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AGRICULTURAL LAND UTILISATION OF SWETA NADI, SALEM DISTRICT, USING GEOGRAPHICAL INFORMATION SYSTEM (GIS)

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ABSTRACT

Change in agricultural land use, including movement into and out of agricultural production, is called change on the extensive margin of production. That is changes at the point or margin at which a different land use become more profitable. Such changes reflect choice about what lands are formed. The term margin should not be confused with marginal soil or marginal land from an environment view point. The agricultural land utilization in sweta nadi environment of Salem district. The river flowing northern portion of the kolli hills with drain into the velar basin. It is one of the sub basins of the velar basin. The present study chosen for the utilization of the agricultural activities of the sub basin.

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INTRODUCTION

The economic development of a region depends on the availability of various types of resources in the region needs and aspirations of the people inhabiting the region and the skills and technology possessed by them. The distribution of resources of various types as well as the distribution of population in a region is highly uneven. Therefore it, results in striking contrasts in levels of development not only between various nations but also within each, nation. Ilanthirayan and Kumaraswamy (1996), made an attempt to study in changing diction of Land use/Land cover pattern of Lalgudi taluk, of Tiruchirappalli District. From their studies given and trace out in rapid changes of the agricultural resources. The data from IRS and LANDSAT satellites were used in their studies. The classified the land use in both NRSA and USGS methods Chandra Subramanian (1998) has conducted research in Nalkantha Region of Ahamedabad in Gujarat. Land capability map was prepared by overlaying different kinds of maps. The maps include soil-nutrient, fertility, water availability, soil capability and composite land capability. Soil map was prepared based on parameters such as type of soil, depth of soil, and slope of land.

A nutrient map was designed by overlaying the distribution maps of nitrogen, phosphorous and potassium. Fertility maps of nitrogen, phosphorous and potassium. Fertility map reveals the fertility required to produce good crops on a particular price of land. Land not suitable for cultivation is also show in soil capability maps. Water availability map presents the type, quantity and quality of crops to be cultivated in the study area. At the end, the water availability maps were overlaid.

Study area

The sweta nadi environment origin from northern portion of kolli hills with flowing towards south-eastern side via valakombai, Salem and perambalur district.(fig 1) The total area of nadi is 125 sq.km within 36 revenue villages. From the boundary of the nadi is drowning from 75 percent of the Salem district and remaining 25 percent from the perambalur district. The 13 revenue villages in perambalur and remain 24 revenue villages from the Salem district. The major taluk of the basin Ganagavali and Vembampatti. It is based on the study area, major three relief order, like hill, upland, and plain. The slope of the region if normally from south-south to north east direction. The major contour line passing portion of the SS-NE direction. The study area the major phsiographic feature is hill, denudational hill pediments. The study is

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located on the Ganagavalai and vembanthatti Taluks of the Perambalur and Salem District. The sweta nadi originated in the northern portion of the kolli hills and it is drain via seradi, valakombai, Thamampatti and their adjoining places. The river flowing on the western –eastern portion with length of 98.5 km and breath is 34.1km. The lithological discrimination of the drainage are placed in the rock types is charnockite, maganetic quartzizes in the basin. The land utilization of the any land is based on the soil characteristic with their texture, productivity, and capability. From the study area major soil groups are Brown reddish, sandy, with hill soils. The feature controlled by the nature of the flowing of the nadi. The major land use Build up land (Valakombai, Thampampatti, Ganagavalai, Sendarapatti, Thalivasal and Vembavur), Agriculture activities being in the entire study area. The wet crops are along the river course, the dry crops are in the portion of the Thalivasal and other adjoin place. The water resource is mainly in the flowing of the sweta nadi, with enormous natural tanks in the study area. The nearly 56 tanks in the study area. Gangavalli had a population of 10,584. Males constitute 50% of the population and females 50%. Gangavalli has an average literacy rate of 60%, higher than the national average of 59.5%: male literacy is 68%, and female literacy is 51%.

