

Farmland Values and Sales in Eastern Dry Zone of Karnataka

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ABSTRACT

The present study aims to analyze the factors influencing farmland value and the reasons for farmland sales in the eastern dry zone of Karnataka. The sample consists of 80 farmers, including 40 respondents from Bagepalli taluk (BTHL) considered under rural area and 40 respondents from Chikkaballapur taluk (CTUP) considered under urban area for the study. It was observed that the process of transformation in the study area has resulted in a doubling of farmland values every five years and particularly in the time interval of 2005 to 2010 land prices have increased more than three times in both rural and urban areas. In the BTHL, the land value has increased from Rs.0.23 lakhs per acre in the year 2000 to Rs.12.57 lakhs in the year 2020. And in the CTUP, the average land value was Rs.2.05 lakhs per acre in the year 2000 and it has increased to Rs.63.91 lakhs in 2020. To clear old debts, perform marriages, construction of the house and higher land values were identified as major influencing factors of farmland sales. To capitalize on current high farmland prices augmented sales of farmlands is observed in both rural and urban areas over the years. It is resulting in the marginalization of farm holdings putting their livelihoods at risk in the long run. Although there was large scale selling-buying of land, not complete giving-up of the land was observed in general. The nature of sale was observed to be voluntary in the BTHL but in the CTUP 12.50 per cent of respondents reported forced sales. The increase in the prices of the farmland over the years may have potential threat to farmlands and the livelihoods of farmers. Hence proper policies should be evolved for the protection of agricultural lands in the study area so that the livelihood of a large number of farmers can be safeguarded in the long run.

Keywords : Land values, Farmland sales, Influencing factors, Marginalization of holdings, Livelihood of farmers, Eastern dry zone

URBANIZATION is a global phenomenon that comes with human settlements and accompanying anthropogenic activities and it plays an important role in land use and land cover change and urban sprawl are some of the most noticeable effects of urbanization on land use. Urban influencing factors are playing a critical role in affecting the overall farmland value and high real estate earnings have led to rising farmland prices. To capitalize on current high land prices and resulting capital gains farmers are selling the farmlands. The developments in the area have brought in transition in land use system, land values,

agricultural production systems, farm capital accumulation and diversification in sources of income for livelihood. A similar rapid surge in urban expansion can be observed across the country. For instance, as a result of urban expansion, land use/land cover has changed drastically at the periphery of Jalandhar city and it has led to the transformation of the rural landscape into the urban landscape where an inbuilt up area has increased to 37 per cent (2010) from 8 per cent (1975) at the cost of a reduction in farmland from 52 per cent to 31 per cent (Seema, 2014).

Chikkaballapur city is very close to Bengaluru North (45 km) considered an urban periphery. The developments like the establishment of an International airport, National highways, Hardware Park, Financial city project and other industries in the Bengaluru north have triggered the process of transformation of farmlands by surging prices and this has increased the marginalization of farm holdings in the places near to the city. Similar developments were observed in other countries too. For example, Larry and Burton (2012) reported that 37 per cent of respondents sold farmland to capitalize on current high land prices and resulting capital gains and reported that the farmland values had doubled in just five years and increased five folds during a period of 11 years in South Dakota, USA. These developments attracted the investment by real estate sector and the agricultural lands turned as common floors for construction of flats, villas, cargos and godowns, schools and colleges, hospitals, malls and supermarkets, resorts, hotels and restaurants, courier operators, parking yards, advertisement boards and so on. Xiaowei and Jay (2013) expressed that urban influencing factors were playing a critical role in affecting the overall farmland value and high real estate earnings had led to rising farmland prices in the California.

In the cases of rural areas, despite higher crop prices, Indian farmer's returns are declining because the cost of cultivation, especially wages, is rising faster. Mechanization is expensive and hence, small and marginal farmers who are unable to invest in technology are the worst hit. Pooja and Umesh (2021) opined that low income from agriculture, low employment level in the rural areas and outstanding debt of the households were the major reasons for migration from rural to urban areas. Farmers themselves understand these trends very well. This poor profitability coupled with non-price risks and family as well as social obligations push the farmers to farmland sales. Often when a farmer sells his own land to a speculator/investor, he uses part of the cash to buy land in areas where land is still cheap because of poor crop margins and on the demand side the investors, who want to invest in infrastructure,

factories, housing and even the sons of rural farmers who fled to the city are now willing to buy a few hectares in their villages as a good investment. The buying of land, rural land in particular, by wealthy households has been taking place in several parts of India since the early 2000s (Chakravorty, 2013 and Rajshekar, 2013). Fairbairn (2014) speaks of the role of high net worth individuals in buying up land but does not analyze the implications of such processes. Importantly, as we illustrate, in the context of growing income inequality, investment of savings in rural land by urban elites is an important mechanism through which rural dispossession takes place.

