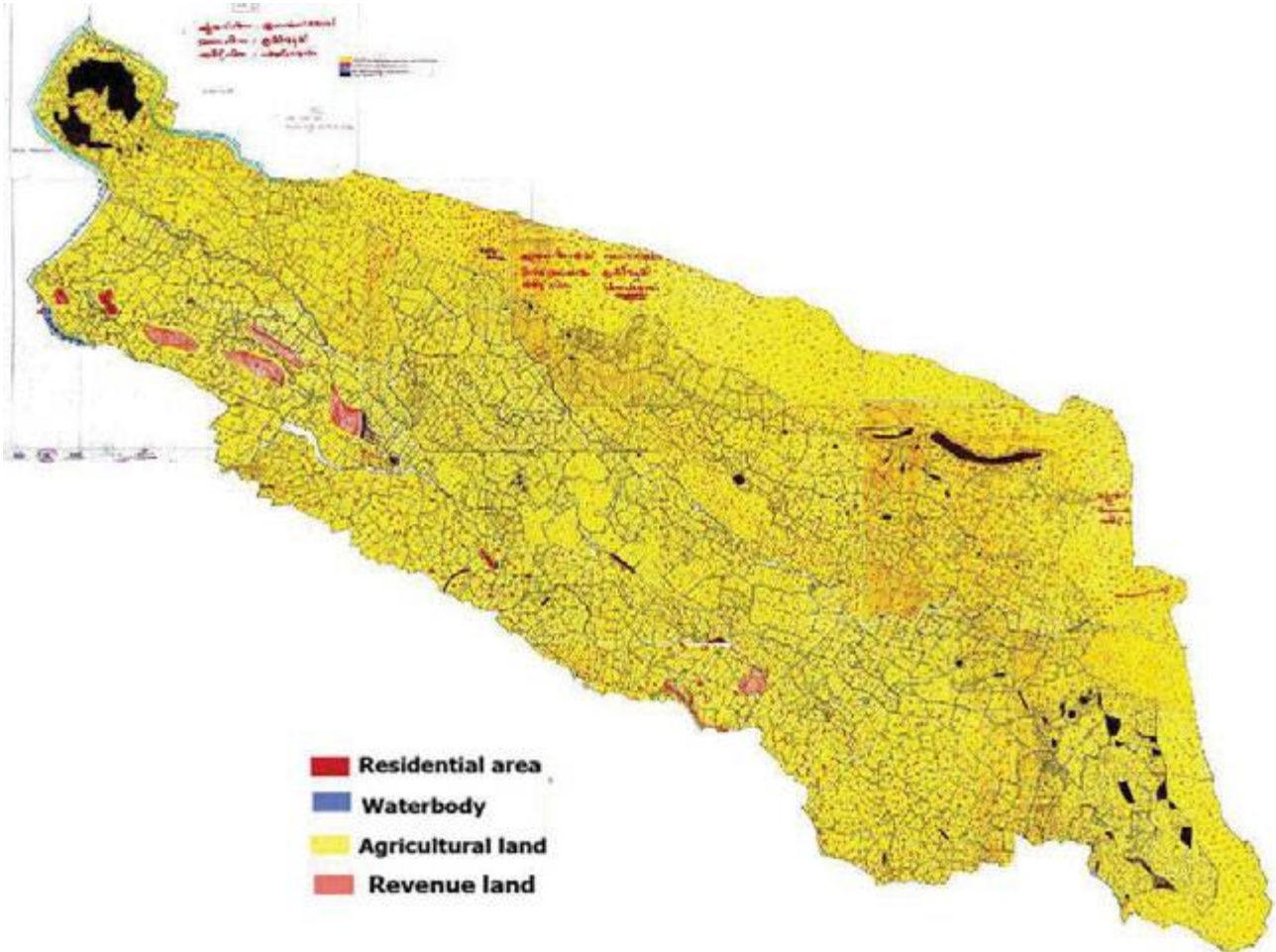
CADASTRAL SCALE ESA VILLAGES

Chathurangappara Village, Udumbanchola Taluk, Idukki District



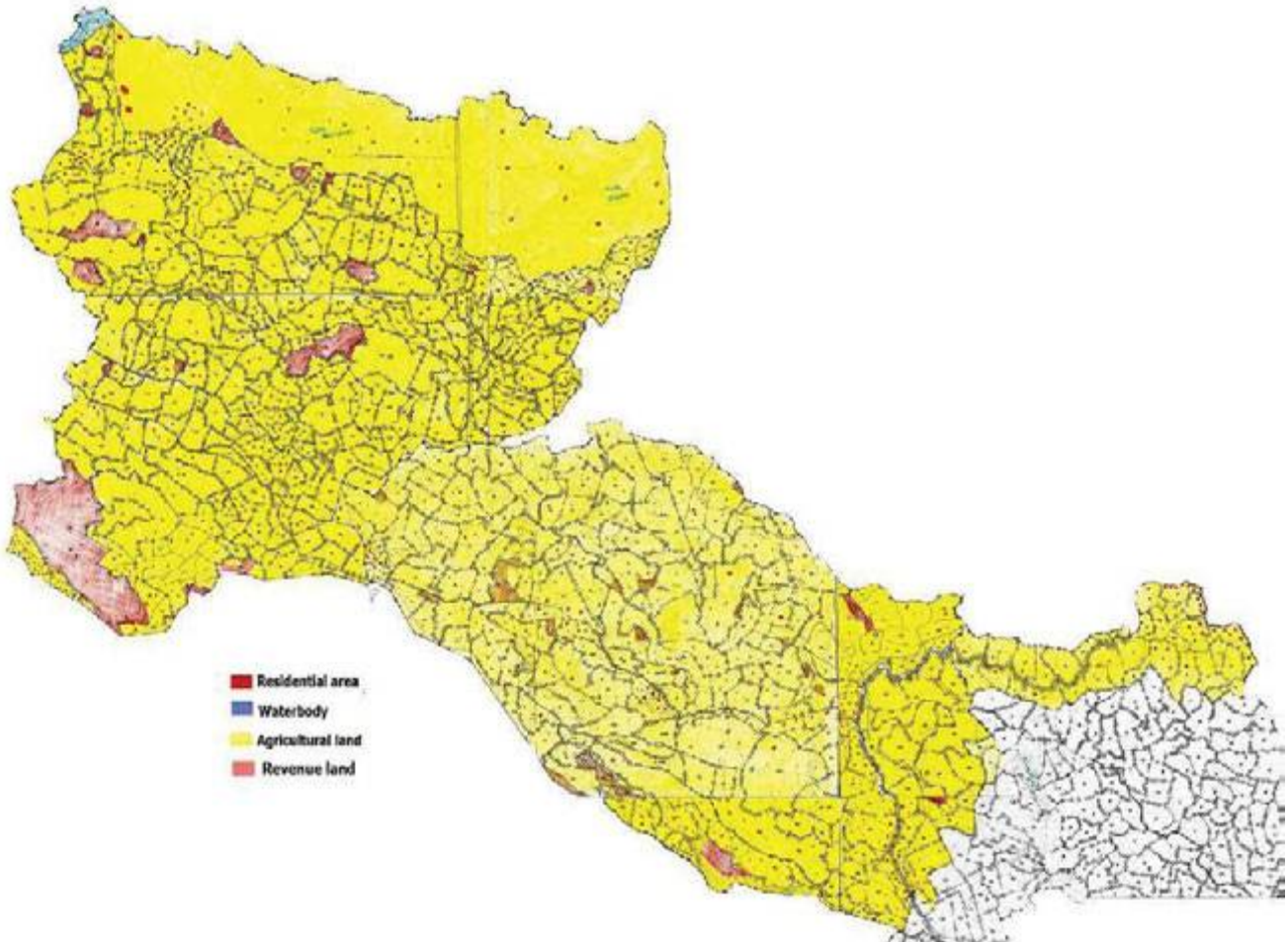
CADASTRAL SCALE ESA VILLAGES

Vathikkudy Village, Udumbanchola Taluk, Idukki District



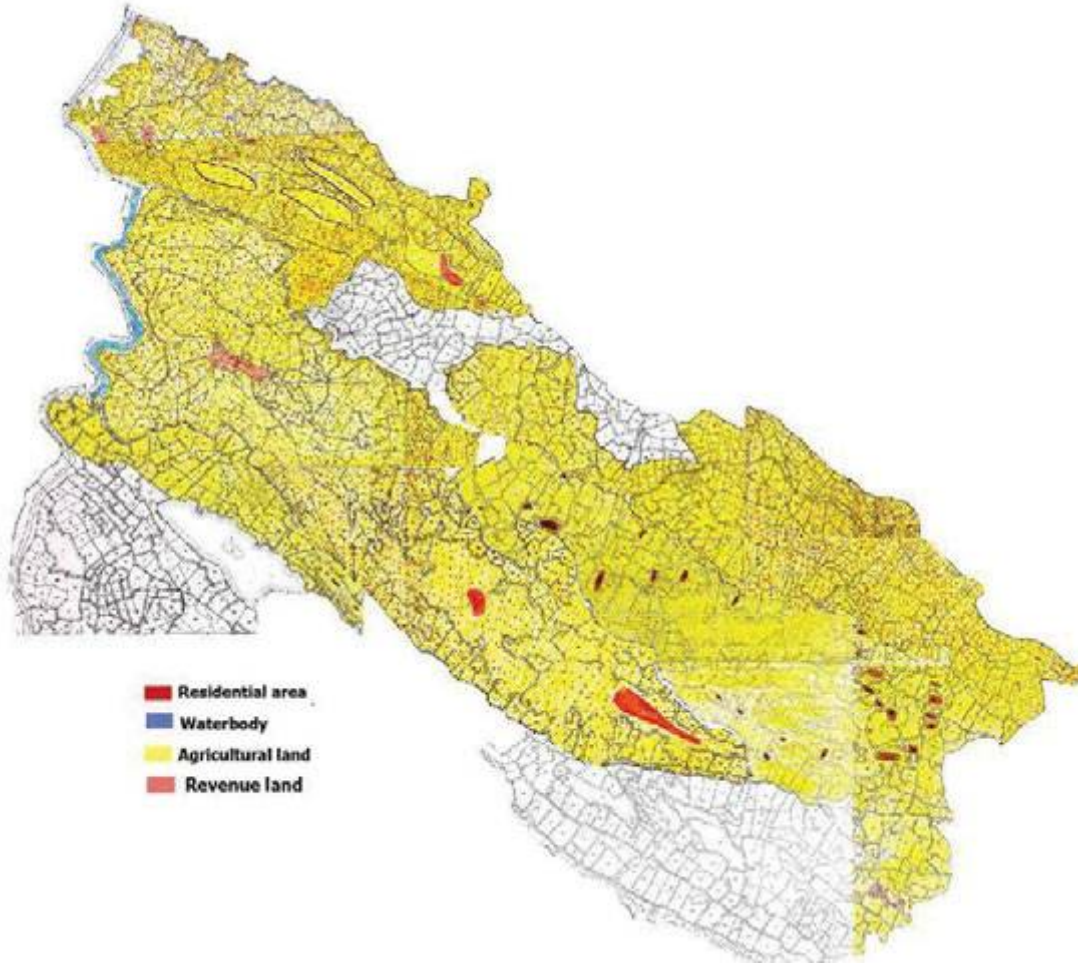
CADASTRAL SCALE ESA VILLAGES

Udumbanchola Village, Udumbanchola Taluk, Idukki District



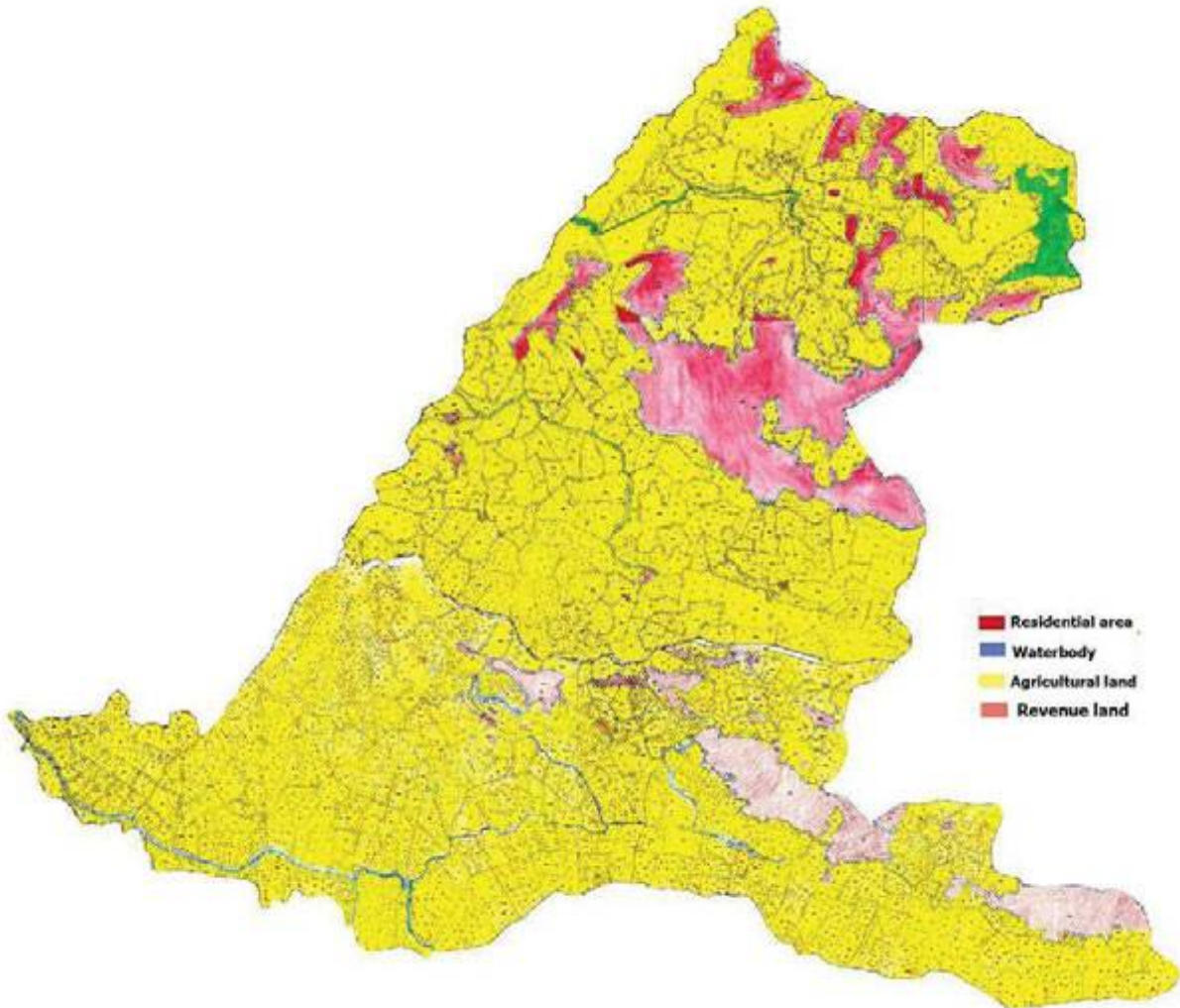
CADASTRAL SCALE ESA VILLAGES

Upputhodu Village, Udumbanchola Taluk, Idukki District



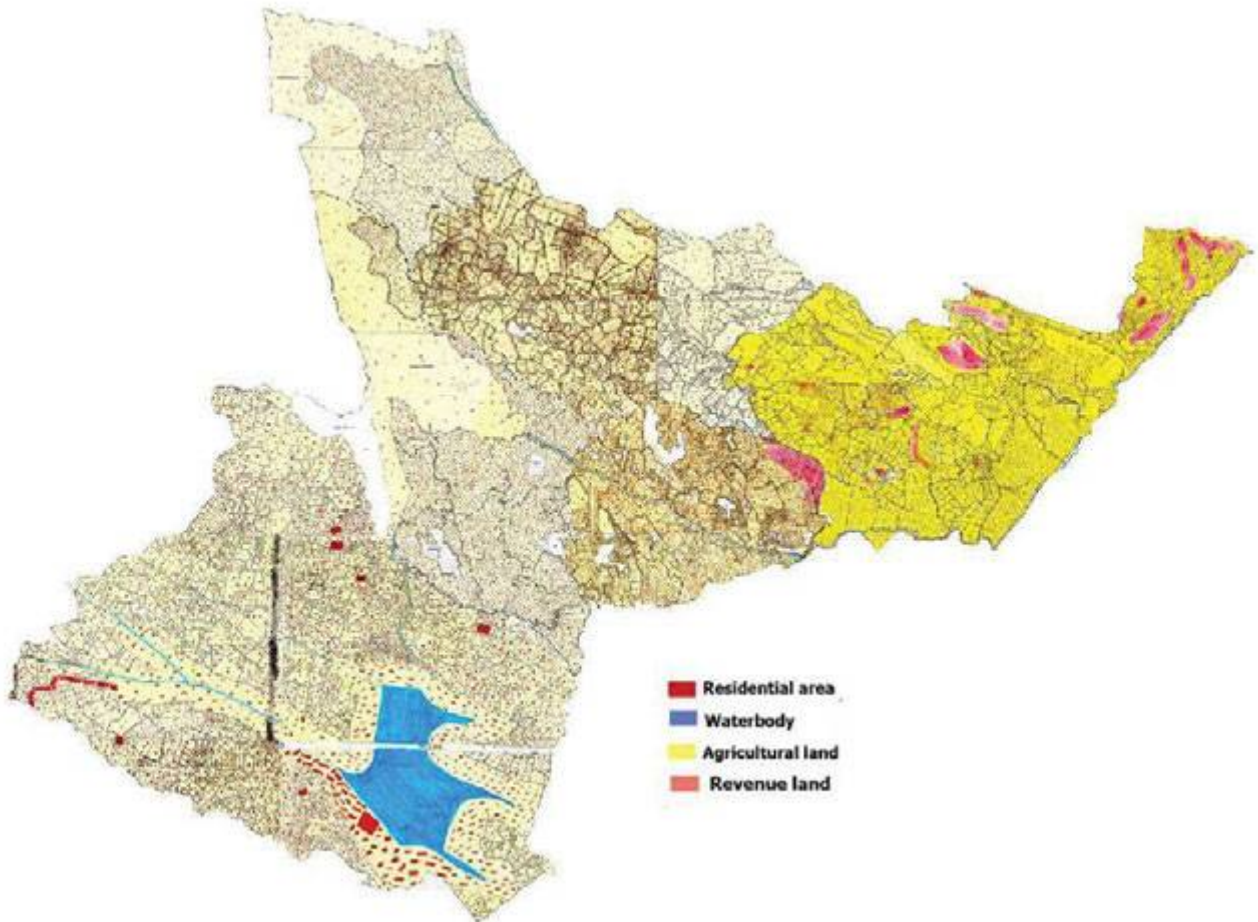
CADASTRAL SCALE ESA VILLAGES

Parathod Village, Udumbanchola Taluk, Idukki District



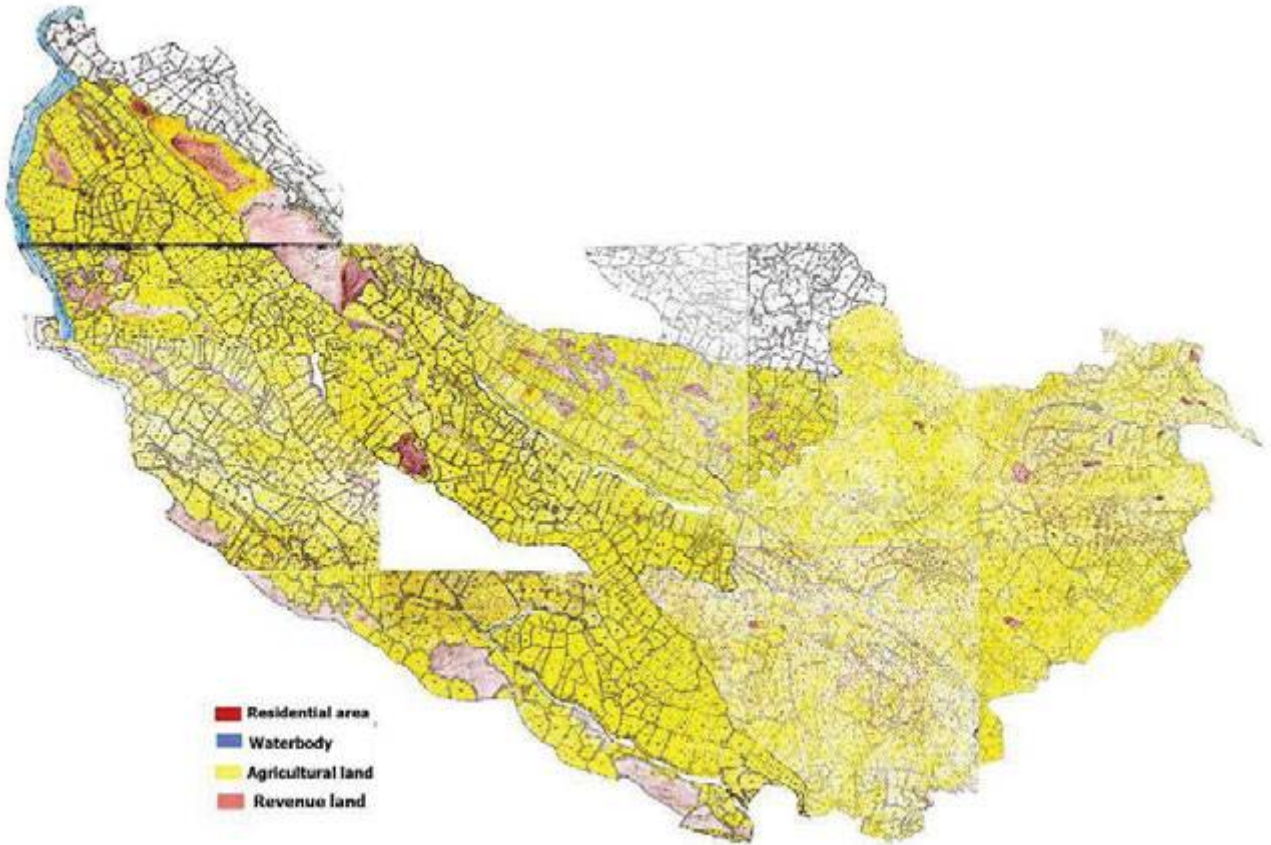
CADASTRAL SCALE ESA VILLAGES

Kalkunthal Village, Udumbanchola Taluk, Idukki District



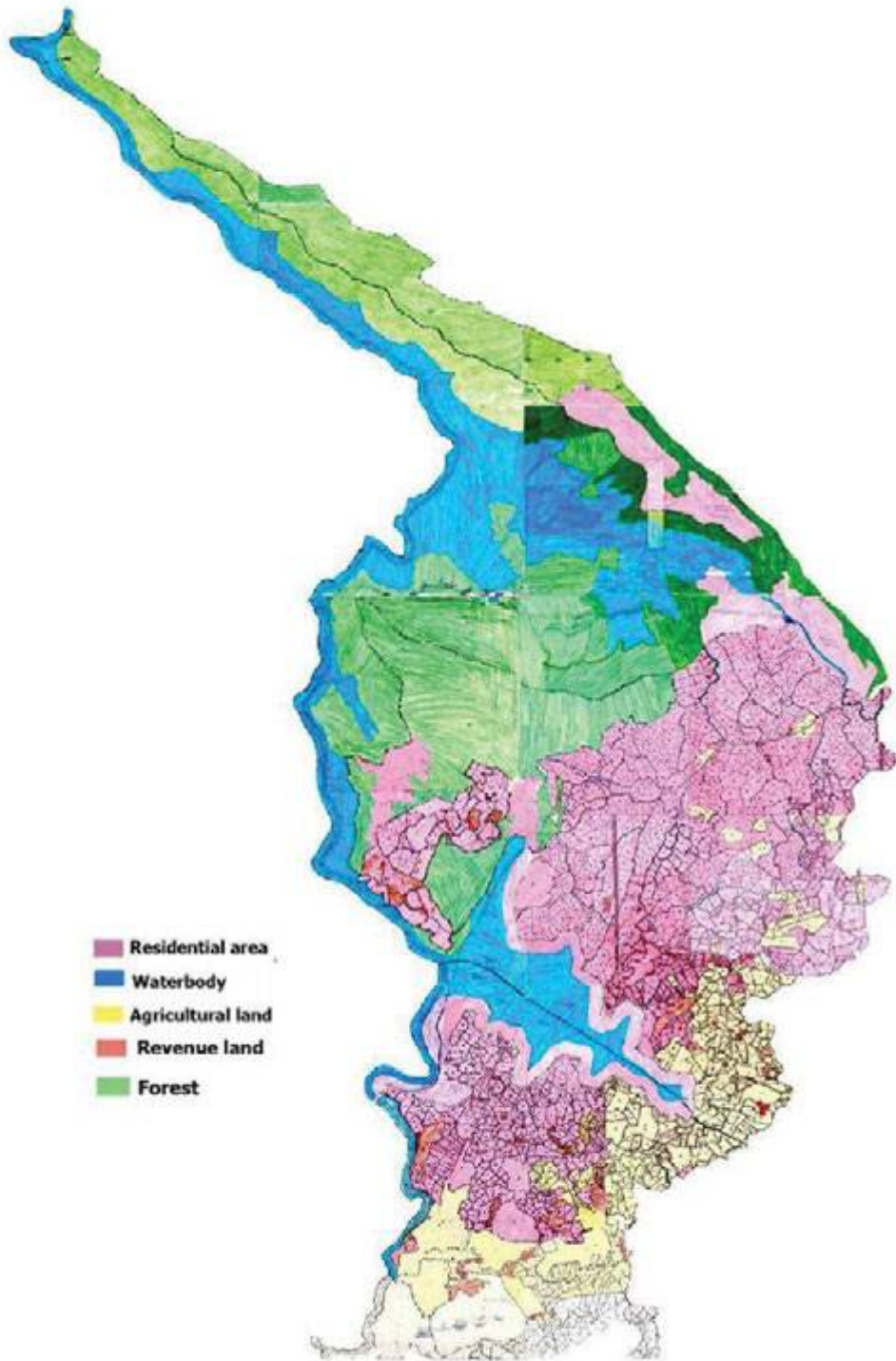
CADASTRAL SCALE ESA VILLAGES

Thankamany Village, Udumbanchola Taluk, Idukki District



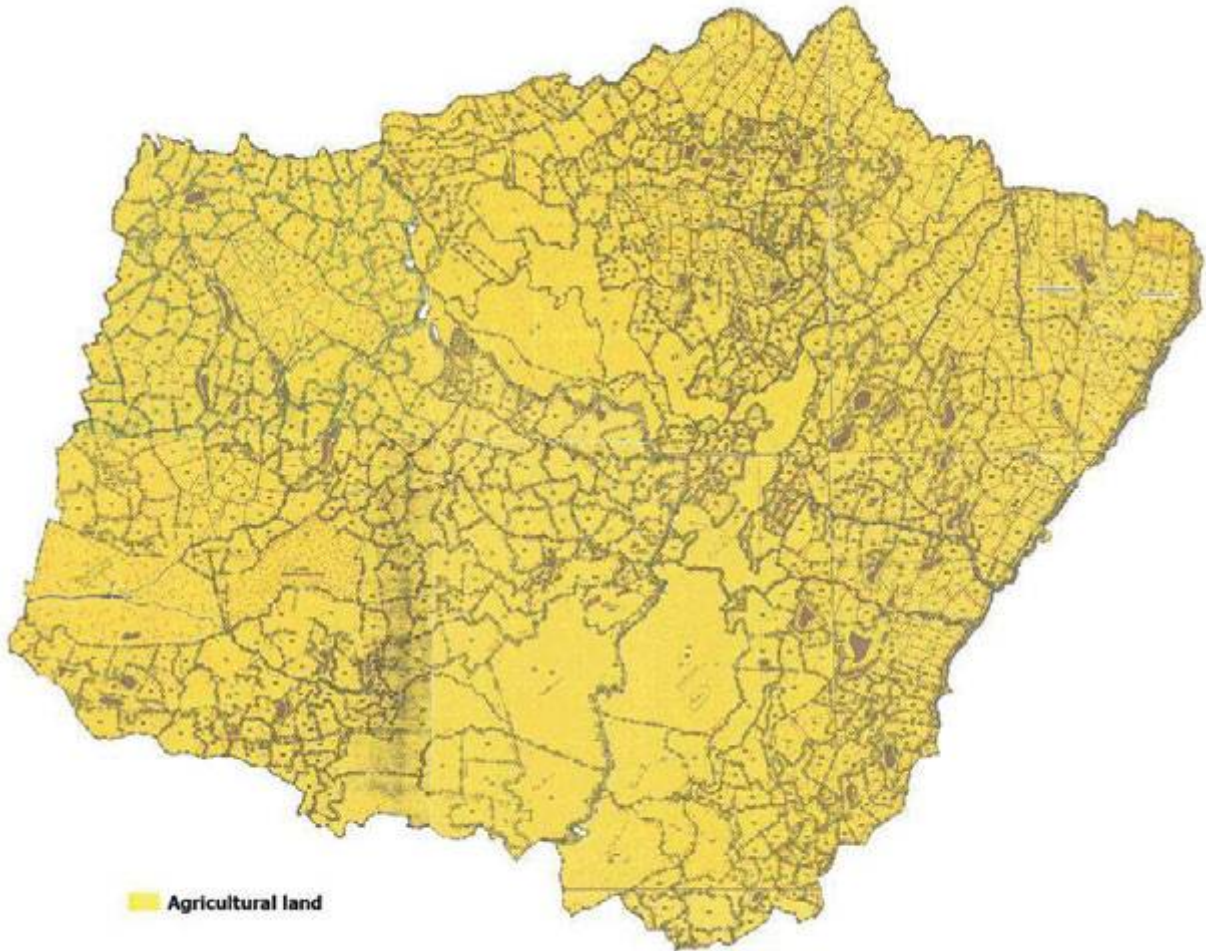
CADASTRAL SCALE ESA VILLAGES

Ayyappankovil Village, Udumbanchola Taluk, Idukki District



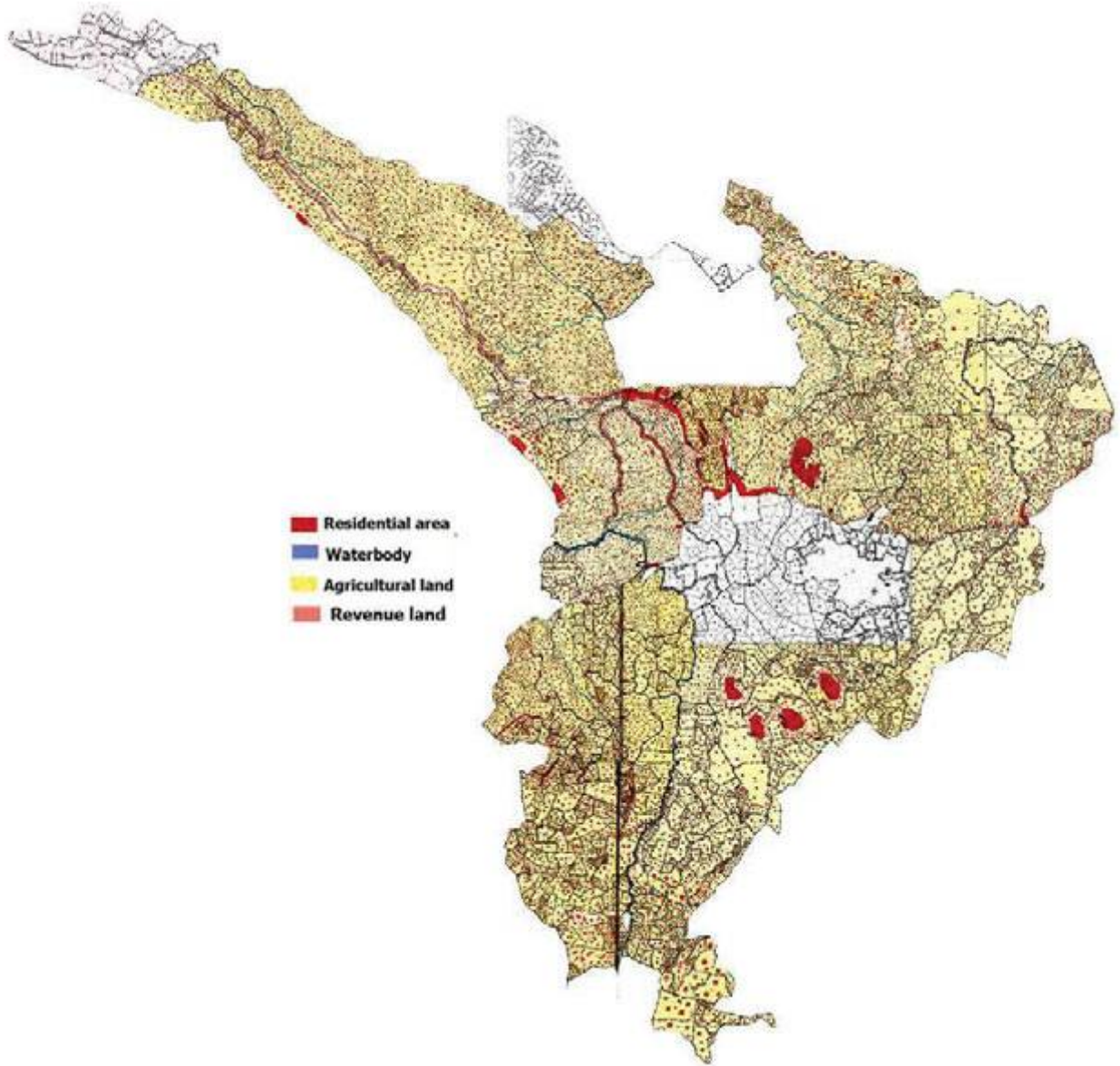
CADASTRAL SCALE ESA VILLAGES

