ABSTRACT

This study demonstrates the utility of visualization-based spatiotemporal analysis as a policy support tool in the agricultural sector through a case study analyzing changes in the spatial distribution of tobacco farming in the Philippines from 1990 through 2012. Tobacco farming remains divisive in the Philippines; although often touted by tobacco companies and supportive government agencies as integral to the Philippine economy and an effective crop for poverty alleviation, recent studies dismiss these claims altogether, suggesting that farmers would be better off diversifying or even switching crops altogether (SEATCA 2008; Espino et al. 2009; World Health Organization 2012). This study does not argue for or against tobacco farming; it simply illustrates how spatiotemporal analysis can be successfully implemented to uncover deeper, more nuanced insights that could be drawn upon to design efficient and effective tobacco farming policies. The analysis considers provincial level agricultural data from the Philippines Bureau of Agricultural Statistics for tobacco area planted, volume of production and farm gate pricing of three unique tobacco varieties: Native, Virginia, and Burley. Stationary and dynamic techniques of spatiotemporal data visualization are used, and data are analyzed for trends using outlined methods. The results holistically describe tobacco farming in the Philippines and are drawn upon to determine which tobacco growing provinces and types of tobacco are on the rise or decline, to investigate causation behind spikes and dips in production, and to outline the future direction of the industry as a whole. The spatiotemporal analysis provides empirical evidence for policy makers to better understand regional and provincial trends in tobacco farming over time.