

Chapter 10

10.0 Findings & Conclusions

10.1 Findings

Extant literature survey has revealed that the compensation for acquired land in eminent domain is paid based on fair market value, with or without solatium. In the free economy the fair market value is assessed based on average of past sales of the comparable lands during the contemporary period. This assumes land is a fungible commodity where prices do not change between the pre-acquisition and post-acquisition period. This also assumes the land market is active and sales are arm's length sale. In active land market there are many buyers and sellers and the evictee can buy a replacement land with the compensation received, to continue with her livelihood. The objective is to ensure that the affected person's livelihood is not worsened. But the study reveals that India's land market is thin and sales are not arm's length sales. Compensation paid on average of past sales has been far less than the replacement cost which has resulted in serious social and rehabilitation issues. More than 50 million people were displaced during the past fifty years after independence creating impoverishment among the displaced. There were many protests against land acquisitions. Lives were lost. Scores injured. This had resulted in slowing down of investment affecting business and infrastructure growth in India. New Act LARR 2013 was passed in the parliament and promulgated since January 2014. But the protests continued. In the new Act there was ad hoc increase in solatium. With this the compensation amount had quadrupled making India's land one of the costliest in the world. This had made investors unhappy. Sliding scale for paying solatium had created confusion and had further complicated the computation.

With this background the research made an attempt to build a model which could be used to compute the fair market value of the acquired land in a thin land market which could be rationally defended and acceptable to the stake holders. The price of land like any other commodities varied depending on its characteristics. There were number of variables that individually and in combinations formed the characteristics of land and its price. From literature review and discussion with the subject matter experts an initial list

of 47 such variables were identified. This was further rationalized to 31 variables to suit Indian condition and for better comprehension. With multiple scaled survey questions 31 variables was factored down into 7 principal components defining the characteristics of land. The interrelated variables were clustered through one or more common parameters for the 7 components. These were used for model building without losing the variance that it would explain.

Land is one asset where market determined demand-supply equilibrium cannot work. Supply of land cannot change with demand. With population and economic growth the land use has been changing from agriculture to other non-agricultural use including residential, commercial and/or for infrastructure. This has further increased demand. But the supply remaining constant there is more and more pressure on agricultural land for conversion into non-agricultural use. The equilibrium is reached only at higher land price. Thus apart from land's own characteristics, local area's social and economic environment also affects the price. There are number of facets of social and economic environments which include local area affluence, remoteness, non-agriculture investment, non-agricultural use of agricultural land and population growth-natural and through influx. The 7 characteristics identified in the factor analysis, are used in land valuation model as independent variable to compute fair compensation. In building model multi-linear regression analysis has been used. The correlations for each of the attributes individually and in combinations are found out for their statistical significance. Results of multi-linear regression have indicated that the location of the acquired plot measured in terms of proximity to communication and business center is the most significant factor with biggest influence on price change. All the factors excepting locational remoteness have 95% or more significance. Locational remoteness as measured through availability of communication facilities. This has not been found to be significant. This may be due to the growth in demand for land in those locations due to natural growth in population, even if the area has remained remote. Alternate use of agriculture land though significant (p value 0.009) is negatively correlated to land price change. This may be due to multicollinearity effect. However, multicollinearity is not significant enough to exclude this as a parameter. Correlation coefficient for the attribute is small and does not have much significance in the value computation. This requires further study for conclusion.

Dependent variable is change in price of land between two periods and the characteristics of the land are independent variables causing the change. The change is assumed to be linear and tested. Linearity and homoscedasticity tests confirm that. R and R² value are significant. The results of land valuation model thus obtained can be used in calculating the current price of land based on an earlier land sale data. This can then be used as fair market value and compensation paid based on this can be rationally defended as “just”. During quantitative validation this is observed that local area prosperity and plot location play important role in deciding agriculture land price in a free market sale. In India the land holding is fragmented and small. Price expectations are land specific and depend on the characteristics of individual plots. It is not the average price paid to acquire land that is important. Land owner will only agree to part with the land when the compensation paid matches with his perceived price of the plot he owns. This is true both for direct purchase by industry or through government acquisition route. Qualitative validation also confirms that. Industry leaders feel that an attribute based land valuation model can be of immense help for negotiation and budgeting purposes. However, the concern was expressed on the feasibility of using one valuation model for whole of India. India is a country of 30 smaller nations of varying social and cultural priorities. It is difficult to have one computation basis. Suggestion was to determine the attributes which might be different for different regions and to build multiple valuation models for compensation.

10.2 Recommendations

Present method of compensation in land acquisition is based on the average of past 3 years' of sale. While considering the three years average the higher 50% of the sale values is recommended in LARR 2013 for use. The figure thus arrived is considered as the fair market value of the acquired plot. This value is to be multiplied by 2 to make it fair market value for just compensation as per LARR 2013. The Act has also made provision for solatium which is variable. There is no scope of adjustments for the characteristics of the acquired land. The amount is same for all the lands to be acquired in the field. In Indian condition the plots are generally small. Each plot is unique and the difference in the land characteristics remains in their price expectations and it cannot be

averaged within. It is a thin market with scanty data available for comparable sales. It's a situation where the sale prices are not adjusted of their characteristics to make them comparable with the acquired land and at the same time there is absence of adequate data. In such situation using straight average is unlikely to meet the demand of rationality. Further in India the sale prices rapidly change when adjacent lands are acquired for development projects. Land acquired for development projects induce price changes in the adjacent area making replacement land costlier. The pre-acquisition price cannot meet the requirement of compensation since market value of the replacement land increases rapidly in anticipation of use change for more productive use. The rise varies depending on the local area's ability to take the benefit of the development projects. This also varies with the location and accessibility of the land from the market. This necessitates the need to compute the fair market value of the acquired plot depending on those characteristics. Straight average cannot meet this. But LARR 2013 does not recognize any of the constraints. The recommendation here is to build a suitable model of land valuation using multilinear regression where different land characteristics are considered as independent variable. Based on the model the past sale values are to be adjusted for the difference of the characteristics (as attributes) with the acquired land. The adjusted sale values are then averaged. The average thus calculated becomes statistically significant. Thus the value thus arrived may be treated as fair market value and can be used to pay "just" compensation.

