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DATABASE MANAGEMENT OF VEDARANYAM TALUK, NAGAPPATTINAM DISTRICT, TAMILNADU USING GEOGRAPHIC INFORMATION SYSTEM (GIS)

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Abstract

GIS, known as geographical information system, is the latest tool, a computer system for capturing, storing, checking, integrating, manipulating, analysis in and displacing data related to positions on the Earth's surface. Typically, a geographical information system or (spatial information system) is used for handling maps of one or another. These might be represented as several different layers each layer holds about a particular kind of feature is linked to a position on the graphically image of a map. With the help of GIS a data base management including data or demography, occupation, education, health, drinking water, power, telecommunication, roads/transportation, banks& commercial institutions, agriculture, sanitation, common property resources ,employment, forestry, industries, marketing facilities, etc.

The scope of the work involves 1, data pertaining to geological and geophysical resources, human resources, social and economic infrastructure, etc. should be collected, collected, updated, and retrieval on regular basis, 2, generation of real time, reliable database on natural resources, socio-economic, agro- climatic condition, financial, institutional and environmental data using geo- informatics and 3, data base to cater to the needs of planning sharing information to various user organizations with necessary data analysis, etc and would act as a centralized data base for state govt. department/ institutions/ institutions involved in development planning.

Keywords: Database management system (DBMS), geo- informatics, Geo-reference and query

Introduction

Today's economy has shifted from material based to information based one resulting in the concept of information super highway. The post industrial revolution, in the form of information technology has fundamentally changed the technological, business and personal life of us.

The term "information technology" reefer's to all-types of technology and associated resources that to capture, storage, retrieval, transform, communication or dissemination of information through the use of electronic media. It encompasses all the resources required for the implementation of it, namely equipment, software, facilities and human resources.

An information system is a key concept in applying information technology. The system is designed to input, store, manage, process and output data as meaningful information.

In the field of planning and decision making, Information technology and its system offer opportunities to improve understanding and practices to develop new theories and to increase the effectiveness of urban and regional planning.

A series of new tools such as data processing systems, statistical analysis packages, CAD and project management packages are used in various levels of planning and decision making processes.

Every object present on the earth can be geo-referenced is the fundamental key of associating any data base to GIS. Here, the term "data base" is a collection of information about things and their relationship to each other and "geo-referenced" refers to the location of a layer or coverage in space defined by the co-ordinate referencing system.

The "information" and "data" are frequently used inter changeably; however, information is generally defined as data meaningful or useful to the recipient .Data items are therefore the raw material for producing information.

Every object present on the earth can be geo-referenced is the fundamental key of associating any data base to GIS. Here, the term "data base" is a collection of information about things and their relationship to each other and "geo-referenced" refers to the location of a layer or coverage in space defined by the co-ordinate referencing system.GIS integrates spatial and non-spatial data sets making it easier to merge or overlay, allowing for the establishment of a more complex picture of the problem.

We would realize a more comprehensive definition of GIS as "An organized selection of computer hardware, software geographic data and personnel design to efficiently capture, store, update, manipulate, analyze and display all forms of geographically referenced information".

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In the strictest sense, a GIS is a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e. data identified according to their locations regard the total GIS as including operating personnel and the data that go in to the system.

Geographic stands for spatial data. This data must be referenced in space i.e. geo-referenced and displayed in the form of a map. If the data or source of information acquired has a spatial reference, the information can be called as Geographic Information. Example: rainfall, temperature, elevation of a point above Mean Sea Level etc.

Literature review

Heagy and McMickle (1988) found that the importance of DBMS training was the topic with the second largest difference in ranking between accounting practitioners--ranked 20th--and academics--ranked 48th Six years later, in a study jointly sponsored by the Institute of Management Accountants and the Financial Executives Institute, high-level accounting and financial executives ranked information systems design as one of the five “most underprepared” topics in accounting education (Siegel and Sorensen 1994).

At the same time, another report showed that organizations are focusing on developing accounting systems in order to integrate their internal and external reporting capabilities and provide accounting information to users in on-line databases (Elliott 1994).

More powerful and useful HR software systems are available in the market (Auxillium 1999; Lye 2000). As is true with any software product, HRM software is designed for an ideal or target user. A new system for a small company can cost between $205,000 to around $560,000 out of which about $50,000 - $150,000 is required for new software with appropriate modules (Walker 1996).