Pambadumpara Village, Udumbanchola Taluk, Idukki District



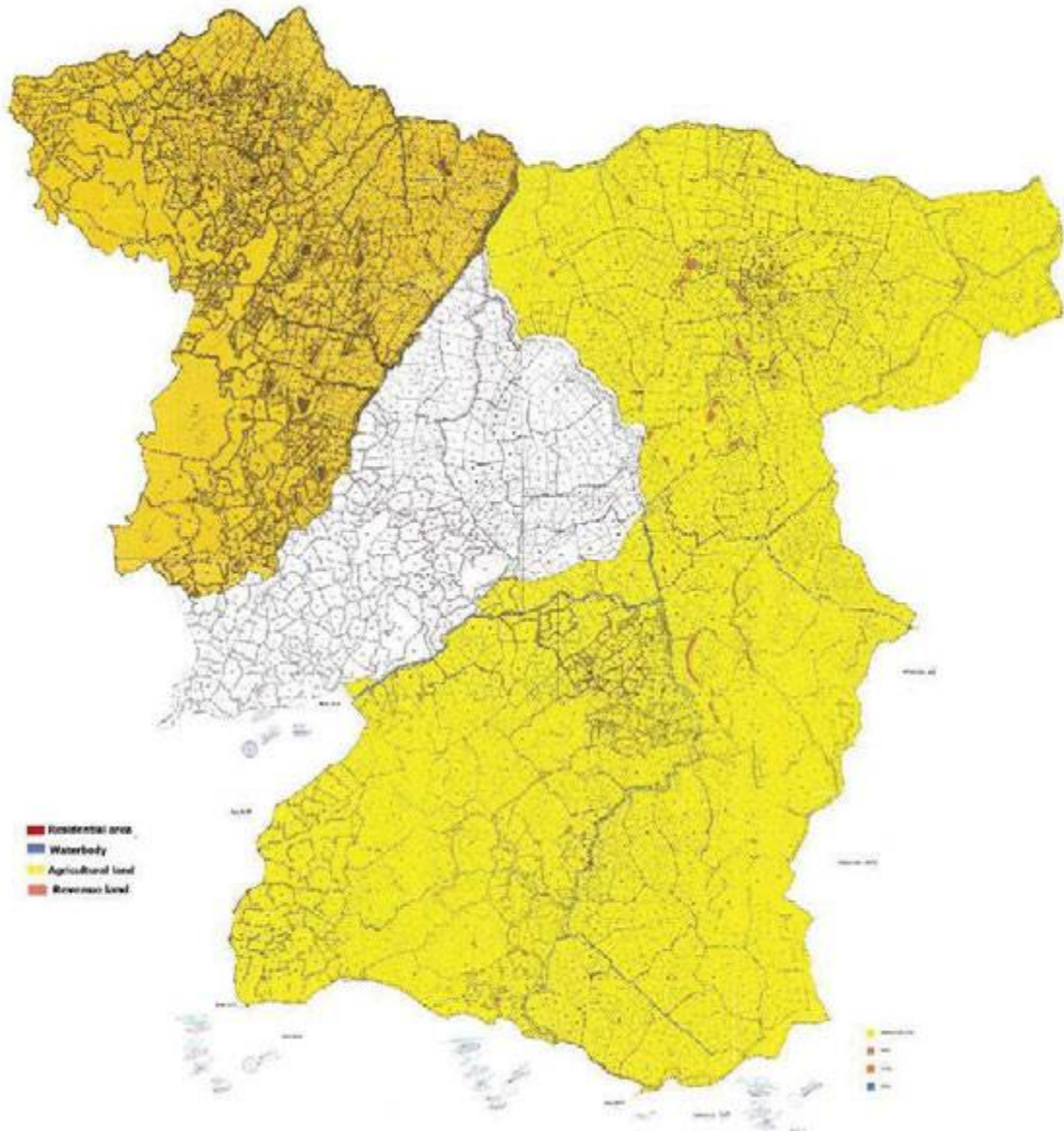
CADASTRAL SCALE ESA VILLAGES

Kattappana Village, Udumbanchola Taluk, Idukki District



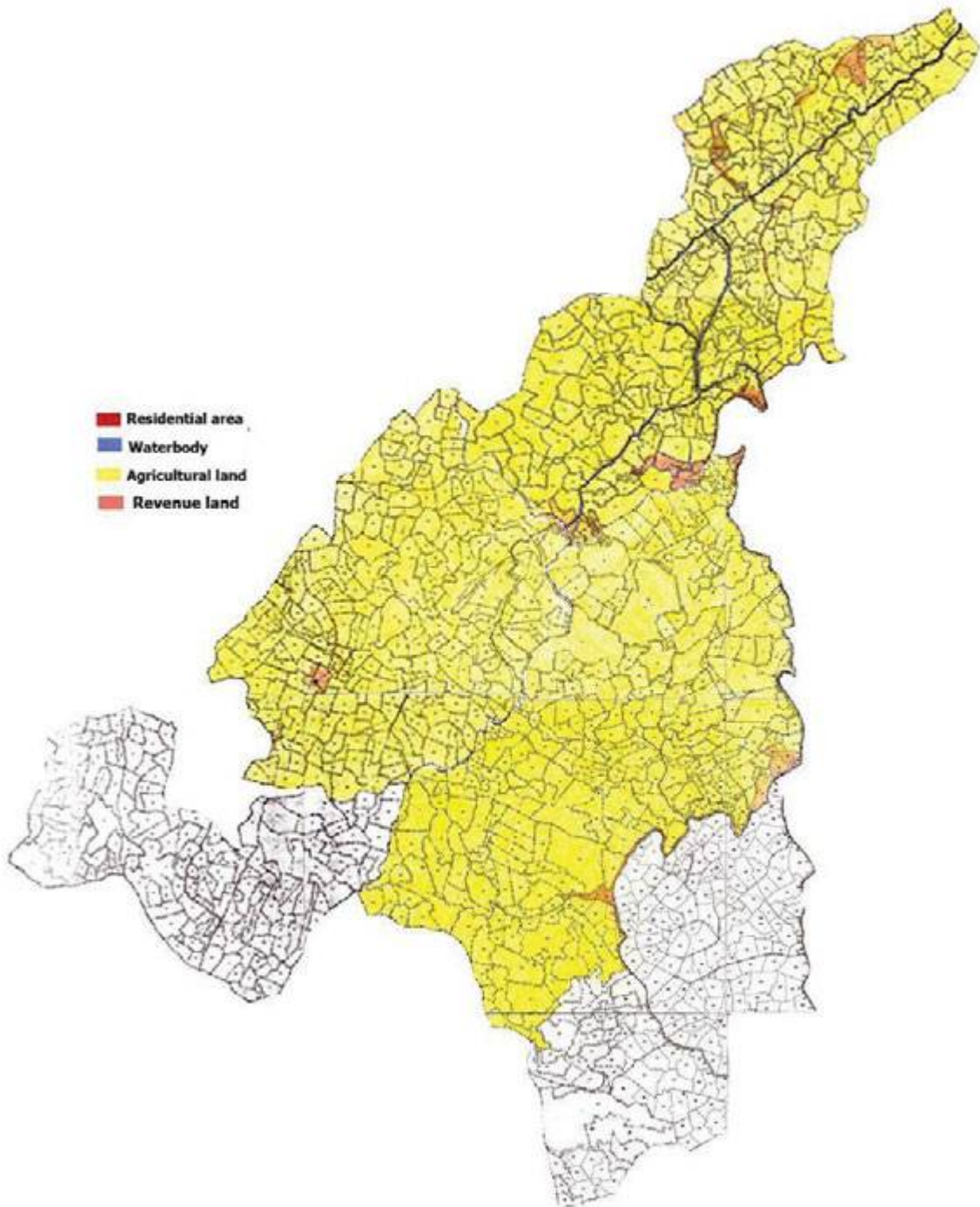
CADASTRAL SCALE ESA VILLAGES

Karunapuram Village, Udumbanchola Taluk, Idukki District



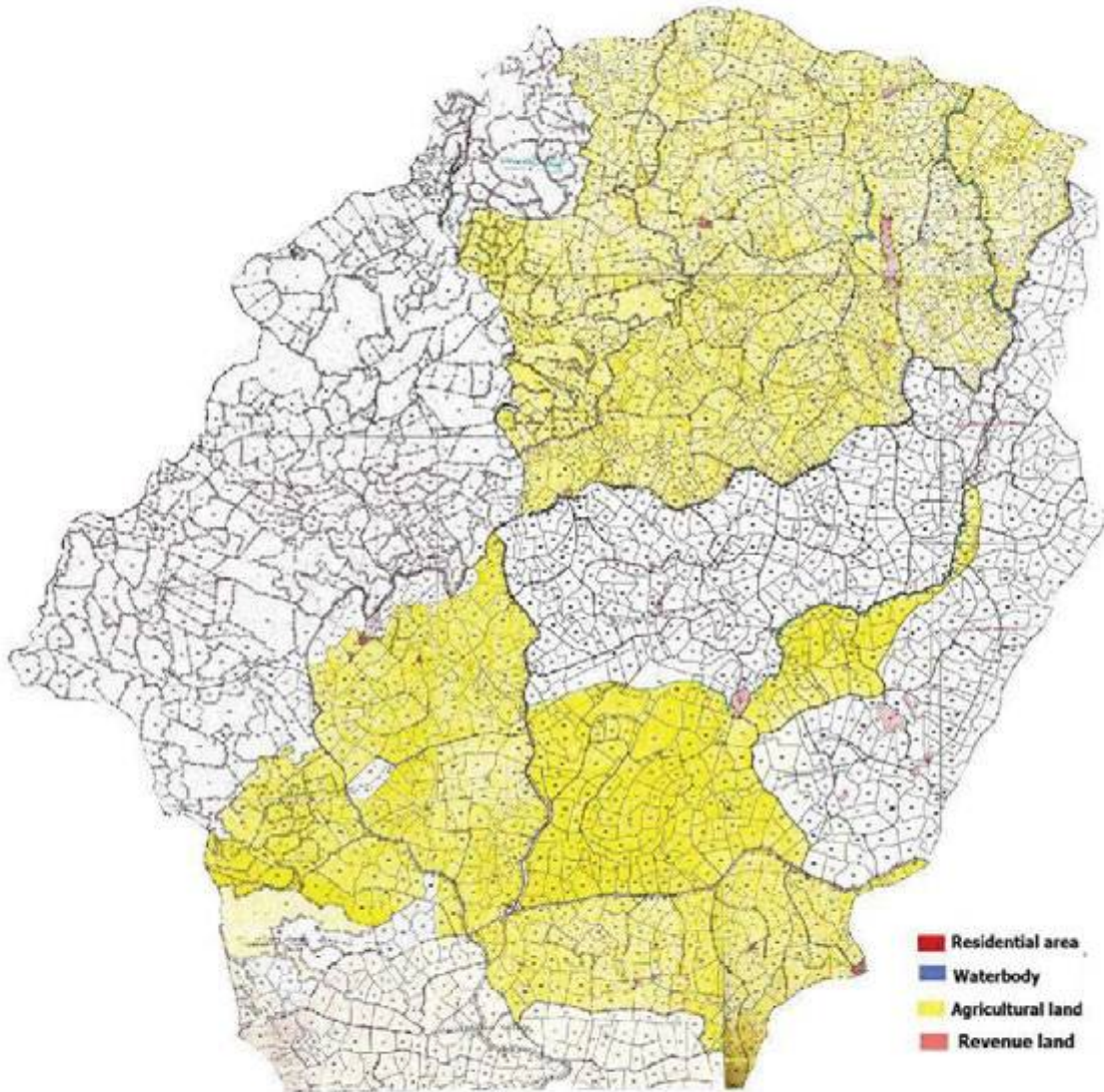
CADASTRAL SCALE ESA VILLAGES

Vandanmedu Village, Udumbanchola Taluk, Idukki District



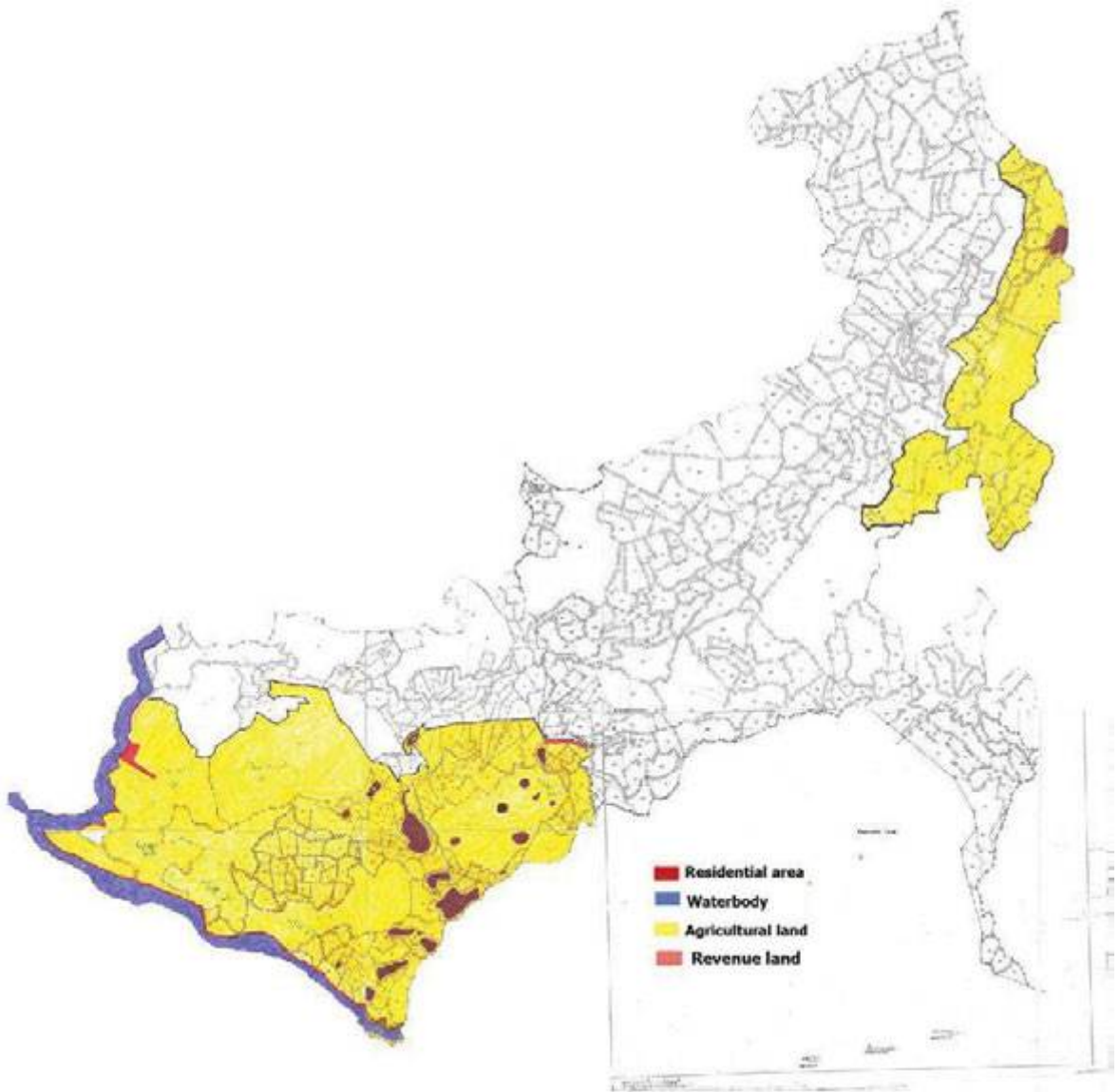
CADASTRAL SCALE ESA VILLAGES

Anakkara Village, Udumbanchola Taluk, Idukki District



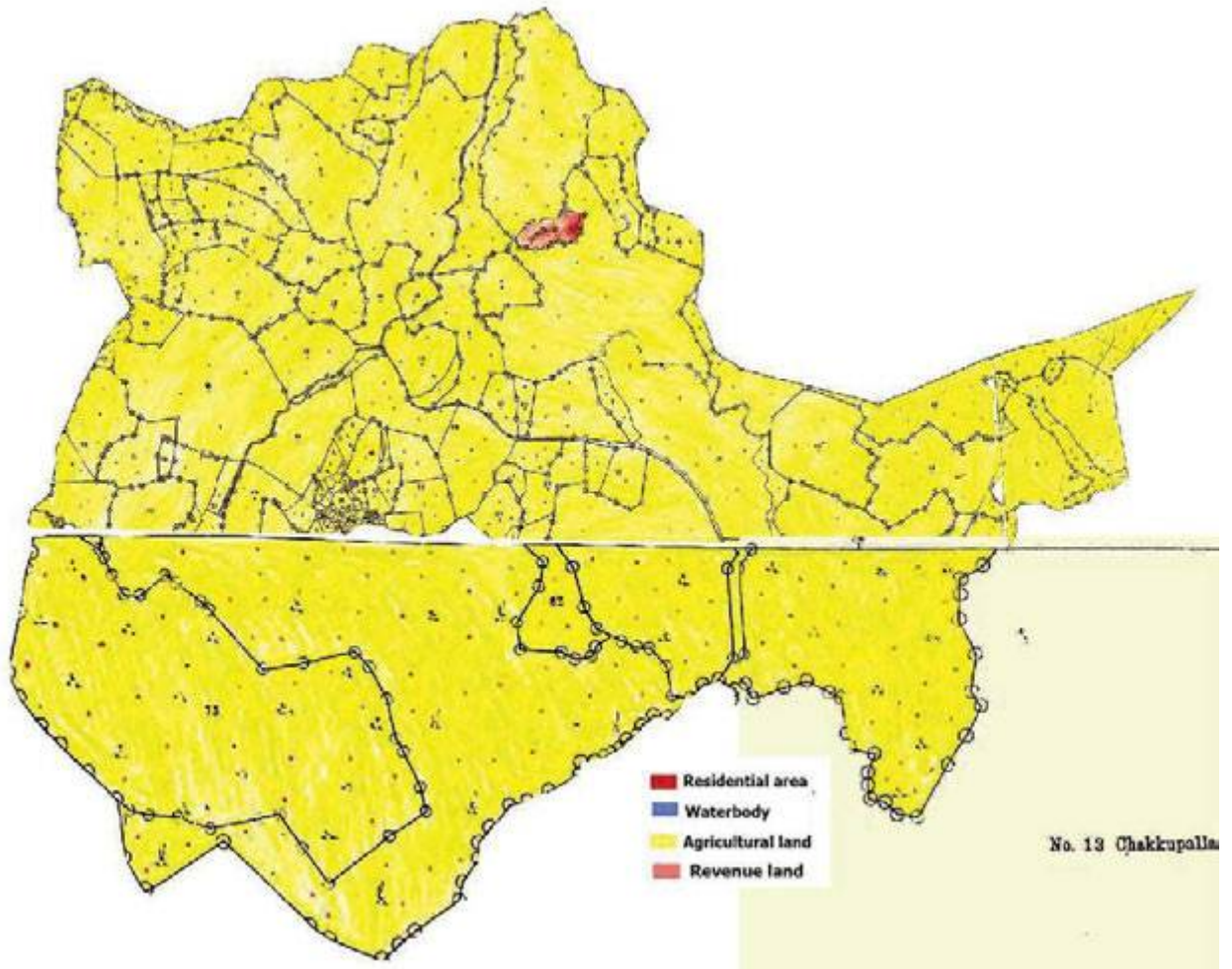
CADASTRAL SCALE ESA VILLAGES

Anavilasam Village, Udumbanchola Taluk, Idukki District



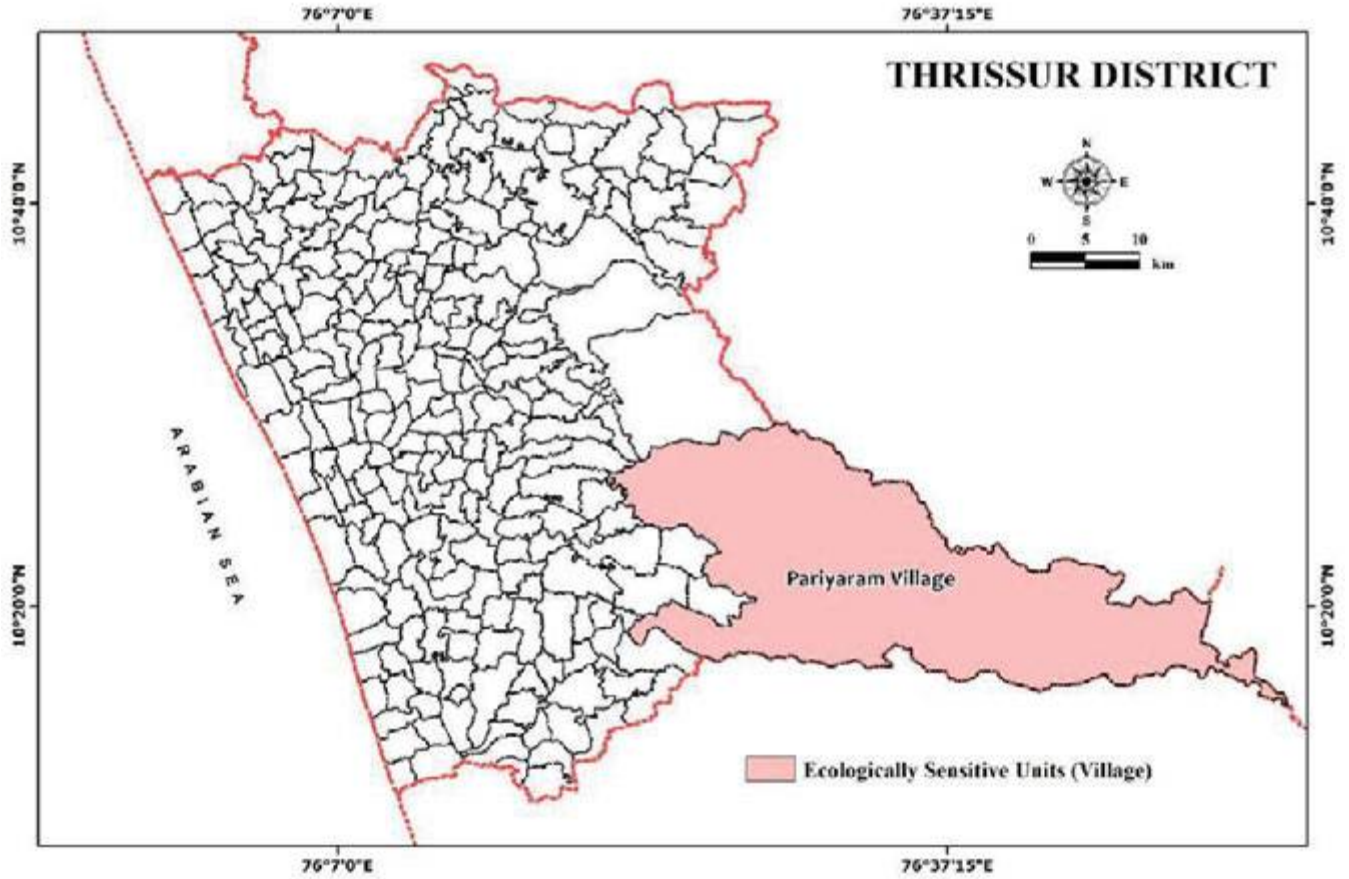
CADASTRAL SCALE ESA VILLAGES

Chakkupallam Village, Udumbanchola Taluk, Idukki District



CADASTRAL SCALE ESA VILLAGES

Trissur District



No. of ESA Villages – 1

No. of Taluks – 1

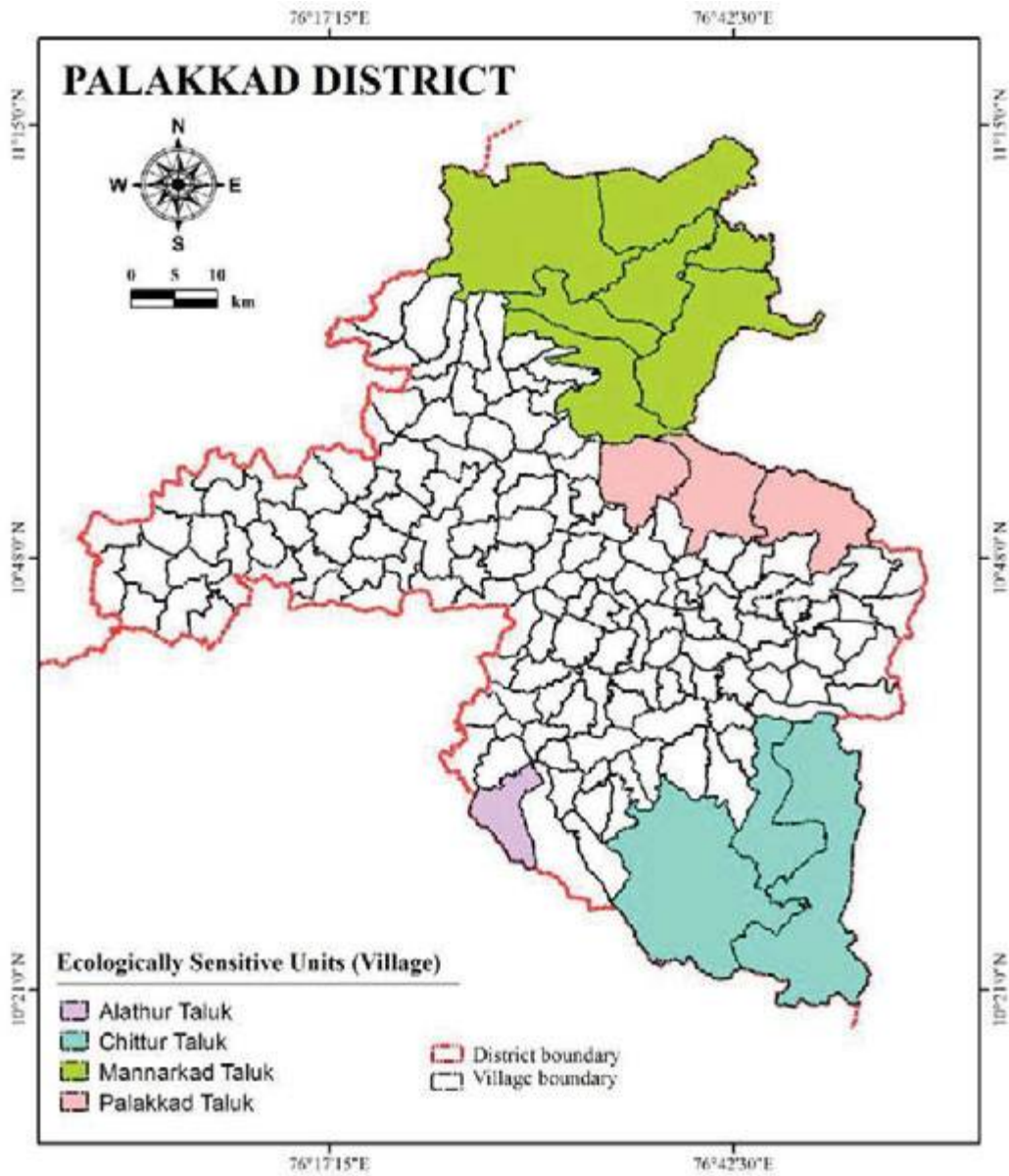
CADASTRAL SCALE ESA VILLAGES

Pariyaram Village, Pariyaram Taluk, Trissur District



CADASTRAL SCALE ESA VILLAGES