10.3 Contribution to Literature

The results of the current research have number of contributions in the land valuation approach. This is discussed herein after in no particular order. The first contribution is in establishing the need for computing fair market value of land in a thin land market. The study has carried out an extensive literature survey to identify the gap in the land valuation approach in active land market and thin market. Not much of work has been done so far to map the differences and the way outs. The research has identified the difference that exists in computing fair market value in a thin land market from the active market.

The second contribution of the present research is to fill a literary gap of identifying variables that are perceived to be significant to impact on agricultural land price to change in a thin land market. The current researches have been using inductive research of using case specific attributes to build land valuation model for a particular socio-economic environment and attempted generalization. These lack the broader socio-economic parameters of a country like India. This research has attempted a deductive top down approach of starting with possible variables affecting land price change and then narrowing down to identification of principal components for land valuation. No of important variables have been identified in the research. The research has used a unique approach of data reduction technique which identifies significant factors using principal component analysis and has used them to build a suitable model for land valuation. The research is focused on India in particular and may be extended for a generic use in other thin market economies.

The third major contribution of the current research is the use of comparative sales approach to value the acquired land by difference in attributes. The difference is calculated as price change per year in percentage. This is a unique approach since this considers the price change per year as dependent variable to make the computational methodology in sync with the legislative guideline of paying just compensation based on comparable land sales and their difference with the acquired land. The use of price change per year as percentage has helped in using linear regression model successfully.

Another unique contribution of the current research is to develop proxy indices for different attributes (as identified through factor analysis) based on secondary data sourced mainly from Census 2011. Using different parameters from the Census to effectively define the latent variables and use them for building land valuation model is unique. The model was tested in an actual situation and validated.

The approach to use “changes in the socio-economic conditions” as one of the attributes of land price change is new in its concept, since socio-economic changes is not a direct attribute of land. Their relationship is indirect. Using them as an attribute of land is a unique departure from the generally used approach in Hedonic pricing. The concept may

be extended in its use in other Hedonic demand theory applications and may be considered as a new dimension in this widely used concept.

10.4 Limitations

The hedonic method has to make the assumption that the characteristics which are not measured by the index, don't affect value. Factor analysis itself has set in a limitation that can account for not the 100% of the variables identified. This is notwithstanding the fact that the 31 variable which is assumed to have accounted the value of an agricultural land fully itself may not be able to do so. Regression is based on past data. This by default assumes that the past transaction shall determine the present value. Macroeconomic changes in the economy are a continuing process. It is true that agricultural land price does not move as fast, especially in Indian condition. But the changes cannot be totally ignored, especially in the context of contemporary macroeconomic changes that are being pushed through digital India initiatives.

India is a large country and may be considered as a conglomeration of nearly 30 odd countries which vary in their perceptions on economic and social life. This makes it difficult to introduce a common digital base for calculation for the price of land, based on one single model of combination of attributes.

Sample survey of 430 respondents to identify attributes and an analysis of land price change based on local indices from one state may not have the necessary robustness to directly using the model for application at macro level across India. Within the scope of an academic research the thesis has only set the direction.

10.5 Scope of Further Research

Payment of compensation based on attributes which defines characteristics of land has been identified in the World Bank recommendations. Judiciary and academic research have also confirmed this need in a thin land market to pay compensation. In a country like India where the land plots are generally small and fragmented and the land market is thin, there is a need to understand the attributes that affect the land price in a varied socio-economic and cultural perspective. Price influence of agricultural yield and the plot

sizes may be different where agriculture economy is stronger like Punjab, Haryana, and Uttar Pradesh as against West Bengal. Factors affecting land prices in the hills of Uttarakhand and Himachal Pradesh may be largely different from that of Tamil Nadu. There is a scope of further research to identify the differences to ascertain their statistical significances and finally develop model/s which if required will have a regional bias.

10.6 Conclusion

The objective of the research is to reopen the erroneously designed compensation policy of LARR 2013 in the public domain and to argue that the land prices vary based on their qualitative and quantitative attributes. In large plots there is a higher probability of many of the attributes getting averaged within. But in India the plot sizes are small and the prices vary. Hence averaging should be done for 'comparable' land sales data, and not a straight average. To make the plots 'comparable' it is necessary to adjust the local sale prices for the differences in their attributes with the acquired land. In the conclusion it is argued that an arbitrary addition of 'solatium' is not logical. The present system of multiplying with solatium only multiplies the inequity. This adds discontent. What is needed is a computation basis to convert the local area land sales data into comparable land sales data. This can then be used for averaging to get the fair value of the acquired land. The value so derived can then be rationally defended to arrive at a 'just' compensation metric with or without solatium.

Goal of this research is to take India from 'assessing' to 'computing' a figure for 'just' compensation, which can be logically defended. The proposed generalized model would, by factoring in inflation, current use and locational characteristics, help in computation of logical 'replacement cost' of project-induced comparable land. This estimated in advance, can form a logical basis for compensation which can be considered as 'just' compensation for a land loser. Solatium if any can then be added to the average 'comparable' land price without disturbing the price premium differences of different land plots.