

Change In Land Value in Kathmandu City (1954-1978)

-Mangal S. Manandhar*
and

Nanda Gopal Ranjitkar

Introduction

It is difficult to ascertain the exact value of land because unlike other commodities land is fixed in supply and location, is immobile and has numerous uses. Its numerous uses are equally matched by its numerous values.¹ Land value varies not only with the change in its use but also from the changed situation.² Here the value of land refers to the market price that a particular plot of land can derive at a particular time in a free and open negotiation between a well informed seller and a well informed buyer.³ So the price which in fact, is only a measurement of the value in terms of money, is used here synonymous with value.

* Dr. Mangal S. Manandhar is Professor of Geography in Tribhuvan University, Kirtipur Campus and Mr. Nanda Gopal is Lecturer of Geography and a Candidate of Ph. D. in Tribhuvan University, Padma Kanya Campus, Kathmandu.

1. Land Economic Institute, *Modern Land Policy*, paper of the Land Economic Institute (Urbana, Illinois: University of Illinois Press, 1960), p. 181.
2. Webster Johnson and Releigh Barlowe, *Land Problem and Policies* (New York: Mc Grow-Hill, 1954), p. 111.
3. William C. Murray, *Farm Appraisal and Valuation*, 4th Edition (Iowa: Iowa University Press, 1963), p. 38.

Report

In the last few decades, the value of land within the city of Kathmandu has skyrocketed. Up until the year 1950, the increase in land value was slow and imperceptible and transactions were few. Opening up of Nepal to outside influence in 1950 and consequent modernization and urbanization greatly accelerated the change in land value in the capital city of Kathmandu. Along with the phenomenal rise in land value, transactions in land too increased. At present, the value involves significant portion of speculative value. However, the rapidly changing land value in Kathmandu still remains uninvestigated.

There have been only a few scattered studies on the changes in land value of Kathmandu city. In 1976, the department of Housing and Physical Planning undertook a study on general land value of Kathmandu and Patan city to assist in housing development in the Valley.⁴ Because of the nature of the study the dynamic character of change has not been dealt with. Studies related to housing and urban property were also conducted by CEDA in 1972 and 1974. These studies also do not take into account the aspect of change in land value.⁵ Further, these studies do not try to relate the value with the distance from the city centre and urban facility. The present study is an attempt to study the change in land value from 1954 to 1978 and relate the value with the distance from the city centre and with other urban facilities.

Objective

The main objective of this paper is to show the dynamic change in land value from 1954 to 1978. The study proposes to test the hypothesis that land value decreases with the increase in distance from the city centre and that land value increases with the increase in urban facilities.

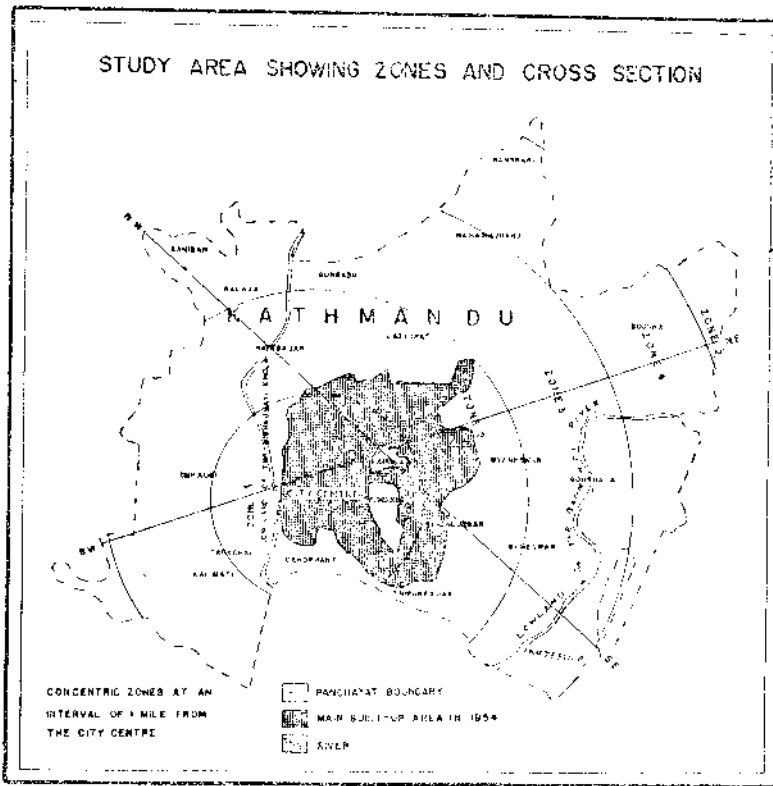
4. HMG, Dept. of Housing and Physical Planning, *Kathmandu-Lalitpur Housing* (Kathmandu: HMG of Nepal, 1976), pp. 115-129.