The five most popular areas targeted by HR software are enterprise resource planning, recruiting, payroll, employee self-service, and competency and performance management (Greengard 1999).

While 1970s and 1980s were eras of centralized computing with the IBM mainframe occupying over 70% of the world’s computer businesses, the era of 1990s was the transition phase toward client/server computing, a totally new concept and technology capable of re-engineering the entire business world.

There has never been a technology that has risen as rapidly as client/server technology. The client/server model significantly enhances the HRMS. It provides greater access, capacity, connectivity, and applications’ process. This technology adds intelligence to the traditional File server platform by allocating processing and data management across networked resources (Hunter 1996).

Client/server technology gives personnel the flexibility they need to decentralize or distribute HR applications without having to relinquish centralized financial control. Client/server architecture allows HR managers throughout the company to distribute information better within the organization and to access information for reporting, analysis, and planning (Henson 1996).

As a whole, the development and implementation of client/server technology is more complex, more difficult, and more expensive than traditional single process applications. However, client/server is still highly desirable because the business demands increased benefits (Linthicum 1996).

The relational database model currently dominates the database market with approximately four billion dollars in sales per year. Relational databases are one of the most powerful tools of current computing technologies. They provide the foundation for a number of current tools and packages. They are also at the heart of corporate information systems and decision support (Soni, Stone, and Thomas 1999).

Relational Database Management System (RDBMS) provides users with a conceptual representation of data that does not include many of the details of how the data is stored (Rob and Coronel 1997).

Database management system

A 'database management system' (DBMS) is computer software designed for the purpose of managing databases based on a variety of data models.

Description

A DBMS is a complex set of software programs that controls the organization, storage, management, and retrieval of data in a database. A DBMS includes:A modeling language to define the schema of each database hosted in the DBMS, according to the DBMS data model. The four most common types of organizations are the hierarchical, network, relational and object models. Inverted lists and other methods are also used. A given database management system may provide one or more of the four models. The optimal structure depends on the natural organization of the application's data, and on the application's requirements (which include transaction rate (speed), reliability, maintainability, scalability, and cost).

The dominant model in use today is the ad hoc one embedded in SQL, despite the objections of purists who believe this model is a corruption of the relational model, since it violates several of its fundamental principles for the sake of practicality and performance. Many DBMSs also support the Open Database Connectivity API that supports a standard way for programmers to access the DBMS.

A database query language and report writer to allow users to interactively interrogate the database, analyze its data and update it according to the users privileges on data.

It also controls the security of the database. Data security prevents unauthorized users from viewing or updating the database. Using passwords, users are allowed access to the entire database or subsets of it called subschema's. For example, an employee database can contain all the data about an individual employee, but one group of users may be authorized to view only payroll data, while others are allowed access to only work history and medical data.

If the DBMS provides a way to interactively enter and update the database, as well as interrogate it, this capability allows for managing personal databases. However, it may not leave an audit trail of actions or provide the kinds of controls necessary in a multi-user organization. These controls are only available when a set of application programs are customized for each data entry and updating function.

A transaction mechanism, that ideally would guarantee the ACID properties, in order to ensure data integrity, despite concurrent user accesses (concurrency control), and faults (fault tolerance). It also maintains the integrity of the data in the database. The DBMS can maintain the integrity of the database by not allowing more than one user to update the same record at the same time. The DBMS can help prevent duplicate records via unique index constraints; for example, no two customers with the same customer numbers (key fields) can be entered into the database.

The DBMS accepts requests for data from the application program and instructs the operating system to transfer the appropriate data. When a DBMS is used, information systems can be changed much more easily as the organization's information requirements change. New categories of data can be added to the database without disruption to the existing system.

Logical and physical view

A database management system provides the ability for many different users to share data and process resources. But as there can be many different users, there are many different database needs. A DBMS minimizes these problems by providing two views of the database data: a physical view and a logical view. The physical view deals with the actual, physical arrangement and location of data in the direct access storage devices (DASDs). Database specialists use the physical view to make efficient use of storage and processing resources. Users, however, may wish to see data differently from how they are stored, and they do not want to know all the technical details of physical storage. After all, a business user is primarily interested in using the information, not in how it is stored. The logical view/user's view, of a database program represents data in a format that is meaningful to a user and to the software programs that process those data. That is, the logical view tells the user, in user terms, what is in the database. One strength of a DBMS is that while there is only one physical view of the data, there can be an endless number of different logical views. This feature allows users to see database information in a more business-related way rather than from a technical, processing viewpoint. Thus the logical view refers to the way user views data, and the physical view to the way the data are physically stored and processed.