Palakkad District, Kerala

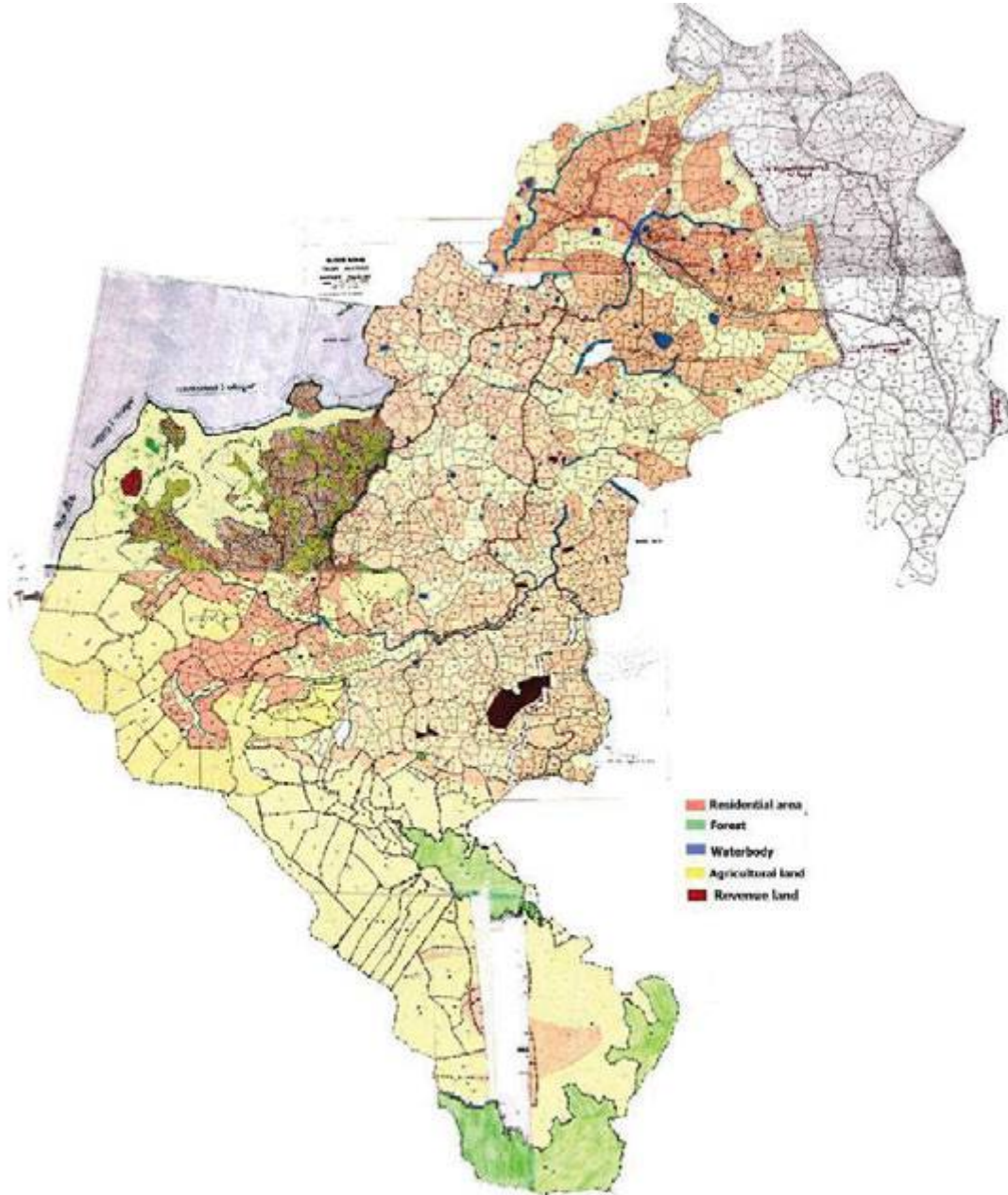


No. of ESA Villages – 14

No. of Taluks – 4

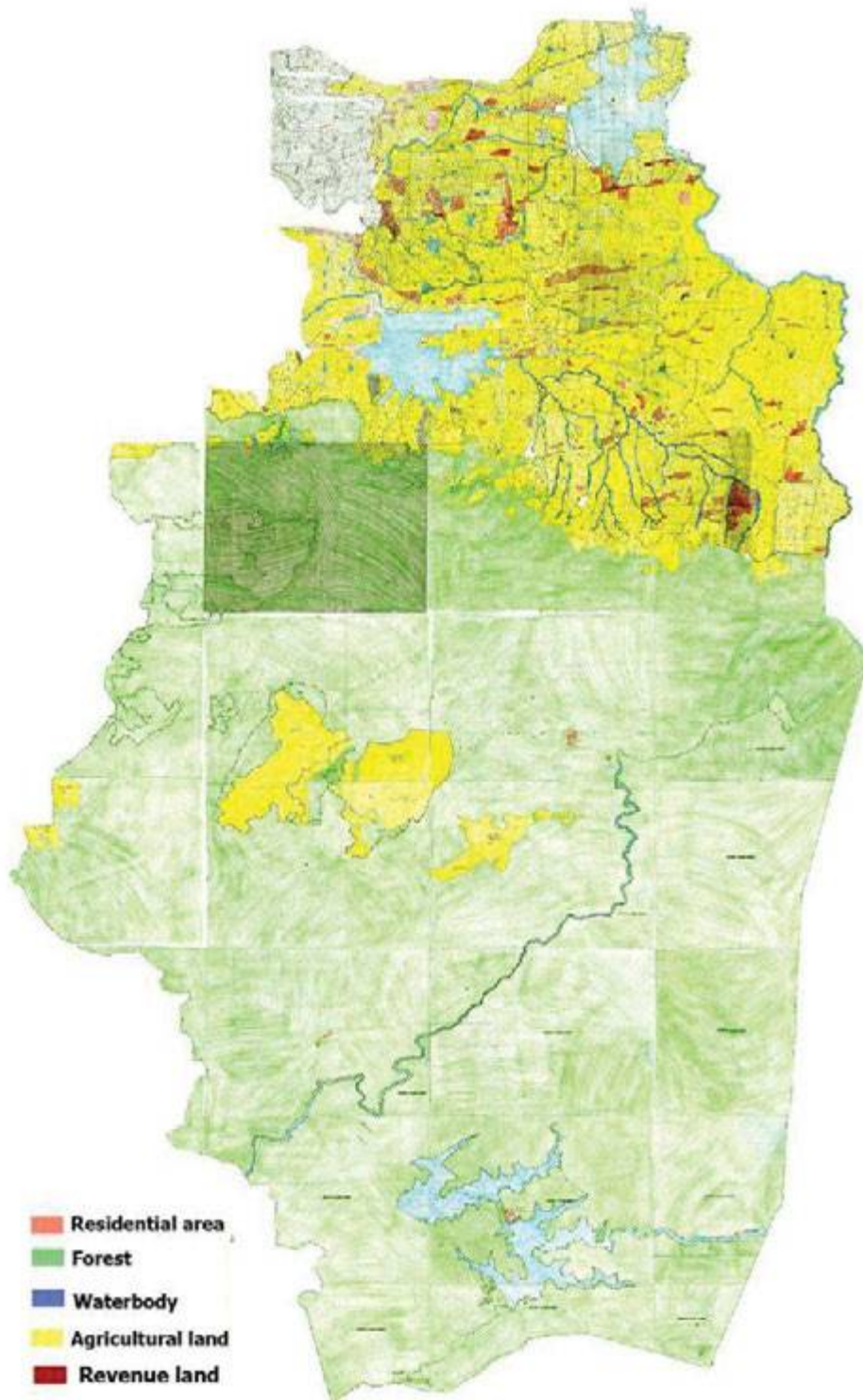
CADASTRAL SCALE ESA VILLAGES

Kizhakkanchery Village, Alathur Taluk, Palakkad District



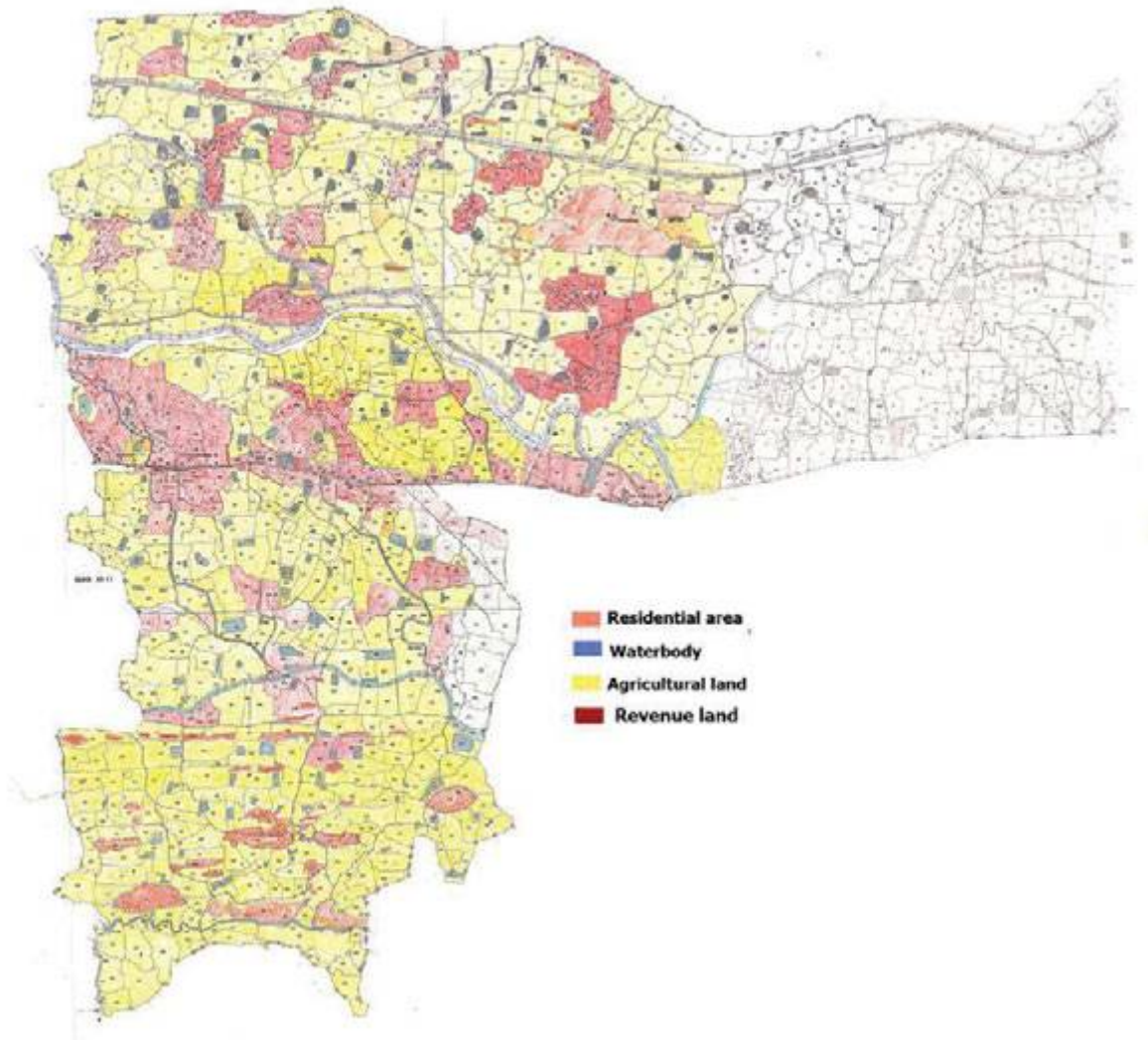
CADASTRAL SCALE ESA VILLAGES

Muthalamada I Village, Chittur Taluk, Palakkad District



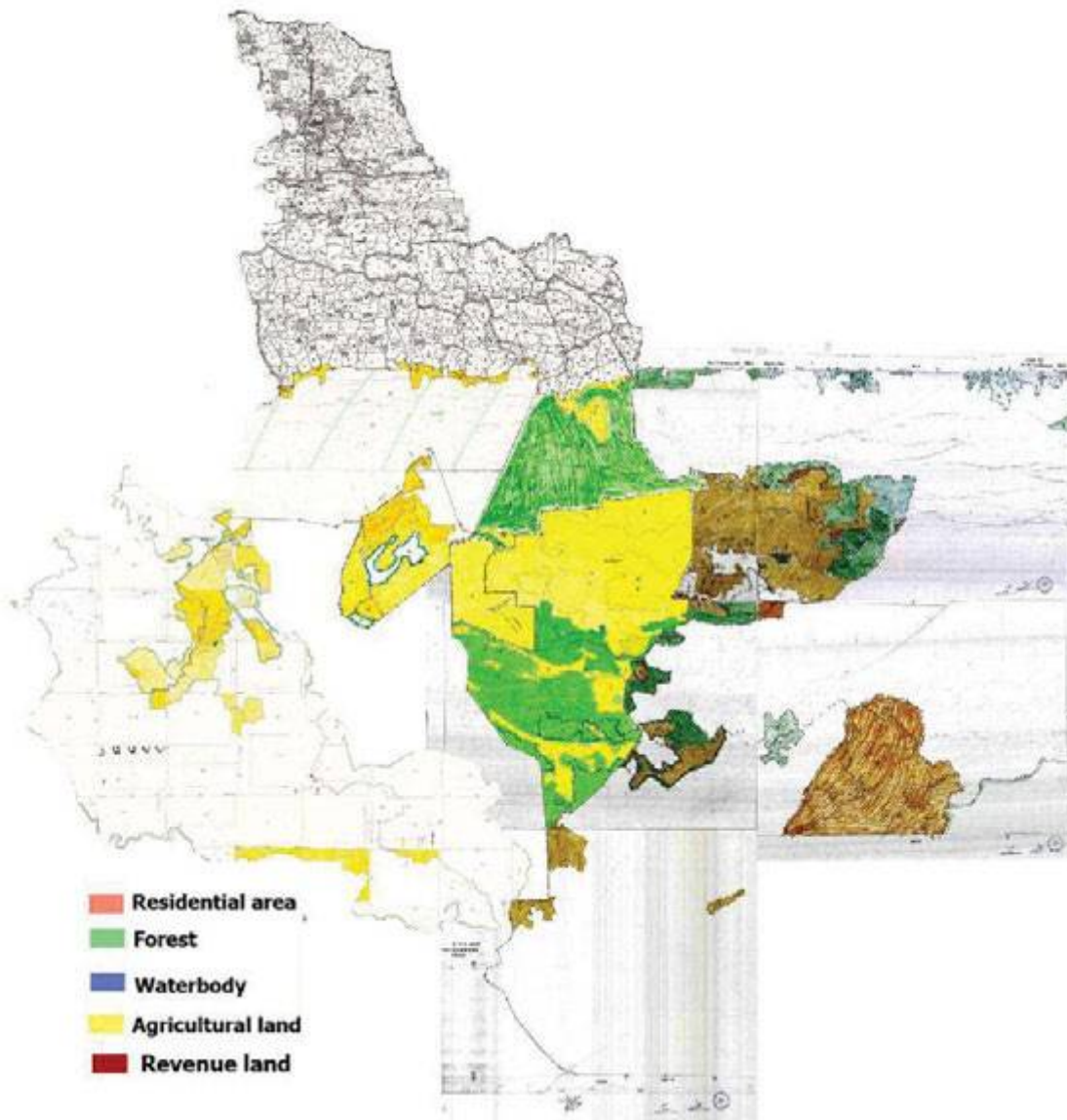
CADASTRAL SCALE ESA VILLAGES

Muthalamada II Village, Chittur Taluk, Palakkad District



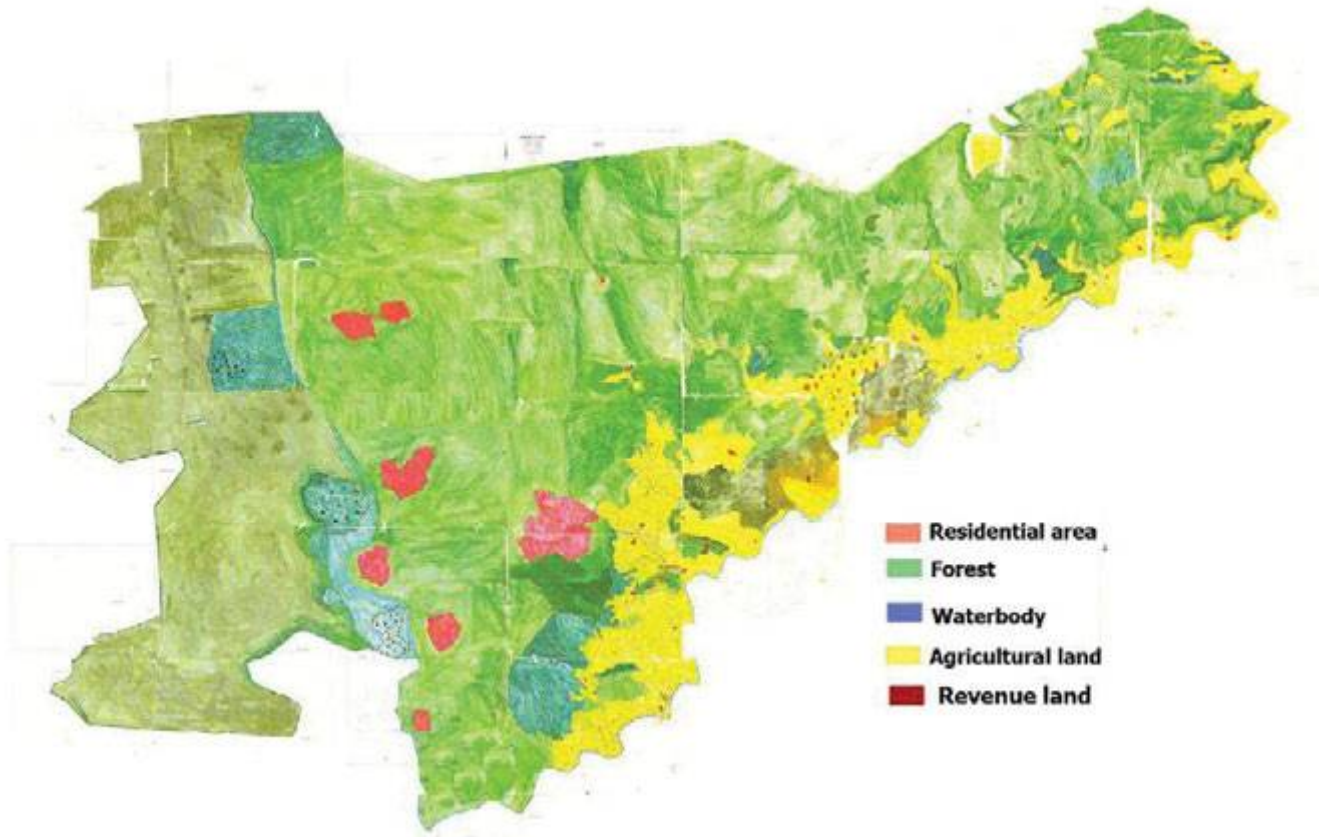
CADASTRAL SCALE ESA VILLAGES

Nelliyampathy Village, Chittur Taluk, Palakkad District



CADASTRAL SCALE ESA VILLAGES

Puthur Village, Mannarkkad Taluk, Palakkad District



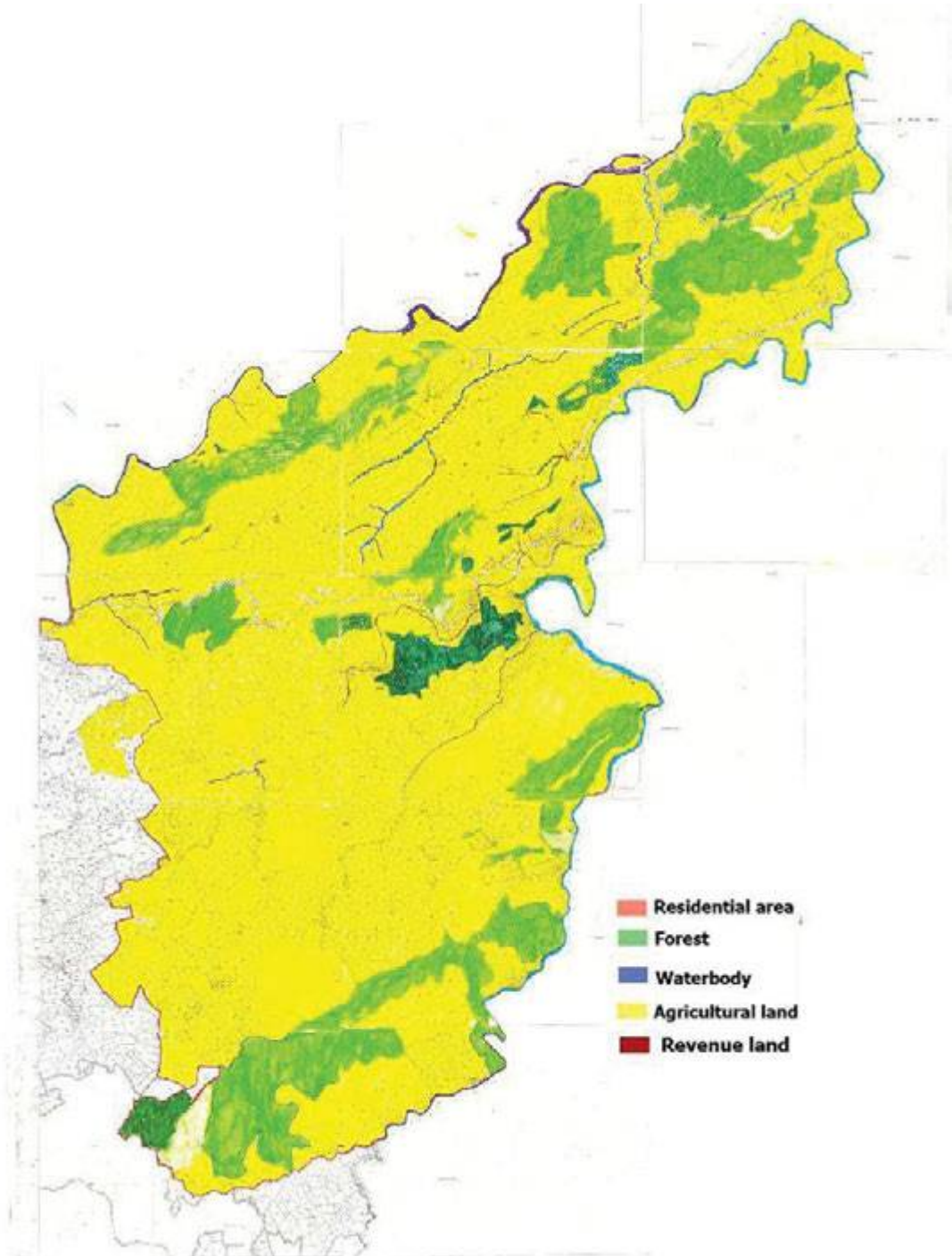
CADASTRAL SCALE ESA VILLAGES

Padavayal Village, Mannarkkad Taluk, Palakkad District



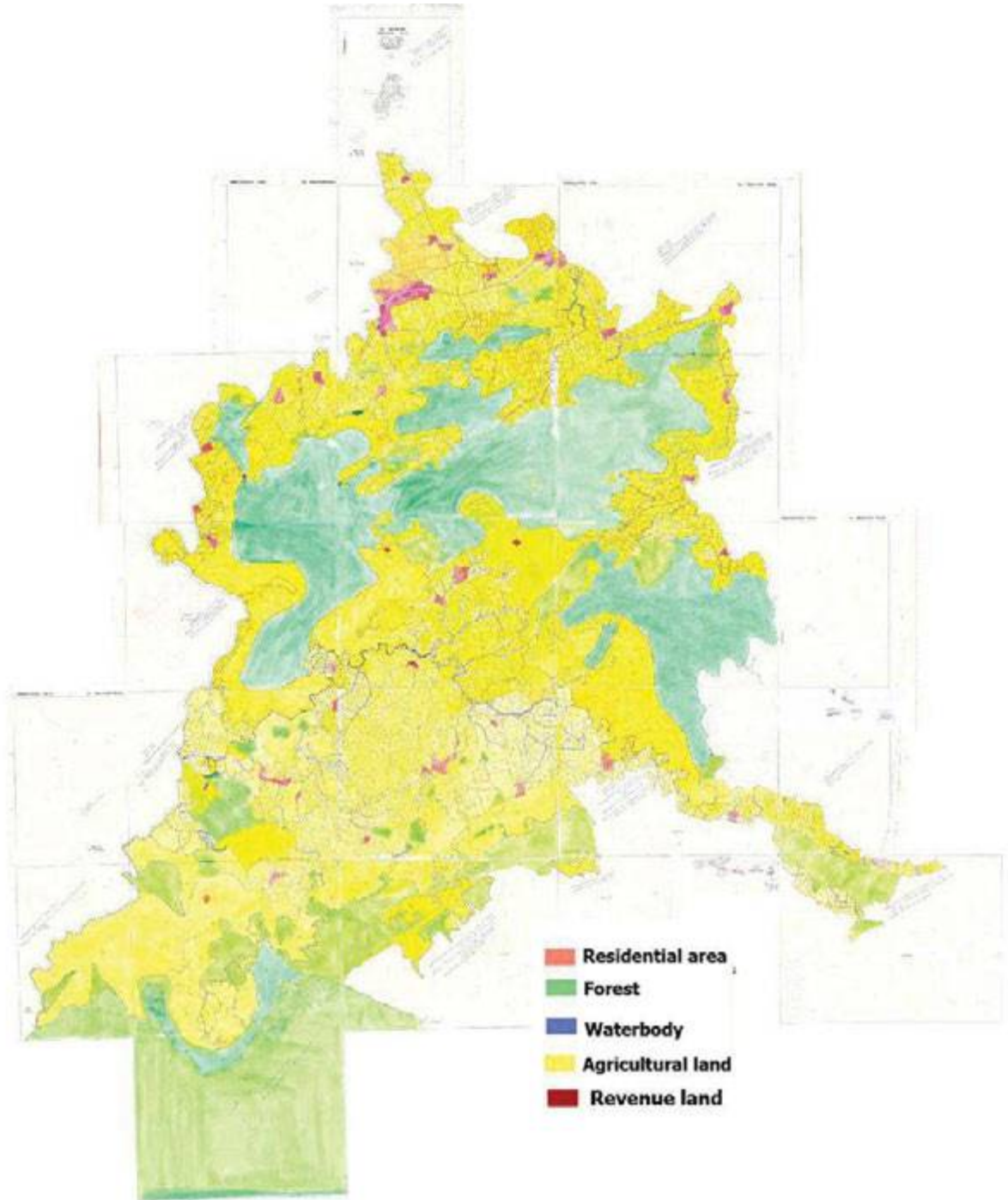
CADASTRAL SCALE ESA VILLAGES

Agali Village, Mannarkkad Taluk, Palakkad District



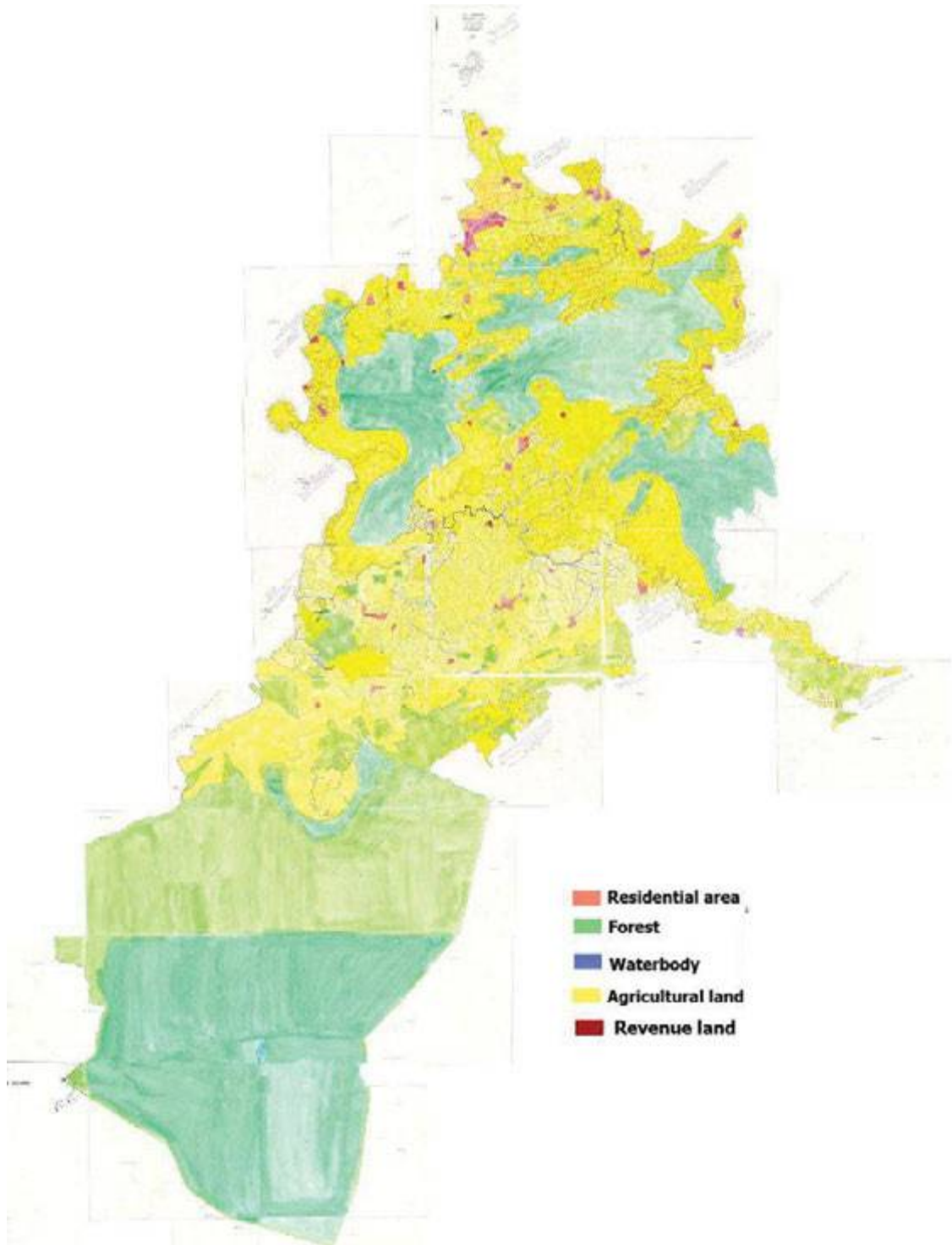
CADASTRAL SCALE ESA VILLAGES

Kottathara Village, Mannarkkad Taluk, Palakkad District



