

EFFECTS OF LAND REFRIGERATION ON PHYSICAL DEVELOPMENT IN MUBI,
ADAMAWA STATE, NIGERIA.¹Lawan A. M. and ²Ibrahim S.¹Department of Surveying and Geoinformatics, Federal Polytechnic Mubi, Nigeria²Department of Geography, Adamawa State University, Mubi, Nigeria**Abstract**

The objectives of the study were to identify the cause of Land refrigeration and its effects on physical development in Mubi the headquarters of Mubi North Local Government Area of Adamawa state, and suggest effective solutions to the identified problems. A total of 14 public institutions in Mubi North Local Government area selected by non probability sampling method especially the purposive sampling was used in choosing samples from the population. The result of the field survey carried out, revealed that 92.56% of the land allocated to institutions for various uses are undeveloped and vacant, and that only 7.44% of the land allocated to the institutions is developed which shows the nature of government approved land allocation within Mubi township and the lack of qualified personnel who are to advise the government on matters relating to land.

Key Words: Land refrigeration, Physical Development, Public Institution, Mubi

Introduction

In the past, much was written on urban land speculation in Nigerian cities and the problems surrounding it. This paper focuses on land refrigeration which is one of the neglected aspects of land speculation by government agencies or bodies. Land refrigeration refers to the extent of allocating large track of land to public institutions in the peri-urban zones of cities for housing, industrial and institutional development which creates an opportunity for permanent speculative dealing that cannot be revoked. Land refrigeration is either underdevelopment or non development of land.

Urban land refrigeration is a human problem with many complications. The most serious part of our urban land problems in Nigeria is that, land cannot be made available as fast as the need arises, due not to the physical lack of land but to the impossibility of requiring owners to develop their property within an existing urban set-up. Ariyo (1989), puts it as speculative land holding which has been growing in magnitude since the first round of creation of states, in 1967.

However, a number of factors contributed to the excessive high demand for land in Mubi in recent times. The first was the creation of more local government areas in the country in 1976. The second factor was the demand for land by immigrants from all parts of the state. Mubi, being a commercial town and close to the Cameroon Republic attracts influx of people from both within and outside the country. The third was the government demand for land for development purposes.

This paper attempts to look at the extent of public land refrigeration in Mubi. It also highlights some salient features associated with urban land refrigeration by public institutions and its impact on urban spatial development in a typical urban set up of a developing country such as Nigeria. Finally, the paper offers suggestions for an effective urban land allocation policy, which will reduce or eliminate urban land refrigeration.

The Study Area

Mubi (Fig. 1) is a northern Nigerian town, located in the northern part of Adamawa State. It lies between latitudes $9^{\circ} 30'$ and $11^{\circ} 00'$ north of the equator and longitudes $13^{\circ} 00'$ and $13^{\circ} 45'$ East of Greenwich meridian and falls on Uba Topo sheet No. 156 NE, covering an area of 1321.80km^2 and with the population of 194000 (3D World map V. 2.0, 2004).

According to Nwagboso and Uyanga (1999), the area has a population density of 185.7 persons per square kilometer. As reported by Adebayo (1999), between the months of November and January, the area is under the influence of dry, continental and relatively stable air masses from the North-East (harmattan). The climate is tropical continental with the mean annual rainfall of over 1000mm, and the average temperature of about 27.8°C . The rate of evaporation is high due to high insolation, and the topography is generally flat on an upland plain with hills and clay soil available in large quantity. The main source of surface water in the area is the River Yadzeram, which is from Huda Hills, East of the Mubi, and flows northwards and eventually drains into the Lake Chad. Surface water is not available during the dry season and the source of groundwater is principally from the boreholes and wells. There are few rivers and small streams, some of which flow only during the rainy season and few months into the dry season. The streams and many deep wells supply water for domestic needs and for watering animals. The people are engaged in subsistence farming, and have few traditional industries, e.g., for conversion of hides and skin for leather dyeing and leather works, to produce handbags, arrows, etc. The dominant ethnic groups are Gude, Fali and Fulani (Sahabo, 1999).

The land use pattern is spread into institution, commercial, residential and industrial usages. The tertiary institutions, the primary and post primary institutions are grouped in one location. Examples are, the Federal Polytechnic Mubi, School of Health Technology, College of Agriculture, Adamawa State University, Government Science Secondary School, Government Technical College and Mubi one Primary School. The main market, the commercial banks and a host of provision, patient medicine shops are located in one area, while the residential houses dominate the greater part of the area. The industrial land use is the Burnt Brick Factory located in the eastern part of the study area. Attached is (Fig 1) showing the study area.