Objectives

The present study area has been prepared the resource mapping following objectives;

- To study agricultural land utilization of the sweta nadi environment and their changing pattern .
- To prepared various thematic layers includes the agricultural Land use with scale of 1:50,000 from survey of India Toposheet and compare with remotely sensed data.
- To analysis entire basin through geographical information system

GIS Database and Methodology

A methodology has been formulated to achieve the present task of Resources Mapping. The following are the sequence of execution, through which the aims and objectives of the present study has been directed and achieved.

Data Sources

The different source for the present study, both primary and secondary data’s was collected.

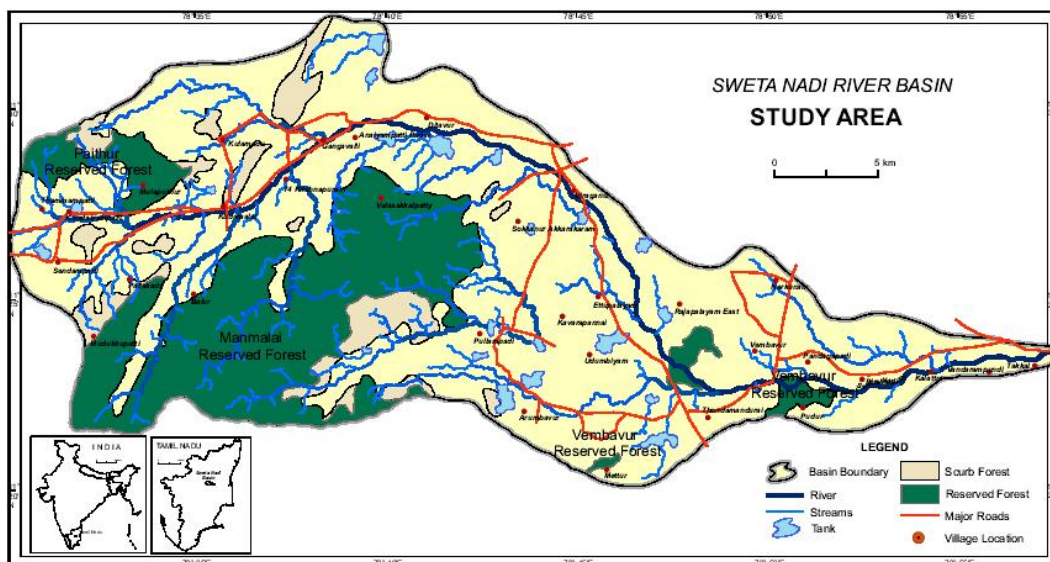


Fig. 2.1

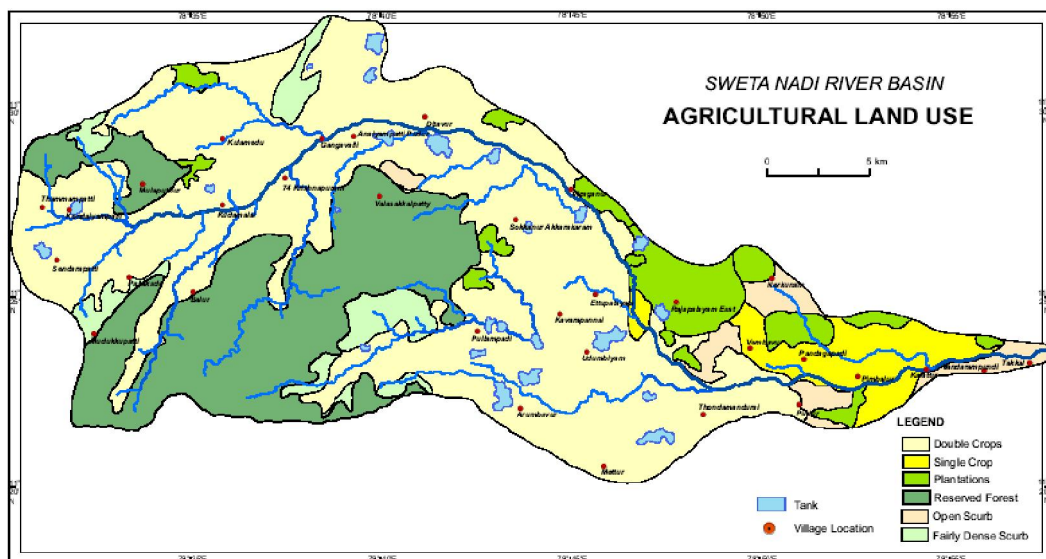


Fig. 4.1

- The SOI source with scale of 1:50,000 for the study area
- Data's generated through the thorough analysis of the entire micro watershed. The addition to this data was collected from various private and public sector. The some of the organization like local departments, Soil and Land use, state Land use, Planning Department and other available source.

RESULT AND DISCUSSION

Introduction

Change in agricultural land use, including movement into and out of agricultural production, is called change on the extensive margin of production. That is changes at the point or margin at which a different land use become more profitable. Such changes reflect choice about what lands are formed. The term margin should not be confused with marginal soil or marginal land from an environment view point. The agricultural land utilization in sweta nadi environment of Salem district. The river flowing northern portion of the kolli hills with drain into the velar basin. It is one of the sub basins of the velar basin. The present study chosen for the utilization of the agricultural activities of the sub basin.

Agricultural land use

The agricultural utilization of the sweta nadi environment have used in the USGS method classification with remotely sensed data were used in NRSA methods. The size of the area is very less even though the cropping area is high. In general the study of the agricultural forming is into two ways one is intensive and another one is extensive forming. The most intensive agricultural forming is along the river course and extensive forming is far from the river course. The first one is wet crops and second one is dry crops.