In the above context, the present study aims at analyzing the factors influencing farmland sales, escalation in the farmland values over the period, kind and nature of farmland sales in the study area and the irreversible transformation of farmlands has created a concern about the sustainability of agriculture. Vijayabaskar and Menon (2016) opined that small scale land sales have emerged as important means of dispossession of marginal and small farmers in a context of state neglect of agriculture, particularly irrigation infrastructure. Land markets have therefore worked to dispossess farmland as opposed to helping farmers consolidate viable landholdings. Kavitha *et al.* (2015) expressed their concern to protect and conserve the farmlands by proper policy and guidelines. Because, over the years, the expansion of Bengaluru to the fringes has declined the extent of agricultural land by 16.31 per cent. Similar concerns were expressed by Li Jiang *et al.* (2013), who alerted that the urban expansion is likely to continue and would result in a reduction in production in China due to reduced agricultural land use intensity. Santhakumar (2014) suggested while planning any development activity, the land value and its influencing factors have to be verified for the preparation of plans, project reports and policies to achieve a comprehensive solution.

METHODOLOGY

Agriculture has seen transitions in terms of land use system, land values, water, labour and marketing

system in the eastern dry zone of Karnataka, because of developments in the area. Hence the study was conducted in the rural-urban continuum of Chikkaballapur district to analyze the influence of the urbanization process and other key factors on farmland values.

A multistage random sampling procedure was employed for the selection of the study area. At the first level Chikkaballapur district was selected and in the next level CTUP (Chikkaballapur Taluk Urban Periphery) and BTHL (Bagepalli Taluk Hinter Lands) were selected. In the next level, the list of farmers who have sold farmland in the year 2019 and 2020 were collected from the respective taluk Sub Registrar's office, Stamps & Registration Department. From the list purposeful sampling was done, selecting 40 respondents from Chikkaballapur taluk and 40 respondents from Bagepalli taluk thus forming a total sample size of 80 farmers. In Bagepalli taluk the data were collected from 22 villages belonging to 4 hoblies and in the Chikkaballapur taluk, the data were collected from 25 villages belonging to 3 hoblies.

The sample farmers were interviewed using a pre-tested schedule and data on socio-economic characters of the respondents, their land holdings, farmland values, reasons for sale and land sale details were collected. Analytical measures like descriptive statistics and percentage changes were used in analyzing the rise in farmland values, number and extent of land sales.

Per cent variation was calculated in reference to base year (beginning year)

Per cent variation = [(Current year value - Base year value) / Base year value] * 100

Compound Annual Growth Rate (CAGR)

To assess the growth rate in land values over the reference period the following growth rate formula was used

$$CARG = \frac{(V_{\text{final}})^{1/t} - 1}{V_{\text{begin}}}$$

Where,

CAGR = Compound annual growth rate

V_{begin} = Beginning value

V_{final} = Final value

t = Time in years

t-test or Student's t-test

The t-test was used to assess whether the two data sets rural area and urban area are significantly different from each other. For this, null and alternative hypotheses were formulated. The null hypothesis was constructed as a hypothesis of no difference. The alternative hypothesis was constructed as having significant differences among land holdings in the rural and urban areas of the study region.

The t-test statistic was obtained as depicted below.

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\left(\frac{\sigma}{\sqrt{n}}\right)}$$

Where, \bar{X}_1 and \bar{X}_2 were the sample mean from a sample of size n, σ is the standard deviation of the data.

The estimated t value was compared with the critical table value with the appropriate level of significance and degrees of freedom. If the estimated value was greater than the table value, it was inferred that there was a significant difference between the two groups in the study region.

