

**ROLE OF TECHNOLOGY TRANSFER FROM ABROAD AND
COMMERCIALIZATION ON ENHANCING PRODUCTIVITY GROWTH: THE
CASE OF AGRICULTURE IN LAO PEOPLE’S DEMOCRATIC REPUBLIC**

Syviengxay Oraboune

National Graduate Institute for Policy Studies (GRIPS)

Summary of Dissertation

Eradicating poverty (SDG1) and ending hunger (SDG2) are important Sustainable Development Goals to be achieved between 2015 and 2030 (UN, 2015). In Lao PDR, one out of five people still lives in poverty, two out of three live in rural areas, and 70 per cent of labor force rely on agriculture for their livelihood (MAF, 2015; and LSB, 2016). Agricultural development is thus critically important for food security, poverty reduction and livelihood improvement in Lao PDR. This dissertation aims to explore how technologies that were transferred from abroad and commercialization have contributed to production growth in the rice and maize sectors. Rice is the main staple crop and source of livelihood for the majority of rural households, whereas maize has emerged as new commercial crop, recently becoming an important source of livelihood in rural area.

In rice sector, technology imported from abroad was facilitated by the public sector through research collaboration with the International Rice Research Institute (IRRI) and foreign countries, particularly Thailand, Vietnam, and China. The dissertation explores the pathways of technology transfer from abroad following Hayami and Ruttan (1985), finding that adaptive research is a key factor nurturing growth in rice production in Lao PDR. Modern rice varieties imported from abroad and directly disseminated to farmers for adoption did not necessarily improve

rice production. Rice production only began to improve upon the application of adaptive research efforts through exchanges between foreign and local scientists, starting from the mid-1980s. During this period, large amounts of genetic material were imported from abroad and used to develop improved strains more directly adapted to local agro-ecological conditions, consumer quality preferences, supported by intensive efforts to expand irrigation systems and agricultural extension services. Wide-spread adoption of modern rice varieties took place and launched the Green Revolution in Lao PDR in 1993.

In the case of maize, the private sector has played a facilitating role in bringing in new technology from abroad such as new seeds, fertilizer, herbicide, pesticide, and machinery, as well as management practices through agribusiness. Using databases and extensive case studies from three surveys in 2013, 2017, and 2018 the dissertation investigates three main drivers: 1) government policies, 2) new technologies brought in by contract farming (CF) business, and 3) commercialization. The main finding is that CF appeared to play the key role in facilitating the growth in maize production and the evolution of the maize economy. CF emerged due to the implementation of the Agricultural Commercialization policy in 2002. CF has brought in new technologies from abroad to farmers, enhancing rural development by stimulating the growth and evolution credit market, hired-labor and capital markets, and nonfarm economy in rural areas.

Overall findings show that growth in rice and maize production in Lao PDR can be traced to technology transfer from abroad and commercialization. The two main channels of technology transfer from abroad to Lao agriculture are 1) through public collaboration programs with international organizations and foreign countries and 2) through the private sector under CF.

Commercialization, made possible by the Agricultural Commercialization policy, has effectively linked smallholder farmers with the urban and global economies and has transformed the rural livelihood system from a subsistence-oriented mode to a market-oriented mode accelerating rural development.

Important policy implication is good government policies on research collaboration, extension service, irrigation development, and importantly, economic liberalization and linking with internationally recognized organizations such as the ASEAN have served as important catalysts of agricultural development in Lao PDR. These government policies have enhanced the positive role of new technology from abroad and commercialization in bringing forth production growth in rice and maize that strengthens domestic food security. This study has shown that sound government policies, new technology from abroad, and commercialization could work together harmoniously for the benefit of the agricultural sector in general and for the benefit of smallholder farmers in particular.