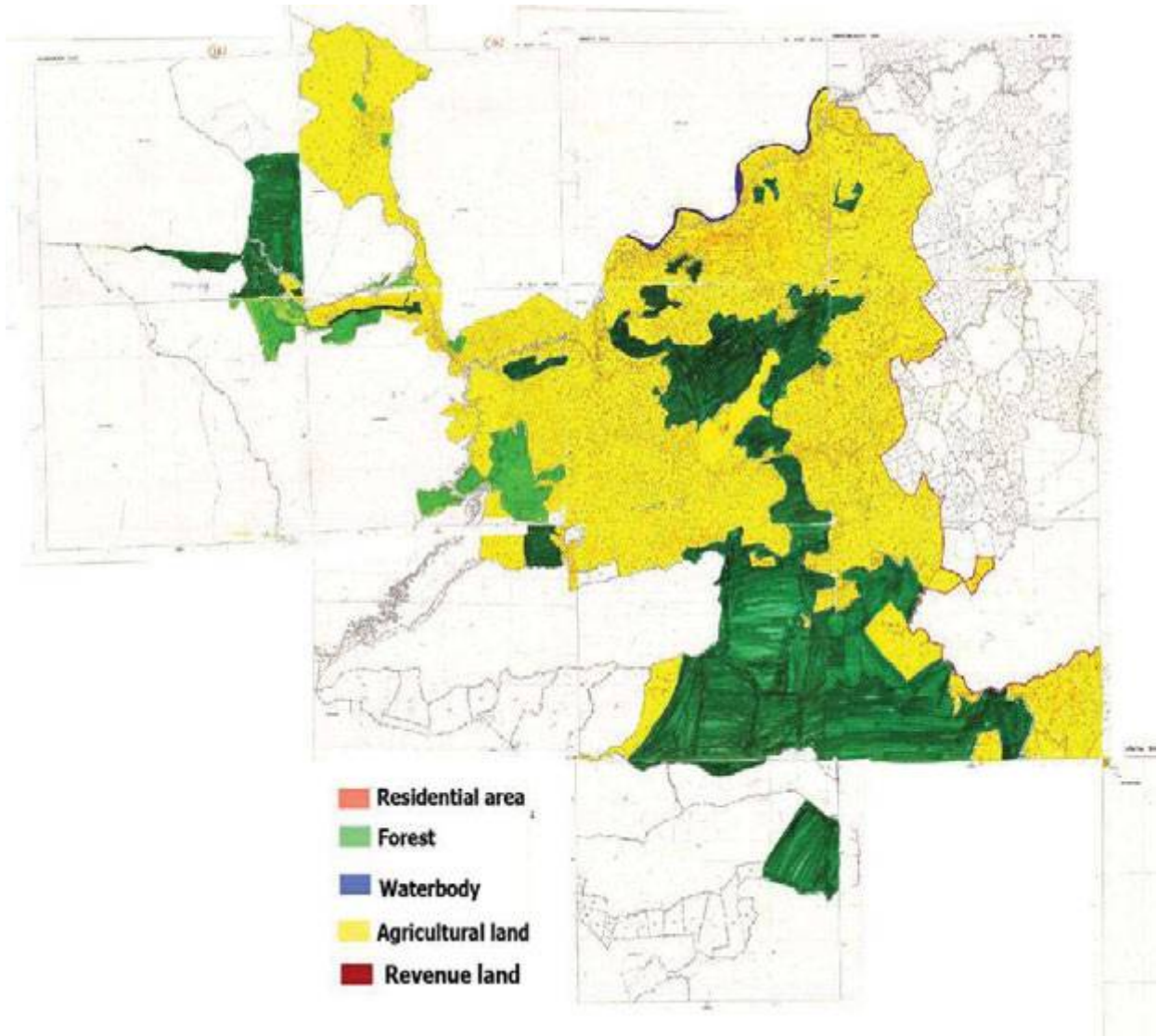
CADASTRAL SCALE ESA VILLAGES

Sholayar Village, Mannarkkad Taluk, Palakkad District



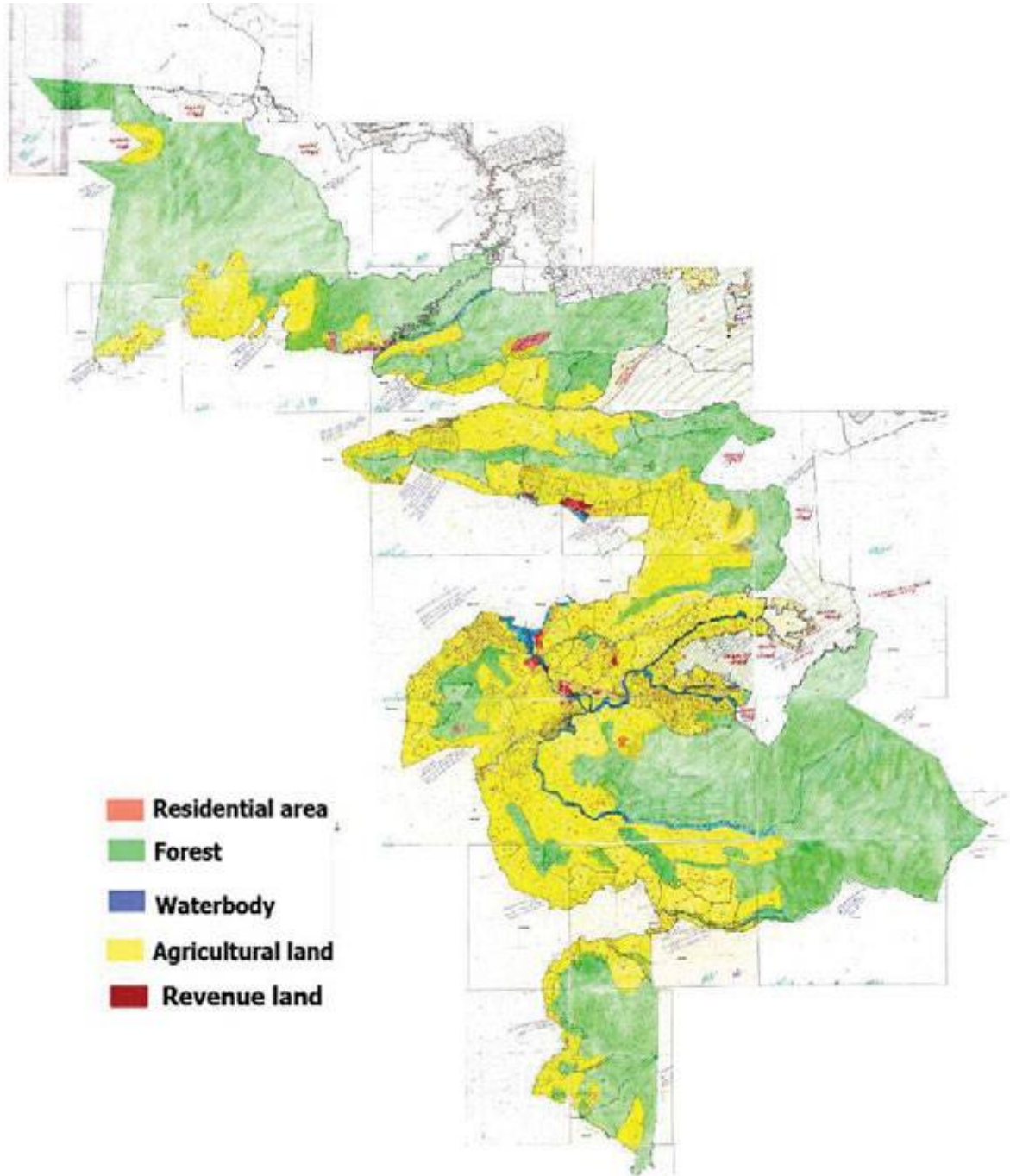
CADASTRAL SCALE ESA VILLAGES

Kallamala Village, Mannarkkad Taluk, Palakkad District



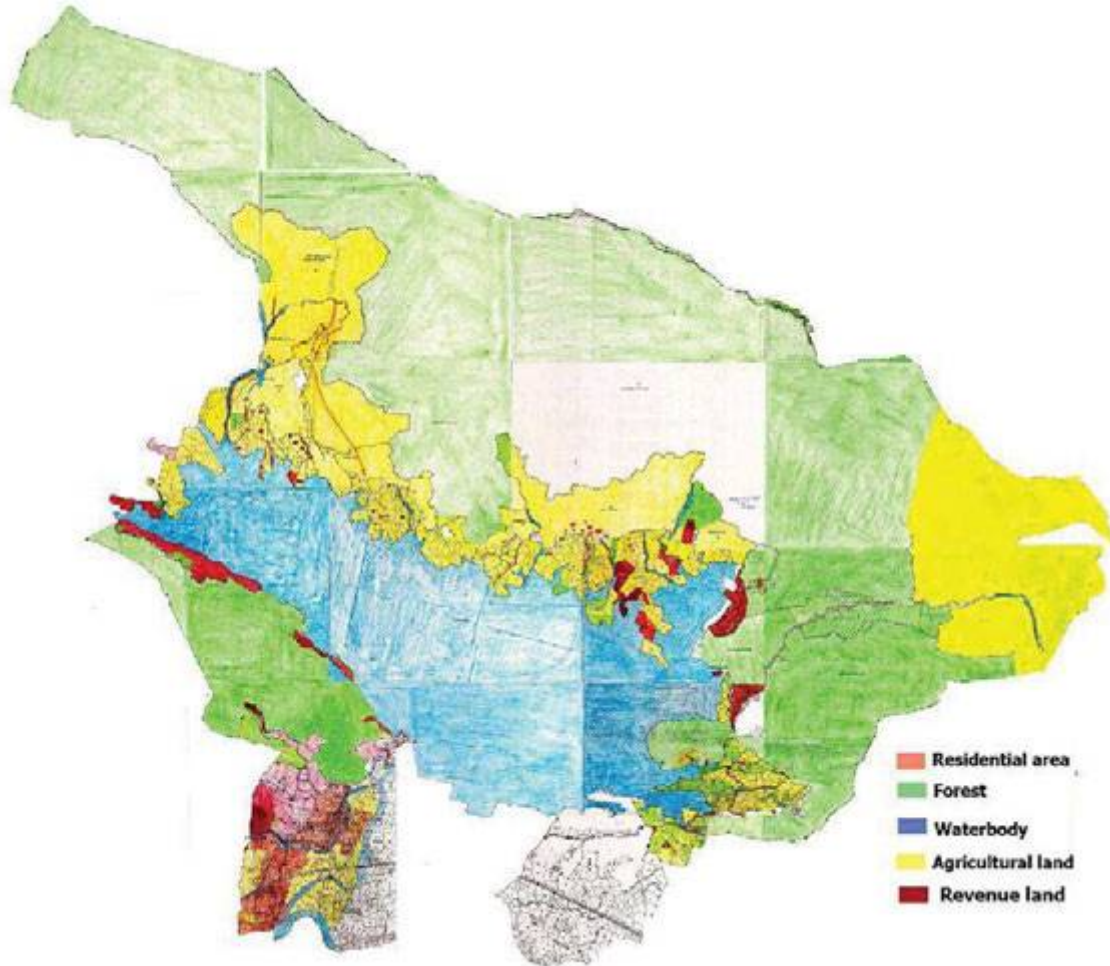
CADASTRAL SCALE ESA VILLAGES

Palakkayam Village, Mannarkkad Taluk, Palakkad District



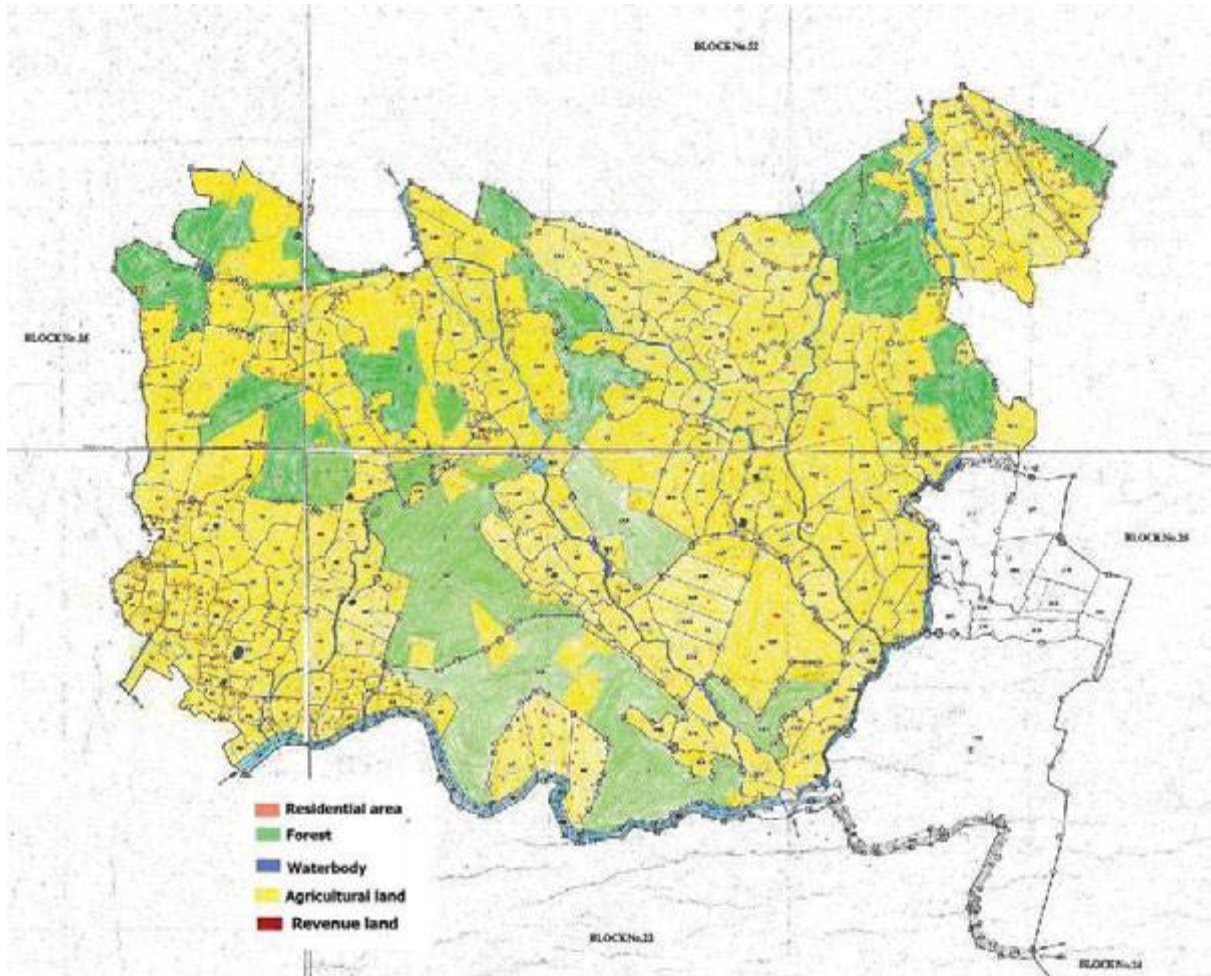
CADASTRAL SCALE ESA VILLAGES

Malampuzha Village, Palakkad Taluk, Palakkad District



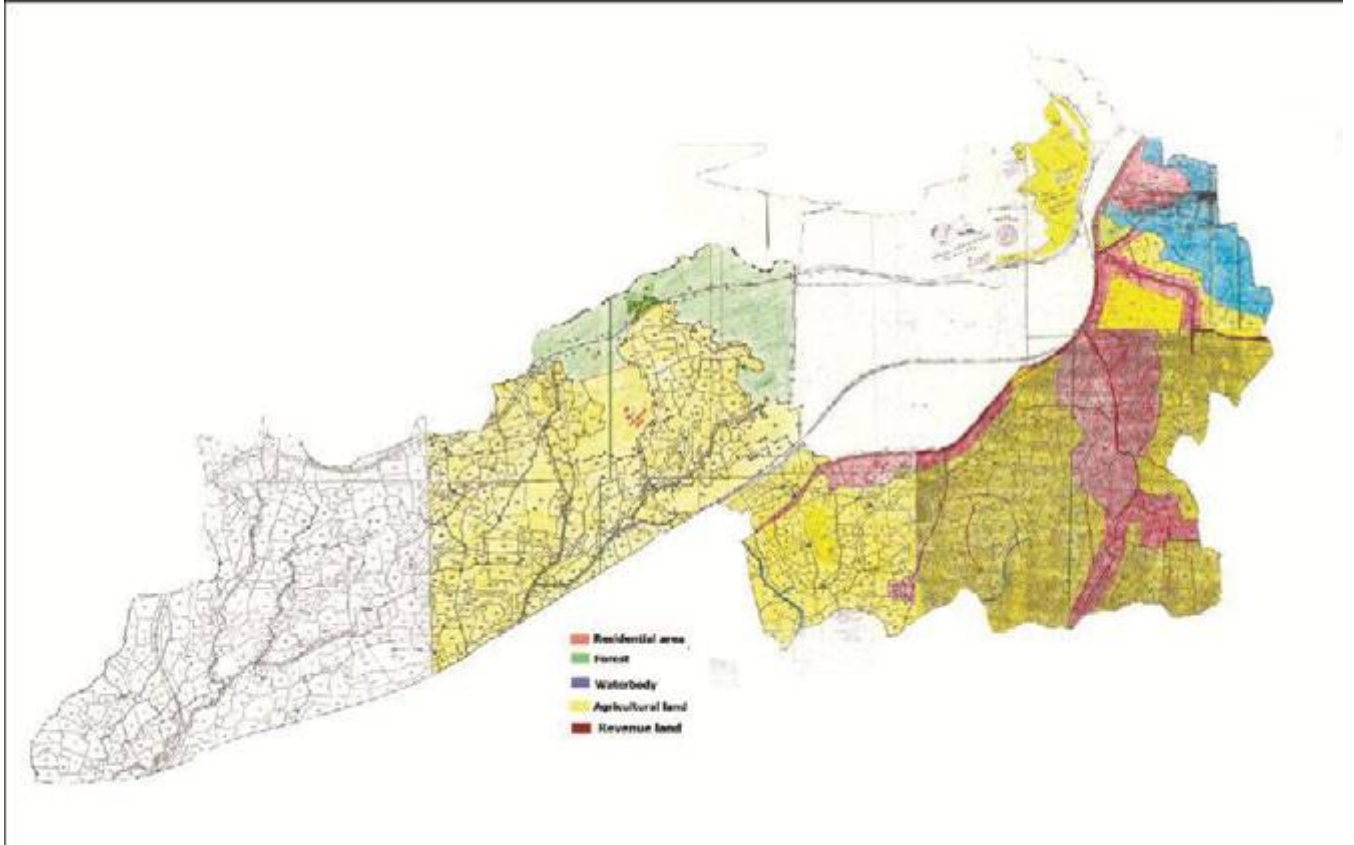
CADASTRAL SCALE ESA VILLAGES

Puduppariyaram Village, Palakkad Taluk, Palakkad District



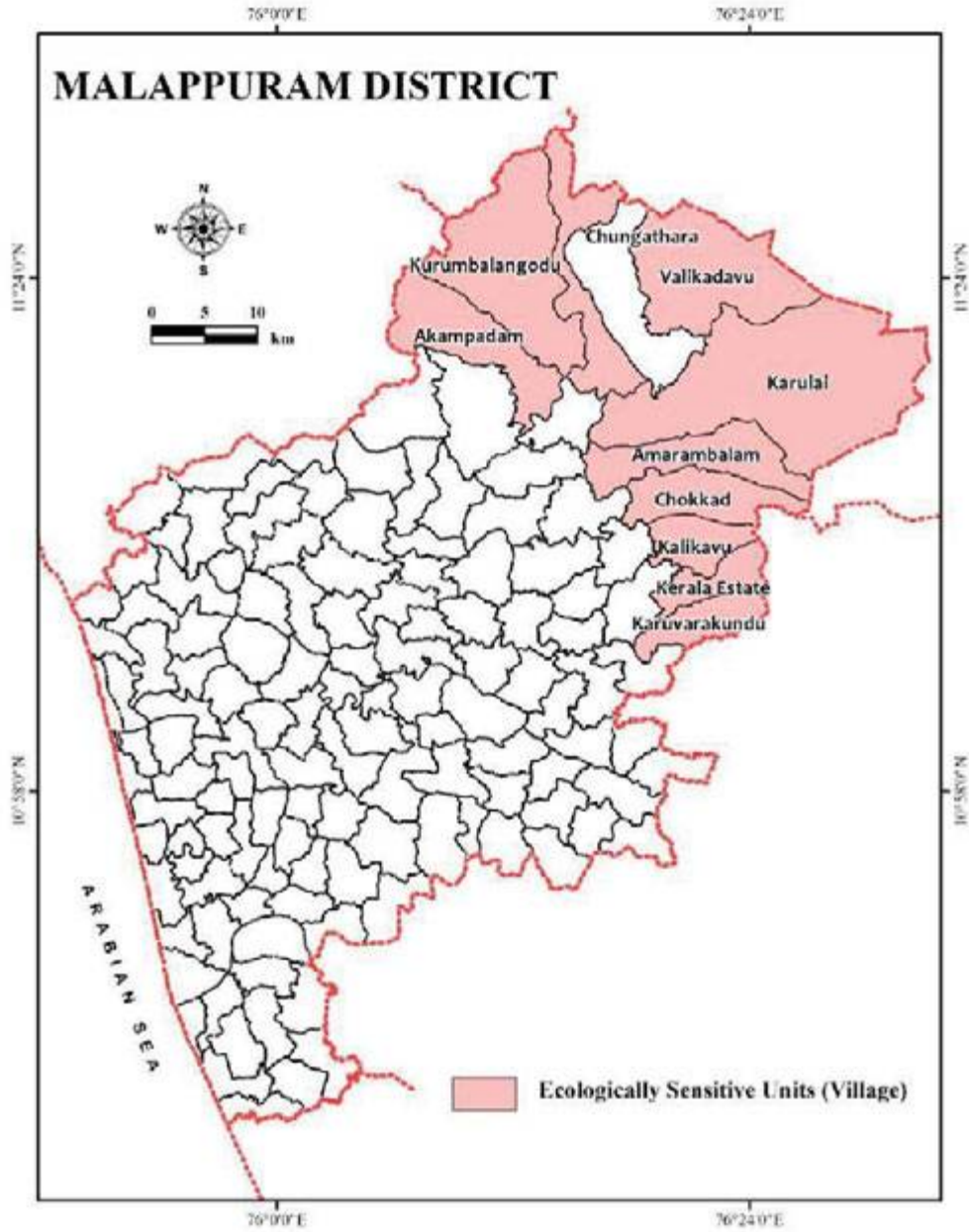
CADASTRAL SCALE ESA VILLAGES

Pudusseri east Village, Palakkad Taluk, Palakkad District



CADASTRAL SCALE ESA VILLAGES

Malappuram District, Kerala

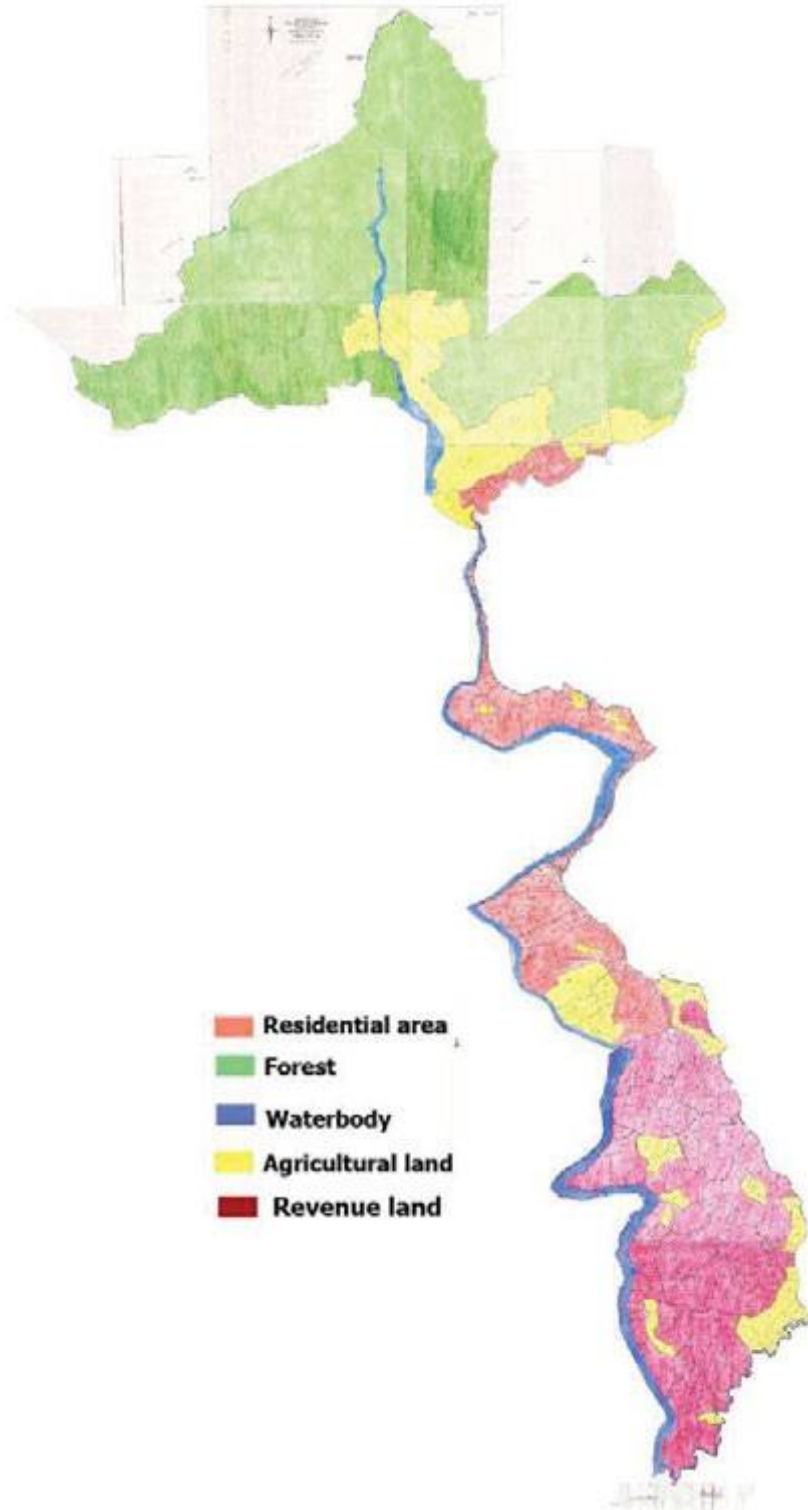


No. of Villages - 10

No. of Taluks - 1

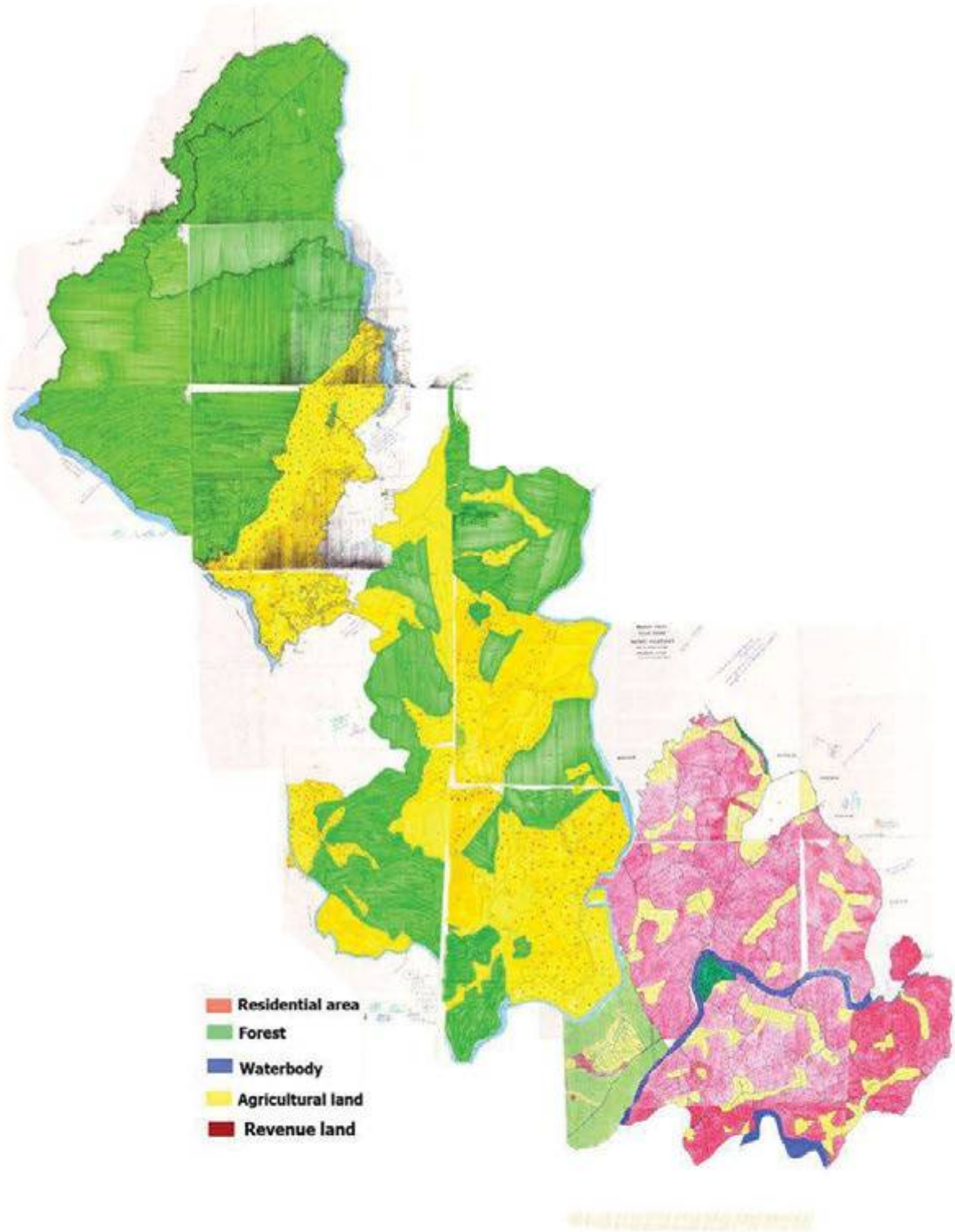
CADASTRAL SCALE ESA VILLAGES

Chungathara Village, Nilambur Taluk, Malappuram District



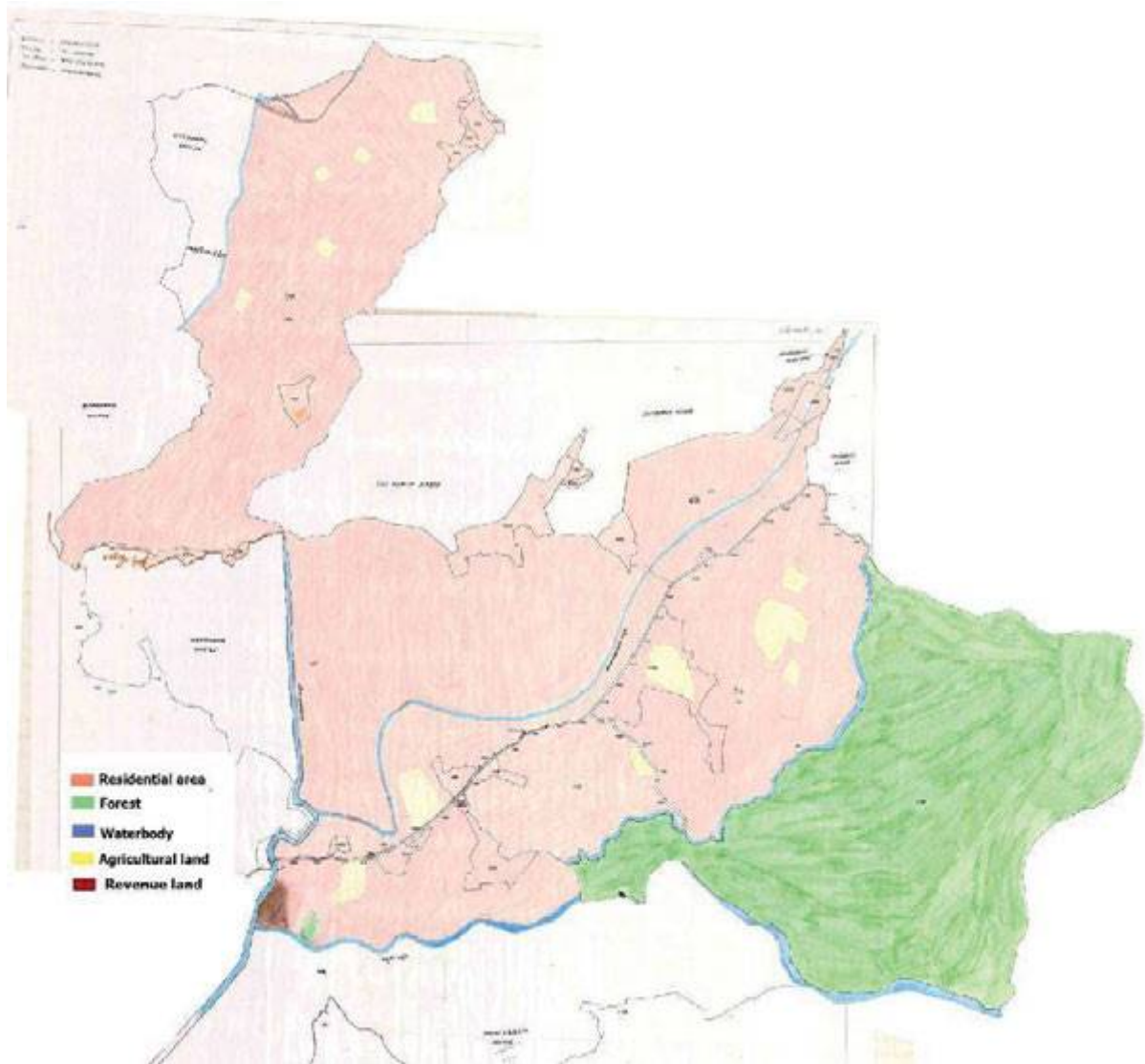
CADASTRAL SCALE ESA VILLAGES