Intensive agricultural forming

The intensive agricultural activities in the nadi mostly Balakodu, Valasakalpatty, Pulampadi, and Udumbiyam. This area is fall most along the river course with fertile soil. The most activities in wet crops, especially in paddy, plantation and other cash crops.(fig 4.1)

Wet crops

The majority of the place for fertile in nature because of the more availabilities of the water source from the sweta nadi. The some of the place are sendarapatty, Thamampatty, Kudamalai, 74 Krishnapuram, Udumbiyam, Vembauvr. The high concentrations of wet crops from the area are sendarapatty and Thamapatty and their adjoining area.

Plantation crops

The another important crops is plantation in and around of the sweta nadi. The main concentrations of the crops are Thamapatty, Sendarapatty, Kudamalai, Ganagavalli, Vembauvr, Balakadu. The high densely seem to along the river basin. From the view of the remotely sensed data is high concentration in red tone in nature. The most crops are banana, Sugarcan, other crops.

Extensive agricultural forming

The population of the environment is moderate and the portion of the extensive agricultural forming. The lesser concentration of

the forming is far from the sweta nadi is most high elevated region. sendarapatty, Thamampatty, Kudamalai, 74 Krishnapuram, Udumbiyam, Vembauvr and Ganagavalli,

Dry crops

The some of the dry crops are gingili, brown gram sendarapatty, Thamampatty, Kudamalai, 74 Krishnapuram, Udumbiyam, Vembauvr and Ganagavalli,. In addition to this activities the entire area was distributed the activities.

Fallow lands

Fallow land is the land has vacant for the non agricultural activities. The concentration of the activities are particularly in Mulapudur, Kudamalai are covered. The current fallow land is coming under the waste land categories. The area not favorable for the agricultural activities, particularly in along the Balakau, Ganagavalli, Arunbauvr, Pullampadi and their adjoining sector, because of the portion of the forest sector.

