AGRICULTURE PRODUCTIVITY GROWTH IN BRAZILIAN MICRO-REGIONS

Alexandre X. Ywata de Carvalho
Institute of Applied Economic Research – Ipea, Brasilia-DF, Brasil (alexandre.ywata@ipea.gov.br).

Camilo R. Laureto
Institute of Applied Economic Research – Ipea, Brasilia-DF, Brasil (camilo.laureto@ipea.gov.br).

Marina G. Pena
Institute of Applied Economic Research – Ipea, Brasilia-DF, Brasil (marina.pena@ipea.gov.br).

The growth of national productivity was due to several structural changes in production over time. These changes in planted crops led necessarily to the exploitation of new cultivation areas, thereby prioritizing the study of yield mapping.

This paper, therefore, is focused on mapping the gain of agricultural productivity in Brazil from 1990 through 2012 by micro-region. After an overview of the behavior of productivity in large regions, it has been studied and mapped the productivity growth of the ten largest crop (relative to production value). Together, the crops of soybean, sugarcane, corn, herbaceous cotton, coffee, cassava, rice, orange, bean and tobacco account 83.5% of total Brazilian agricultural production on average between 2010 and 2012.

The database used was the Municipal Agricultural Production (PAM) - whose disclosure is borne by the Brazilian Institute of Geography and Statistics (IBGE) - between the years 1990 to 2012. The data were then divided into two sub-periods: i) 1990-2000; and ii) 2001-2012. Thus, it was possible to compare the performance of productivity growth in Brazilian micro-regions between these two great ranges.

The productivity of the domestic agricultural sector in 1990 was 9.25 t/ha and jumped to 14.32 t/ha in 2012, an increase of approximately 55%. Nevertheless, the annual productivity growth had a slightly elastic behavior, ranging up to 20%. Of the major regions, the one that stood out was the Southeast, getting a productivity almost four times higher than the second most productive region, the Northeast.

When evaluating the annual productivity of micro-regions between 1990-2000 and 2001-2012, most of then presented positive results, with the difference only in the intensity of this growth: the productivity of soy, sugarcane, corn, coffee, cassava, cotton, rice, orange, bean and tobacco came to grow 10%, 3%, 9%, 7%, 3%, 15%, 5%, 6%, 6% and 5% per year, respectively. However, for all analyzed cultures, there were micro-regions with negative growth rate. Analyzing the crops, the results showed that, of the ten, six decreased their growth rate of productivity between the first and the second period, three remained stagnant and one showed a slight increase between the first and second interval.