Kurumbalangod Village, Nilambur Taluk, Malappuram District



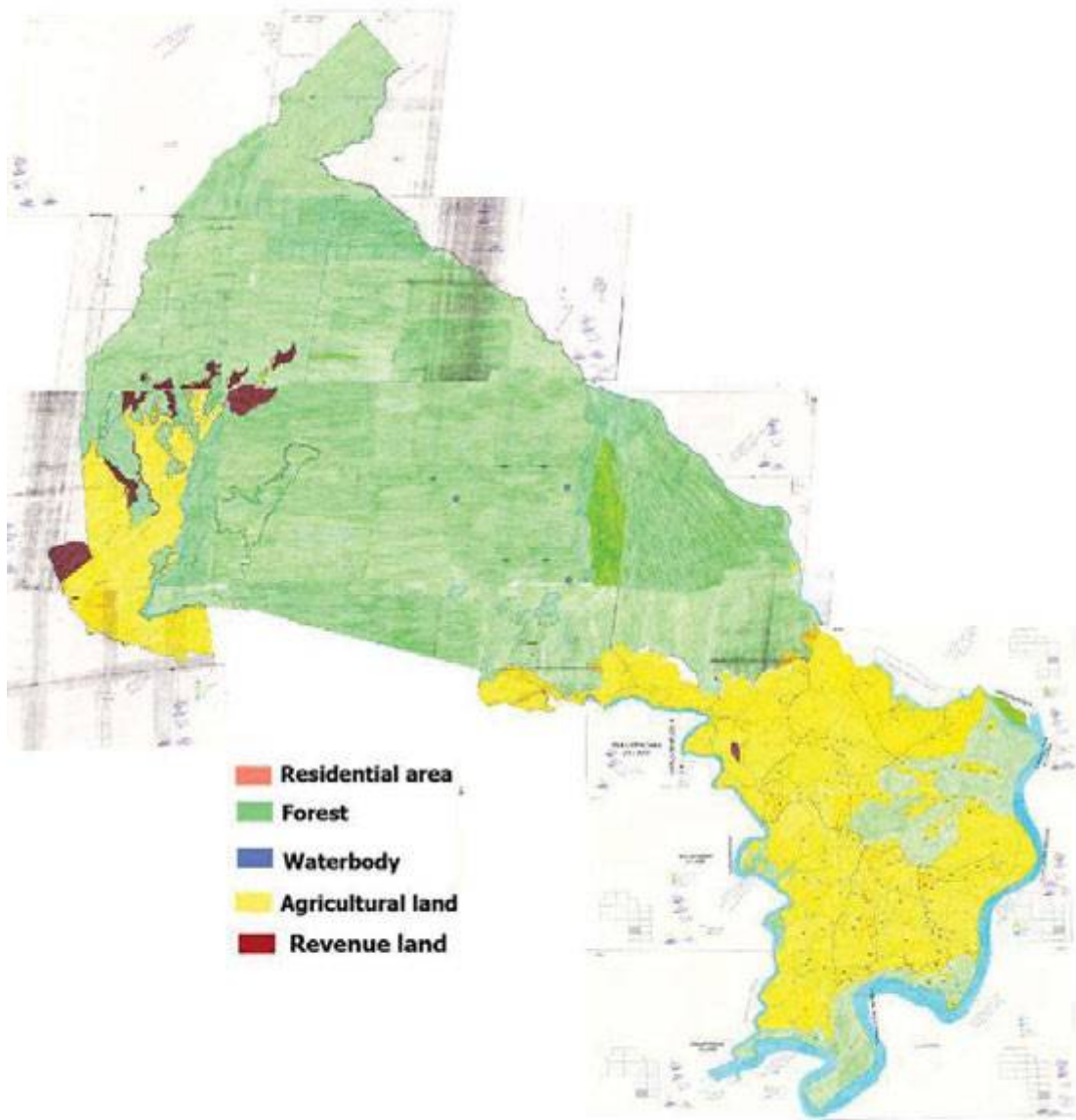
CADASTRAL SCALE ESA VILLAGES

Vazhikadavu Village, Nilambur Taluk, Malappuram District



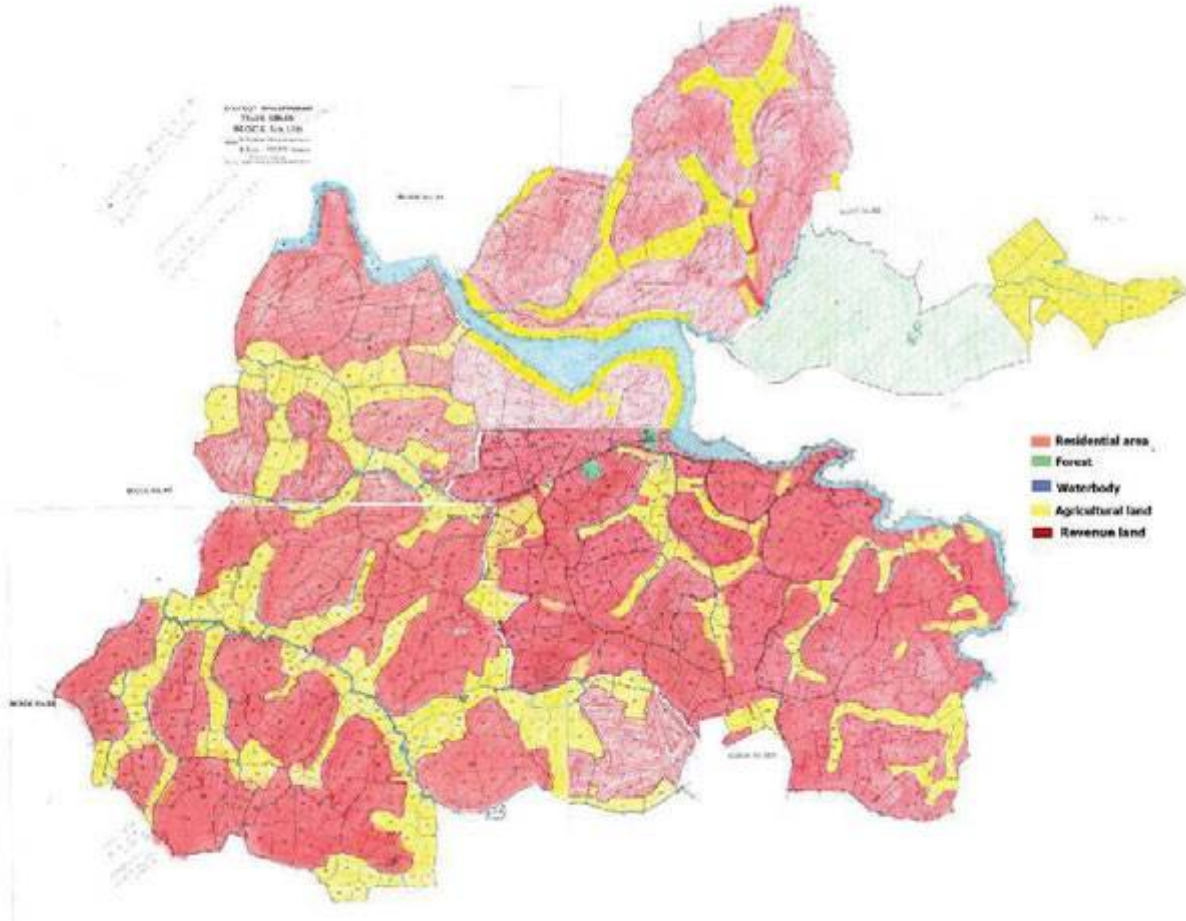
CADASTRAL SCALE ESA VILLAGES

Akampadam Village, Nilambur Taluk, Malappuram District



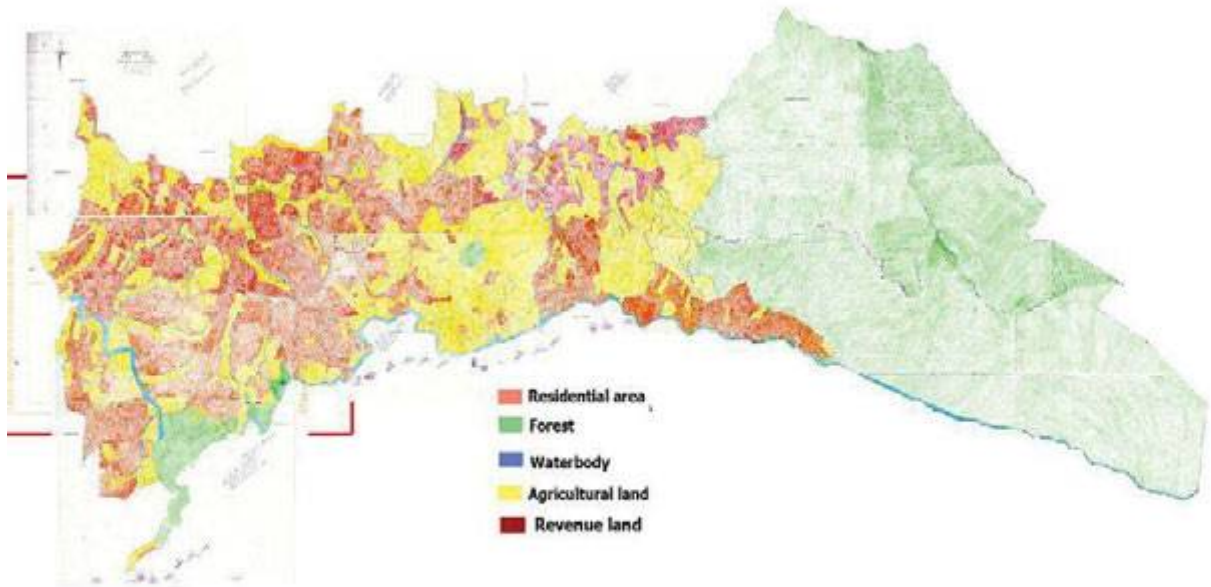
CADASTRAL SCALE ESA VILLAGES

Karulai Village, Nilambur Taluk, Malappuram District



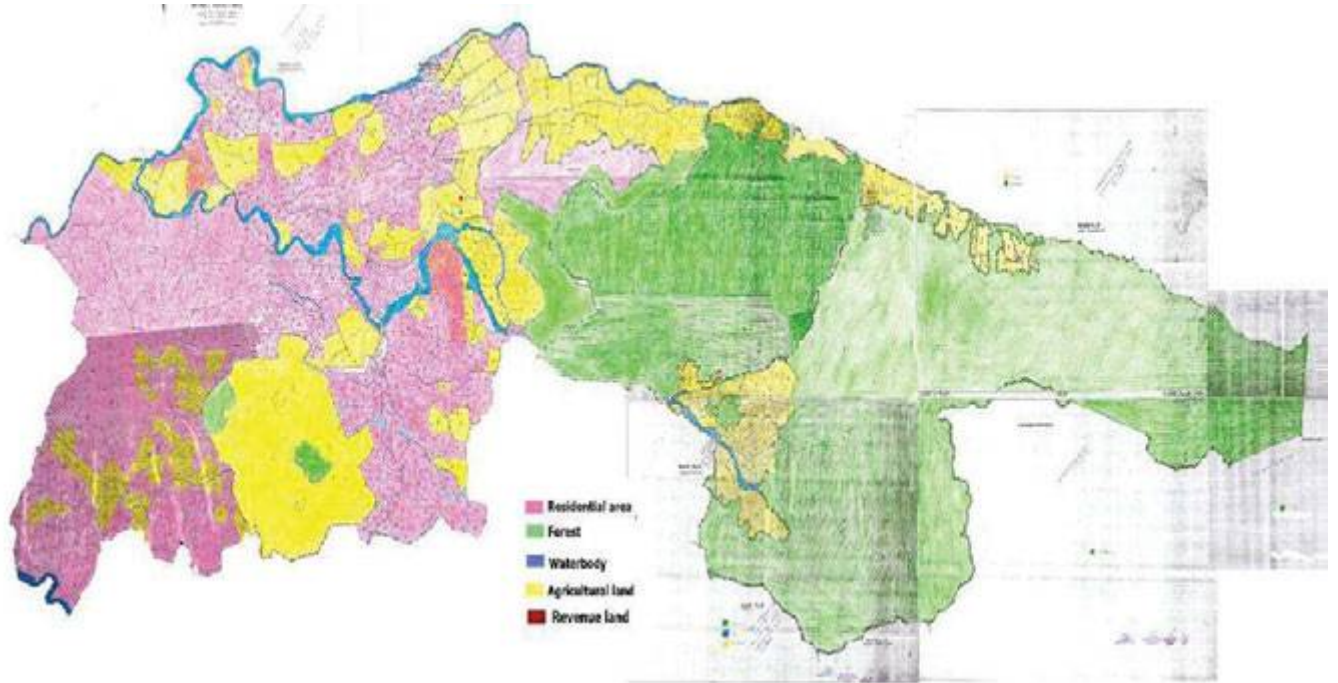
CADASTRAL SCALE ESA VILLAGES

Amarambalam Village, Nilambur Taluk, Malappuram District



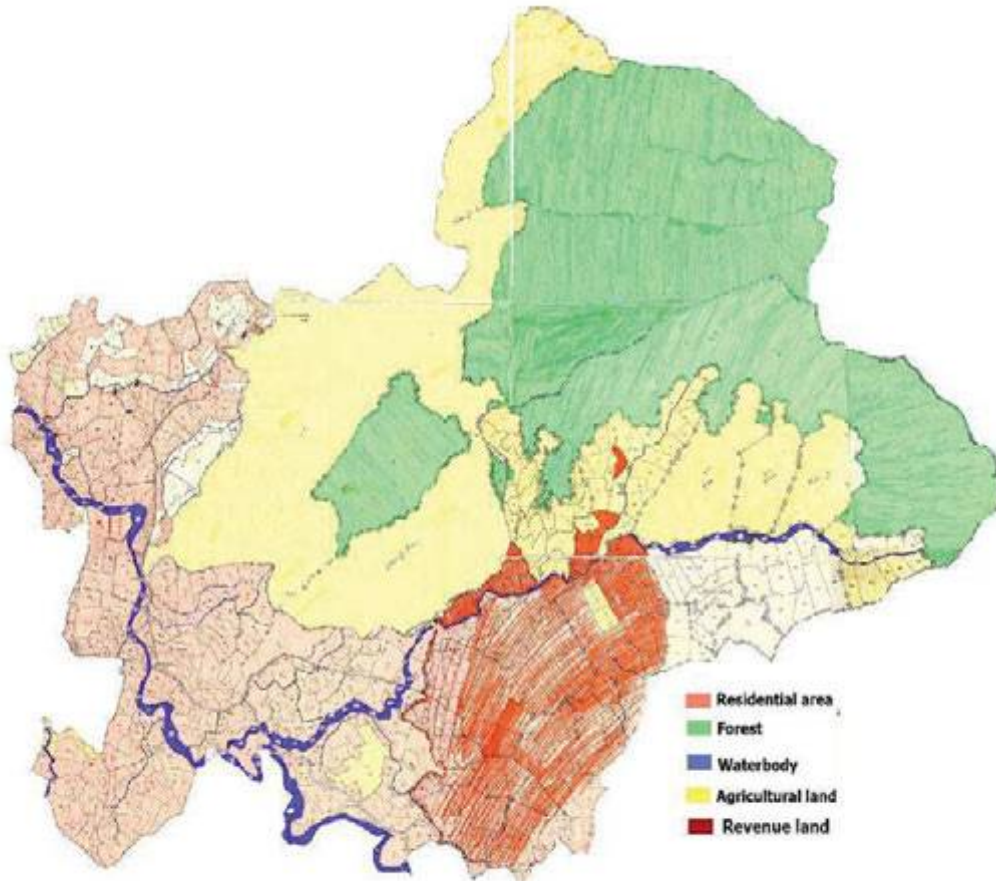
CADASTRAL SCALE ESA VILLAGES

Chokkod Village, Nilambur Taluk, Malappuram District



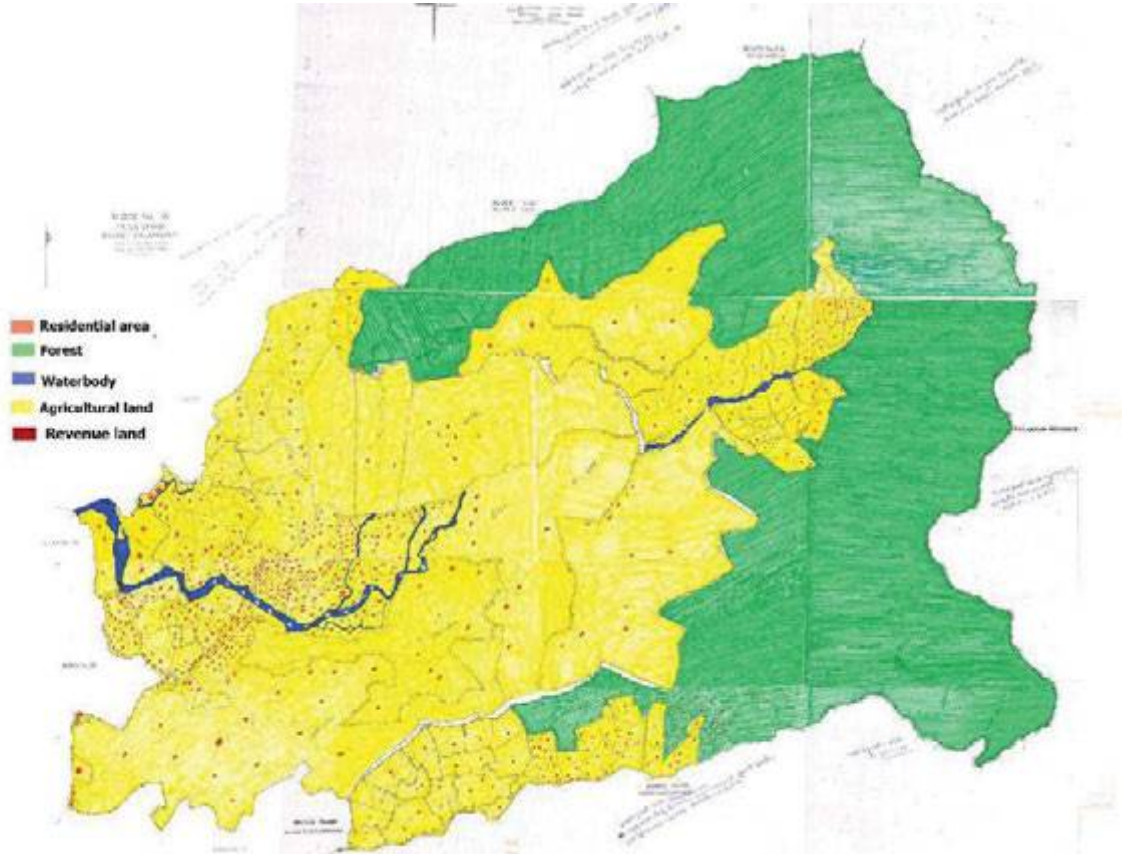
CADASTRAL SCALE ESA VILLAGES

Kalikavu Village, Nilambur Taluk, Malappuram District



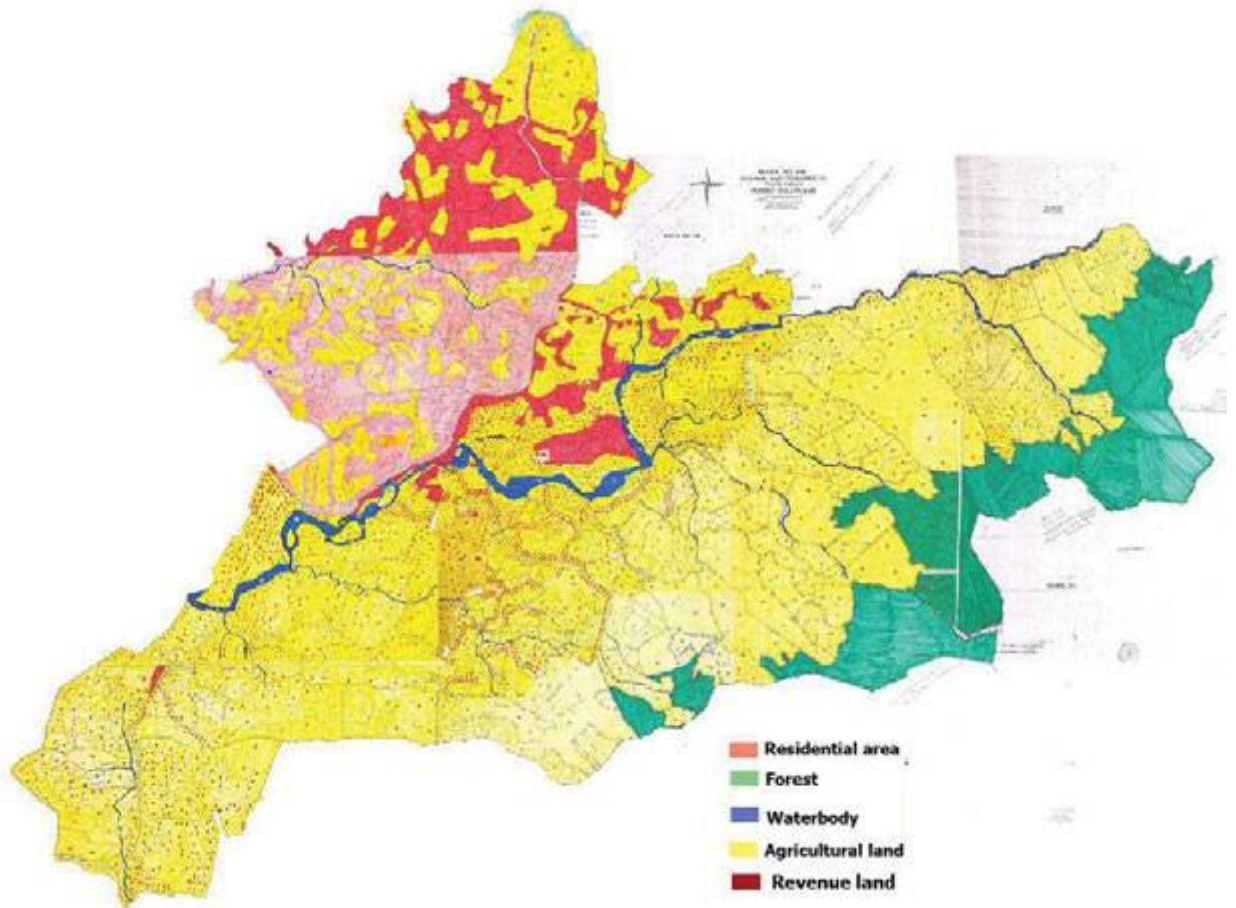
CADASTRAL SCALE ESA VILLAGES

Kerala Estate Village, Nilambur Taluk, Malappuram District



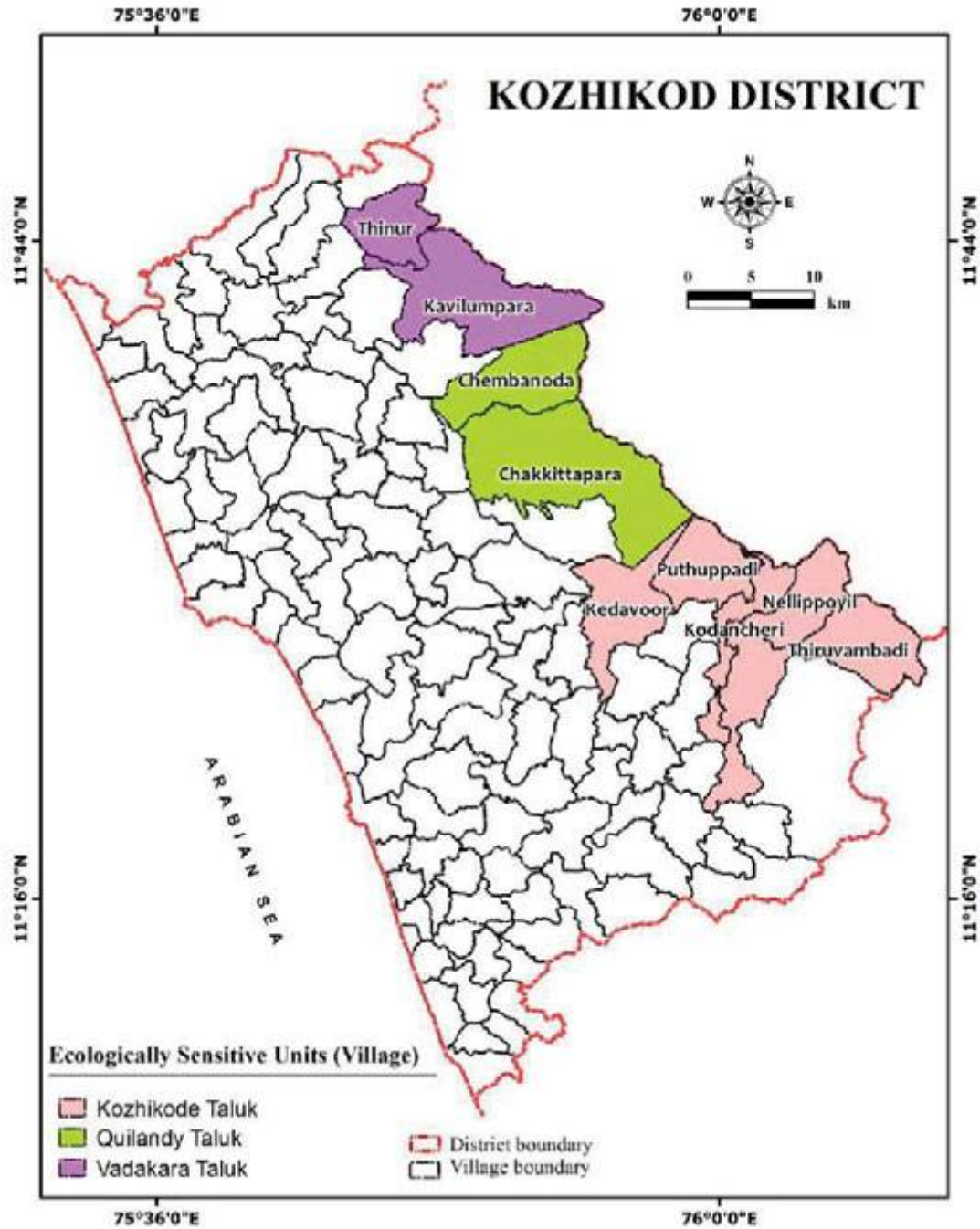
CADASTRAL SCALE ESA VILLAGES

Karuvarakundu Village, Nilambur Taluk, Malappuram District



CADASTRAL SCALE ESA VILLAGES