DBMS Benefits

The benefits of DBMS are 1.Improved strategic use of corporate data 2.Reduced complexity of the organization's information systems environment 3.Reduced data redundancy and inconsistency 4.Enhanced data integrity 5.Application-data independence 6.Improved security 7.Reduced application development and maintenance costs 8.Improved flexibility of information systems 9.Increased access and availability of data and information.

Features and capabilities of DBMS

One can characterize a DBMS as an "attribute management system" where attributes are small chunks of information that describe something. For example, "color" is an attribute of a car. The value of the attribute may be a color such as "red", "blue" or "silver".

Alternatively, and especially in connection with the relational model of database management, the relation between attributes drawn from a specified set of domains can be seen as being primary. For instance, the database might indicate that a car that was originally "red" might fade to "pink" in time, provided it was of some particular "make" with an inferior paint job. Such higher arity relationships provide information on all of the underlying domains at the same time, with none of them being privileged above the others.

Throughout recent history specialized databases have existed for scientific, geospatial, imaging, document storage and like uses. Functionality drawn from such applications has lately begun appearing in mainstream DBMSs as well. However, the main focus there, at least when aimed at the commercial data processing market, is still on descriptive attributes on repetitive record structures.

Thus, the DBMSs of today roll together frequently-needed services or features of attribute management. By externalizing such functionality to the DBMS, applications effectively share code with each other and are relieved of much internal complexity. Features commonly offered by database management systems include.

Query ability

Querying is the process of requesting attribute information from various perspectives and combinations of factors.

A database query language and report writer to allow users to interactively interrogate the database, analyze its data and update it according to the users privileges on data. It also controls the security of the database. Data security prevents unauthorized users from viewing or updating the database. Using passwords, users are allowed access to the entire database or subsets of it called subschema's. For example, an employee database can contain all the data about an individual employee, but one group of users may be authorized to view only payroll data, while others are allowed access to only work history and medical data.

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Backup and replication

Copies of attributes need to be made regularly in case primary disks or other equipment fails. A periodic copy of attributes may also be created for a distant organization that cannot readily access the original. DBMS usually provide utilities to facilitate the process of extracting and disseminating attribute sets. When data is replicated between database servers, so that the information remains consistent throughout the database system and users cannot tell or even know which server in the DBMS they are using, the system is said to exhibit replication transparency.

Rule enforcement

Often one wants to apply rules to attributes so that the attributes are clean and reliable. For example, we may have a rule that says each car can have only one engine associated with it (identified by Engine Number). If somebody tries to associate a second engine with a given car, we want the DBMS to deny such a request and display an error message. However, with changes in the model specification such as, in this example, hybrid gas-electric cars, rules may need to change. Ideally such rules should be able to be added and removed as needed without significant data layout redesign.

Security

Often it is desirable to limit who can see or change which attributes or groups of attributes. This may be managed directly by individual, or by the assignment of individuals and privileges to groups, or (in the most elaborate models) through the assignment of individuals and groups to roles which are then granted entitlements.

Computation

There are common computations requested on attributes such as counting, summing, averaging, sorting, grouping, cross-referencing, etc. Rather than have each computer application implement these from scratch, they can rely on the DBMS to supply such calculations.

Change and access logging

Often one wants to know who accessed what attributes, what was changed, and when it was changed. Logging services allow this by keeping a record of access occurrences and changes.

Automated optimization

If there are frequently occurring usage patterns or requests, some DBMS can adjust themselves to improve the speed of those interactions. In some cases the DBMS will merely provide tools to monitor performance, allowing a human expert to make the necessary adjustments after reviewing the statistics collected.

Meta-Data resposity

Main article: Meta data

Metadata (also spelled meta-data) is data describing data. For example, a listing that describes what attributes are allowed to be in data sets is called "meta-information".