Rank Based Quotient (RBQ)

To analyze the reasons for the sale of farmland in the study area, a list of reasons for the sale of farmlands was developed during the preliminary survey conducted in the study area. The sample farmers were asked to rank the reasons at the time of interview using a pretested schedule. The quantification of data was done by first ranking the reasons based on the responses obtained from the respondents and then calculating the Rank Based Quotient (RBQ) (Sabarathnam, 1988), using the expression:

$$RBQ = \frac{\sum_{i=1}^n (F_i) (n + 1 - i)}{N * n} \times 100$$

Where,

F_i = Number of farmers reporting a particular reason under i^{th} rank

N = Number of respondents (Sample size – 40)

n = Number of reasons identified.

RESULTS AND DISCUSSION

The extent of land holdings before the land sale in the study area can be observed from Table 1. In case of BTHL, the majority of the respondents were medium farmers (40%) with an average land holding of 3.28 hectares, followed by small farmers with an average land holding size of 1.36 hectares. In the CTUP, majority of the respondents were small farmers (67.50 %) with an average land holding size of 1.49 hectares followed by medium farmers with an average land holding size of 3.52 hectares. The average farm size observed was higher in the BTHL (2.69 ha) compared to the CTUP (1.68 ha) and the result of the t-test infers that there is a significant difference in the size of land holdings between rural and urban areas. Ramalinge Gowda *et al.* (2012) reported similar results in Magadi taluk, Bengaluru district, where in the long-term, the rise in land prices was associated with reduced farm holding size. As the influence of urbanization decreases, the average holding size of farms increases and these changes were statistically significant at a one per cent level.

In any land sale, we observe two prices, one is the registered price indicating the fundamental value fixed by the state government and the other is the sale price or market price *i.e.* the actual price at which the land is transacted. The actual sale price is the true reflector of land values. These values were obtained from farmers through their memory recall by asking them the actual sale price of nearby similar lands which were transacted in that year and the results are presented in Table 2.

In the BTHL, the land value increased from Rs.0.23 lakhs per acre in the year 2000 to Rs.12.57 lakhs in the year 2020. The highest percentage increase was observed during the period 2005 to 2010. The land prices in this period had increased more than three times and it is attributed to the establishment of the international airport in 2008 in Devanahalli and also road developments like NH7. The people who sold lands in the Devanahalli region for the international airport were the part of buyers of agricultural land in the rural areas.

The land values in the CTUP have increased drastically. The average land value was Rs.2.05 lakhs per acre in the year 2000 and it has been increased to Rs.63.91 lakhs in 2020. The highest percentage increase was observed in the time interval of 2005 to 2010. The land prices in this period increased more than three times in the study area. The increase in the price was attributed to, a) Chikballapur district being

TABLE 1
Classification of sample farmers based on the size of land holdings

Farmer Category	Rural (BTHL)		Urban (CTUP)	
	n=40	Average land size (ha)	n=40	Average land size (ha)
Marginal farmer (< 1 ha)	6 (15.00)	0.69	(12.50)	0.75
Small farmer (1-2 ha)	14 (35.00)	1.36	27 (67.50)	1.49
Medium farmer (2-5 ha)	16 (40.00)	3.28	7 (17.50)	3.52
Large farmer (> 5 ha)	4 (10.00)	6.47	1 (2.50)	5.05
Average farm size (ha)		2.69		1.68
t-stat				3.009 **

Note: ** Significant at 5 per cent level of significance ; Figures in parentheses represent percentages to total

TABLE 2
Land values in different periods across Rural (BTHL) and Urban (CTUP) respondents

Year	Rural (BTHL)		Urban (CTUP)	
	Value (Rs.Lakhs/ac)	Percentage Increase	Value (Rs.Lakhs/ac)	Percentage Increase
2000	0.23		2.05	
2005	0.55	139.13	4.82	135.12
2010	2.60	372.72	20.05	315.97
2015	5.25	101.92	34.50	72.06
2020	12.57	139.42	63.91	85.24
Average land holding size(ac)		6.65		4.15
Average land value per farm (2 in lakhs) during 2019 and 2020		83.59		265.22
Average land value per ac (2 in lakhs) during 2019 and 2020		12.57		63.91
CAGR (%)		22.14		18.76

created out of Kolar district in the year 2007. It was carved out of moving Gauribidanur, Gudibande, Bagepalli, Chikkaballapur, Sidlaghatta and Chintamani taluks of the existing Kolar into the new district. b) Chikkaballapur being just 25 km away from Devanhalli where the international airport was established in the year 2008. c) Building the north-south six-lane national highway 7 (NH-7) as well as the east-west highway 69 passing through the district and also d) anticipated future developments in the area. Larry and Burton (2012) reported similar results

stating that the farmland values had doubled in just five years and increased five folds in 11 years in South Dakota, USA.

