

Economic Change in Lao Agriculture: The Impact of Policy Reform

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Abstract

Since implementation of economic reforms in the Lao PDR, beginning about 1990, rice output has grown less rapidly than population but cash crop and livestock production has outgrown population. The sources of these events were: (i) The reforms reduced the barriers to domestic trade in agricultural commodities within Lao PDR. Those regions with a comparative advantage in cash crop and livestock production could now more readily sell their output of cash crops and livestock in exchange for rice. It was no longer necessary for a farming household to grow rice in order to be sure of having sufficient rice to consume. (ii) The restoration of good border relations between Lao PDR and Thailand meant that cross-border trade between the two countries was no longer obstructed by political tensions. In addition, the reform process in Lao PDR reduced the administrative barriers to international trade with Thailand, China and Vietnam. (iii) The rapid growth of the Thai, Chinese and Vietnamese economies, with which Lao PDR shares long and permeable borders, produced greatly increased demand for cash crops and livestock, some of which could be produced efficiently in Lao PDR.

DURING 1987, the government of the Lao Peoples' Democratic Republic (Lao PDR) embarked upon an ambitious program of economic reform. In doing so, it took policy steps also taken at around the same time by Vietnam², and earlier by China, where a reform process had begun in 1978. The decision to reform the economy reflected the government's assessment that the existing policy framework, based on tight government control of private sector activity and central planning, was not working well. It was evident that comprehensive central planning was in any case virtually unworkable, given the Lao government's very limited resources. Some other way of allocating resources had to be found. The government's policy package for economic reform, known as the New Economic Mechanism (NEM) had, as its central thrust, greater reliance on market mechanisms. The reformers believed that market mechanisms offered a more efficient solution to the resource allocation problem.

Agriculture remains the largest sector of the Lao economy, generating 56% of Gross Domestic Product (GDP) and employing more than 80% of the work force. This paper deals with the impact that the program of economic reform has had on this crucial sector of the Lao economy. Table 1 shows the growth rates of output at current and constant prices, respectively, for the period 1990 to 1995 inclusive. During this period, aggregate agricultural output increased in real terms at the impressive rate of 4.8% per year. This compares with growth of real GDP at market prices of 6.4% and growth of industrial and services output of 10.6 and 6.1%, respectively. The observed rate of growth of aggregate agricultural output is high by international standards. Moreover, in comparing agricultural output growth with that of industry and services it must be recognised that in the case of agriculture this rate of output growth was achieved at the same time as resources were being released from agriculture to the other sectors of the economy, thereby contributing to their growth. From this, it appears that the rate of productivity growth in agriculture exceeded the 4.8% rate of growth of output.

Table 1. Growth rates of GDP and its components, 1990- 1995.

(Per cent per annum)		
Sector	Current prices	Constant 1990 prices
Agriculture	14.01	4.75
Crops	10.68	1.43
Livestock and fishery	15.63	6.38
Forestry	30.31	21.06
Industry	19.87	10.62
Mining and quarrying	24.57	15.32
Manufacturing	20.03	10.78

Construction	21.07	11.81
Electricity, gas and water	15.58	6.33
Services	16.37	6.07
Transport, storage & communications	12.95	3.70
Wholesale and retrain trade	19.48	10.23
Banking, insurance and real estate	16.49	7.24
Ownership of dwellings	12.50	3.25
Public wage bill	13.32	4.48
Non-profit institutions	9.92	10.33
Hotels and restaurants	47.45	52.07
Other services	29.56	19.92
GDP at factor cost	15.57	6.06
Import duties	31.02	24.58
GDP at market prices	15.79	6.35
Memorandum item: GDP deflator	9.42	0

Source: National Statistical Centre, Vientiane.

When agriculture's major components are viewed, however, a somewhat different picture emerges. The growth rates of these major components have differed significantly. Livestock output grew at an annual average rate of 6.4%, and forestry at the very high annual rate of 21.1%. But the crops sector grew at only 1.4%. The high rate of growth of forestry output must be seen in part as involving a depiction of the natural resource base, the forests, rather than as a reflection of productivity growth. Since population grew at the rate of 2.2% per annum over the same period, it is clear that livestock and forestry output both grew much faster than population but that crops output did not keep pace with population growth. Crops output per head of population declined at an annual rate of 0.6% per annum.