Kozhikod District

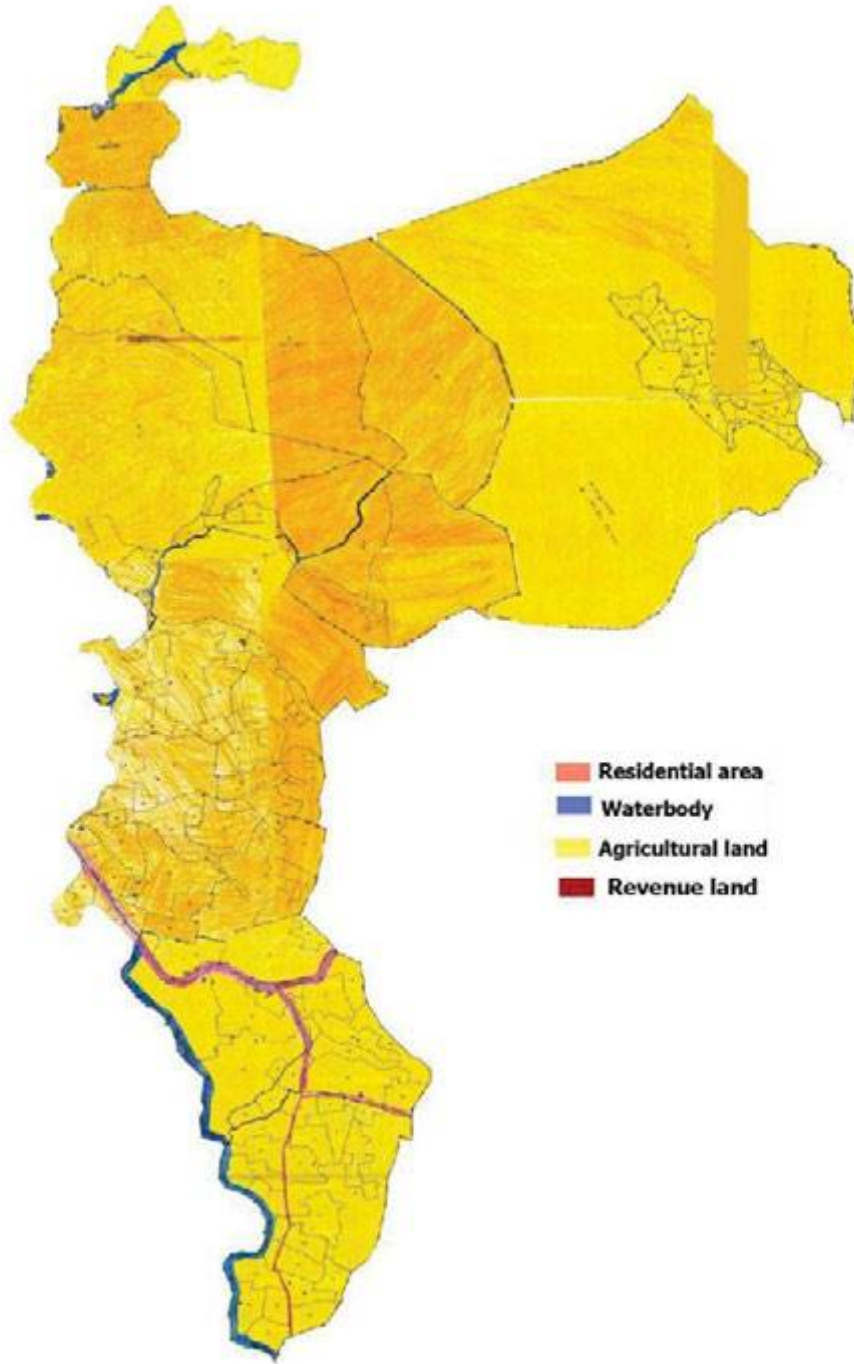


No. of Village – 9

No. of Taluks - 3

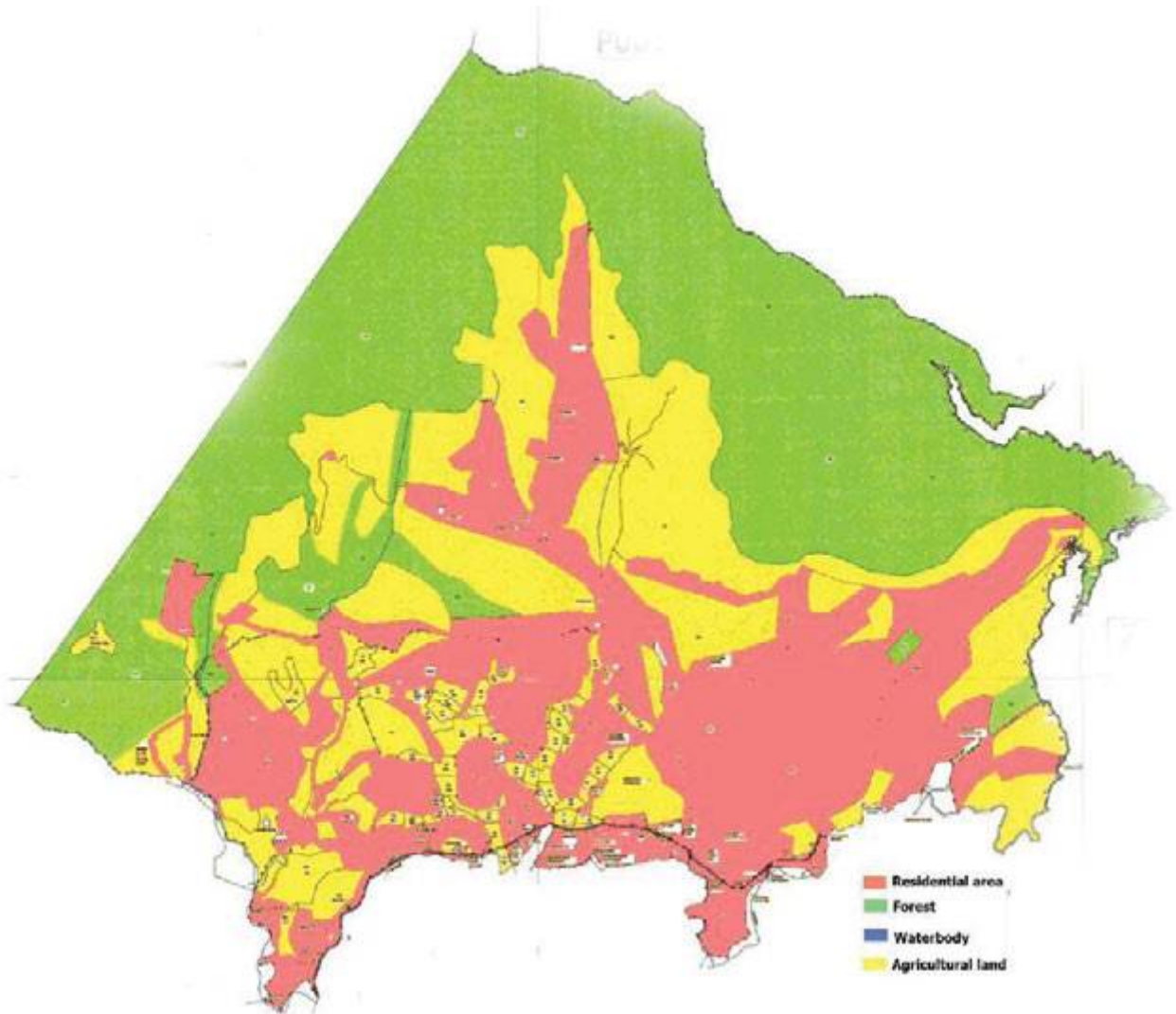
CADASTRAL SCALE ESA VILLAGES

Kedavoor Village, Kozhikod Taluk, Kozhikod District



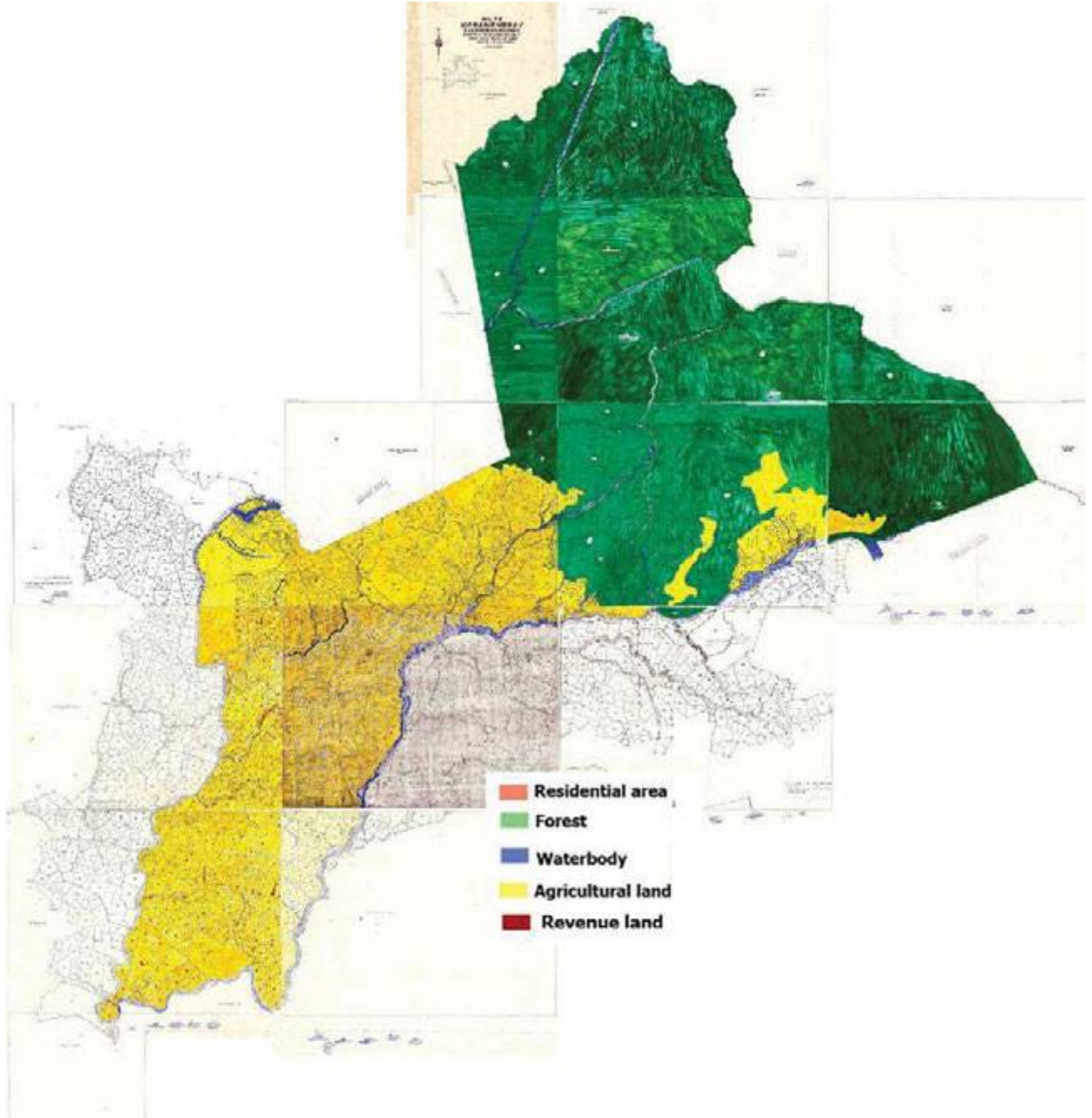
CADASTRAL SCALE ESA VILLAGES

Puthupadi Village, Kozhikod Taluk, Kozhikod District



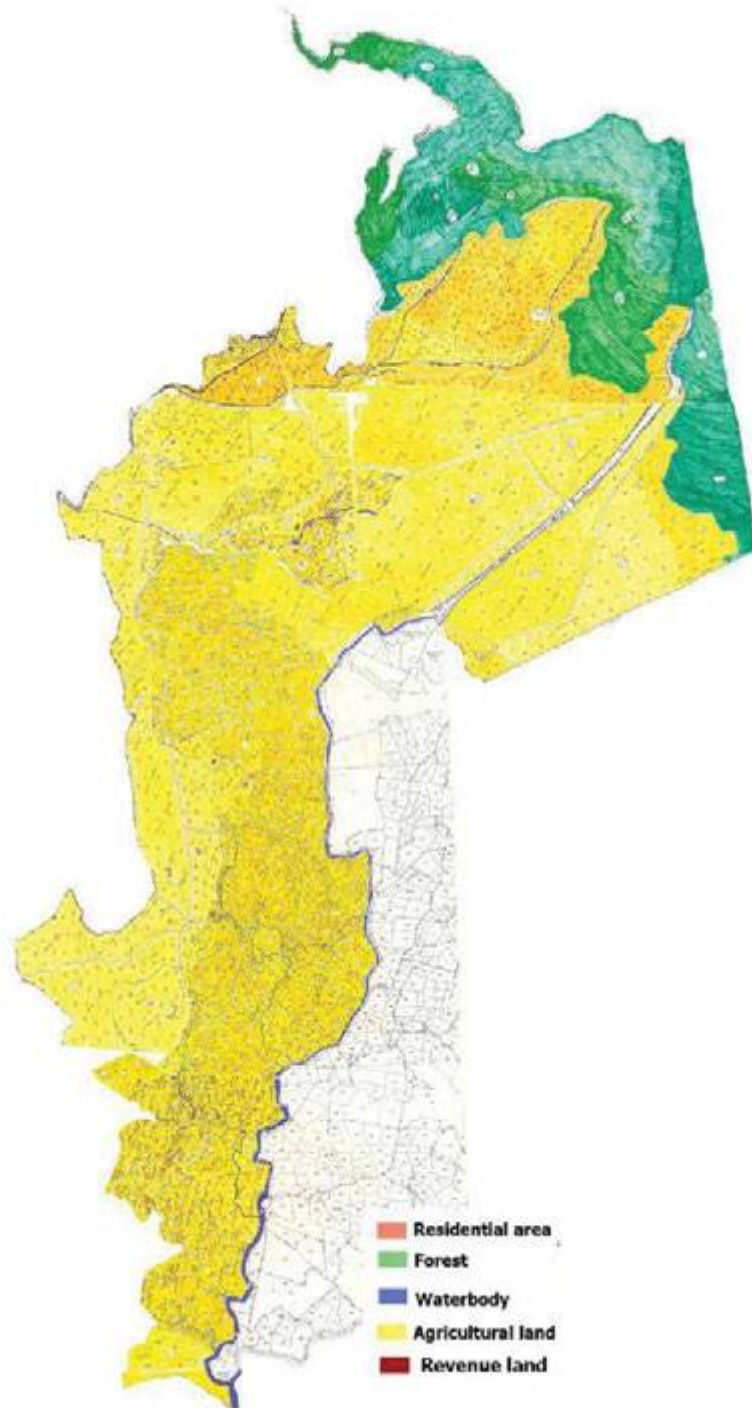
CADASTRAL SCALE ESA VILLAGES

Nellippoyil Village, Kozhikod Taluk, Kozhikod District



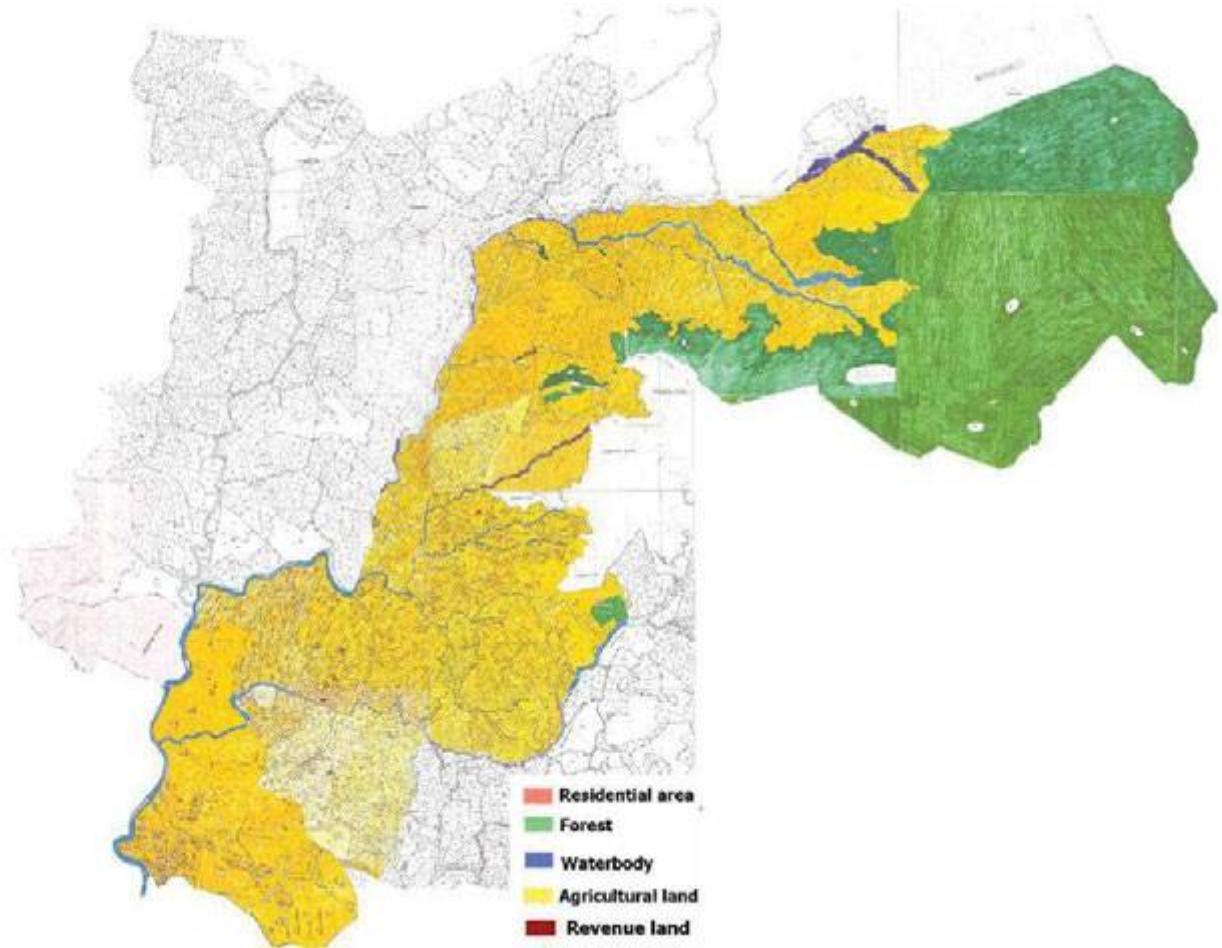
CADASTRAL SCALE ESA VILLAGES

Kodancheri Village, Kozhikod Taluk, Kozhikod District



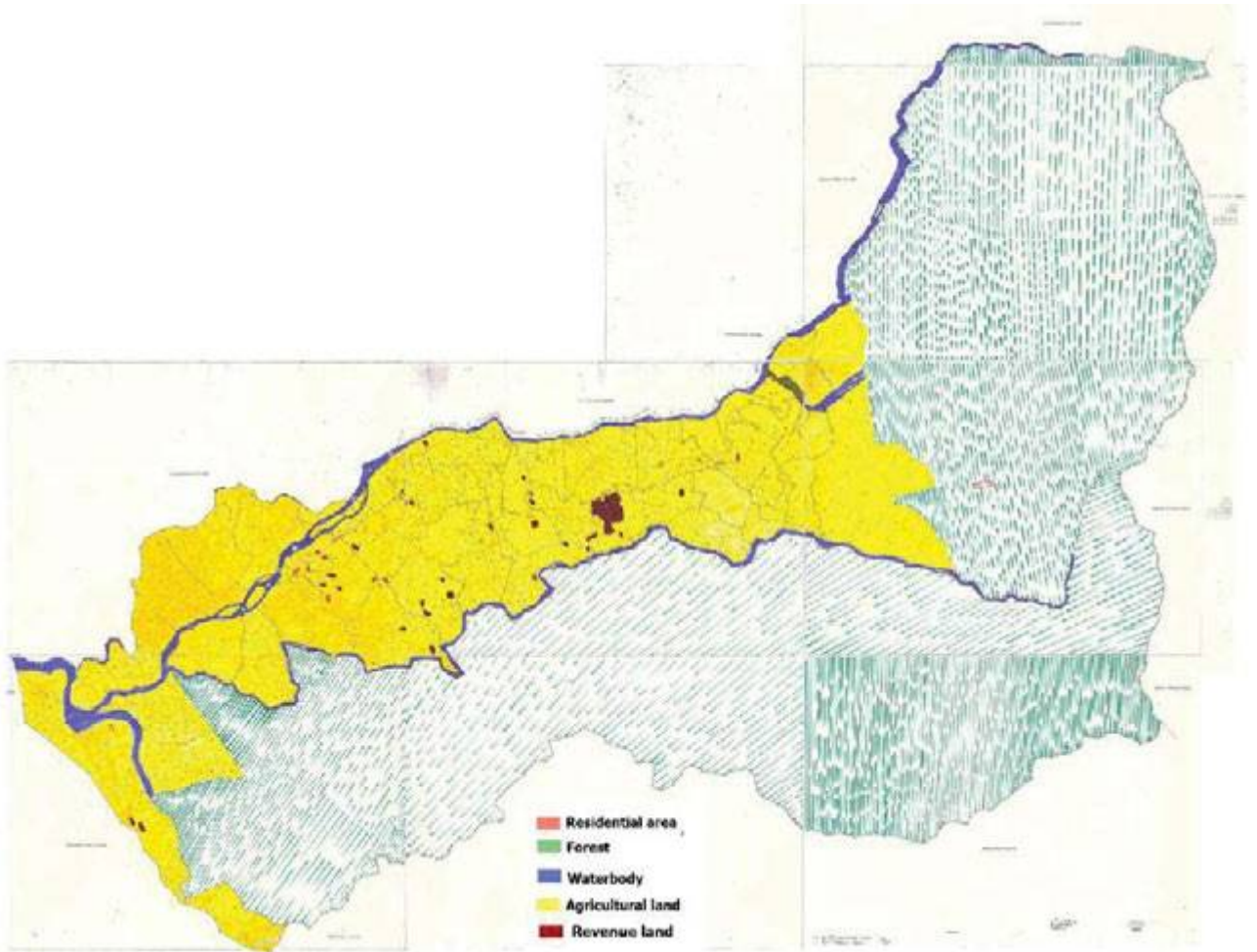
CADASTRAL SCALE ESA VILLAGES

Thiruvanbadi Village, Kozhikod Taluk, Kozhikod District



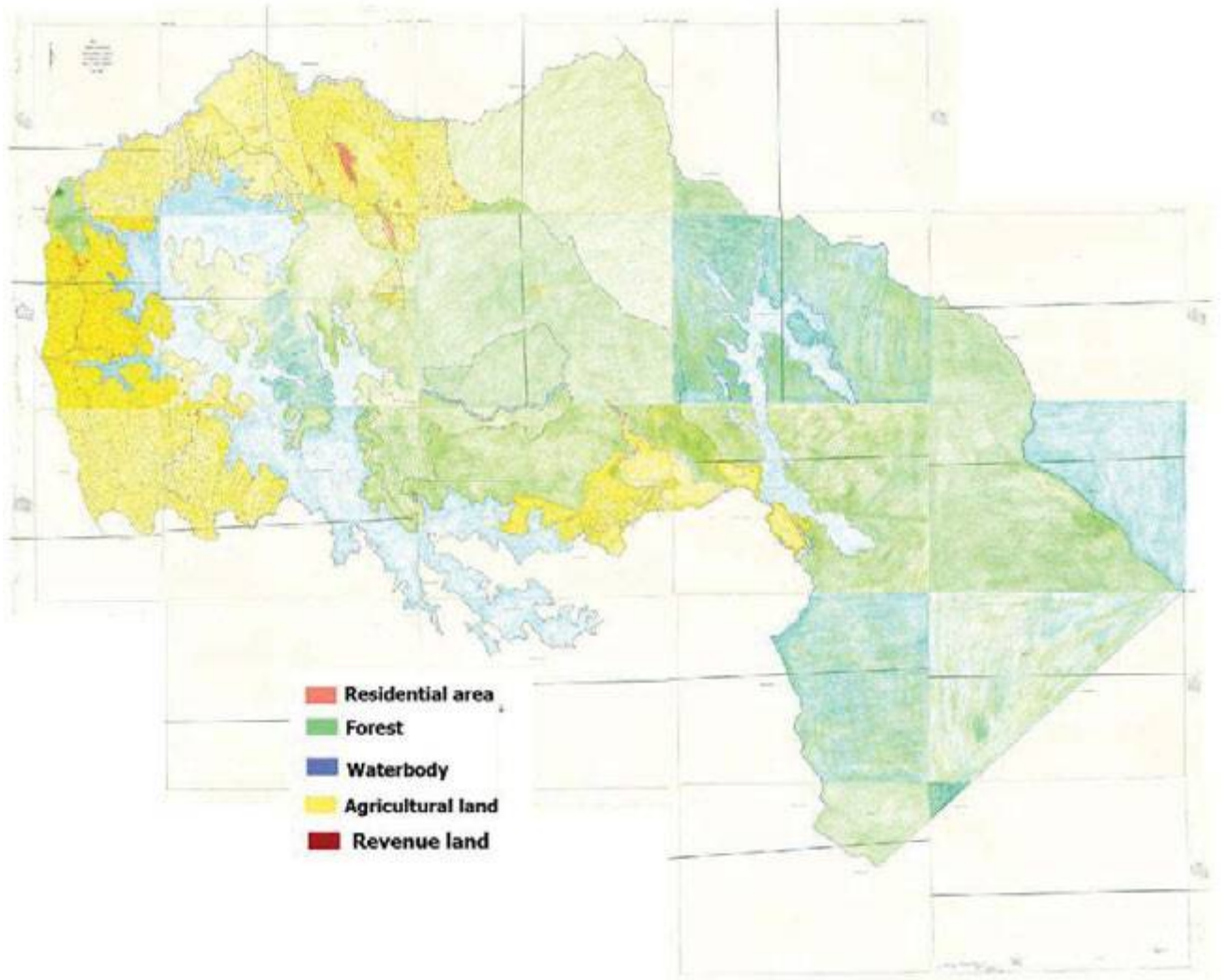
CADASTRAL SCALE ESA VILLAGES

Chembanoda Village, Quilandy Taluk, Kozhikod District



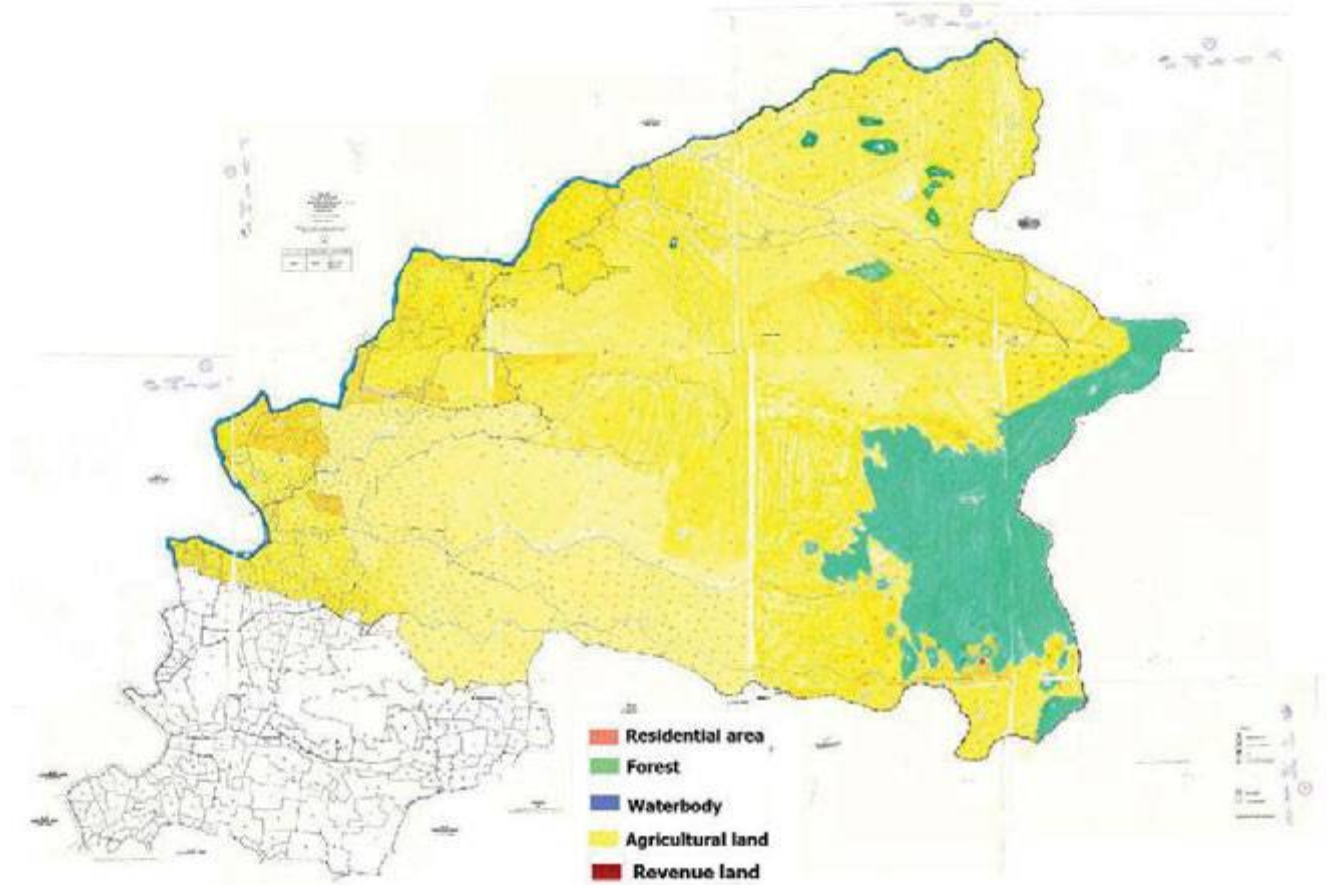
CADASTRAL SCALE ESA VILLAGES

Chakkittappara Village, Quilandy Taluk, Kozhikod District



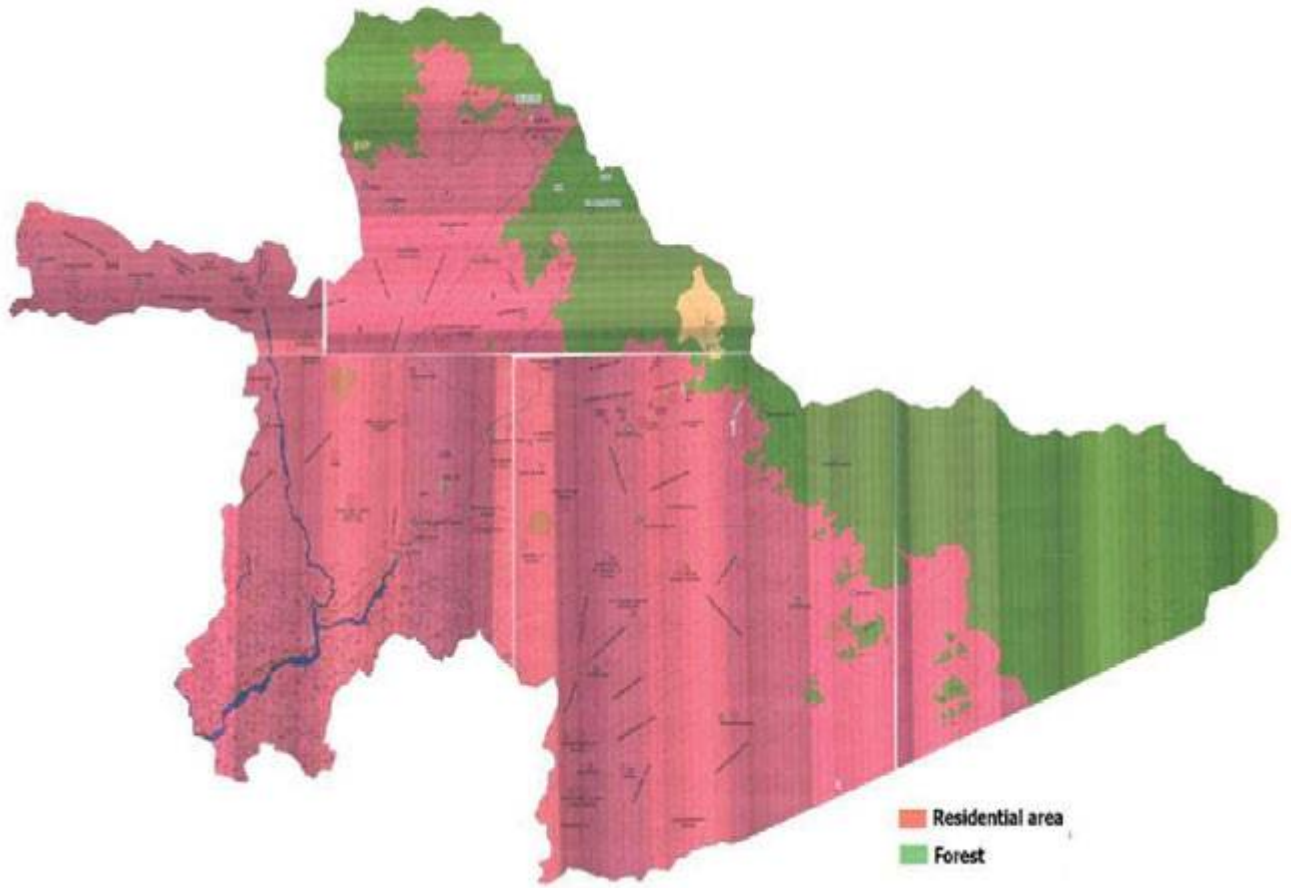
CADASTRAL SCALE ESA VILLAGES

Thinur Village, Vadakara Taluk, Kozhikod District



