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Notice for the PhD Viva Voce Examination

Ms Radhika C, Registration Number: 2070315, PhD Scholar at the Department of Economics, School of Social Sciences, CHRIST (Deemed to be University) will defend her PhD thesis at the public viva-voce examination on Friday, 12 December 2025 at 11.00 am in Room No. 044, Ground Floor, R&D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

Title of the Thesis : **Economic Study of Land Use Dynamics in the Agricultural Landscape of Karnataka**

Discipline : **Economics**

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The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva – voce examination.

Registrar (Academics)

Place: Bengaluru
Date: 04 December 2025

ABSTRACT

Land and its utilization across various activities must be analysed to frame suitable policies for optimum land use. In Karnataka, the share of the net sown and non-agricultural areas increased. However, the share of permanent pasture and other grazing lands, barren and unculturable land, current and other fallow lands, culturable wasteland, and land under miscellaneous tree crops and groves decreased compared to their share in 2000-01. Urbanization and industrialization are mainly responsible for the conversion of large tract of agricultural lands and other vegetation-rich lands to non-agricultural purposes. The goal is to explore the direction of land use change between these land use categories and the determinants of land use change. Meanwhile, in the case of land use in agriculture, growing strand of literature has highlighted positive association between diversification towards high-value crops and poverty reduction in developing countries, largely drawing on household level data. However, many socio economic and biophysical factors operate at the meso (district) level, but its role in diversification towards high value crops is not well understood.

This study examined the dynamics of land use change and the contextual effects of districts on land transformation in Karnataka, using socio-economic and biophysical data from 27 districts over the period from 2001-02 to 2020-21. To better understand land use change in agriculture, we analyzed the factors driving diversification towards horticulture crops and its subsectors at the district level. Additionally, we assessed the spatial distribution of land classes through location coefficient analysis and compared GIS maps illustrating district-wise land use distribution across the two periods. We employed a panel regression model with fixed effects to identify the determinants of changes in different land categories, utilizing district-level data sourced from reports by the Directorate of Economics and Statistics of the Government of Karnataka. We recorded changes in major land use classes at the district level by comparing temporal dynamics from 2000-01 to 2020-21, and we also studied the outcomes and changes in urbanization status in each category at the district level.

The findings revealed significant shifts in land use at the district level throughout the study period. Results indicated that factors such as the rate of urbanization, GDP per capita, road infrastructure, and average land size significantly influenced land use distribution across districts. Urbanization had an adverse impact on the allocation of land designated for gross cropped area, culturable wasteland, and total fallow land. This study provides detailed insights into the direction of land use changes in Karnataka, particularly in relation to urbanization, which has increasingly become a focal point in the country's development agenda. The findings have important policy implications, highlighting how rapid population growth and the expansion of non-agricultural areas at the district level negatively affect arable and barren land. Additionally, average land size had a positive effect on land categorized as fallow, while negatively impacting land designated as permanent pasture, land not available for cultivation, and culturable wasteland. The results of a panel regression model with fixed effects indicate that increasing the share of horticulture does not necessarily lead to greater diversification. Furthermore, the factors influencing the growth of horticulture crops vary in significance across different subsectors. Therefore, government and donor agencies should understand that a one-size-fits-all approach is ineffective in promoting diversification. This study enhances our understanding of how geographical context influences land use patterns and carries important policy implications. It underscores the effects of rapid population growth and the expansion of non-agricultural areas on desirable land use categories.

Keywords: *Land use change drivers; Panel data regression; Urbanisation; Crop diversification; Horticulture crops; District level study*

Publications:

1. **Radhika, C**., Mahesh, E., Sutradhar, R., Kethineni, U. and Prasad, J. (2024). Trends and Direction of Land Use Change in the Perspective of Urbanization in Karnataka: A District Level Study. Indian *Journal of Agricultural Research.* 1-9. doi:10.18805/IJARe.A-6328. https://arccarticles.s3.amazonaws.com/OnlinePublish/Final-article-attachemnt-with-doi-A-6328-6089603e9087340b9bdcbbb1.pdf

2. **Radhika C**, Rajib S, Mahesh E, Udaya BK, Jagdish P. Diversification towards horticulture crops: District level evidence from Indian state of Karnataka -A panel regression approach. *Plant Science Today.* 2025; 12(sp1): 1-16. https://doi.org/10.14719/pst.8856.