5. CEDA, *Feasibility Study of Housing Industry in Kathmandu Valley* (Kathmandu: CEDA, 1972), pp. 28-30; Bhabani Dhungana, Bina Pradhan and Arjun Joshi, *Evaluation of Urban Property* (Kathmandu: CEDA, 1974), pp. 72-77.

Delimitation of the study

The study is confined within the municipal boundary of Kathmandu city. Within the municipal boundary only those areas which were agricultural in 1954 have been studied. The study concentrates mainly on the change in land value as a consequence of land use change from agricultural to non-agricultural uses.

Urban facilities in this study refer to the road, piped water, electricity, market, school, hospital, transportation service and nearness to the city centre. Other urban facilities like banks, cinemas and theatres have been excluded from the facility index. The correlation of land value with the urban facility is limited to the year 1978, because of the lack of data of urban facility for 1954.



Methodology

The study is based on the sample survey carried out in 1978. The sampling frame has been prepared on the basis of vector lines drawn from the centre at an interval of 10° each, forming 36 vectors in the study area. The vectors were further divided into small segments by drawing 18 concentric circles at an interval of $1/4$ mile each, so as to intersect all the vectors radiating from the city centre. Each concentric zone was further subdivided into 36 segments. From each concentric zone 10 segments (30 percent) were selected randomly. Three plots from each of the 10 sampled segments numbering 30 in total were randomly selected for interview. It came to 187 sample plots. By interviewing 187 sample units, information on the land value for the period 1954 and 1978 and urban facilities were collected. Only the people above 40 years of age were interviewed because of the required past information. Data for 18 concentric zones have been grouped into five one-mile zones for convenience (Fig. 1)

Change in land value from 1954 to 1978

There has been a tremendous increase in the land value in Kathmandu since 1954. Up to 1954, the tempo of change in land use from agricultural to non-agricultural was slow. The infrastructure was non-existent for urban development outside the old built-up area. Immigration to the valley was yet to be felt. The establishment of new industrial, commercial, and administrative undertakings were only in an embryonic stage. Increasing diplomatic offices and residences were yet to be built. There was no housing shortages in the city. The fringe had not felt the encroachment from the non-agricultural uses. Nor the people could foresee or expect the change in the land use. As a result the land value in 1954 remained low on an average Rs. 1000 per ropani.

The average land value of Rs. 1000 per ropani in 1954 increased to Rs. 33,000 in 1978. In a mere 24 years there was a tremendous increase of 3200 percent. This of course, was and is the result of enormous demand of agricultural land for non-agricultural purposes in the urban fringe. With the development of basic urban infrastructure like road, electricity, and water there was a phenomenal growth of suburbs all around the city. The natural increase of people in the city as well as the residential demand

generated by people coming from outside the valley gave a tremendous impetus for the development of the suburbs. It is estimated that the housing shortage in 1971 was of 30 % of the requirement.⁶

TABLE NO. 1 Land Value (In Rs. NC Per Ropani)

ZONE	YEAR			
	1954	1978	Difference	Increase in %
1	1,400	58,000	56,600	4043 %
2	1,000	30,000	29,000	2900 %
3	800	25,090	24,200	3025 %
4	600	25,000	24,400	4067 %
5	300	10,000	9,700	3233 %