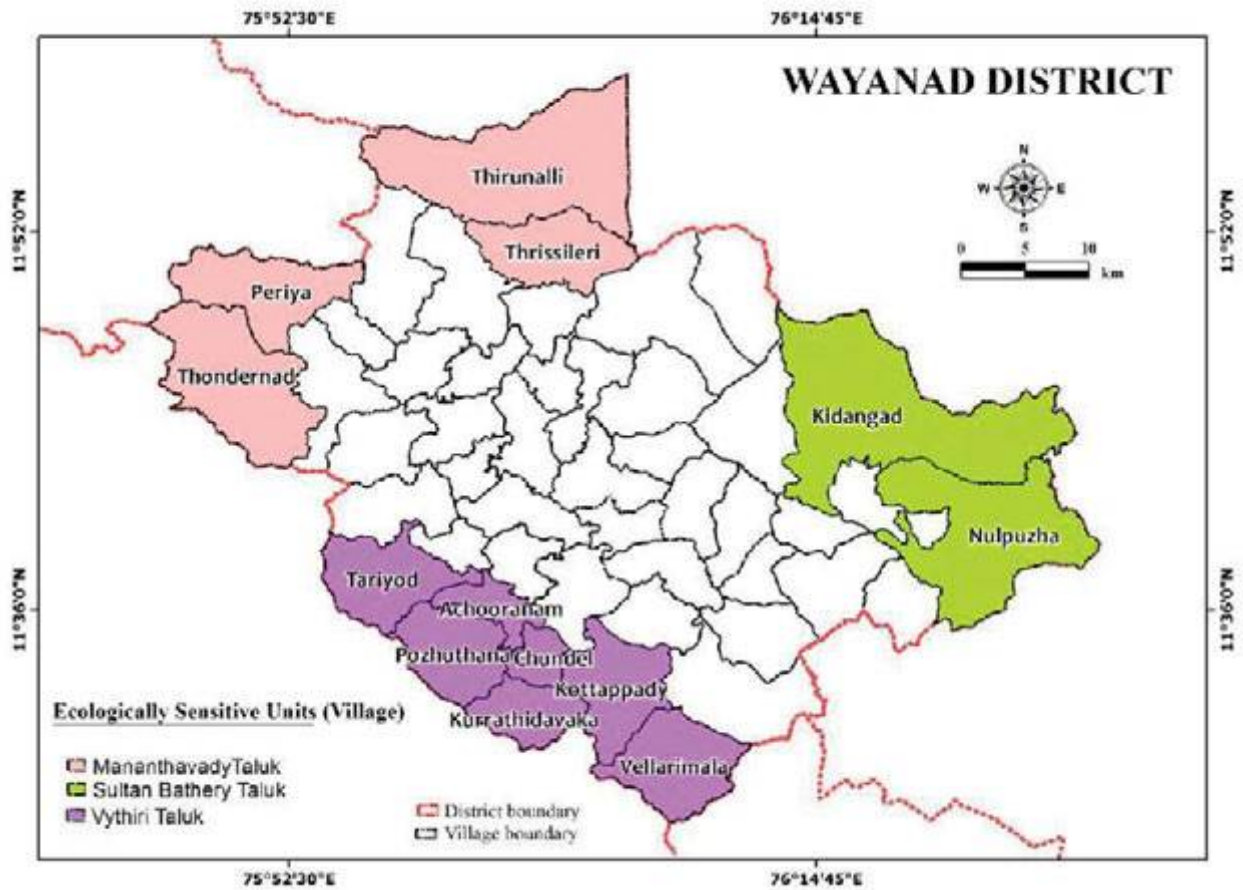
CADASTRAL SCALE ESA VILLAGES

Kavilumpara Village, Vadakara Taluk, Kozhikod District



CADASTRAL SCALE ESA VILLAGES

Wayanad District, Kerala

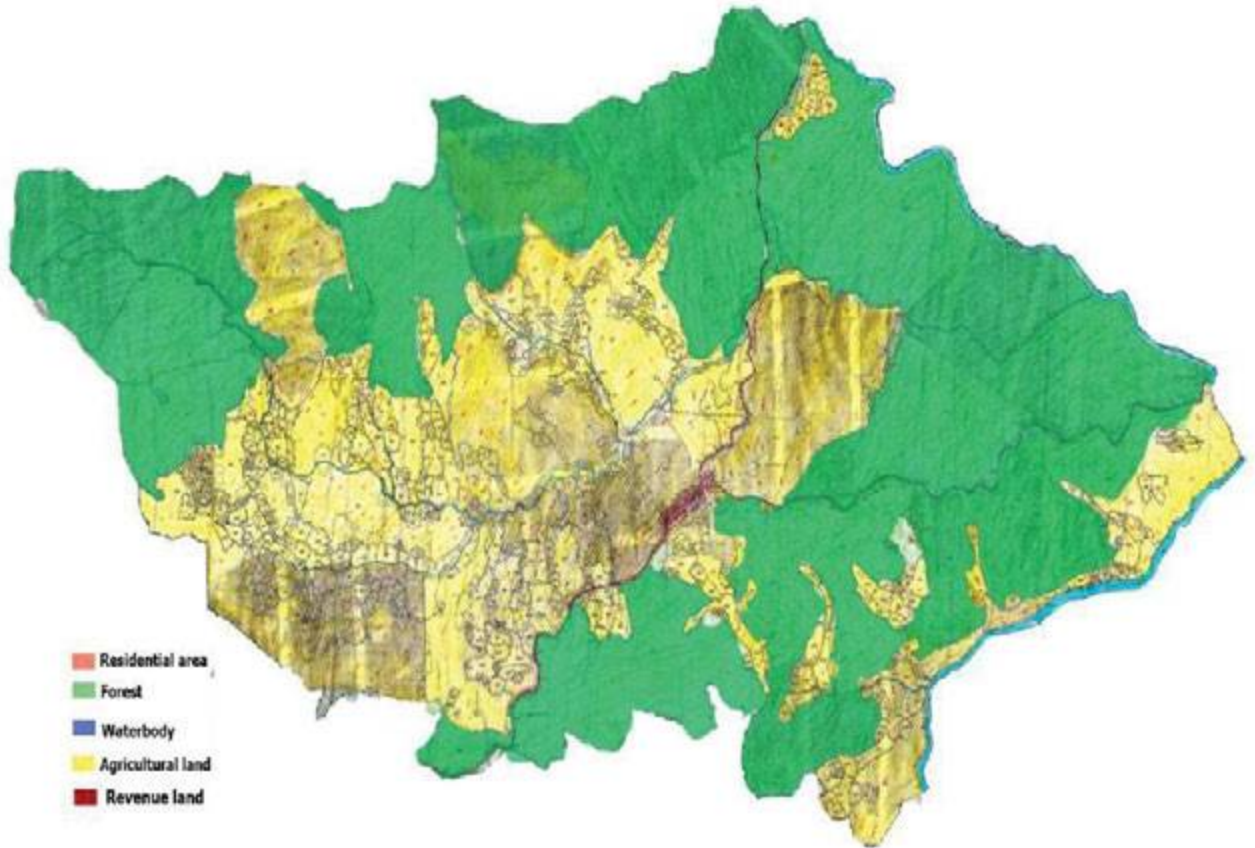


No. of villages – 13

No. of Taluks - 3

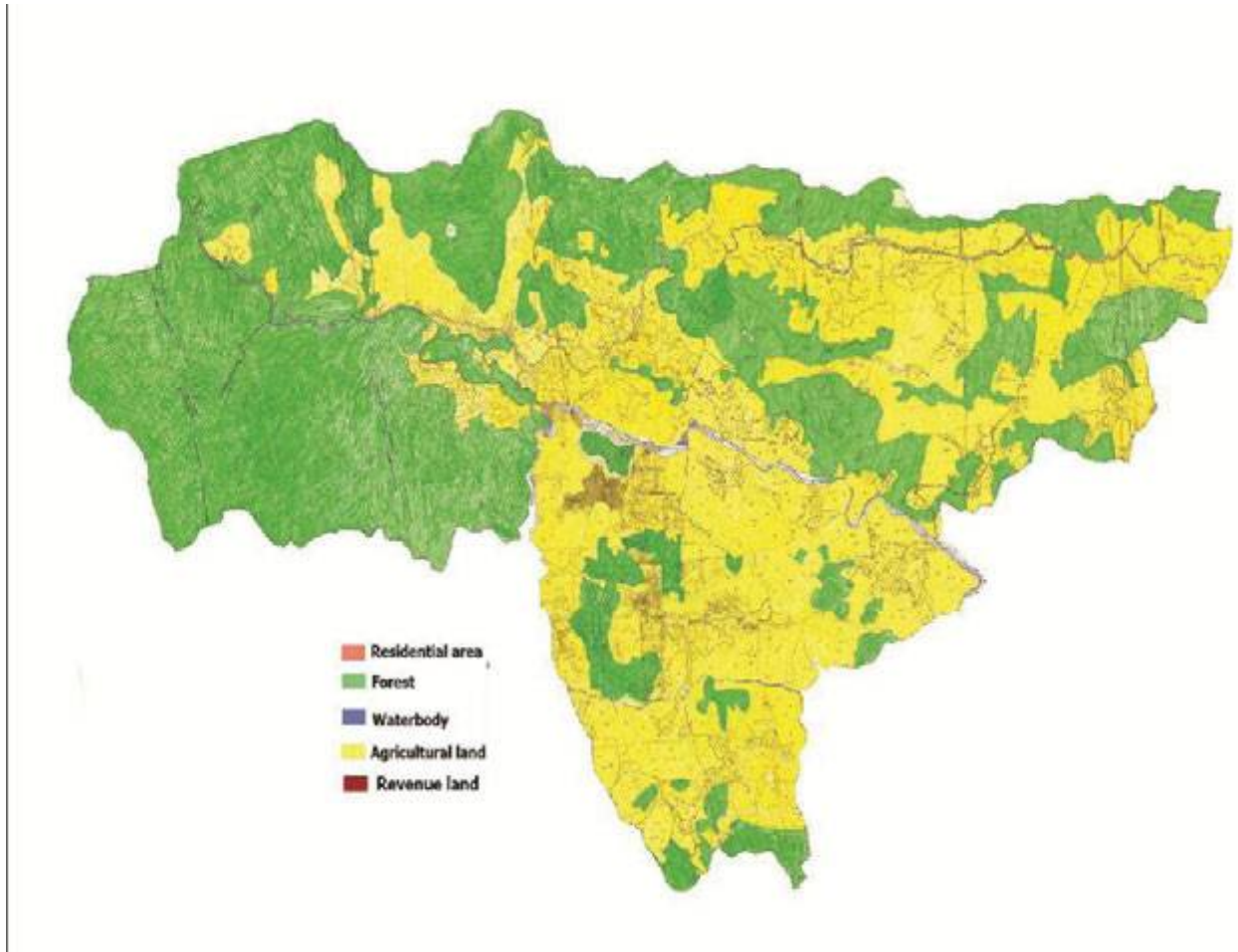
CADASTRAL SCALE ESA VILLAGES

Thrissilleri Village, Mananthavady Taluk, Wayanad District



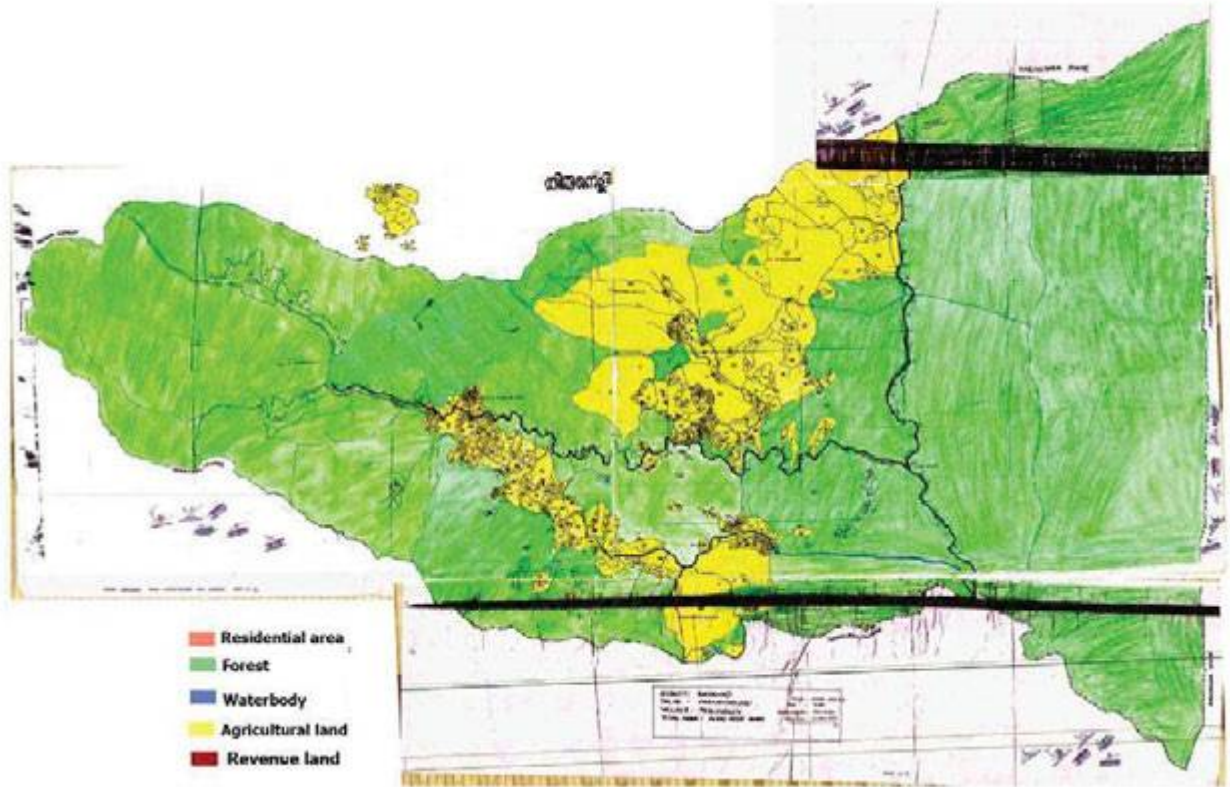
CADASTRAL SCALE ESA VILLAGES

Periya Village, Mananthavady Taluk, Wayanad District



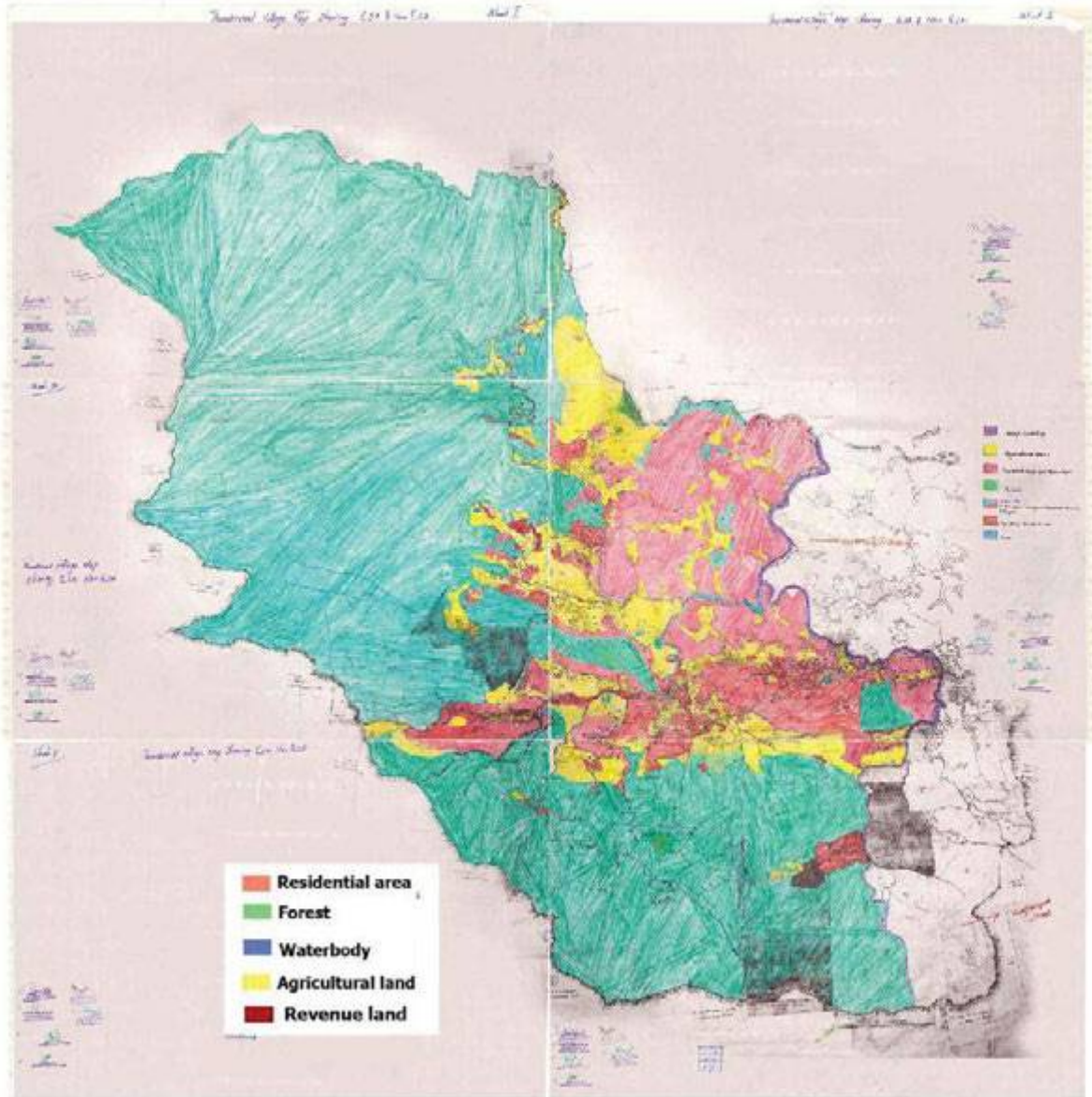
CADASTRAL SCALE ESA VILLAGES

Thirunelli Village, Mananthavady Taluk, Wayanad District



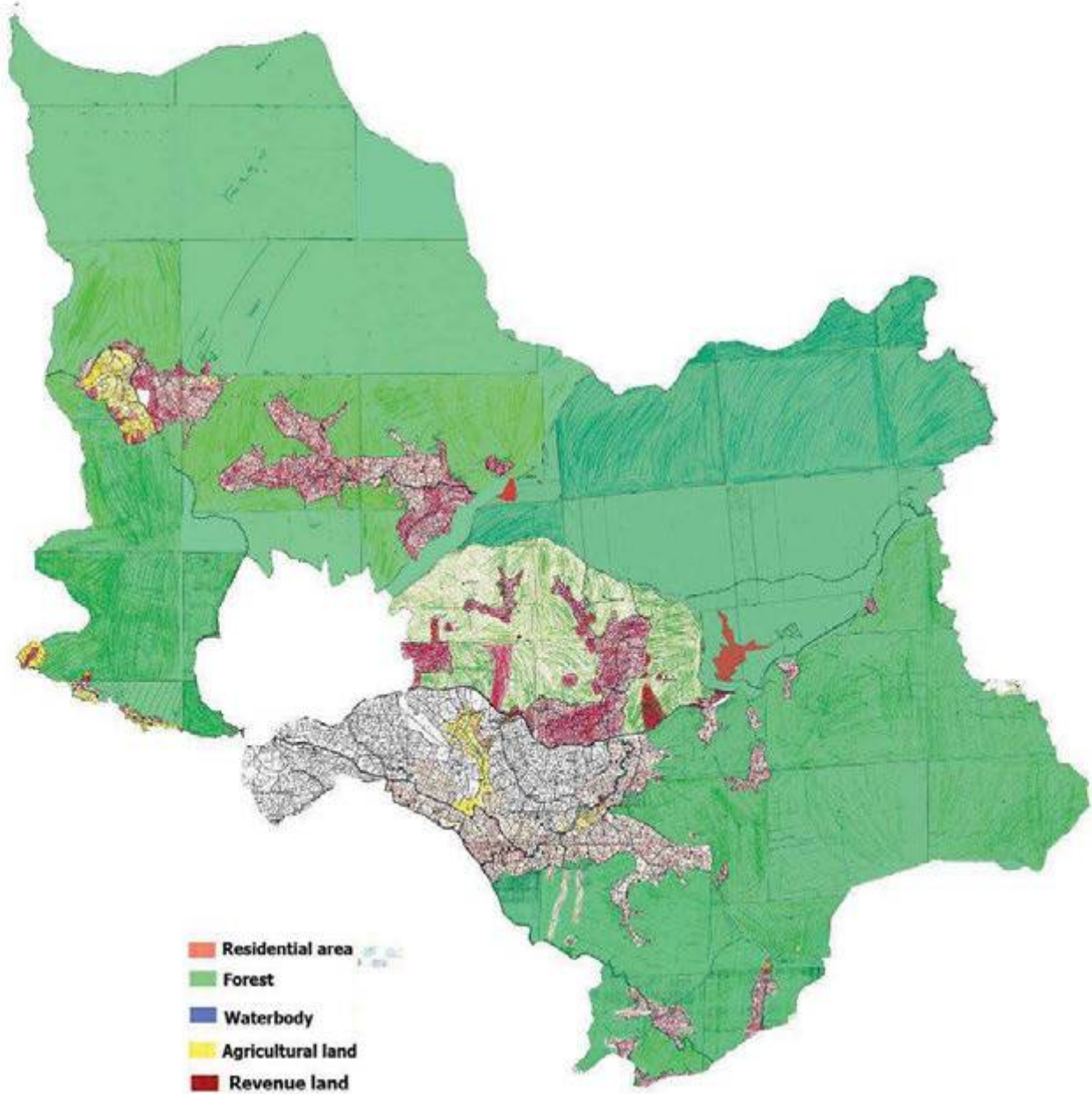
CADASTRAL SCALE ESA VILLAGES

Thondarnad Village, Mananthavady Taluk, Wayanad District



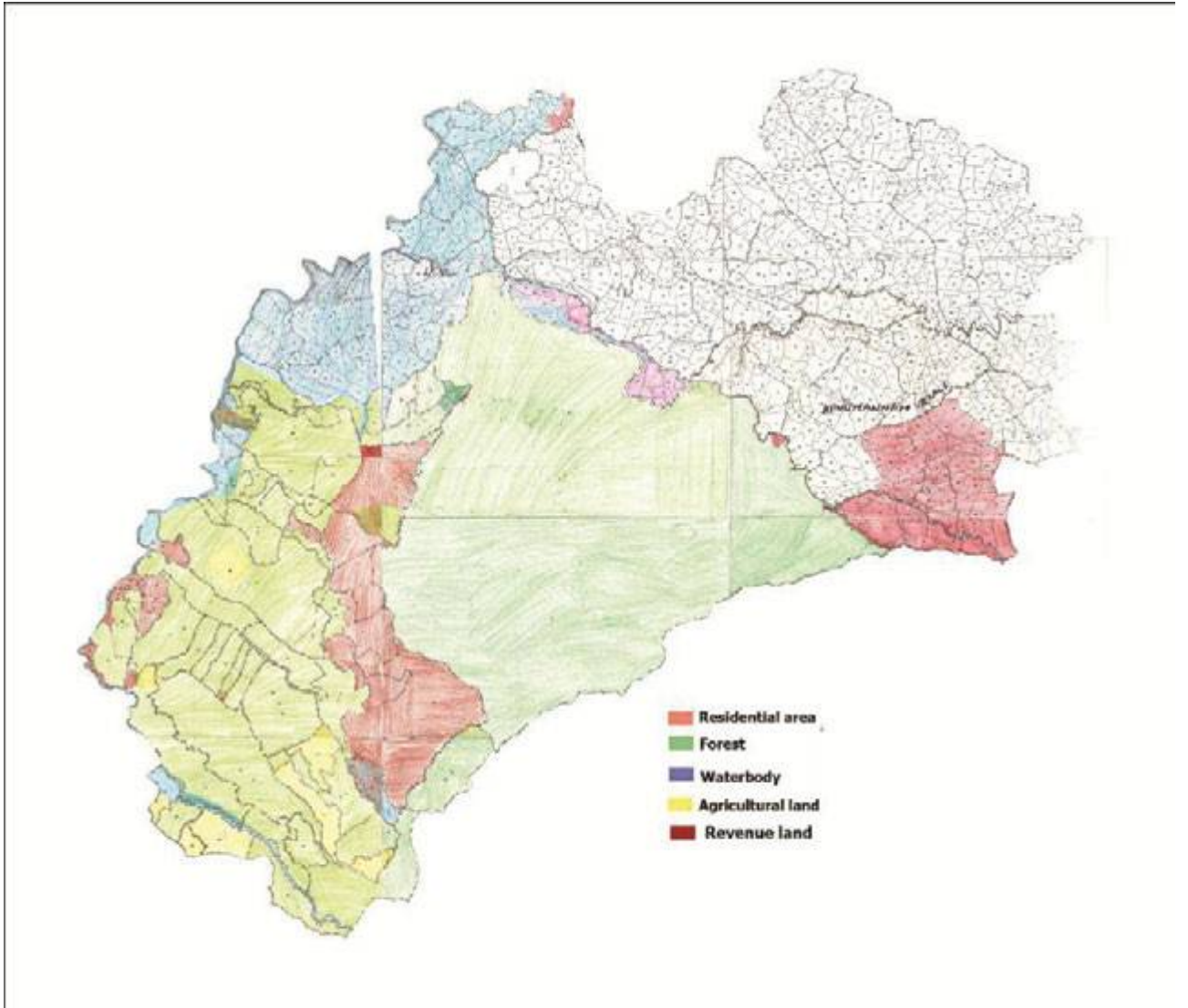
CADASTRAL SCALE ESA VILLAGES

Kidangad & Noolpuzha Village, Sulthanbethery Taluk, Wayanad District



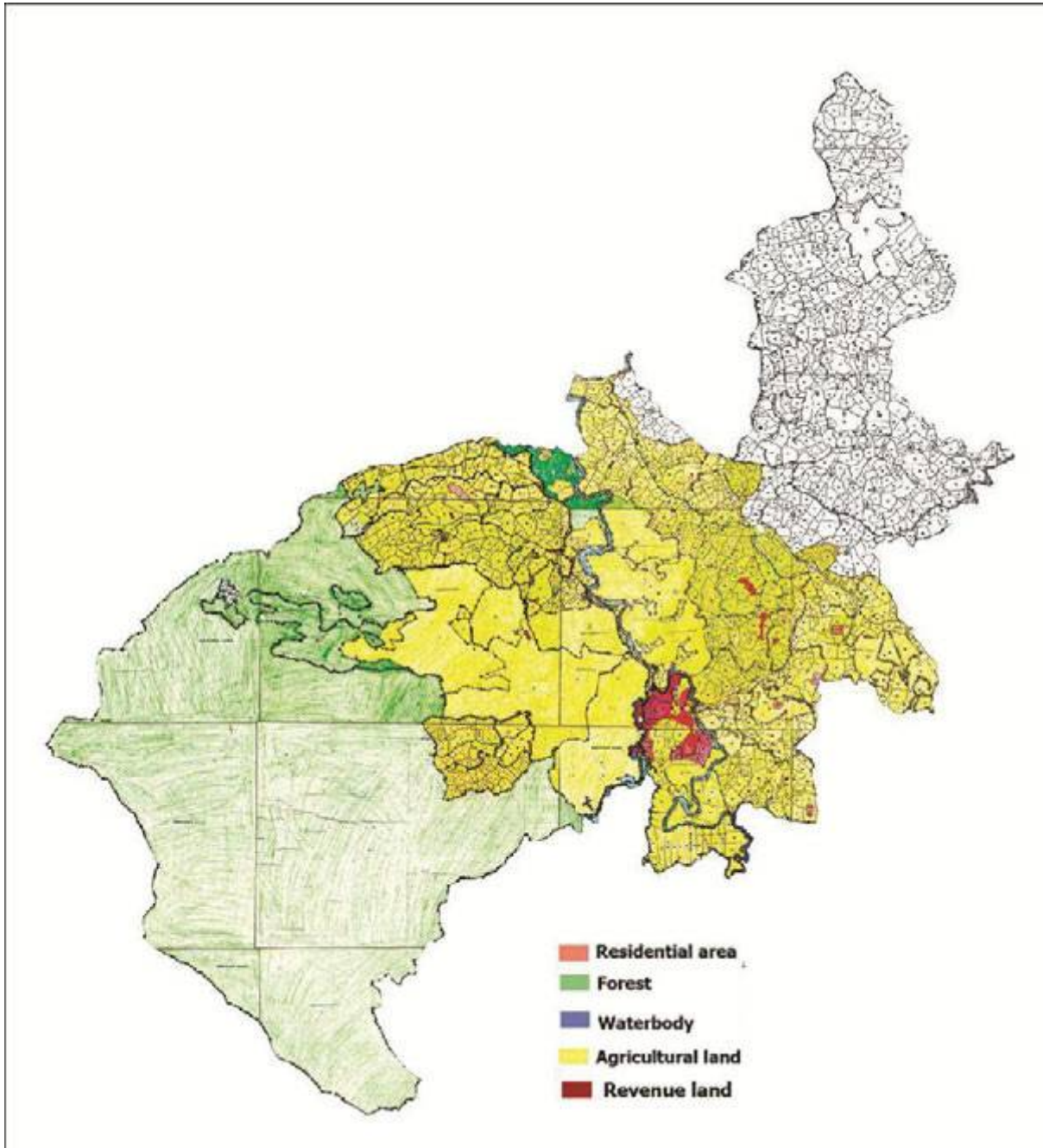
CADASTRAL SCALE ESA VILLAGES

Theriyod Village, Vythiri Taluk, Wayanad District



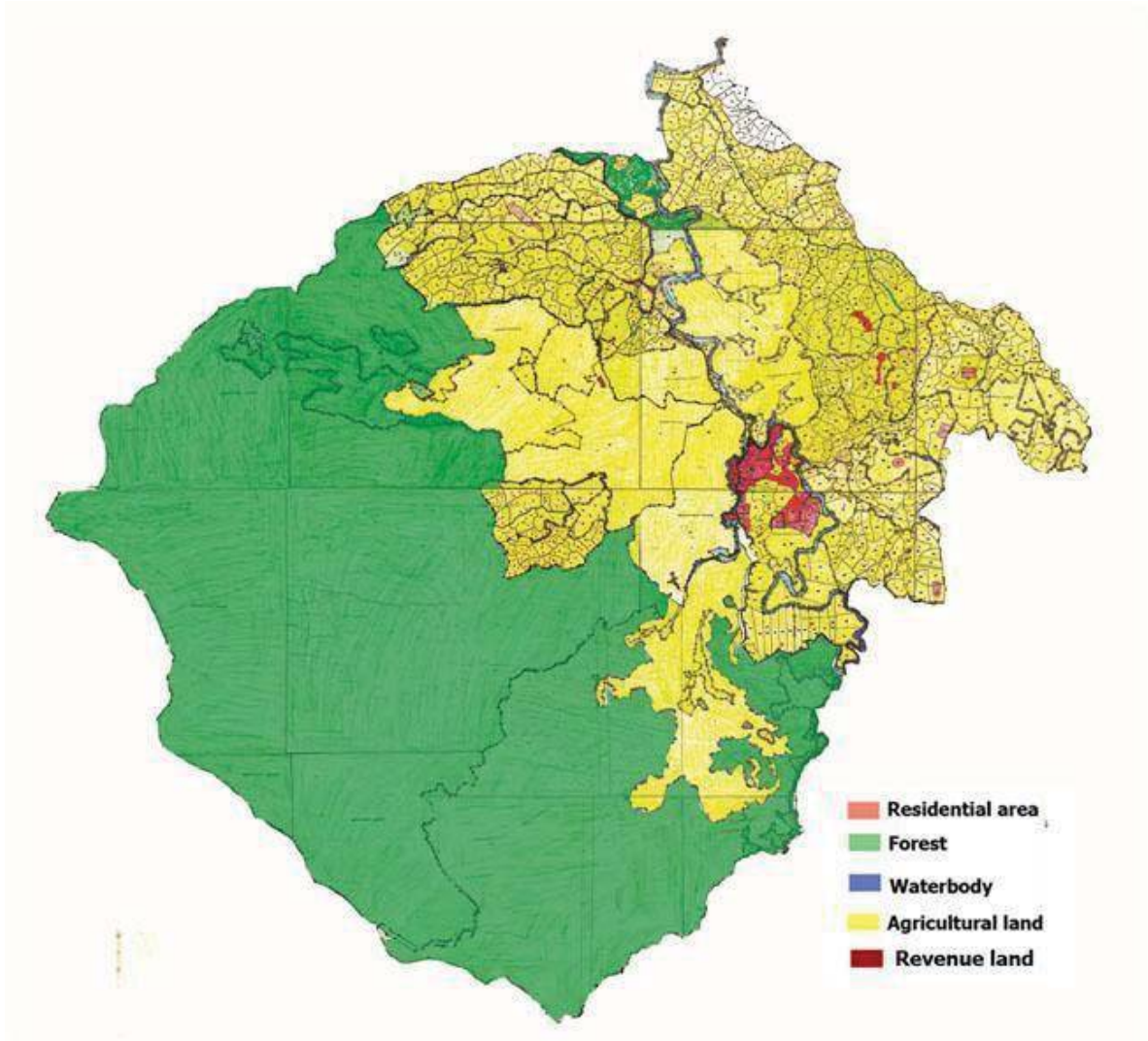