Within the crops sector, the growth rates of output of different crops varied significantly. In general, output of cash crops grew rapidly but staple food output — rice, corn and starchy roots — grew much more slowly. The data suggest that since the reforms agricultural producers have responded to the new market opportunities by moving significant quantities of resources out of staple food production and into production of cash crops. The cash crops where output has grown rapidly include vegetables and beans, soy beans, cotton and coffee. But not all cash crops have responded in this way. Production of mung beans, peanuts, tobacco and sugar cane have actually declined in absolute terms.

The growth of the cash crops and livestock sectors in the post-reform period may be seen as the consequence of three important events:

(i) The reforms reduced the barriers to domestic trade in agricultural commodities within Lao PDR. In particular, those regions with a comparative advantage in cash crop and livestock production could now more readily sell their output of cash crops and livestock in exchange for rice. Since domestic trade was no longer restricted, it was no longer necessary for a farming household to grow rice in order to be sure of having sufficient rice available for its own consumption. Improvements in domestic transportation infrastructure facilities reduced natural barriers to trade and reinforced the effects of this policy change.

(ii) The restoration of good border relations between Lao PDR and Thailand, following, serious and sometimes bloody border disputes in the late 1980s, meant that cross-border trade between the two countries was no longer obstructed by political tensions. In addition to the reduction of border tensions, the reform process in Lao PDR reduced the administrative barriers to international trade, in particular trade with Thailand and China, thus facilitating the response of Lao agriculture to the market opportunities created by rapid economic growth in these neighbouring countries.

(iii) The rapid growth of the Thai economy, with which Lao PDR shares a long and permeable border, produced

greatly increased demand for cash crops and livestock, some of which could be produced efficiently in Lao PDR. A similar, but somewhat smaller, increase in demand for cash crops also occurred along the Lao PDR border with China. Thailand's growth did not produce a demand for rice from Lao PDR, however, because Thailand is and remains a large net exporter of this commodity.

Rice is by far the most important agricultural commodity produced in Lao PDR and since the reforms aggregate rice output has grown at an average annual rate of about 1%. With annual population growth of 2.2%, these data imply that since the reforms rice output per head of population has declined at an average rate of 1.2% per year. In so far as achievement of rice self-sufficiency is a major objective of the Government of Lao PDR, these data indicate continued difficulty in the post-reform environment in moving toward that objective. Comparing the available data on the growth of rice output per head of population before and after the reforms, it is apparent that while rice output grew more rapidly than population before the reforms (the data imply output growth per capita of just under 3% per annum, 1976 to 1990), this momentum was not sustained after the reforms.

Within the rice sector, it is vital to distinguish between the growth of production under irrigated and non-irrigated conditions. An average of around three fourths of total rice production in Lao PDR occurs under irrigation. The scope for substitution out of rice production and into cash crops is much greater under non-irrigated conditions than under irrigation because the irrigation systems in place within Lao PDR are in general specifically designed for paddy rice production. Accordingly, the movement out of rice production and into cash crops described above has been heavily concentrated in upland (non-irrigated) conditions. While rice output under irrigated conditions has grown at 2.8% (more rapidly than population) output under upland conditions has declined at an average rate of 5.4%.

In summary, the decline of rice output relative to population reflects the post-reform economic environment of Lao PDR in three major respects:

- (i) The more liberalised trading environment in place after the reforms produced market incentives which favoured movement of resources out of agriculture and into the non-agriculture sectors of the economy*

This phenomenon is demonstrated by examining the movement of relative prices. Agricultural commodity prices declined markedly relative to non-agriculture prices, especially those of services and construction. An economic boom followed the more open economic environment created by the reforms, but this boom was concentrated in the services and construction sectors of the economy, which drew resources from elsewhere, especially from agriculture.

The inflow of foreign capital which has accompanied the New Economic Mechanism has indirect micro economic effects on agricultural output which are in some cases negative. The increased domestic expenditure made possible by foreign aid and foreign investment produces demand-side effects which imply construction of agriculture. Increased demand produces increases in the domestic prices of those goods and services which cannot readily be imported. These include most services and construction and the expansion of these sectors attracts resources, eluding labour, away from agriculture.

This phenomenon has also been observed in other countries experiencing large increases in capital or export revenue inflows from abroad where it has sometimes been called the "Dutch Disease" or "booming sector" effect. It causes the prices of agricultural commodities to decline relative to other prices, with negative effects on agricultural production.

To the extent that the New Economic Mechanism increases the exposure of agricultural commodities to international markets, this policy change indirectly increases the impact on agricultural production of these market phenomena.