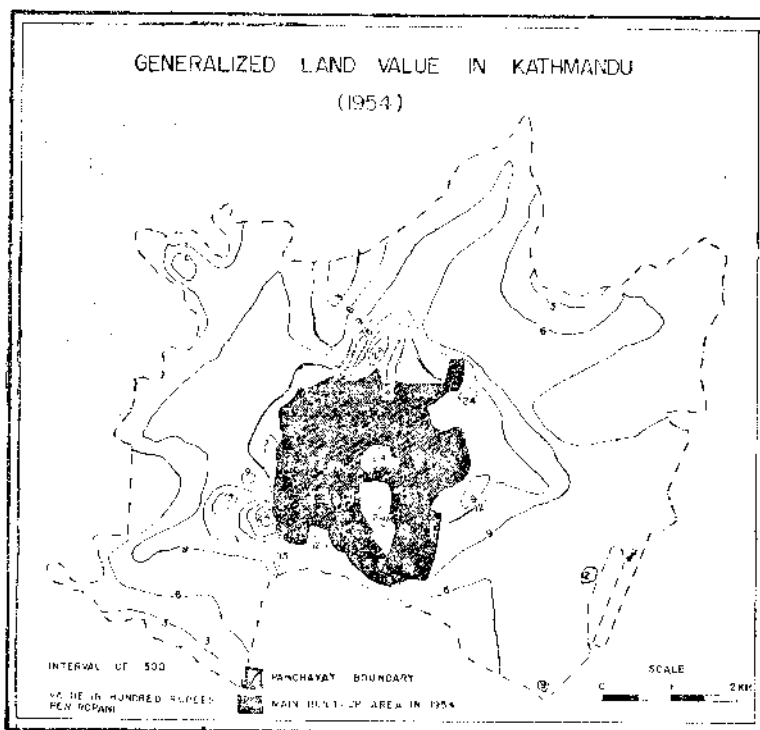
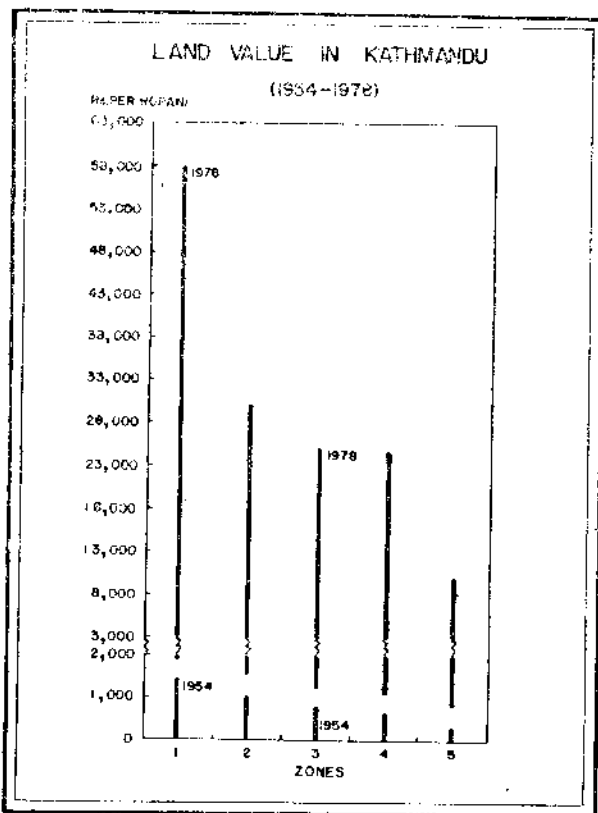


Fig No 7

6. *op cit*, Foot note. 4, p. 83.