Material and Method

The study area is Mubi the headquarters of Mubi North Local Government Area in Adamawa State. The target population is all refrigerated lands owned by the public institutions in Adamawa State. The method of non probability sampling, especially the purposive sampling technique was used in choosing a sample element from the population. The decision was based on personal observation over a period of years.

The main sources of data collection are both primary and secondary sources. The field survey method was the main source of the primary data. The instrument of data collection are the chain, ranging poles, field note books, writing materials and a pocket calculator which were used in taking the measurements of the parcels of land and the area computations. The land area acquired by each public institution was computed by multiplying the lengths and the widths and similarly, the land area developed within was also computed. The difference between the two gave the undeveloped area.

The secondary source of data was from surveyed plans and site plans which were supplied by the cartographic unit of the Federal polytechnic, Mubi, and the Ministry of

Land and Survey, Mubi zonal office. A scale rule was used to scale off distances which were later employed to compute land area acquired and land area developed. The percentages of developed and undeveloped portions were determined from the data generated.

Results and Discussion.

A practical experience of the effects of land refrigeration on spatial expansion and physical development was examined, taking the case study of Federal Polytechnic, Mubi, established in 1979 by Decree No. 33 of 1979. The findings were based on a field survey carried out in 2005, supplemented with documentary sources, personal observations etc. The Polytechnic lies on latitudes $10^{\circ} 17' N$ and longitudes $13^{\circ} 18' E$. It is located at the outskirts of Mubi, about 9km from the motor park. It is located along Mubi-Vitim-Maiduguri road and to the North West of the River Yadzeram. It occupies an area of about 757.6 hectares. The Polytechnic started with an initial enrolment of 138 students in 1979, and 10 academic staff members. The Polytechnic, by 2006, had student enrolment of 3365 and the academic staff strength rose to 172.

The Polytechnic currently occupies only about 106 hectares out of 757 hectares (Fig. 3) which representing only 14% of the total area acquired, leaving the land allocated in surplus of 651 hectares lying waste. The developed land areas were determined by a digital planimetric instrument in the cartography studio. The proportion of developed land areas range from 15hactares, 15hactares, 15hactares, 15hactares, 15.3hactares to 15.3hactares totaling 106hactares.

Fig.3 was originally surveyed and drawn on National Transverse Mercator system (N.T.M.) and the coordinates involved were the National coordinates. However, a field survey was carried out using the hand held Garmin 12 GPS. (Global Position System) to take coordinates of points in both LAT/LONG and the Universal Transverse Mercator, (UTM.) coordinates system. Both UTM and LAT/LONG coordinate systems were used to identify locations precisely recording UTM coordinates of "A" as 1136129N, 315672E and "H" as 1136331N, 315672E. The field work involved occupying these stations one after the other. At each observation station, the hand held GPS was switched on and allowed to be initialized for few minutes. Next, a statement "Ready to Navigate " was displayed on the screen meaning ready to navigate the revolving satellites. An escape button was then pressed twice and list of options was displayed and then a scrolled was made to statement "Mark" among the options. An ENTER button was pressed which displayed the coordinates of station "A". At the station "H", the coordinates of the station was displayed after pressing ENTER button twice. The coordinates were latter Georeferenced with the help of a lap top computer system having an AutoCAD software installed which was used to produce gridded plan as shown in Fig.3. The implication is the presence of discontinuous development around the town and the presence of isolated built up areas among it empty parcels of land which are completely left to fallow. This discontinuous development around towns was described as "urban shadows" by Ariyo (1989). It is pertinent to note that in such areas, urban development tends to leap-frog rather than follow smooth process.