- (ii) Within the agricultural sector, the reforms and related improvements in market access to Thailand generated market incentives which encouraged substitution of cash crops and livestock for rice.*

The particular cash crops and livestock enterprises that were suitable varied greatly from region to region. For example, in the Paksong district of the highland plateau region, coffee and green vegetables were the main cash crop alternatives, while in Kaen Thao district of Sayabury Province there were many cash crop alternatives, including cotton and beans. Since the liberalised market environment under the reforms meant that households' rice requirements could be purchased and did not have to be produced, diversification into cash crops became an option that was not readily available before the reforms.

The changes in the composition of output following economic liberalisation suggest that, in terms of economic efficiency alone, comparative advantage in Lao agriculture does not lie in expansion of rice production. Rather it seems to lie in increased high value cash crop and livestock production. The reasons for this conclusion are:

(a) The land endowment of Lao PDR. Laos is mountainous and the scope for lowland irrigation is limited. The "green revolution" technology, based upon (i) irrigation, (ii) high levels of fertiliser and insecticide use, and (iii) varieties of rice adapted to these conditions, are thus less suited to Lao conditions than to those in some neighbouring countries.

(b) The poorly developed transport system within Lao PDR, which leads to high transport costs for bulky commodities. There is an advantage to producing high unit value commodities which are also storable. In so far as livestock can walk to market, high transport costs favour their production relative to commodities requiring mechanised transport.

(c) Continued rapid economic growth in neighbouring Thailand will produce growing export demand for high value cash crops and livestock products, rather than for staple foods.

(iii) In addition to the above, the Government has introduced policy measures designed to reduce the incidence of slash and burn cultivation and encourage more stable forms of land use in upland areas.

Since a high proportion of upland rice production actually occurs under slash and burn conditions, the movement out of upland rice is in part due to the reduction of slash and burn modes of production. In this respect, the reduction of upland rice production should not be interpreted as an indication of the failure of policy, but rather as an indication of the partial success of policies intended to achieve a reduction of slash and burn modes of cultivation.

Field studies at the village and household level suggest that most rural households have benefited from the new market opportunities made possible by the reforms.³ Nevertheless, the households best able to adjust quickly to the new economic environment produced by the reforms are those who are already better off. These have been the first farmers to adjust the composition of their output towards more profitable opportunities, the first to adopt modern agricultural inputs and the first to acquire new machinery. The proportionate gains in income achieved by the better off households have considerably exceeded those of the less well off. It is vital to recognise, however, that this fact does not imply that the poor have become worse off in real terms. The reforms will have reduced absolute poverty in rural areas, because almost all households seem to have experienced some improvement in opportunities, but the relative distribution of incomes will have become more unequal. To a large extent, these outcomes were to have been expected. Better off farmers are generally those best informed about new commercial opportunities and best able to take the risks involved in pursuing them. However, the poorly developed agricultural credit system of Lao PDR is also partly responsible for the difficulty of poorer rural households in participating more fully in the market economy. To adjust the composition of output or to modify existing cultivation practices requires investment, and investment requires credit. But field studies indicate that in general poorer agricultural households can obtain credit only through informal channels that involve very high rates of interest. As of mid-1995, the existing channels of agricultural credit were not reaching the rural poor. This was also true of the government's very limited agricultural extension capacity. As of the time of the study it too was not reaching the rural poor. The Government's determination to reduce the incidence of slash and burn cultivation is motivated by concern for its environmental consequences. This policy has been applied in a policing manner. Some households, or entire villages, practicing slash and burn methods have been relocated to areas where more sedentary forms of production can be practiced. Elsewhere, the policy has operated by placing maximum limits on the lengths of fallow periods. The effect of maximum fallow periods is to reduce the amount of land that a household can cultivate and thus reduce the area subjected to slash and burn practices. But within the area cultivated the effect is to hasten the degradation of that land, a fact which is demonstrated by rapidly falling yields on that land. In many cases, the maximum fallow periods are too short to permit productive agriculture to be sustained. Efforts are under way to improve the security of land titling in Lao agriculture and these developments seem to have far greater potential for reducing land degradation than the policing approaches now being pursued. Greater security of tenure reduces land degradation by giving the villagers a greater incentive to maintain the long-term productivity of the land.

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Notes

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²Vietnam's reforms were officially announced a little later but were already under widespread discussion in 1987.

³Field studies were conducted by the author, together with the colleagues named under the heading Acknowledgments. Two villages were studied in each of the three major agro-ecological zones of Lao PDR - mountainous areas, highland plateau and lowland plains, except for the mountainous areas where a third village was added to extend the study's coverage of shifting cultivation.