Many new commercial and industrial undertakings both private and government sprang up in the late sixties by consuming large areas in the fringe. Increase in diplomatic and U. N. offices equally made demand on the land in the fringe. All these new demands led to rapid conversion of agricultural land to non-agricultural uses. This resulted in tremendous rise in land value. The expected use raised the speculative values of land prices. It has been noted that the speculative value increases towards the city centre, while the agricultural value decreases because of increasing anticipation of urbanization towards the heart of the city.⁷



7. Frederick. W. Boal, "Urban Growth and Land Value." *The Professional Geographer*, Vol. 22 (1970), pp. 79-82.

The change in land value from 1954 to 1978 shows a phenomenal increase (Table. No. 1, Fig. 3). The first zone with the average price of Rs. 1400 per Ropani in 1954 increased to Rs. 58,000 in 1978, an increase of 4043 percent. The highest percent increase was in zone four and the lowest in zone two. Even discounting the inflation from 1954 to 1978, the increase is noted from 570 percent in Zone two to 833 percent in zone four (Table. No. 2, Fig. 4)

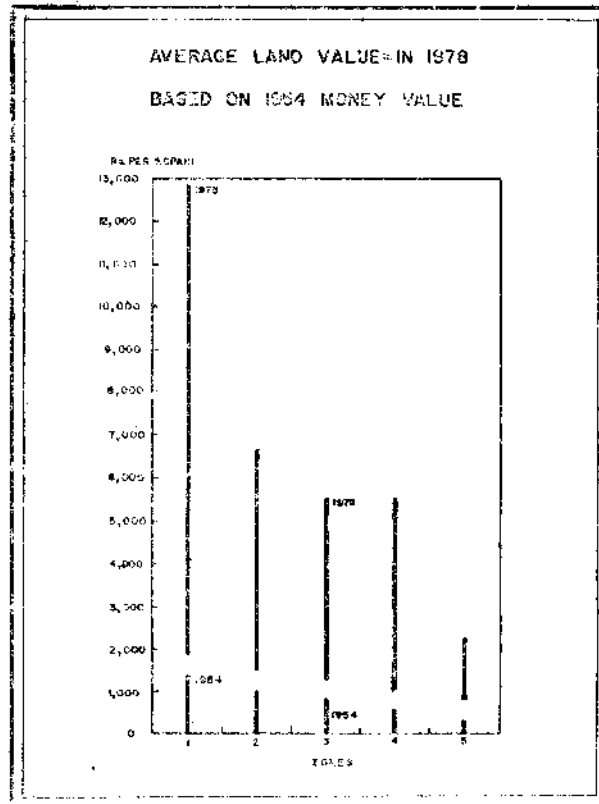


Fig. No. 4

TABLE NO. 2.
Increase in Land Value in 1978 based on 1954 Money Value.*
(In Rs. N. C. per Ropani)

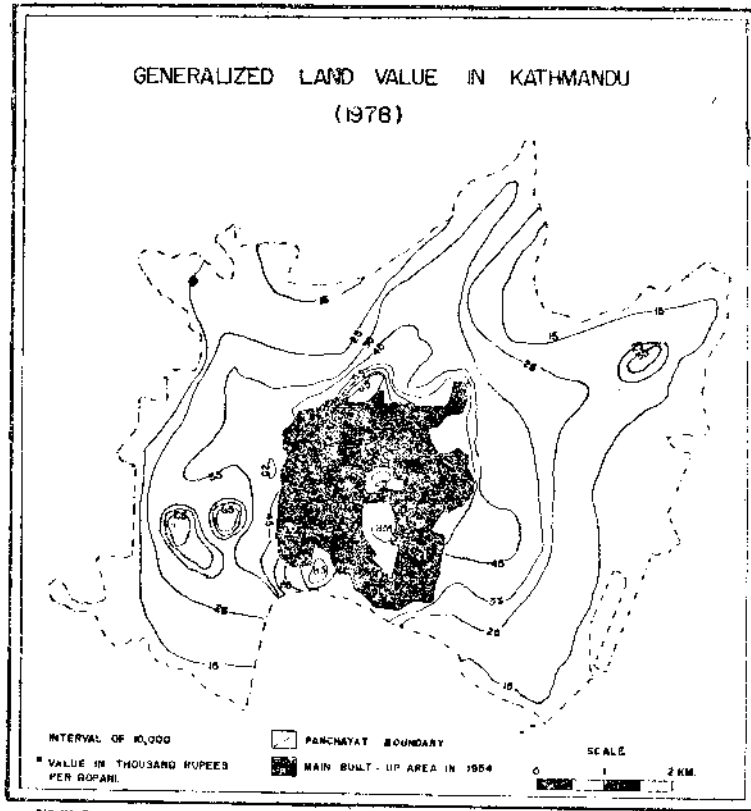
Zone	Value in 1954	Inflation Value in 1978	Difference	Increase in %
1	1,400	1,2900	11,500	821 %
2	1,000	6,700	5,700	570 %
3	800	5,600	4,800	600 %
4	600	5,600	5,000	833 %
5	300	2,200	1,900	633 %