CADASTRAL SCALE ESA VILLAGES

Achooranam Village, Vythiri Taluk, Wayanad District



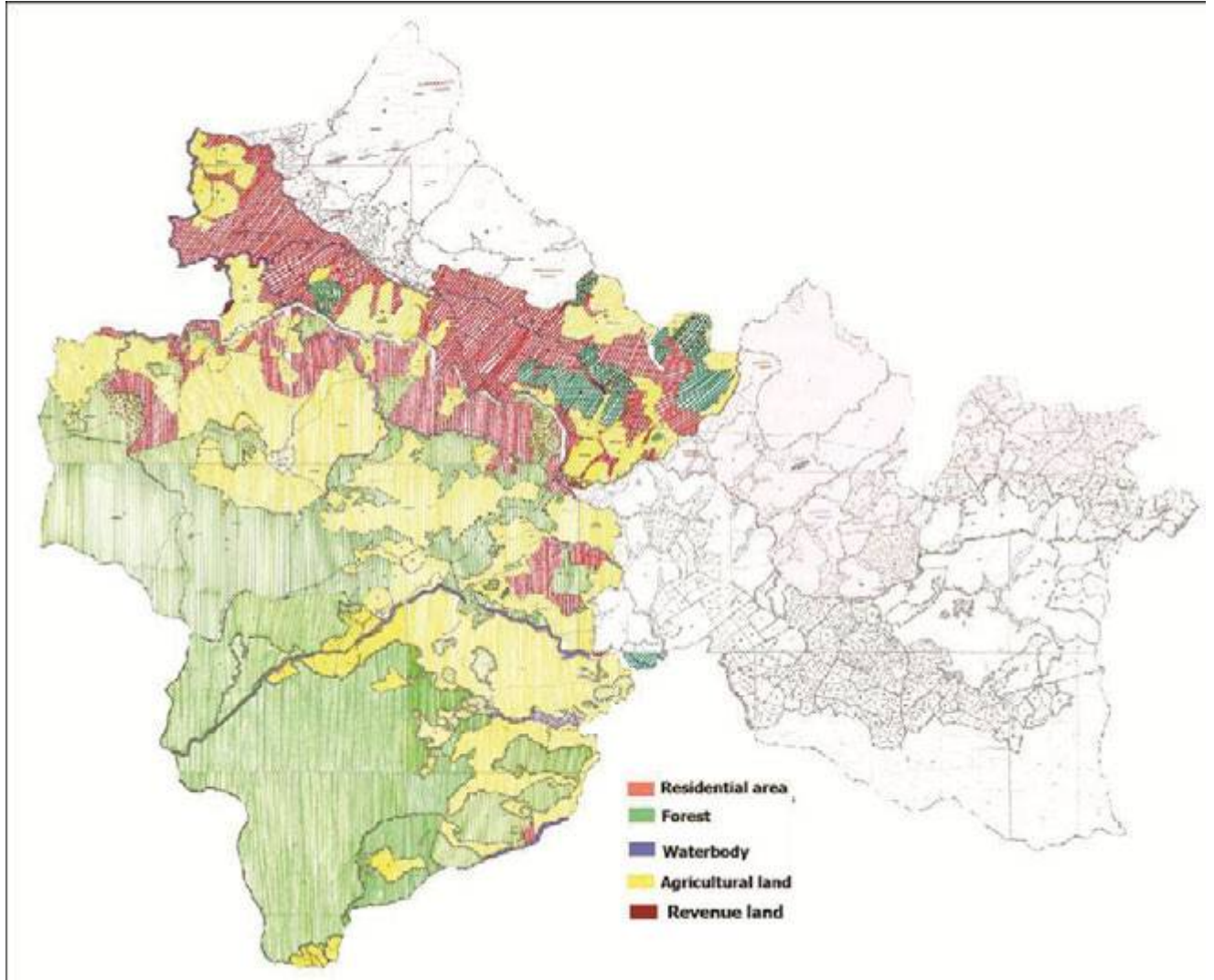
CADASTRAL SCALE ESA VILLAGES

Pozhuthana Village, Vythiri Taluk, Wayanad District



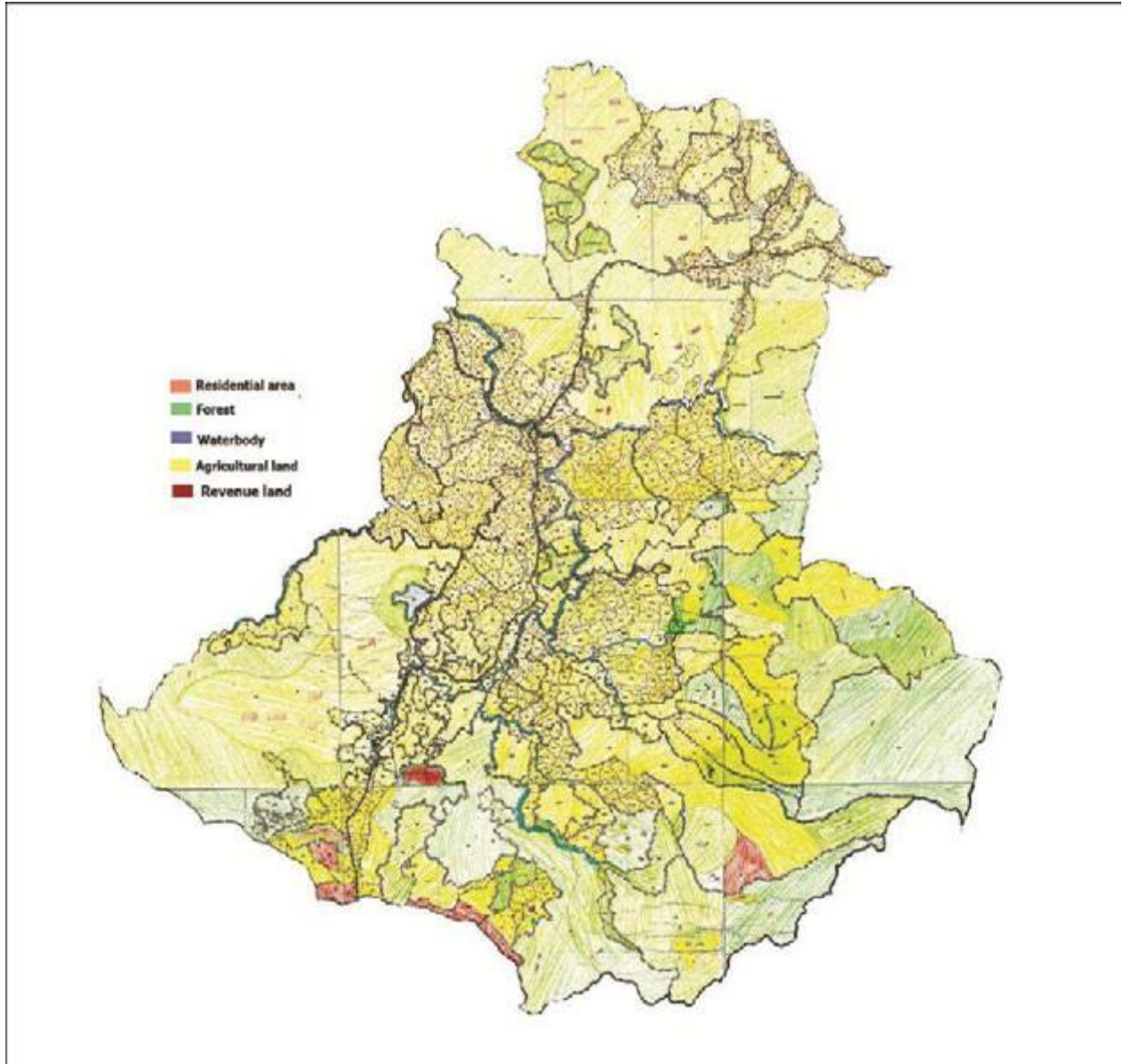
CADASTRAL SCALE ESA VILLAGES

Kottappady Village, Vythiri Taluk, Wayanad District



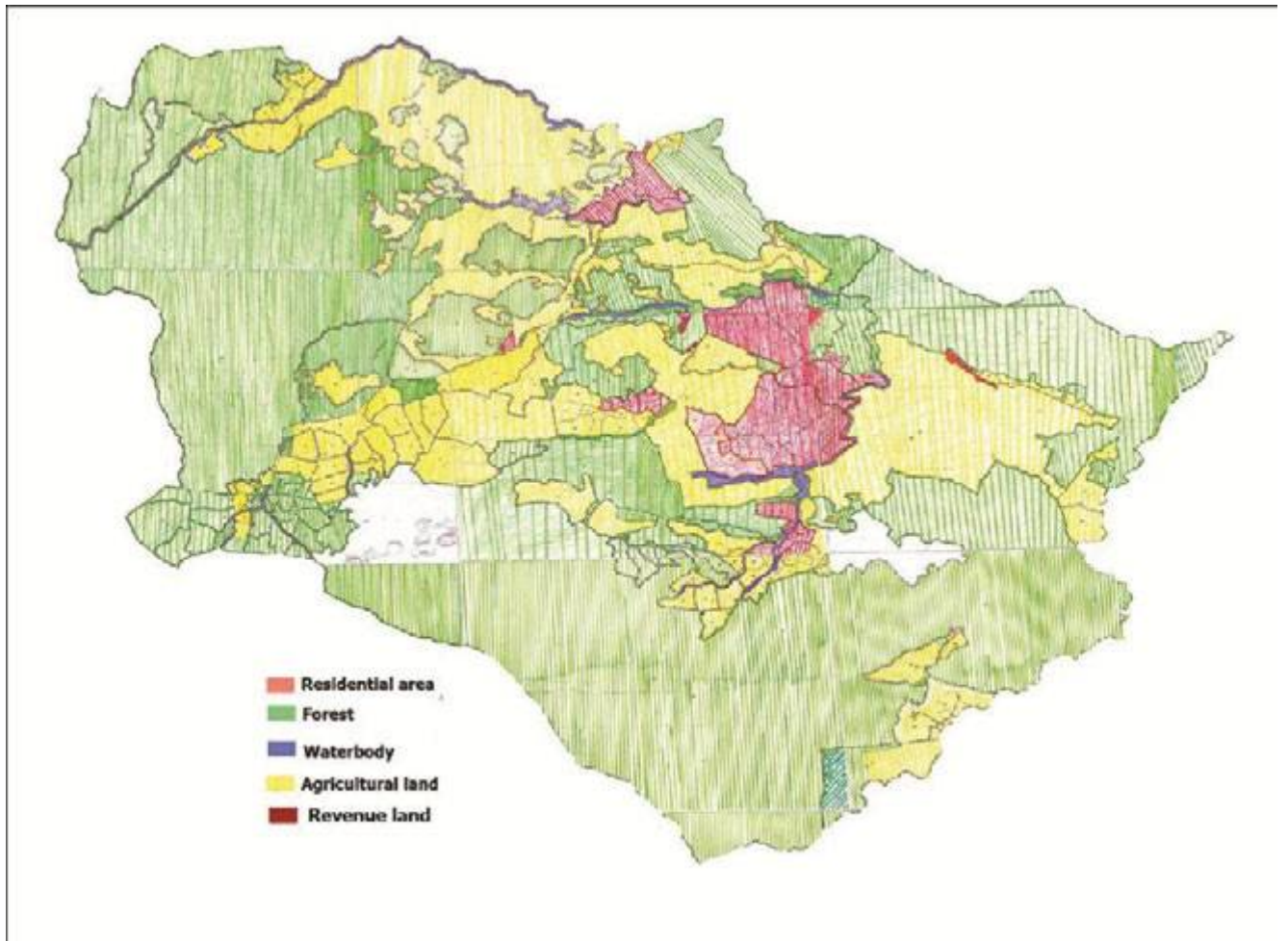
CADASTRAL SCALE ESA VILLAGES

Chundel and Kunnathidavaka Village, Vythiri Taluk, Wayanad District



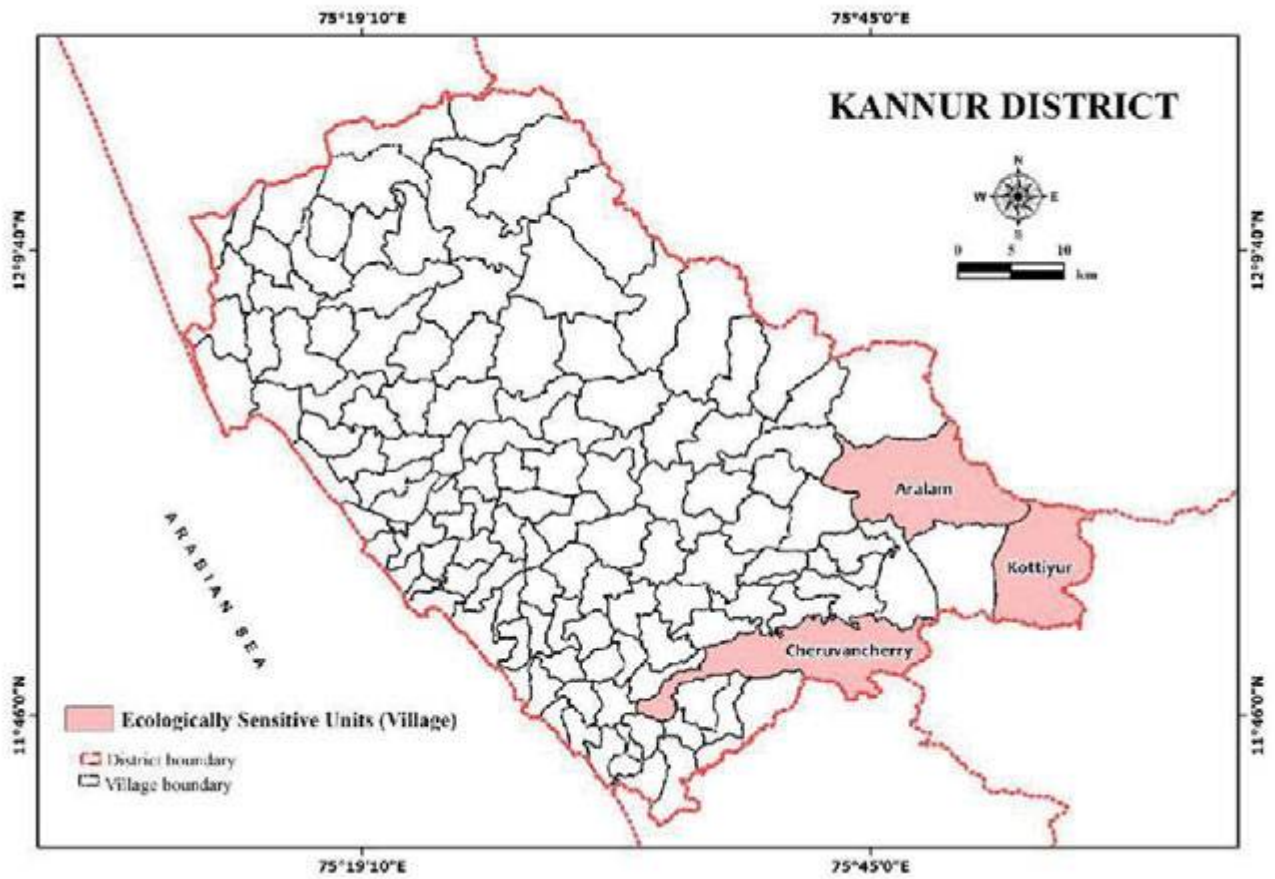
CADASTRAL SCALE ESA VILLAGES

Vellarimala Village, Vythiri Taluk, Wayanad District



CADASTRAL SCALE ESA VILLAGES

Kannur District, Kerala

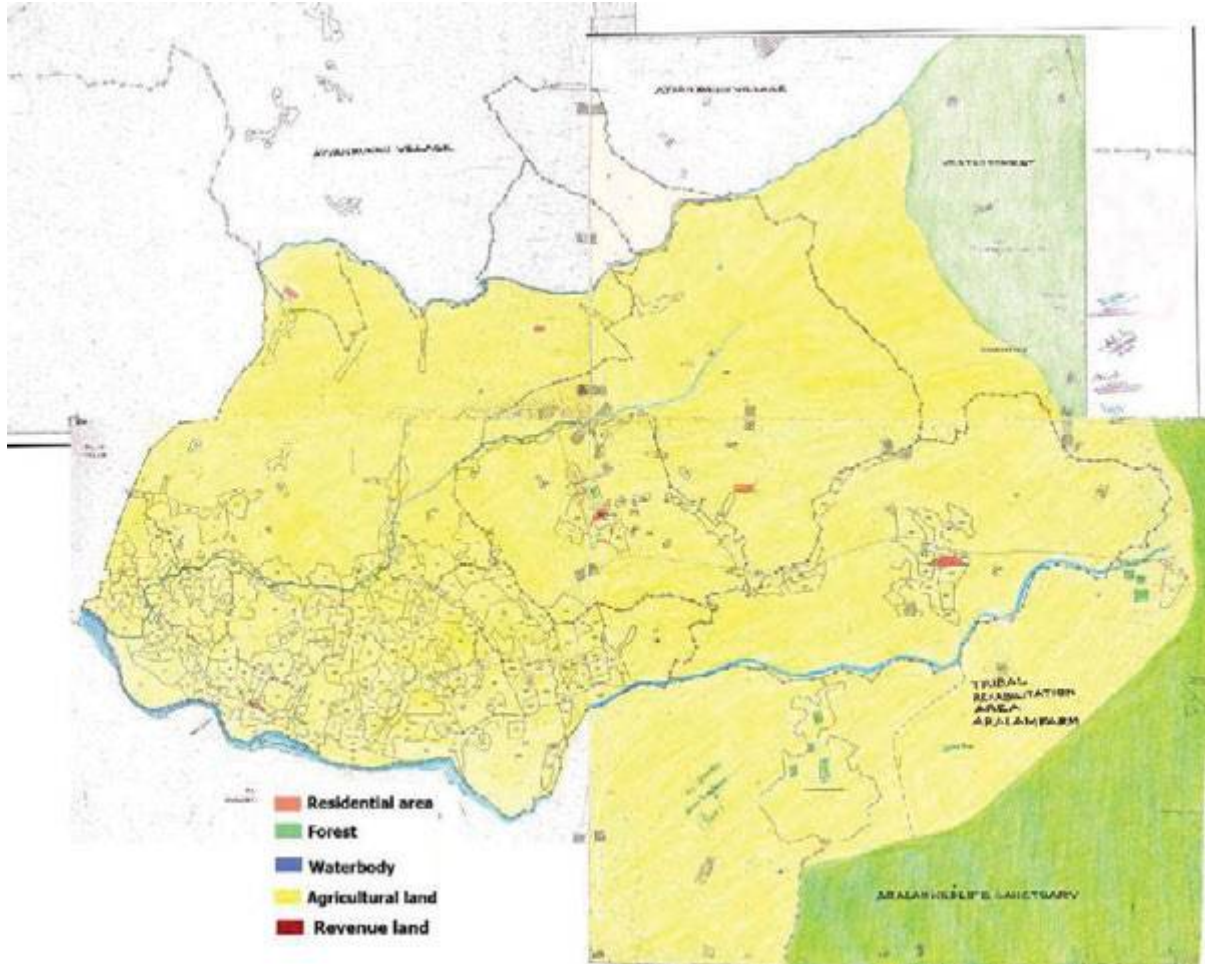


No. of Villages – 3

No. of Taluks - 1

CADASTRAL SCALE ESA VILLAGES

Aralam Village, Thalassery Taluk, Kannur District



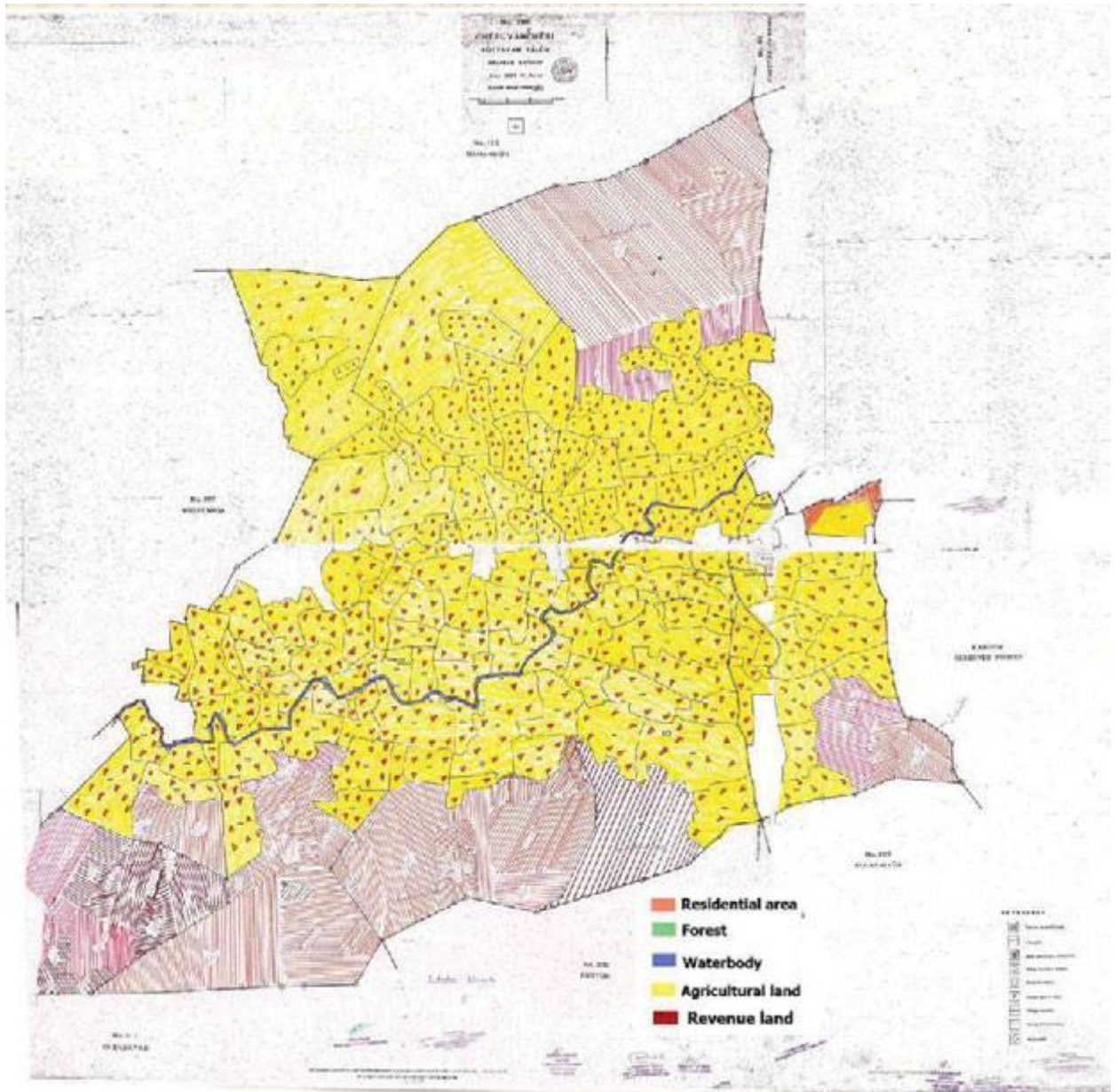
CADASTRAL SCALE ESA VILLAGES

Kottiyur Village, Thalassery Taluk, Kannur District



CADASTRAL SCALE ESA VILLAGES

Cheruvancherry Village, Thalassery Taluk, Kannur District





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