The average size of farmland sold, kind and nature of the sale is presented in Table 3. The average land sold was high in the BTHL (2.22 ac) compared to the CTUP (1.05 ac) in the study period of 2019 and 2020, as total land holding was higher in rural areas average land sold was also higher in a rural area compared to urban area. Ramalinge Gowda *et al.* (2012) reported

TABLE 3
Average farmland sold in the years 2019 and 2020, kind and nature of sale across Rural (BTHL) and Urban (CTUP) areas

Particulars	Rural (BTHL)	Urban (CTUP)
Sample size	n=40	n=40
Average land sale (ac)	2.22	1.05
Type of sale		
Complete sale (No.)	5 (12.50)	2 (5.00)
Partial sale (No.)	35 (87.50)	38 (95.00)
Nature of sale		
Voluntary sale (No.)	40 (100.00)	35 (87.50)
Forced sale (No.)	0 (0.00)	5 (12.50)

Note : Figures in the parentheses are the percentage of sample size

similar results showing that the average size of land sold in areas with high urban influence areas (0.56 acres) was less than that of farms with low urban influence (6.5 acres). Although there was large scale of selling-buying, no complete giving-up of the land was observed. In the BTHL, only 12.5 per cent of the respondents sold the farmland completely and the remaining were partial sales. In the case of the CTUP, only five per cent of the respondents were identified as complete sellers and the remaining were partial sellers. The nature of sale observed was 100 per cent voluntary in the BTHL and in the CTUP 12.50 per cent of sample respondents indicated that their transaction was under forced sales.

Development of the city could not only be the prime force behind the sale of farmland. There could be other reasons as well which are external and internal to the farmer. This has been presented in Table 4 and 5. In the case of BTHL, the first three major reasons for farmland sales identified were a) To meet financial obligations *i.e.*, mainly to clear old debts (RBQ value 91.65); b) To perform marriages and other ceremonies (RBQ value 88.72) and c) to construct the house (RBQ value 81.29). To purchase agricultural land in a remote area and forced sales were the least influencing factors of farmland sales identified.

In the CTUP, the first three major reasons for farmland sales identified were a) construction of the house (RBQ value 89.98), b) attractively higher land value (RBQ value 85.39) and c) performing marriage and other ceremonies (RBQ value 77.69). Remoteness of the land parcel and forced sales were the least influencing factors of farmland sales identified.

Supply of farmland being inelastic in nature, with the increase in demand the prices have been increased over the years. Both BTHL, as well as CTUP show the tendency of increase in number as well as extent of sales because of attractive rise in prices. Harish and Chinnappa (2017) reported similar results showing that farmers were provoked to sell their farmlands due to high farmland prices in high urban influence areas leading to the marginalization of agricultural holdings which will put their livelihood

TABLE 4
Reasons for sale of farmland in Rural (BTHL) areas

Particulars	1	2	3	4	5	6	7	8	9	10	11	12	RBQ Value	Rank
To meet the financial obligations	17	11	7	5									91.65	I
Marriage and other ceremonies	7	20	8	3	1	1							88.72	II
Lack of irrigation		1	4	18	16	1							72.51	IV
Construction of house	8	2	11	10	8	1							81.29	III
Higher land value	1		1	2	6	25	4	1					60.82	VI
Educational purpose	3	6	4	1	7	6	6	6	1				66.44	V
To purchase assets like gold, vehicle						5	15	10	1		8	1	40.81	VII
Labour scarcity to take up agriculture				1			6	7	13	11	2		35.19	IX
To purchase site or house	4		5		2		8	3		4	7	7	43.72	VII
To purchase agriculture land in remote area							1	5	7	6	13	8	22.05	XI
Remoteness of land parcel						1		8	13	2	10	6	27.27	X
Forced sale									5	17	18	18	18.53	XII

