

Integration of Community Revenue Gairmukin Lands with Record of Rights (Ror) Data at Cadastral Level Using Geo-Spatial Technology A Case Study in Hisar District (Haryana)

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Abstract: All lands - other than roads - owned or under council's care, control and management was classified as "community land". Community land mapping will helpful in future planning such as development in village, institutions construction, quarrel between two groups and communism (solved out the problem). The main advantage of geo- informatics utility in the cadastral mapping is in updating and modification of the cadastral data as per the present day requirement. the Cadastral Data (spatial data) with RoR (Record of Rights - Jamabandi) data, identification of community land at village level on 1:2640 inch scale and mapping of Community Land Allocation and its classification in Hisar district. The cadastral data was used to interpret gairmumkin category of community lands. Cadastral data and RoR data was used in this study. This information can be used in land value assessment, field level soil health cards, smart cards for farmers to (facilitate e-governance and e-banking) settlement of compensation claims, land acquisition and rehabilitation, crop insurance, grant of agricultural subsidies, community / village resource centres, precision farming etc. The resulted data will help in future construction of buildings, recreational centre such as community centres, marriage places or any tourism places.

Keywords: Community Land, RoR, GIS, and Cadastral data

1. Introduction

Community land system is an integral part of cadastral data or information which provides the information about the land use / cover for different applications or for public land management. Community land mapping is an essential tool for demarcating and mapping of the community land use area, which would be helpful for management of property, and planning, distribution of the fund for public programme. Classification only affects the way in which a council can manage and use the land under the Act. It does not affect any ownership, tenure, development, or zoning. For as long as it remains classified as community land, the land cannot be sold by the council and must be managed in accordance with the Act. Classification as community land does not prevent the land from being used for business or commercial purposes. The Act allows a council to approve the use of community land for such purposes provided that the use has been authorised in an approved management plan for the land. Land acquired by a council is classified as community land, unless the council specifically resolves to exclude the land from classification prior to taking possession or control of the land. Removal of land from classification does not prevent a council from making a resolution to re-classify the land as community land at some later date.

A cadastral map is a comprehensive register of the real property, which includes details of the ownership, the tenure, the precise location, the dimension and the value of individual parcel of land. So the cadastral map provides detailed information about real property within a specific land. A cadastral map will also highlights specific landmarks

which people can use to orient themselves within the map including building and natural features such as lakes, streams and rocks.

1.1 Role of GIS in Community Land Mapping

Geo-Informatics has been described as "the science and technology dealing with the structure and character of spatial information, its capture, its classification and qualification, its storage, processing, portrayal and dissemination, including the infrastructure necessary to secure optimal use of this information".

With the advent of GIS, a new vistas has opened in cadastral mapping. Besides this, other socio-economic data will also be integrated with geo-referenced cadastral maps. This integration of spatial and non-spatial information will greatly aid in village level planning which will enrich the utility of cadastral maps in the present day context. Besides the preservation and permanence of records, this information can be used in land value assessment, field level soil health cards, smart cards for farmers to facilitate e-governance and e-banking, settlement of compensation claims, land acquisition and rehabilitation, crop insurance, grant of agricultural subsidies, community / village resource centres, precision farming etc.

1.2 Gairmukin land

Uncultivable waste land such as mountain, desert, or unsuitable land unfit for villages which is not subservient and agriculture land. Barren land describes an area of land where

plant growth is sparse, stunted, or possesses and little biodiversity. Poor growth may occur due to high winds, climate, salt spray, infertile soil and heavy exploitation by human being.

1.3 Need of the Study

Gairmukin lands will help in future construction of buildings, recreational centres such as community centre, marriage place or any tourism place, forestry. People will be aware about their Panchayat properties. Panchayat land under illegal consultancy person or under illegal activity this will fruitful to find out accuracy in land management. It require for the development of land in agriculture lands, dairy farming and aquaculture. Areas identified for rare and rich bio diversity and wild life. Areas with ores/mineral reserves other than energy related minerals. Areas suitable for river water harnessing such as reservoirs, canals, hydro power stations, etc. Infrastructure projects such as roads, railway lines, air strips, water treatment plants, sewage treatment plants, power lines, communication lines, Forest areas, Industries including thermal power stations, purely residential & commercial areas. In study the historical, archeological and ancient sites / monuments.

2. Location and Extent of Study Area

I have study in hisar district all data (musavie, jamabandi (HALRIS), vactor data provide easily in suitable for study. It is situated between 28°53'45" to 29°49'15" N latitudes and 75°13'15" to 76°18'15" E longitude s, with a total area of 3983 sq.km

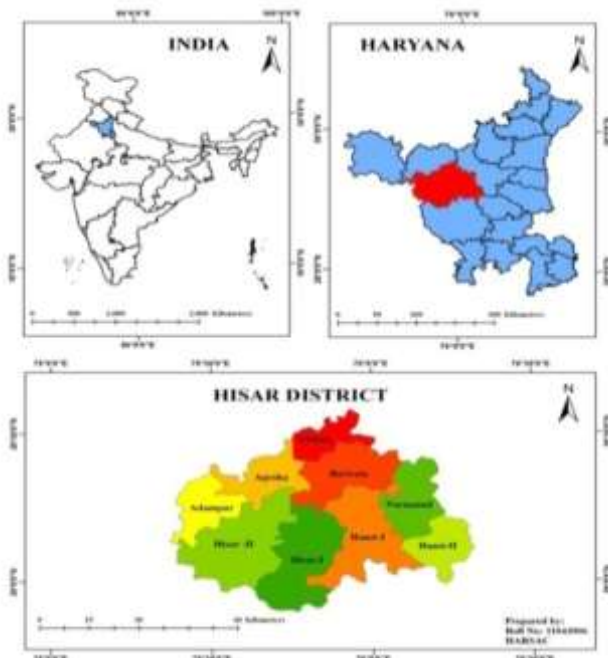


Figure 1: Location Map- Hisar District

3. Data Used

Ancillary Data: Mussavies ,Cadastral data (vector data), ROR (Record of Rights), Hisar District Boundary, Technical Report and other related materials such as Google earth, excel files containing the community land details.