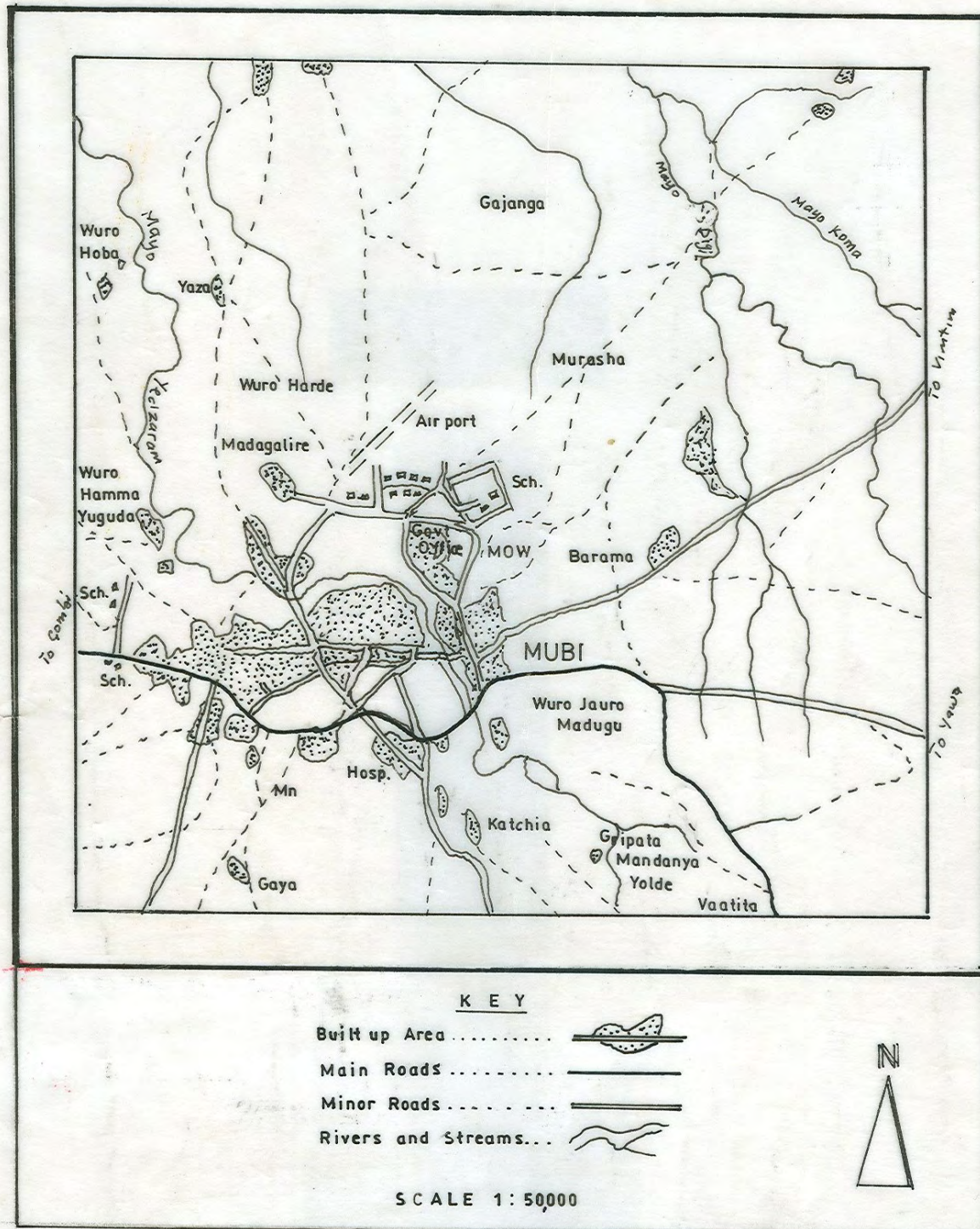


Fig.1: The Study Area.

SOURCE: Uba Topo. Sheet 156 NE, 1970.

Effects of Refrigerated Areas on Urban Development

From figures 2, 3 and 4, the unshaded areas clearly show the refrigerated areas. A situation where about 93% of the land allocated to institutions for various uses was undeveloped can be described as excessive land speculation referred to as 'Land Refrigeration'. At present, these refrigerated areas are partly left to fallow and partly

leased out to peasant farmers, and the staff members of these institutions for annual ground rent. Others are used as prayer or idi ground, football field (FBF), while others are left for future expansion of administrative blocks, classrooms and students hostels.

The results in the Table indicate that, Idi ground and football field, each shows a 100% land area undeveloped (refrigerated area) and a 0% land area developed. This may be connected with the land use nature of the areas as annual prayer ground and field for football pit for the young, the youth, and even the aged.