Navigational DBMS

As computers grew in capability, this trade-off became increasingly unnecessary and a number of general-purpose database systems emerged; by the mid-1960s there were a number of such systems in commercial use. Interest in a standard began to grow, and chorales, author of one such product IDS, founded the Database Task Group within CODASYL, the group responsible for the creation and standardization of COBOL. In 1971 they delivered their standard, which generally became known as the Codasyl approach, and soon there were a number of commercial products based on it available.

The Codasyl approach was based on the "manual" navigation of a linked data set which was formed into a large network. When the database was first opened, the program was handed back a link to the first record in the database, which also contained pointers to other pieces of data. To find any particular record the programmer had to step through these pointers one at a time until the required record was returned. Simple queries like "find all the people in

Sweden" required the program to walk the entire data set and collect the matching results. There was, essentially, no concept of "find" or "search". This might sound like a serious limitation today, but in an era when the data was most often stored on magnetic tape such operations were too expensive to contemplate anyway.

IBM also had their own DBMS system in 1968, known as IMS. IMS was a development of software written for the Apollo program on the System/360. IMS was generally similar in concept to Codasyl, but used a strict hierarchy for its model of data navigation instead of Codasyl's network model.

Bachman's 1973 Turing Award award presentation was The Programmer as Navigator.

IMS is classified as a hierarchical database. IDS and IDMS (both CODASYL databases) as well as CINCOMs TOTAL database are classified as network databases.

Relational DBMS

Edgar Codd worked at IBM in San Jose, California, in one of their offshoot offices that was primarily involved in the development of hard disk systems. He was unhappy with the navigational model of the Codasyl approach, notably the lack of a "search" facility which was becoming increasingly useful. In 1970, he wrote a number of papers that outlined a new approach to database construction that eventually culminated in the groundbreaking A Relational Model of Data for Large Shared Data Banks.

In this paper, he described a new system for storing and working with large databases. Instead of records being stored in some sort of linked list of free-form records as in Codasyl, Codd's idea was to use a "table" of fixed-length records. A linked-list system would be very inefficient when storing "sparse" databases where some of the data for any one record could be left empty. The relational model solved this by splitting the data into a series of normalized tables, with optional elements being moved out of the main table to where they would take up room only if needed. In the relational model, related records are linked together with a "key".

For instance, a common use of a database system is to track information about users, their name, login information, various addresses and phone numbers. In the navigational approach all of these data would be placed in a single record, and unused items would simply not be placed in the database. In the relational approach, the data would be normalized into a user table, an address table and a phone number table (for instance). Records would be created in these optional tables only if the address or phone numbers were actually provided.

Linking the information back together is the key to this system. In the relational model, some bit of information was used as a "key", uniquely defining a particular record. When information was being collected about a user, information stored in the optional (or related) tables would be found by searching for this key. For instance, if the login name of a user is unique, addresses and phone numbers for that user would be recorded with the login name as its key. This "re-linking" of related data back into a single collection is something that traditional computer languages are not designed for.

Just as the navigational approach would require programs to loop in order to collect records, the relational approach would require loops to collect information about any one record. Cod's solution to the necessary looping was a set-oriented language, a suggestion that would later spawn the ubiquitous SQL. Using a branch of mathematics known as tuple calculus, he demonstrated that such a system could support all the operations of normal databases (inserting, updating etc.) as well as providing a simple system for finding and returning sets of data in a single operation.

Cod's paper was picked up by two people at Berkeley, Eugene Wong and Michael Stonebreaker. They started a project known as INGRES using funding that had already been allocated for a geographical database project, using student programmers to produce code. Beginning in 1973, INGRES delivered its first test products which were generally ready for widespread use in 1979. During this time, a number of people had moved "through" the group - perhaps as many as 30 people worked on the project, about five at a time. INGRES was similar to System R in a number of ways, including the use of a "language" for data access, known as QUEL - QUEL was in fact relational, having been based on Cod's own Alpha language, but has since been corrupted to follow SQL, thus violating much the same concepts of the relational model as SQL itself.

IBM itself did only one test implementation of the relational model, PRTV, and a production one, Business System 12, both now discontinued. Honeywell did MRDS for Mastics, and now there are two new implementations: Alphora Dataphor and Rel. All other DBMS implementations usually called relational are actually SQL DBMSs.

In 1968, the University of Michigan began development of the Micro DBMS relational database management system. It was used to manage very large data sets by the US Department of Labor, the Environmental Protection Agency and researchers from University of Alberta, the University of Michigan and Wayne State University. It ran on mainframe computers using Michigan Terminal System. The system remained in production until 1996.