Soil

Soil is extremely important for the agricultural activities, in this area. The most food crops being in the regions are paddy, cholam, millet, ragi, mazie sugar can, grain varities, red garm, black gram, horse gram are available along the river course. The most soil type is Red and brown soil. The red soil seems along the Thamapatty, 74 Krishnapuram, sendarapatty, Valasakalpatty, Pullampadi. This are mostly concentrated in wet crops like paddy and sugarcane. The block soil seem along the Thamapatty, sendarapatty, Gangavalli, Kudamalai, Pulakadu. The along the area mostly concentrated in cotton and tobacco. In general most of the soil quality brings their status based on the Soil texture, Capability and productivity

Socio-Economic status of the sweta nadi environment

Crop cultivated area in Hectare in 2003-4 from the table showing the status of the crop cultivation in and around the sweta nadi environment. The paddy crops are exceeds to comparing other crops. The among the the crops dominant to paddy (4930), solam (1476), kambu (1650), grains (2278), Ground nut (2413), cottan (1424). The variation is seemed to positive with high concentration of the above said statistical datas. The other crops (2074), sunflower (42), Syabense (825), sugarcan (373) and Tobacco (90) is very lesser amount of the

Table 1. Cultivation Land Sweta Nadi

No	Crops	Normal Cultivation Hectare	Cultivation in Hectare	Variation Hectare
1.	PADDY	4900	4930	-30
2.	SOLAM	1650	1476	+174
3.	KAMBU	1650	1650	0
4.	RAGI	450	163	287
5.	OTHER CROPS	3000	2074	936
6.	GRAINS	2195	2278	-83
7.	GROUNT NUT	2100	2413	-313
8.	GENJALAI	260	416	-156
9.	SUN FLOWER	550	42	508
10.	SOYA BENSE	825	-	-
11.	SUGAR CAN	400	373	27
12.	TO BACCO	400	90	310
13.	COTTON	1500	1424	76

production due to the low rainfall and as well as the low water sources utilized those particular areas. The status showing only the extensive agricultural forming areas only. In other words such factor due to the unfertile soil condition with land system. (Table 1). From the ranking of the production, paddy, small crops, grain, small grain and cotton. The productivity in tones are paddy is (30234), small crops (10660), small grains (4740) and cotton (1534) (Table 2).

Table 2. Agricultural Production

No	Details	Hectare	Production (Kg)	Production (Ton)
1.	PADDY	4799	6332	30234
2.	SMALL CROPS	4100	2599	10660
3.	GRAIN	2428	838	2040
4.	GRAINS	1975	2395	4740
5.	COTTON	1434	1066	1534
		14736	13230	50208

The portion of the irrigation sources in across some of the dominate place to role like Thedavur (266.74), valkalpatti (163.44) and sendarapatti is (240.30) (Table No) The major panchayat sources of water is uses the neighboring agricultural lands, where utilized in Nadavur (79.58), 74 Krishnapuram (81.23), Kondayampalli (91.44), Nagaiyampatti (87.88), Sengadu (85.45), valakombai (58.20) (Table No)

Conclusion

From the overall analysis of the agricultural land use of the sweta nadi environment is based on the field investigation, were collected the G. Written data as well as the including the cultivation land, Agricultural production in each food crops, Plantation and cash crops etc. The statement given in the table for the status of the agricultural activities from the sweta nadi environment.

REFERENCES

- Bhalla. G.S and Singh. G (2001), Indian Agriculture: Four Decades of Development, South Asia, Sages Publications, New Delhi.
- Directorate of Agriculture, Tamil Nadu(1988), Agricultural Statistics: Tamil Nadu Government, Chennai.
- Mohammad. N (1978), Agricultural Land use in India, Concept Publication, Delhi.
- Mujtaba. S.M (1994) ' Land use and Environment change due to urban expansion, Daya Publishing House, Delhi.
- Ramesh. M (1990) ' Land Utilisation in Tamil Nadu, Chennai.
