

Investments in Agricultural Vocational Training in the Sudan: Incorporating Child Labor in Educational CGE models

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i. Background:

Agriculture is deemed an appropriate remedy for improving economic growth and alleviating poverty in the Sudan. However, the sector has faced significant numerous challenges and constraints. These include climate change, inefficient irrigation infrastructure, lack of extension services, erroneous agricultural practices and inconsistent agricultural policies (Mahgoub, 2014, 7).

Furthermore, the majority of agricultural workers are women and youth with low skill levels, engaging in traditional agricultural activities (Nour, 2011, 13). On other hands, the sector is characterized by high participation rates of child workers who aged less than 15 years (Ibrahim et al., 2014, 39), which could be caused by the increasing migration to urban areas or abroad (Daoud et al., 2017, 4). Those who are left in the sector, lack appropriate skills, which constrains their productivity and render them vulnerable to a range of economic and environmental changes. Consequently, this not only undermines enhancing their production and income, but also constraints the process of innovation, technology adoption, and transformation of agriculture in the country.

Vocational training (VT) plays a valuable role in preparing people regardless their age to enter the job markets, by improving their productive capacities, which make it crucial for achieving the economic and social development, particularly in developing nations (McGrath, 2012, 623). In the Sudan, the quality of VT as measured by the availability of training centres, the qualifications of teachers and their proficiency and the availability of training materials in in rural areas lags behind it in urban areas, which measured by. Furthermore, most of the VT centres in urban areas provide training programs only for manufacturing and services activities with the majority of them allocated in Khartoum State. In the whole country, there is only one VT centre offering training services for the agricultural workers, located in Gezira State. Overall, the VT system has failed to meet the requirements of the labour market, because of non-updating trade test¹, lack of learning materials and technologies constraints.

This study aims at an in-depth analysis that quantifies the influences of various options of reallocating government investment amongst agricultural and non-agricultural VT systems on the economic growth and social welfare in the Sudan.

¹ Definition: A test of a person's proficiency in a particular trade or occupation.

ii. Research Methodology:

The study uses a recursive dynamic Computable General Equilibrium (CGE) model called STAGE-EDU model to conduct the intended analysis. The model accommodates the VT and permits depicting the potential influences of different policies targeting the VT system. The model takes into account the linkage between two types of VT (agricultural and non-agricultural) and incorporates other formal education systems; while linking the outcomes of these educational systems to the labour market in a dynamic framework.

The model considers educational choices available to students and workers at any age. These choices are defined using a constant elasticity of substitution function that is governed by relative changes in wages, opportunity cost and educational cost. Furthermore, it takes into accounts child labour by incorporating those who decide to exit schools earlier at age of less than 15 years. The model provides them with three choices: (i) staying at home, (ii) joining a VT, or (iii) entering the labour market. These are the options usually available to child labour in most of the developing countries.

The model is calibrated to the most recent Social Accounting Matrix (SAM) for Sudan (Siddig et al., 2016), which includes thirteen production sectors. In addition, the SAM includes 38 accounts for production factors covering 34 labour categories, classified based on gender, education and training skills and potential. The representative household is classified into 10 groups by location (rural and urban) and income level (five quintiles).

iii. Expected outcome:

The study aims to identify the potential economic influences of increasing the government spending on agricultural VT system in the Sudan. This is depicted by various resource allocation policies not only among agricultural VT versus non-agricultural VT sectors but also between the various types of education and training. Moreover, the study tends to highlight the role of agricultural VT system in the economy through its impact on skill levels of agricultural workers as well as its interaction with other sectors. The findings of the study are meant to provide options for policymakers in the country to adopt measures for enhancing skills of the workforce and improving livelihoods of worker as well as achieving the overarching targets economic growth in the sector and the economy at large.

Keywords: Agricultural VT, RDCGE, Skill Level, labour market, economic growth, Sudan

iv. Reference

Daoud, S., Salah Eldeen, N., Bello, A. (2017). " Rural Urban Youth Migration and Informal Self Employment in Omdurman Market Sudan". International Journal of Science 6. Retrieved September 20, 2017, from: <https://www.ijsciences.com/pub/pdf/V62017051270.pdf>

- Ibrahim, I., Mohamoud, A., Powell, M. and Abdelrahim, H. (2013). "Skills Development in Sudan, the Formal and the Informal Reality". Thematic/ Policy Paper.
- Mahgoub, F. (2014). "Current Status of Agriculture and Future Challenges in Sudan". Nordiska Afrikainstitutet, Uppsala 2014, Current African (57).
- McGrath, S. (2012). "Vocational education and training for development: A policy in need of a theory?". International Journal of Educational Development, 32(5), 623–631.
- Nour, S. (2011). "Labour Market and Unemployment in Sudan". Working paper 2011-007, UNU-Merit Working paper, ISSN 1871-9872. Retrieved September 21, 2015, from: <http://www.merit.unu.edu/publications/working-papers/abstract/?id=4057>
- Siddig K., Elagra, S., Grethe, H. and Mubarak, A. (2016). "A Post-Separation Social Accounting Matrix for the Sudan". Working Paper No. 92. Retrieved December 01, 2017, from: <https://ageconsearch.umn.edu/record/244286?ln=en>