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Smart Utilization of Urban and Rural Land

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Abstract – Land is the most important component of the life support system. It is the most important natural resource which embodies soil and water, and associated flora and fauna involving the ecosystem on which all man's activities are based. Land is a finite resource. Land availability is only about 20% of the earth's surface. Land is crucial for all developmental activities, for natural resources, ecosystem services and for agriculture. Growing population, growing needs and demands for economic development, clean water, food and other products from natural resources, as well as degradation of land and negative environmental impacts are posing increasing pressures to the land resources in many countries of the world. For India, though the seventh largest country in the world, land resource management is becoming very important. India has over 17% of world's population living on 2.4% of the world's geographical area. After independence the population of our country increase's day by day. Due to that the problems like shortage of basic amenities, shortage of lands, and increase in the population rate are occurred. Due to increase in the population rate the price of lands are increases day by day. To overcome such problem the proper smart utilization of land is necessary.

In this report the smart utilization of land is done with respect to proper land zoning, create and maintain the basic infrastructure, transportation, rural community development, plantation, landscaping & wasteland reclamation, smart waste management and smart services.

Keywords — Smart utilization of urban & rural land, proper land zoning, create & maintain basic infrastructure, non-agriculture permission, rural community development, transportation, plantation, landscaping & wasteland reclamation, smart waste management, smart services.

INTRODUCTION:

In India large amount of land is used for dumping the waste. If proper techniques like source reduction, recycling, proper disposal of waste are used, we can reduce the wastage of land for such purpose. For smart utilization of land proper land zoning is the major consideration is to be considered. The land zoning is classified as Residential zone, Commercial zone, Industrial zone, Institutional /Public/Semipublic zone, Transportation & Recreation zone.

Non-agriculture used of land is plays an important role in smart land utilization. During post independence period & especially during last ten years industrialization is taking place in India particularly in Maharashtra on very wider scale. New cities & towns are coming into existence so also the then small existing towns & cities have now developed into Great metropolitan cities. Million & millions of people are migrating from other distance states in Maharashtra in search of jobs and means of livelihood & getting themselves permanently settled. Consequently the non-agricultural use of agricultural lands is increase beyond limitations. There is constant continuous increase in the constructions of the residential houses, industries & commercial complexes. Multi story projected buildings in large numbers in almost all cities, towns, metropolitan cities & various industrial estates including various Maharashtra Industrial Development Industries (M.I.D.Cs).

Smart utilization of land plays an important role in rural community development, agriculture & food production. Traffic issue is the major problem in our country now days. If the proper transportation system is provided by using smart land utilization we can defiantly overcome from this problem.

Plantation & landscaping is also plays an important role in smart utilization of land. Loss of vegetation cover leads to loss of soil erosion, which ultimately creates wasteland. This is one of the pressing problems of our country as loss of soil has already ruined large amounts of cultivable lands. If it remains unchecked, it will affect the remaining lands. That's why the wasteland reclamation is important.

By considering all above parameters we can do the smart utilization of urban & rural land which is beneficial to the overall development of our country.

LITERATURE REVIEW:

I. R.K. Lallianthanga, Robert Lalchhanhima Sailo (2013)

1. It is imperative to develop land use plans which can counteract the detrimental effects on environment, and at the same time improve productivity of land.
2. Indian Remote Sensing satellite data (LISS-III and Cartosat-I) had been used for generating various thematic layers like land use, slope, soil, drainage, etc.
3. The analysis in a GIS system helped in bringing out maps and statistics with constructive options for alternate land use plans which are expected to be both productive and sustainable.
4. The study incorporates standard techniques of remote sensing and geographic information system. Visual interpretation and on-screen digitization techniques were used for classifying and delineating the various land use / land cover classes from the satellite data.

II. William A. Fischel

1. Zoning allows municipalities to shape their residential environments and their property-tax base.
2. Voters in most communities will accept developments that raise the value of their major personal asset, their homes.
3. The efficiency of zoning thus depends on the transaction costs of making mutually advantageous trades between existing voters and development-minded landowners.
4. High transactions costs of selling zoning plus the endowment effect that zoning confers probably create land-use patterns with excessively low densities in American metropolitan.

PROBLEM STATEMENTS AND OBJECTIVE:

Day by day the value of land is increasing. There will be need of proper land utilization. We are trying to do smart utilization of land with respect to the proper zoning, proper establishment of infrastructure with proper land use, smart waste management, plantation & landscaping etc. is necessary. We take a problem statement on a small village named as Malegaon (Najik Kinhi) Tal. Malegaon Dist.Washim. We try to doing the smart utilization of land with considering above all parameters So that in future there will be no shortage of all the requirements for the people and it will helpful to become India Smart country in the world.

OBJECTIVES:

1. Reduce the wastage of land by providing smart waste management.
2. Create a proper utilization of land with help of proper zoning.
3. To create & maintain basic infrastructure.
4. Oxygen control with the help of plantation & landscaping.
5. Increase the efficiency of land by using smart techniques like ground water recharge, rain water harvesting, biogas & vermiculture.
6. Smart utilization of land by forming echo-chain

METHODOLOGY:

1. The methodology adopting is a mix of literature survey.
2. By taking studies of MRTP ACT, Development Plan, Non-Agriculture permission procedure, Land Acquisition Act regarding land utilization policy
3. Conducting the survey of the villages & find out the present issue.
4. Design an eco chain STP, WTP, & Biogas plant for improve efficiency of land.