4. Results

Gairmukin Land - Barren Land

An attempt has been carried out to indentify the Gairmukin lands in the study area. Gairmukin land identified in five categories on the basis of area as shown in figure 1 and figure 2.

Category 1 (Nil category) 85 villages out of 235 villages in Hisar have been identified in this category. Out of these, about 85 villages Gairmukin Land is not authorised under Panchayat Land.

Category 2 (0.1 to 25 Acre): 113 villages namely Juglan, Kirtan, Data, Chanot, Latani, Rawat Khera, Phuthi Samain, Sulkhani, Ghursal, Thaska, Kheri Jalab, Balak, Badhawar, Sisai Kalirawan, Sultanpur, Saharwa, Sadalpur, Jewra etc. out of 235 villages in Hisar have been identified within this category.

Category 3 (25.1 to 50 Acre): 14 Villages nemely Mothsara/ Mahalsara, Sindhar, Niyana, Kuleri, Mohla, Daroli, Chuli Khurd, Fransi, Badala, Sulchani, Siswal, Mallpur, Sisar, Kapro falls under this category.

Category 4 (50.1 to 75 Acre): 4 villages Dubeta Ghirai, Ashrawan, and Hindwan have been identified under this category.

Category 5 (Above 75.1 Acre): Only 1 village namely Umra has been identified with more than 75acre Gairmukin Land, as shown in figure 2.

It was observed that in the study area, some of the data pertaining to Gairmukin land could not be indentified at village level, due to the non availability of RoR data or mussavie were either damaged or founded to be missing.

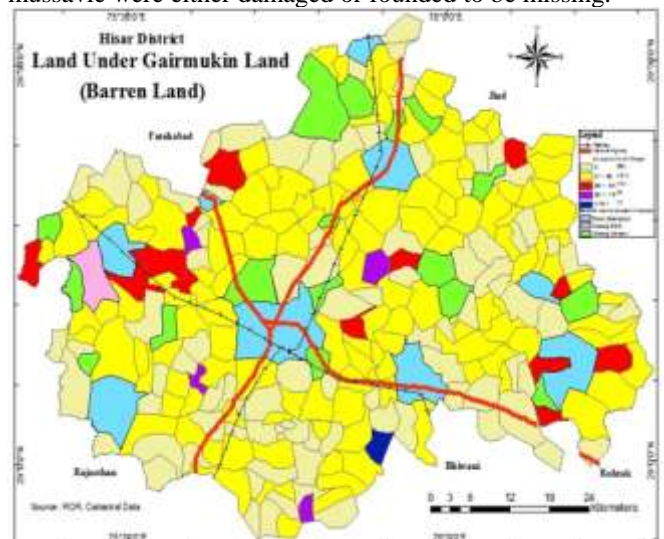


Figure 2: Gairmukin land Hisar District

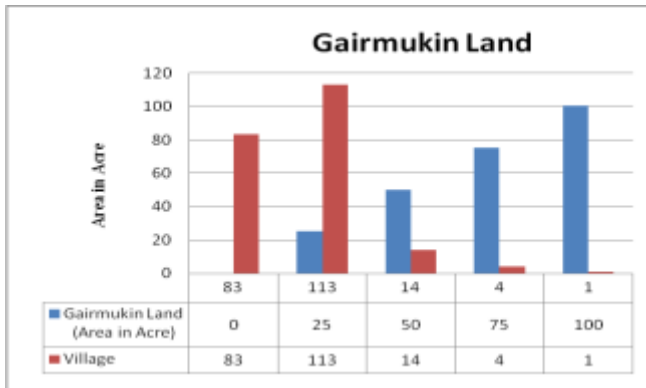


Figure 3: Gairmukin land area in Hisar District

5. Conclusions

The present study has been carried out to demonstrate the capability of geoinformatics technology in delineation of the community land features. In the present exercise, an attempt has been made to integrate RoR data with cadastral data. Out of 275 total villages in Hisar district, about 235 village data was integrated, while the rest of the village data could not be studied because of the non availability of RoR data or then mussavie was damaged or some of RoR data not mismatch with mussavie.

About 235 villages depicting Gairmukin land categories of community land were mapped by using Arc GIS software. The study successfully revealed that the gairmukin land. 1414.08 acre total area of gairmukin land. The Gairmukin land covered an area of 89.79 acre in Umra village (Hb. No.132) while in Sandlana village (Hb. No.8H) it was found to be 0.02 acre only.

6. Recommendations

This present study aimed to integrate community land with RoR at cadastral level using geospatial technology. This cadastral level data can be utilised for better resource planning, disaster management and better monitoring of Govt. lands such as hamlet lands and easy identification of encroachments on public / private properties using Geospatial data. Layers generated at cadastral level can be overlaid on high resolution satellite data to estimate area under various community lands and change detection over a selected temporal period. Data pertaining to land registered under authority of women inhabitant in Hisar can be extracted from RoR data. Percentage of villages beholds womens authority over land can be estimated.

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