SQL DBMS

IBM started working on a prototype system loosely based on Cod's concepts as System R in the early 1970s — unfortunately, System R was conceived as a way of proving Cod's ideas un implementable and thus the project was delivered to a group of programmers who were not under Cod's supervision, never understood his ideas fully and ended up violating several fundamentals of the relational model. The first "quickie" version was ready in 1974/5, and work then started on multi-table systems in which the data could be broken down so that all of the data for a record (much of which is often optional) did not have to be stored in a single large "chunk". Subsequent multi-user versions were tested by customers in 1978 and 1979, by which time a standardized query language, SQL, had been added. Cod's ideas were establishing themselves as both workable and superior to Codasyl, pushing IBM to develop a true production version of System R, known as SQL/DS, and, later, Database 2 (DB2).

Many of the people involved with INGRES became convinced of the future commercial success of such systems, and formed their own companies to commercialize the work but with an SQL interface. Sybase, Informix, Nonstop SQL and eventually Ingress itself were all being sold as offshoots to the original INGRES product in the 1980s. Even Microsoft SQL Server is actually a re-built version of Sybase, and thus, INGRES. Only Larry Ellison's Oracle started from a different chain, based on IBM's papers on System R, by beating them to market when the first version was released in 1978.

Stonebreaker went on to apply the lessons from INGRES to develop a new database, Postures, which is now known as Postures. Postures is primarily used for global mission critical applications (the .org and .info domain name registries use it as their primary data store, as do many large companies and financial institutions).

In Sweden, Cod's paper was also read and Mime SQL was developed from the mid-70s at Uppsala University. In 1984, this project was consolidated into an independent enterprise. In the early 1980s, Miner introduced transaction handling for high robustness in applications, an idea that was subsequently implemented on most other DBMS.

Database management systems

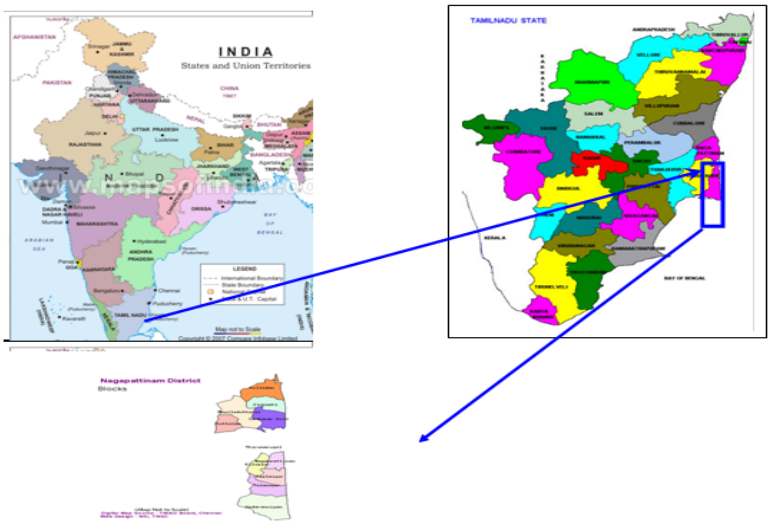
Oracle, DB2, Sybase Adaptive Server Enterprise, Ingres, Informix, Microsoft Access, Microsoft SQL Server, Firebird, PostgreSQL, MySQL, OpenLink Virtuoso, SQLite, FileMaker.

Backstudy area

The district of Nagappattinam has been carved out as a separate district by bifurcation of Thanjavur district. Six taluks namely Sirkali,Tharangampadi, Mayiladuthurai, Valangaiman, Nagappattinam and Vedaranyam were detached from their parent district i.e Thanjavur to form this new district. The district is bounded by the Bay of Bengal in the east, Palk Strait in the south, Thiruvarur and Thanjavur districts in the west, and the Cuddalure district in the North. The district is spread over 2715.83 sq.km.

Vedaranyam is one of the coastal Block of Nagapattinam District. It is situated 45 k.m . South of nagapattinam. Vedaranyam lies on the coast of bay of Bengal, It had historical importance. From here Chula kings had traded with Srilanka and then conquered them. Here Rajaji had participated salt satyagraha movement an important. Movement in freedom struggle. This Block has an Geographical Area of 630. 32 sq. Km. This Block 20 Consists of 44 Revenue Villages and 36 Village punchayat.