Note : Measurement of money value is based on the price in 1954.
The price of rice in 1978 has increased by 4.5 times than that of 1954.

Land value in relation to distance from the city centre.

Table. No. 1 clearly indicates that land value decrease as one moves away from the city core. The land value of Rs. 58,000 per Ropani in the first zone decreases to Rs. 10,000 in the fifth zone, the farthest area, at the outer limits of the incorporated city of Kathmandu. Although the general decrease in land value away from the city core holds true in all directions the rate of decrease is not uniform. The above statement applies to the situation that existed in 1954 as well (Table. 1).

The iso-price lines of 1954 and 1978 (Fig. 2 and Fig. 5) also clearly support the general statement that the land value decreases away from the city centre. But, the fact that iso-price lines are not equally spaced is a clear indication of unequal rate of decrease in the land value. The most notable factor in producing unequal spacing of the iso-price lines seems to be roads. Road generally indicates the presence of other urban facilities too. The axial growth of land values along the transportation lines seems to produce a star - shaped land value surface. The iso-price line is clearly indicative of this fact.



Also in the cross-section drawn (Fig.6 and Fig.7) for iso-price lines of 1954 and 1978, the general decrease of land value in the city margins stands out very clearly. In the NW-SE cross-section (Fig.7), the general decrease seems uninterrupted except for one or two small peaks. But in SW-NE cross-section (Fig.6), particularly the 1978 price profile, the presence of huge peaks in Tahachal and Baudha clearly begs for an explanation other than that of the distance from the city centre.

Correlation Between Land Value and Urban Facility Index

Urban facilities have been computed on the basis of walking time distance. If a facility is present at the sample plot, it would mean