TABLE 5
Reasons for sale of farmland in Urban (CTUP) areas

Particulars	1	2	3	4	5	6	7	8	9	10	11	12	RBQ Value	Rank
To meet the financial obligations	5		4	11	15		5						72.70	IV
Marriage and other ceremonies	3	5	10	11	6	5							77.69	III
Lack of irrigation					1	14	13	7	5				49.77	VII
Construction of house	12	16	5	6	1								89.98	I
Higher land value	14	8	8	9		1							85.39	II
Educational purpose	2	3		3		11	4	13	4				55.40	VI
To purchase assets like gold, vehicle					12	2	4	4	5	7			53.10	VIII
Labour scarcity to take up agriculture							4	5	20	5		6	31.23	X
To purchase site or house	4	8	7		5		1	4	2	9			63.93	V
To purchase agriculture land in remote area						5	9	4	4	4	8	6	36.86	IX
Remoteness of land parcel						2		3		3	17	15	18.10	XI
Forced sale										12	15	13	16.45	XII

at high risk in the future. In the near future it may create problems of marginalization of farmlands and conversion of farmland for non-agricultural uses. Construction of house, clearing old debts and to perform marriages and other ceremonies were identified as major influencing factors of farmland sales. Investing farmland sales proceeds in these kinds of activities does not create any future livelihood options for the farmers. In the CTUP, the transacted land is mainly used for non-agriculture uses mainly real estate, conversion into sites, shops, villa plots, factories and a few plots kept vacant and fenced with speculative intention. The urban elites who purchased farmland in the rural areas lease-out to the same farmers and few farmers work on a daily labour basis on their own farms after the dispossession of farmland. Hence proper policies should be evolved for the protection of agricultural lands in the study area and proper awareness should be created among the farmers regarding the problems which will encounter after the land sales so that the livelihood of a large number of farmers can be safeguarded in the long run.

REFERENCES

CHAKRAVORTY, S., 2013, The price of land: Acquisition, conflict and consequence. N. Delhi: Oxford University Press.

FAIRBAIRN, M., 2014, Like gold with yield: Evolving intersections between farmland and finance. *The Journal of Peasant Studies*, **41** (5) : 777 - 795.

HARISH KUMAR, H. V. AND CHINNAPPA REDDY, B. V., 2017, Farm land values and portfolio management in rural-urban continuum of Bengaluru north. *Mysore J. Agric. Sci.*, **51** (2) : 208 - 215.

KAVITHA, A., SOMASHEKAR, R. K. AND NAGARAJA, B. C., 2015, Urban expansion and loss of Agriculture land - A case of Bengaluru city. *Int. J. Geomatics Geosci.*, **5** (3) : 492 - 498.

LARRY JANSSEN AND BURTON PFLUEGER, 2012, South Dakota agricultural land market trends 1991-2012. *South Dakota State University*, South Dakota, pp. : 1 - 28.

- LI JIANG, XIANGZHENG DENG AND KAREN C SETO, 2013, The impact of urban expansion on agricultural land use intensity in china. *Land use pol.*, **35** : 33 - 39.
- POOJA AND UMESH, K. B., 2021, Why do farm households migrate? Evidence from rural-urban interface of Bengaluru. *Mysore J. Agric. Sci.*, **55** (3) : 132 - 141.
- RAMALINGE GOWDA, U. C., CHANDRAKANTH, M. G., SRIKANTHAMURTHY, P. S., YADAV, C. G., NAGARAJ, N. AND CHANNAVEER, 2012, Economics of peri-urban agriculture - A case of Magadi of Bangalore. *Econ. Pol. Weekly*, **47** (24) : 75 - 80.
- RAJSHEKAR, M., 2013, Great rural land rush: 3 to 100 fold rise in farm land prices may not bode well, 12 November, *Economic Times*.
- SABARATHANAM, V. E., 1988, Manuals of field experience training for ARS scientists. NAARM, Hyderabad.
- SANTHAKUMAR SWAMIDURAI, 2014, Factors affecting urban land value in Indian cities -Chennai city as a case study. *Int. J. Res. Scientific Innovation*, **1** (3) : 31 - 34.
- SEEMA RANI, 2014, Monitoring land use/land cover response to urban growth of the city of Jalandhar using remote sensing data. *Int. J. Adv. Res.*, **2** (6) : 1122 - 1129.
- VIJAYABASKAR, M. AND MENON, A., 2018, Dispossession by neglect: Agricultural land sales in the periphery of Chennai. *Journal of Agrarian Change*, **1** (5) : 7 : 25.
- XIAOWEI, CAI AND JAY, E. NOEL., 2013, California farmland valuation: A hedonic approach. Poster presented In: *Agric. Appl. Econ. Assoc. Joint Annual Meeting*, Washington, DC. August 4 - 6.