The only public institution with the minimum refrigerated area of 67% is Mubi 1 primary school, and having the land area developed of 33%. Others show percentages of land area developed between 0.02% and 22%. The former College of Agriculture permanent site has 0.02% of its land and the Government Technical College has 22% of its developed areas as shown in the Table. On the on the whole, there is no public institution that has 50% as its developed land area and 50% of it as undeveloped. This shows the nature of physical development in the study area.

Table 1: Extent of Acquired, Developed and Undeveloped Lands within Mubi Urban Area.

S/N	Public institutions	Land Area Acquired in (Hectares)	Land Area Developed in (Hectares)	Percentage (%)	Land Area Undeveloped In (Hectares)	Percentage (%)
1.	Fed. Poly	757.60	106.06	14	651.54	86
2.	Government Tech. College	24.00	05.20	22	18.80	78
3.	College of Agric	09.03	0.23	03	08.80	97
4.	Mubi I Pri Sch	01.76	0.58	33	01.20	67
5.	Islamiya Pri Sch	01.32	0.28	21	01.04	79
6.	Lokuwa I Pri Sch	01.21	0.09	07	01.12	93
7.	Idi ground	03.00	Nil	Nil	03.00	100
8.	Football field (FBF)	01.87	Nil	Nil	01.87	100
9.	University farm	01.32	0.01	01	01.31	99
10.	Govt. Sec. Sch (GSS)	43.13	05.45	13	37.68	87
11.	Sch. of Health Technology	10.67	01.02	10	09.65	90
12.	College of Agric permanent site	746.00	0.15	0.02	745.85	98.98
13.	NIPOST	01.00	0.09	09	0.91	91
14.	NTA	01.00	0.06	06	0.94	94
	Total	1602.93	119.22	139.02	1483.71	1259.98
	Total percent	(100%)	(7.44%)		(92.56%)	

(Source: Fieldwork, 2005).

Conclusion

From the experience of Mubi as analyzed above, urban land refrigeration is an undesirable obstacle in the path of effective urban growth, development planning, implementation, and urban management not only to Mubi but to the whole country, Nigeria. There is a rapid rate of urbanization in Adamawa State therefore the issue of "land fridges" will be reflected in many emerging urban centres of the state. There is the urgent need to do anything humanly possible to curtail its effect. This has been recognized in the country as far back as 29th March 1978 by the then Head of State Lt. General Olusegun Obasanjo while announcing the promulgation of the land use Decree, had this to say:-

"The appropriation of rising land values by a few so-called landowners and speculators, especially in our urban areas, is one of the main sources of social and economic inequality in this country. But more importantly, it is disincentive to development" (Ariyo, 1989).

One thing left out by the policy makers and is yet to be addressed and it is the rate of government involvement in the land-markets especially in the peri-urban zones by way of laying out residential plots which are then allocated to selected individuals and creating an opportunity for a permanent speculative dealings referred to as 'land fridges'. It has been established that, land refrigeration exists in Mubi, and that it is a human problem of great magnitude and complexity since the land allocation has not been proportional to land use requirements. In view of this situation, the following recommendations are put forward:

Recommendations

Some strategies and policies which could be adopted to avert the problem of land refrigeration include the following:

- (i) Land Ceiling – Urban land ceiling policy to be imposed on the amount of land to be owned by public institutions especially at the urban fringe. The Land Use Act (1978) is silent on this. It stipulated 0.5ha for residential use, 500ha for agriculture, and 5000ha for grazing; for both urban and rural areas.
- (ii) Application – All applications relating to land in the case of public institutions be accompanied with proposed site plan, building plan and source of funding with attached take off grant meant for the development of infrastructures.
- (iii) Composition of Land Use Allocation Committee: A fixed number of members should be spelt out. This should include one member from the following professionals: Land Administrator, Land Surveyor, Architect, Building Engineer, Civil Engineer, Town Planner, Legal Practitioner, Political Scientist, Representative of Local Government (concerned), Representative of NEPA, Representative of NITEL, Representative of State Police Command, and Representative of State Security Service (SSS)

At present, the Land Use Act gives the Governor the room to fill the membership of the committee with any number of persons, but with only two professionals- a legal practitioner and a land officer, the rest could be friends, relatives, party supporters, and well-wishers with little or no knowledge of land Administration.