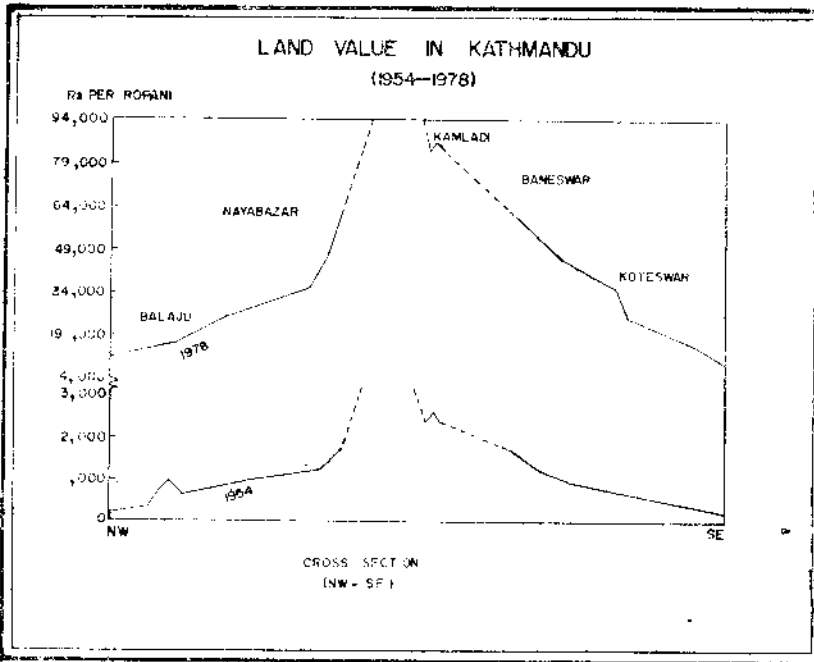
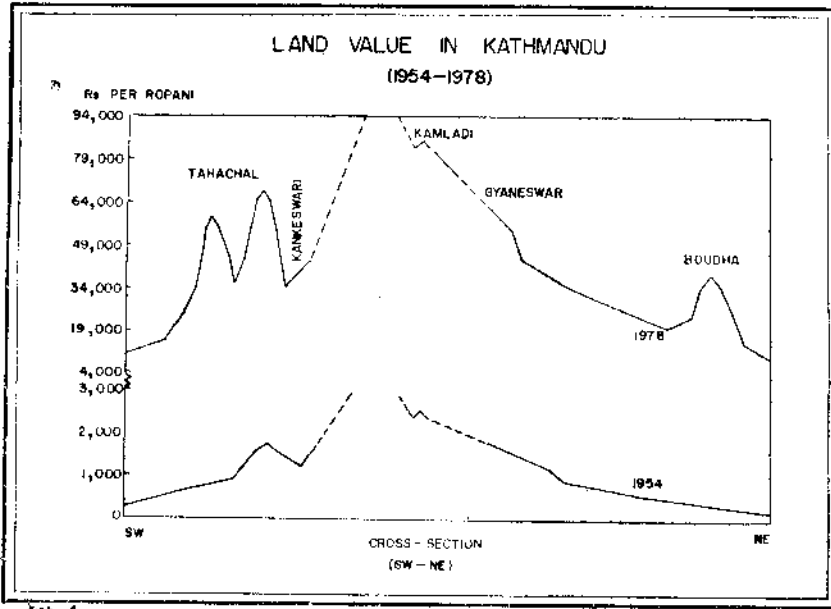


Fig No 7

'O' walking distance. For each urban facility the walking time distance was computed. The aggregate urban facility index is derived by adding the walking distance of all the urban facilities considered in this study. Lower the facility index the higher is the availability of urban facilities and vice versa. The 'r' value for each concentric zone was derived by correlating the land value and the urban facility index of all sample units in a zone.

TABLE NO. 3
Correlation Between Land Value and Urban Facility Index

Zone	No of. observation	Coefficient Value (r)	r ² In percent
1	34	0.51	26
2	77	0.67	45
3	51	0.64	41
4	19	0.62	38
5	6	0.81	66

There is a positive correlation between land value and urban facility in each zone. The calculated 'r' value ranges from 0.51 in the first zone to 0.81 in the fifth zone (Table. 3). All the 'r' Values are significant at 0.01 level except for the fifth zone where it is significant only at 0.05 level.

The greater r² (Coefficient of Determination) value towards the city limit clearly indicates that the land value is more positively explained by urban facilities farther from the city centre than in its immediate vicinity. The general assumption would be that the nearer the city centre the greater are the urban facilities so land value should have been more positively explained by the urban facility in the immediate vicinity of the core. But the lowest value of r² in the vicinity of the city centre (Zone 1) indicates that the higher land value near

the city centre is not explained by urban facilities. Some other factors or facilities not considered in this study seem to be important in the explanation of land value in the vicinity of the city centre. Factors like land use association, functional convenience, acquired prestige, and other special assests of the nearby city centre probably would explain the rest. But as one moves away from the immediate vicinity of the city centre, urban facility index seems to explain more positively the land values.

Conclusion

The land value in the city of Kathmandu prior to 1954 remained low because of insignificant non-agricultural demands. The land value then reflected agricultural value rather than speculative value. After 1954, there was a gradually increasing demand for land for non-agricultural uses. With the increase in demand from non-agricultural uses the land price skyrocketed .

In general, the distance from the city centre does explain the decrease of land value towards the city limit only. The urban facility index, on the other hand, provides a better explanation for the land value only in the fringe than in the immediate vicinity of the city centre. Both distance and urban facility index combined seem to provide, though not complete, a fairly good explanation of concentric decrease in land value around the city core with axial growth along the transportaion lines.