Map 3.1. Location of the area



This district is having an area of 2715.83sqkms in its fold. It extends in latitude from 10'15'N to 11 30'N and longitude from 79.30' E to 79'55' E. The general geological formation of the district is plain and coastal. The Cauvery and its off shoots are the Principle Rivers. Nagapattinam is a coastal district having a long coastline of 141km. The study area name is Vedaranyam block in Nagappattinam district is found in the inlands with coastal line. It is bound between 10° 51´ 0" N to 10° 54´ 0" N latitude and 79° 45´ 0" E to 79° 48´ 0" E longitude Map (3.1).

The general topography of the district is a part of the coastal plain. The Cauvery and its offshoots are the principal rivers. The marine land or coastal land is generally plain except for few sand dunes. However there is a general tilt from coastal line to the land area. The most important feature of the district is the Cauvery River spread over with its numerous branches.

Tropical climate with dust storms and whirl winds blow from various quarters towards the end of May. The southwest winds set in during April. It is strongest in June and continues till September. Northeast monsoon starts during the month of October and blow till January. Cyclonic storm with varying wind velocity affects once in 3 or 4 years during the month of November-December. Both these storms affect the plantation crop. During southwest monsoon the air is calm and undisturbed. The average maximum temperature for the district (from 1991 to 1996) as a whole is about 32.46°C and the average minimum temperature is 24.75°C.The monthly average rainfall in the district was 108.87 mm.

The geological formation of the Nagappatinam district is made up of completely alluvial deposit both of river and marine origin. A small pocket of terrestrial deposit viz. the Cuddalore sandstones of Tertiary age is seen near Thiruthuraipoondi. The sandstone is covered by a thin layer of clay bound sands. This Tertiary formation is invariably capped by the alluvial deposits of the river Cauvery and its tributaries over the sandstones. They consist of sands, gravelly sands, clays and sandy clays. The thickness of this formation ranges from 30m to 400m. The tidal deposits of Bay of Bengal are invariably seen up to 5km range from the sea which consists of fine to course sand. Sandy clays with marine features like shells and salt pans are concentrated at Vedaranyam. The entire area is occupied by the rocks of recent formation. The recent formation is marked by river alluvium and soil.

The Nagapattinam district is well connected with a net work of roads and railways. The total length of roads in this district is 1,221km with various types of roads concrete, black toped metal led and non metal led ones. The important roads are 1) The state highways roads connecting Thanjavur and Nagappatinam., Nagapattinam and Karaikal.2)The major district roads in Nagappattinam connect all taluk head quarters.

The primary source of irrigation is the ancient network of canals of the rivers. Oullaiyaru, Addapparu, Harichadra, Odampokkiyaru, Valapparu Mudikondam, Thirumalairajanaru Nandalar, Veerachonaru, Manjalaru, Ayyanararu, Vikkramananru Cauvery and its tributaries.The block has Vennar River, which along with tributaries like Odambokki, Chandranathi, Vellaiyar etc., transverse through the block and provides irrigation facilities. Nearly 90 percent of the net area irrigate, is connected by canal irrigation system.

The total population of the Vedaranyam Block as per 2001 census is 162646, Male population is 80530 and female 82116 .There are some important temples attracting tourists from other parts of the district. Arulmigu Vedapureswarar Temple at Sattiyakkudi, Arulmigu Naduthirinathar Temple at Koil Kannapura Arulmigu Anju Vettathamman Temple at Kilvelur, Arulmigu Atchayalingaswamy Temple at Thevoor.

The present study aims to create a data of land use characteristics and its management for the Vedaranyam Block. For this purpose, the data for the years from 2003 t o 2007 has been collected and analyzed.

Materials and Methods

Secondary data were collected from the district headquarters, panchayat and statistical office in the Nagappattinam district. With the help of GIS the data were analyzed and interpreted.

Arc Gis 8.3 – The software used for on screen interpretation, digitization and analysis of different thematic information.