- (iv) Conditions and Provisions Implied in Certificate of Occupancy – The certificate of occupancy granted for public institutions shall contain a provision stating that the holder binds himself to effect 50% improvements in the first five years from the date of his entering into occupation. The certificate of occupancy shows absence of this. It only echoes the amount payable in respect of unexhausted improvements and rent payable to the Governor.
- (v) Monitoring and Implementation Committee – This committee is to be formed by the land use allocation committee with five members from the state public service. The committee is to monitor and ensure the implementation of developments in the first five years and in the second five years, with the view to minimizing or eliminate land refrigeration by the public institutions. The Land Use Act is also silent on this.
- (vi) Revocation of Right of Occupancy – Upon the recommendation of the monitoring and implementation committee, if by the end of 15 years, 75% development has not been implemented by the public institution concerned, then 50% of the total acquired be revoked and redistributed by the Governor for public use.
- (vii) There is the need to urgently formulate an urban land policy on urban refrigerators and speculators. Furthermore, bringing an effective machinery into place in each urban area of the state to collect idle land tax will serve as a sources of revenue yet untapped in our towns. It is also hoped that an effective and progressive urban land policy should be formulated before the problems of urban land fridges get spread to all or most emerging urban centers of Nigeria.

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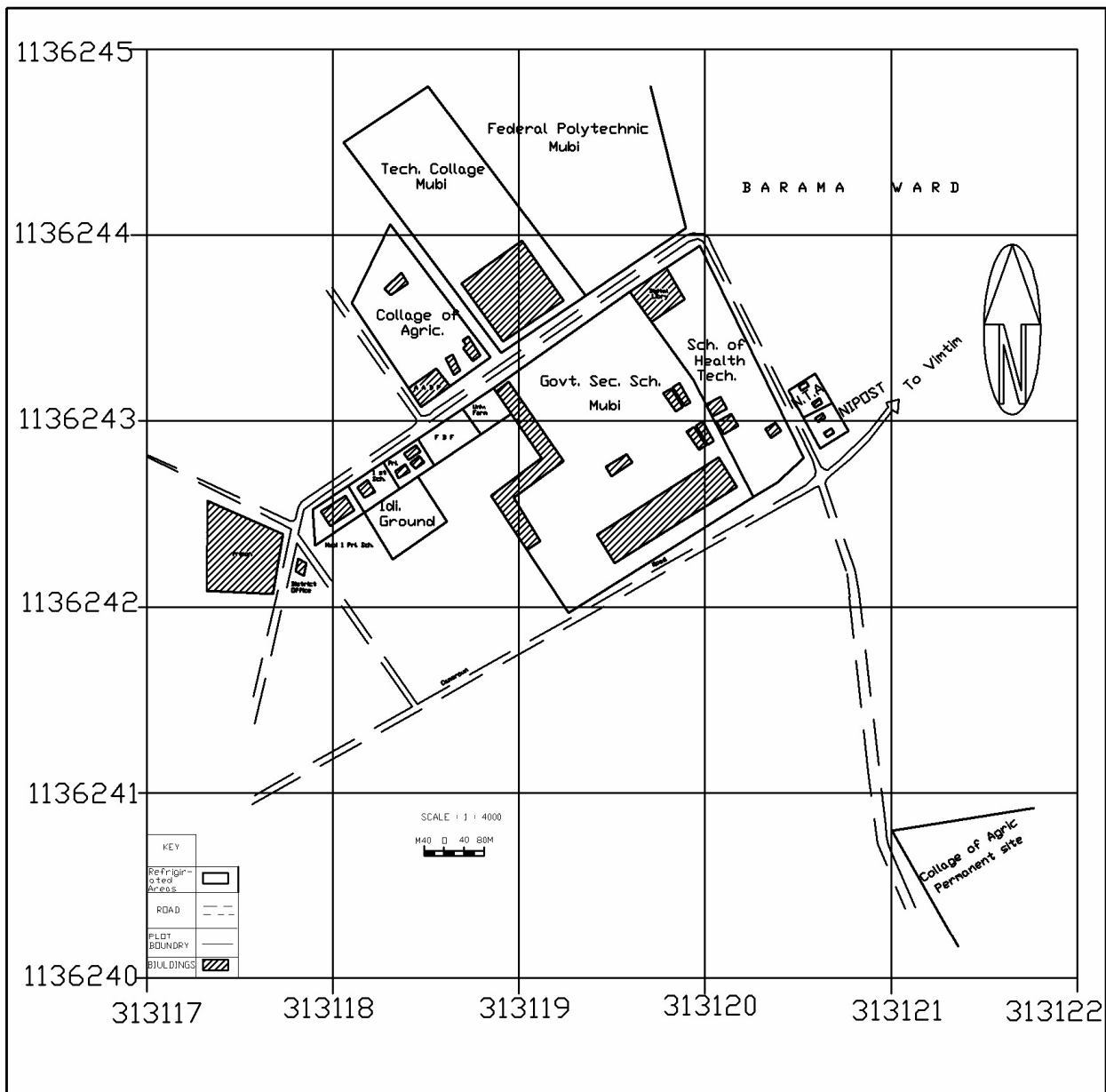


