

Chapter 51

Agricultural Productivity in Indonesian Provinces

Khee Giap Tan

National University of Singapore, Singapore

Nurina Merdikawati

National University of Singapore, Singapore

Ramkishen S. Rajan

George Mason University, USA

ABSTRACT

Indonesia has been recognized as a country with significant potential in agriculture, not only to be self-sufficient in terms of food, but also to be the “food basket” for the world. However, given limited and competing use of resources, raising agricultural productivity is of paramount importance. To date, most of the existing work on Indonesia’s agricultural sector is at the national level. Considering the extent of Indonesia’s regional diversity, a provincial-level analysis of the country’s agricultural sector would be more useful from a policy perspective. In this light, this paper examines agricultural productivity growth in Indonesian provinces during 2000-2011 and draws policy implications from such empirical analysis. The paper uses two methodologies, namely growth accounting and Malmquist index data envelopment analysis. Results suggest that technological change has been improving for most provinces, though there is wide variation in technical efficiency change which in turn is driving differences in total factor productivity growth across provinces.

1. INTRODUCTION

Indonesia is a vast archipelagic country with tremendous potential in its agricultural output. Although agriculture’s contribution to the country’s gross domestic product (GDP) has steadily decreased from 35.3 percent in 1960 to 11.5 percent in 2012, the sector still employed about 35 percent of Indonesia’s labour force as of 2012. Within the agricultural sector, in terms of the contribution of each sub-sector, farm food crops and horticulture together contributed to nearly half of the agriculture’s share of GDP

DOI: 10.4018/978-1-5225-9621-9.ch051

in 2012. While estate crops¹ and livestock represented about 22.8 and 12.6 percent, respectively, the remaining 17.6 percent came from fisheries and forestry (Biro Pusat Statistik, 2012).

Indonesia's trade surplus in agriculture is mainly a result of its exports of estate crops while its major imports include wheat, cotton, sugar, soybeans, and maize. In fact, Indonesia is one of the world's major producers and exporters of estate crops such as palm oil, rubber, palm kernel, coffee, coconut (copra), cocoa, tea, and spices. Within Asia, Indonesia contributed to more than one third of total agricultural output of the Association of Southeast Asian Nations (ASEAN) (Food and Agriculture Organization, 2012).

Agricultural development policy in Indonesia has evolved in four significant phases (Fuglie, 2010). During 1961-1967, Indonesia had poor macroeconomic performance characterized by slow output growth with very few modern inputs and small improvements in productivity. From 1968-1992, a green revolution took place and agriculture was the top priority in the economic development agenda which gave rise to the invention and wide dissemination of a number of high-yielding varieties, as well as implementation of pro-agricultural policies. During 1993-2001, the agricultural sector faced stagnation, coupled with the Asian Financial Crisis (AFC) in 1997, with fewer sources for public spending in agriculture. Post AFC, the period of 2002-2006 marked the liberalization era of Indonesia's agricultural sector, where import restrictions on food crops were removed. This was a period of significant diversification of agricultural output with land expansion mostly for estate crops. The agricultural value-added in Indonesia expanded by more than one-third from 1993 to 2006 (World Bank, 2012b).

The trend for agricultural output remained positive as strong macroeconomic performance translated into more resources to pursue pro-agricultural policies. This was intertwined with the government's pro-poor policy as agricultural growth and productivity were often cited as the means to reduce rural poverty. According to the OECD (2012), incidence of poverty in rural areas was twice as high as in urban areas and almost three-fifth of the poor depended on agriculture as the main source of income. Hence, continued progress in agricultural productivity and incomes from agriculture plays an important role in diminishing rural poverty. Indonesia has been recognized as a country with significant potential in agriculture, not only to be self-sufficient in terms of food, but also to be the "food basket" for ASEAN and the world. However, given limited and competing use of resources, raising agricultural productivity is of paramount importance.

Indonesia has a considerably diverse agricultural sector and it is most evident when one compares the relative resource endowments and commodities across islands. Rice as a staple crop is widely cultivated in Java Island, with Sumatra being well known for its vast palm oil plantations and Sulawesi for cocoa. Beyond that, diversity persists in other aspects as well, such as in terms of the size of agricultural sector in their own economy and also their contribution to the national agricultural output. For instance, in terms of agricultural sector as a share of GDP in 2011, it was 46 percent in West Sulawesi GDP but a negligible 0.1 percent for DKI Jakarta. The Java Island -- consisting of East Java, West Java, Central Java, Banten, DI Yogyakarta, and DKI Jakarta -- contributed to just over two-fifth percent of national agricultural output in 2011 even though agriculture itself was no longer a prominent economic driver to the island, contributing to only 9.7 percent of Java's GDP. On the contrary, agriculture is still the main economic driver for easternmost provinces such as North Maluku, Maluku, West Papua, and Papua. In fact, agriculture contributed to 20.5 percent of their GDP as a whole. However, their agricultural output only made up 2.5 percent of national agricultural output in 2011.

Despite variations in agricultural contribution to GDP for each province, what persists is a sizeable share of employment in agricultural sector across provinces. In West Sulawesi for example, 59 percent of its labour force worked in agricultural sector and contributed to about 46 percent of its GDP in 2011.

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/agricultural-productivity-in-indonesian-provinces/233006

Related Content

Various Approaches for Food Waste Processing and Its Management

Anupam Pandey, Priyanka Harishchandra Tripathi, Ashutosh Paliwal, Ankita Harishchandra Tripathi, Satish Chandra Pandey, Tushar Joshi and Veena Pande (2019). *Global Initiatives for Waste Reduction and Cutting Food Loss* (pp. 191-211).

www.irma-international.org/chapter/various-approaches-for-food-waste-processing-and-its-management/222997

Functional Foods of the Indian Subcontinent

Jiwan S. Sidhu and Tasleem A. Zafar (2018). *Food Science and Nutrition: Breakthroughs in Research and Practice* (pp. 452-480).

www.irma-international.org/chapter/functional-foods-of-the-indian-subcontinent/197288

A Policy Framework for Sustainable Marketing Practices and Brand Evaluation Through Instagram Marketing

Syed Muhammad Jalal, Iqra Arshad, Shahid Khalil and Muhammad Khuram Khalil (2024). *Emerging Technologies and Marketing Strategies for Sustainable Agriculture* (pp. 70-87).

www.irma-international.org/chapter/a-policy-framework-for-sustainable-marketing-practices-and-brand-evaluation-through-instagram-marketing/344375

A Comprehensive Review of Agricultural Policies in India

Amaan Ullah, Abukasim Idrisi, Mohd Mohsin Khan and K. M. Bahrul Islam (2022). *Driving Factors for Venture Creation and Success in Agricultural Entrepreneurship* (pp. 171-179).

www.irma-international.org/chapter/a-comprehensive-review-of-agricultural-policies-in-india/292973

Precision Agriculture: Automated Irrigation Management Platform Using Wireless Sensor Networks

Amine Dahane, Bouabdellah Kechar, Abou El Hassan Benyamina and Rabaie Benameur (2021). *Precision Agriculture Technologies for Food Security and Sustainability* (pp. 150-165).

www.irma-international.org/chapter/precision-agriculture/265205