Analysis

The study of this block indicates that the density of population was very unevenly distributed in rural and urban area. The population in the rural area are very high, comparing with urban, overall average of female ratio is higher than the male ratio both in rural and urban. Cultivation was the main occupation in the rural areas but very few cultivators are found in the urban areas. Male cultivating workers are high in both rural and urban areas. Agricultural laborers are accumulated mainly in the rural areas since agriculture is the main business in the rural areas. Mostly male workers were participating in the agriculture work. The participation rate of workers in rural and urban in household industry manufacturing processing service and repairs are showing a decreasing trend from 1961 onwards. The other workers in the field like animal husbandry, forestry, fishery, hunting, mining and quarrying etc are also as seem from the data collected from this area with a very low participation rate. However data from

this block show that agriculture is the main work and maximum number of workers participated in agriculture than other workers in this area. Overall reading shows that the total work participation rate of male is higher than female in all census in this block.

The study of the census of literate persons shows that the male literate were higher then the female literate in both rural and urban area.

In this block 44 elementary schools 14 middle schools 10 high schools 2 higher secondary schools, 7 matriculation schools and one polytechnic function. Out of the total population almost 11132 students are studying in these educational institutions. It varied every year. The data's shows that the ratio of boys is higher than girls in all the year. In this educational institution almost 253 Teachers are working. It varied every year. Women teacher's variation is higher in pre-primary school and primary school than the men teachers. But in the high school and higher secondary school men teachers are found more than the women teachers.

Farmers use machineries by replacing animal and human powers. Plugging by tractors sowing and threshing by combined harvest thresher are the modern machineries used for agriculture in this block. Large number of water pumps are used for irrigation purpose. But very few number of rice mills and oil Ghana is found in this area. In this block the cultivating area are irrigated by flow irrigation and ground water irrigation. Most of the areas are irrigated by flow irrigation. Cereals, Pulses, Oil seeds, and other crops are cultivated here but cereals and pulses are the main crop in this area and they are cultivated in 80% area in this block.

As for as the land utilization is concerned the area of forest is unchanged during the entire census. Barren and uncultivable land is also unchanged in the last three censuses. There is a light variation in every census in the land put to non agriculture use. Cultivable waste and grazing lands and geographical area remained unchanged in all the censuses. The total cropped area gradually decreased in every census. There is a decreasing and increasing trend in the case of current follows and other fallows land.

Live stocks are an important source of income in this block. It provides regular employment and the woman constitute the most part in it. Buff allows, sheep, goats, horses, pig etc are some live stock grown in this area. The cattle population of this block is 52325.All the villages in this Block are electrified. For the convenience of the people public lighting were installed in this block.

The communication system in this block comprises of Post offices, Telegraph offices, Telephone exchange offices etc. Post offices remain same in all censuses. Telephone is the main communication system in this block. Number of telephone and public call office are increased in every census.

Mud Road, cement road, serial road, tar road were laid in this block. As seem from the data maximum of serial roads and mud roads are seen from the all census but the cement roads are laid in very low ratio.

The study of the medical and health structures shows that there is only one Indian Medicine – primary health centre available in this block. 2 hospitals and 14 health sub –centers are also seem from all the available census.

The census shows that the needs of drinking water of the village in this block are provided with water supply by hand pump sets.

Among the essential services, National Blanks and Agricultural co-operative Banks contributed much to the financial needs of the farmers Nationalized banks and 8 Agricultural co-operative banks are seen from the all census. For the maintenance of law and order problem 3 police stations are there in this block. 1 railway station, 140 noon's – meal centers, 1 petrol Bank and 1 fire station are also available in this block. The finance of the panchayat in this block is raised by collecting of Revenue Taxes. The main revenue of the panchayat union of this block is the Grants received from Govt / Higher level bodies. The most of the amount is utilized for development of this block as it is seen from the data. 5 libraries, travelers' bungalow, Cinema theatre, Bio-gas plants, petrol bunks, rice flower mills are also created in this block. Food grains in this block stored in the godown of marketing committee, civil supplies and panchayat union.

Conclusion

The concept of a database is that data needs to be managed in order to be available for processing and have appropriate quality. This data management includes both software and organization. The software to create and manage a database is a database management system. When all access to and use of the database is controlled through a database management system, all applications utilizing a particular data item access the same data item which is stored in only one place. A single updating of the data item updates it for all uses. Integration through a database management system requires a central authority for the database. The data can be stored in one central computer or dispersed among several computers; the overriding requirement is that there is an organizational function to exercise control. A system is spatially referenced information, including computer programs that acquire, store, manipulate, analyzed, and display spatial data.

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