FIG. 2 DEVELOPED AND UNDERDEVELOPED LAND WITHIN MUBI URBAN AREA
 Source: Field Survey 2005

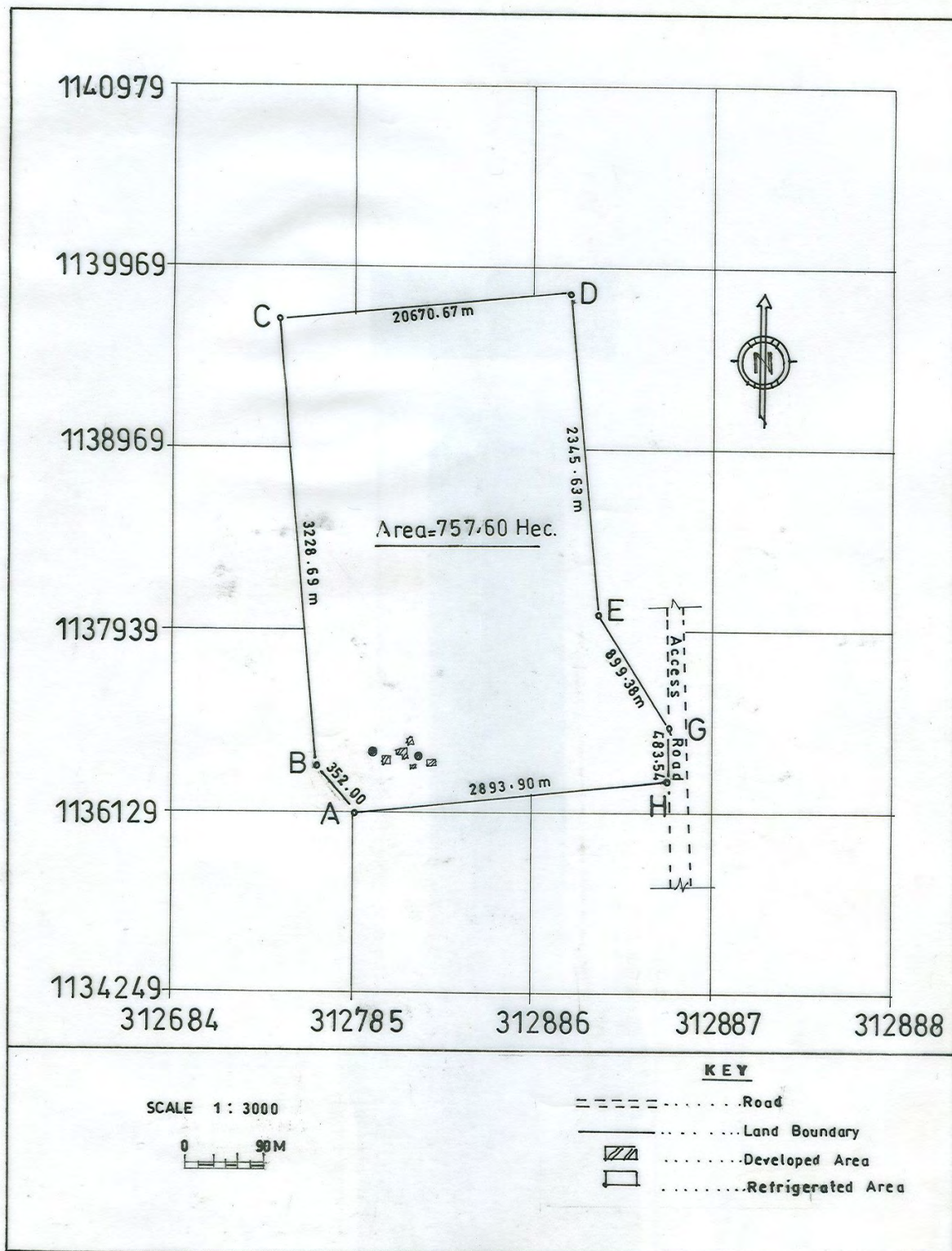


Fig. 3: Federal Polytechnic, Mubi.
SOURCE: J. S. Lawson Surveying Firm, 1974.