DATA COLLECTION AND ANALYSIS:

The area of village 1519.1 Ha. The village is located at Malegaon Taluka in Washim District. The village is under development. Following data is collected from village for the analysis:

1. Zoning of the land is not done properly.
2. There is no proper transportation system available in village.
3. The roads are not properly constructed.
4. There is lot of illegal construction is done in the village.
5. The ground water table is very low.
6. There is one big lake but the proper utilization of this lake is not done.

7. There is no proper drainage system, lack of basic amenities etc.

The following table shows the basic information regarding this village:

Sr. No.	Location	Malegaon(N.K.),Tal.Malegaon Dist.-Washim, Maharashtra
1	Area In Hector	1519.1Ha
2	Number of Household	264
3	Population	1109
4	Male	559
5	Female	550
6	Number of Catals	1590
7	Population Under Age 0.6	136
8	Population Under Age Male 0.6 Male	65
9	Population Under Age 0-6 Female	71

Firstly we carried out the survey of the village. Then we found out above issues regarding land utilization. After that we create a proper land zoning with the help of MRTP Act.1966. Providing residential zone, industrial zone, commercial zone, recreational zone, farming zone etc. We also provide educational facilities, temples, proper transportation facilities, parking, gardens etc. We have design the W.T.P. & S.T.P. for 1500 people of that village. After treating of waste water, the remaining water is used for plantation which is plays an important role in oxygen control. By using biogas plant, it becomes helpful for cooking purpose and solar panels are provided for street lights.

Following Figure shows Eco chain of village for dumping of waste to reduce wastage of land:

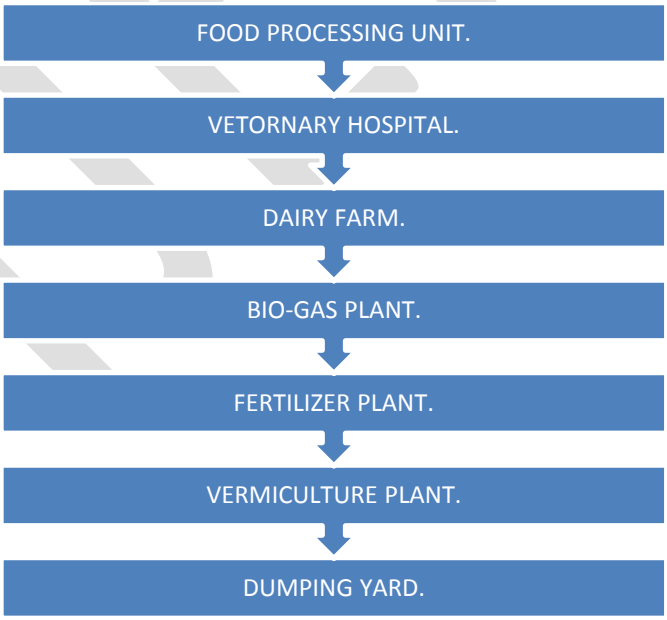

Fig. 1.Eco chain

Following are the advantages of Eco chain:

- By Formation of the chain, the land wastage for dumping of the waste is reduces & the proper land utilization is done.
- By Providing Smart services like Bio gas plant, solar energy, Rain water harvesting the rural community development is achieved.

Fig. 2 Smart utilization of land at Malegaon (N.K.) village.

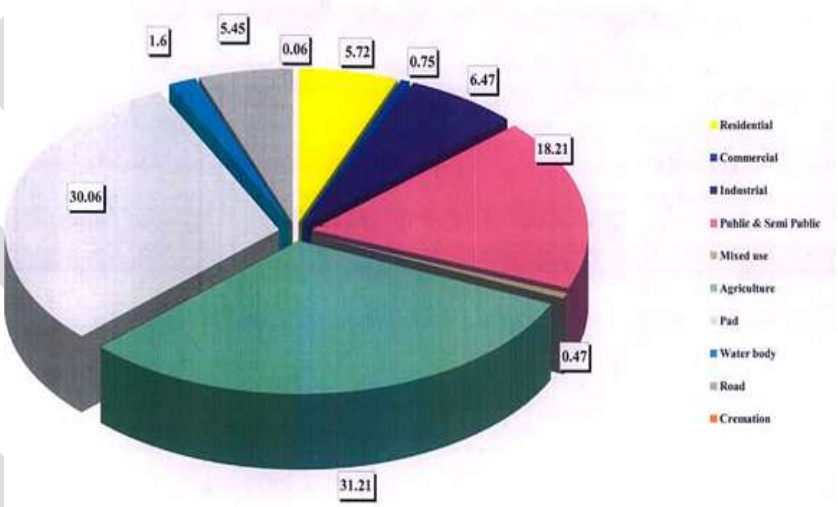

Fig.3 Land use zoning of Malegaon (N.K.) Village

CONCLUSION:

After the study of Malegaon (N. K.) Village, we can conclude that the smart utilization of land can be done with the help of proper zoning, establishing the basic infrastructure, proper land use, smart waste management, plantation & landscaping .The wastage of land can be reduced by providing proper eco-chain maintained at its proper level. With the help of smart services like Rain water harvesting, Biogas, Vermiculture, we can improve the efficiency of the land. It also useful for the rural community development. The land is a finite source so the proper utilization of the land is necessary for future development.

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