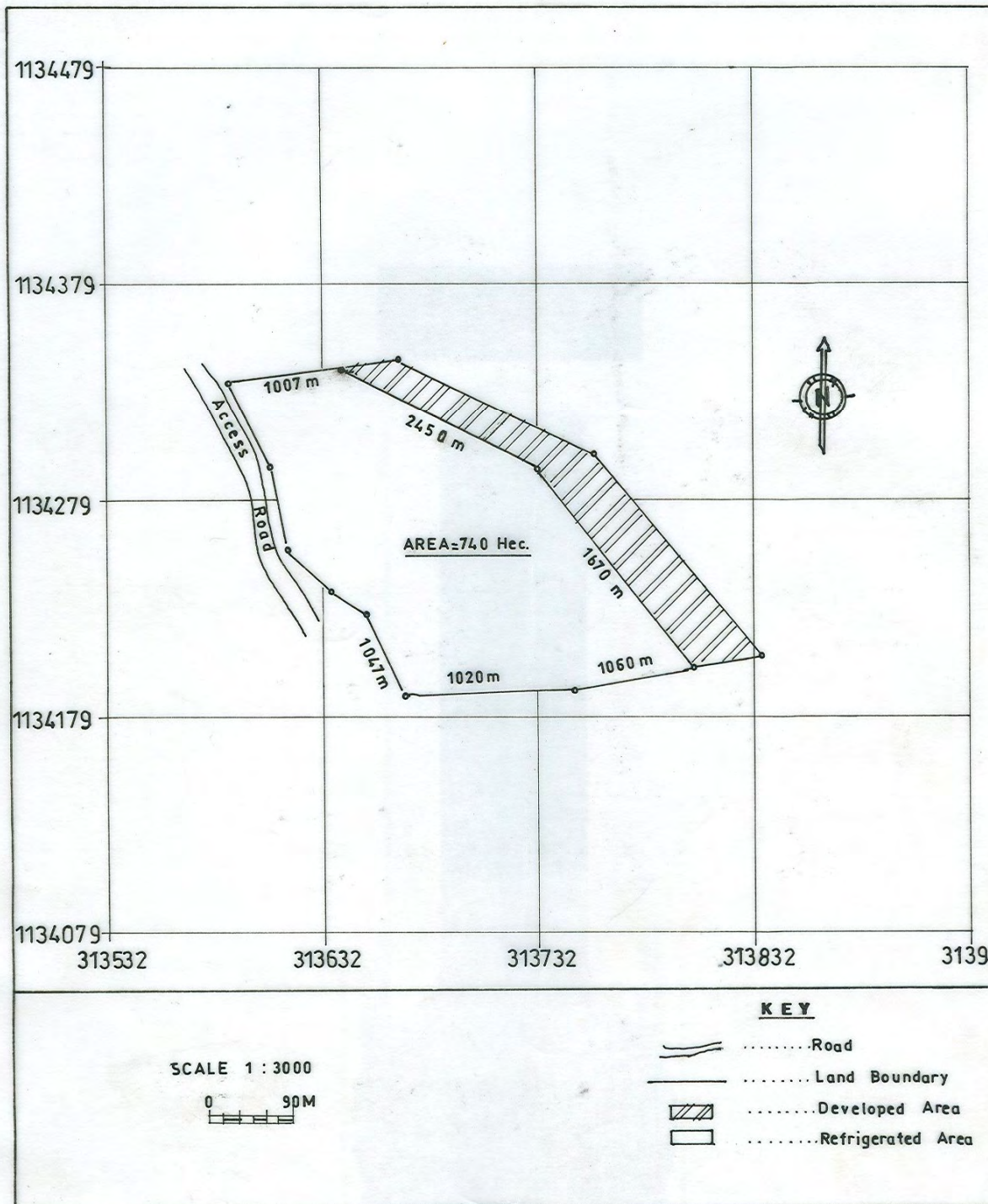


Fig.4: College of Agric. (Parmanent Site).
SOURCE: Min. of Land and Survey Zonal Office, Mubi, 1980.