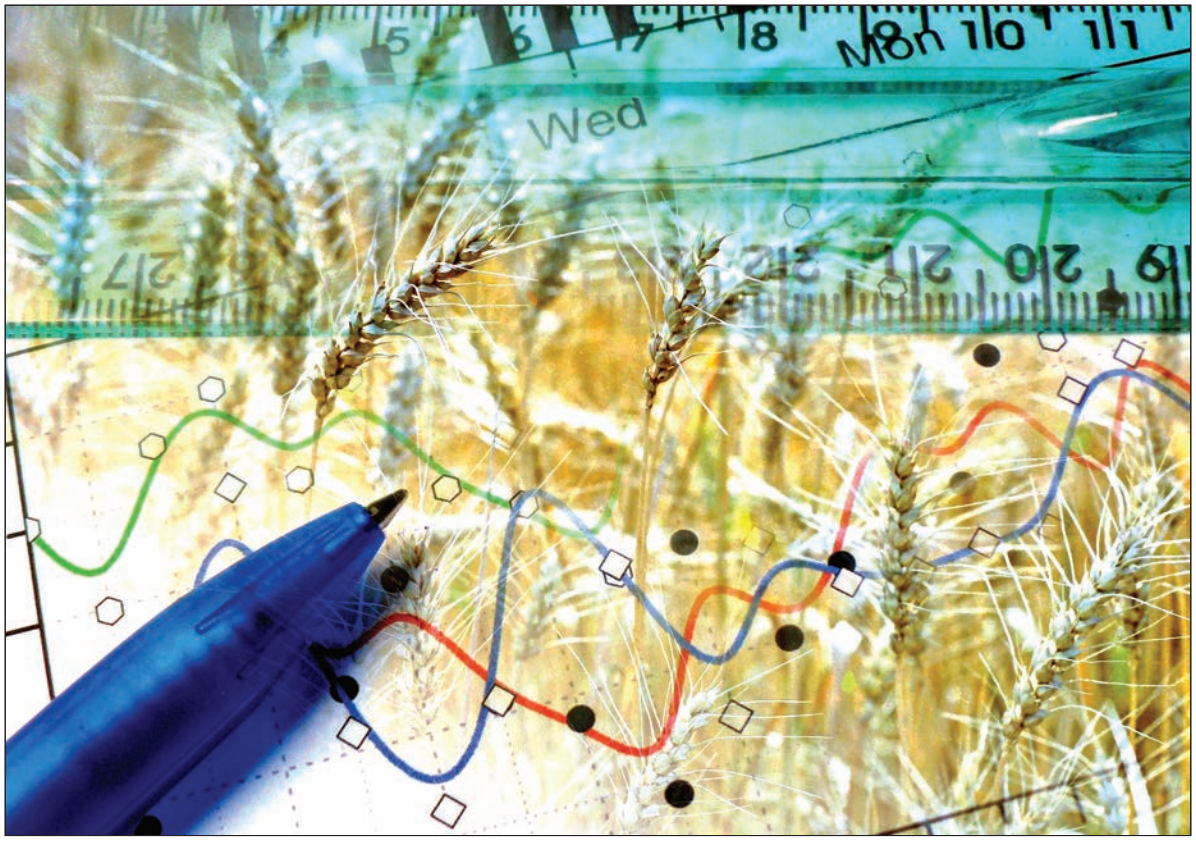

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Sources of Agricultural Productivity Growth in South and Southeast Asia

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ABSTRACT

This study focused on the analysis of sources of land productivity in South and Southeast Asian countries. A cross section, time series data from 1980 to 2007 was used in the analysis. An aggregate production function was estimated and growth accounting was carried out to assess the contribution of different inputs on the land productivity growth. The empirical evidence suggests that land productivity and input intensification widely vary across South and Southeast Asian countries. The use of modern input like chemical fertilizer and tractor was found higher in Southeast Asia while the use of traditional inputs like livestocks and labor were found higher in South Asia. The growth accounting suggests that the growth in fertilizer and tractor usages are the main sources of land productivity growth.

Key words: Agricultural growth, land productivity, production function, growth accounting, input intensification

INTRODUCTION

The recent period has witnessed many changes in agriculture such as increase use of food crops for bio-fuel, erratic weather conditions and increasing scarcity of land and water. These changes have affected the supply pattern of agricultural products both in domestic and international markets. As a result, many parts of the world have experienced a shortage of staple foods like rice, wheat and maize. The consequences are seen in the form of food price hike and its ailing effect on the poverty stricken people of developing countries (Lustig, 2009; Mitchell, 2008). The problem is further aggravated by the raise in average income of mass in some of the highly populated countries in Asia and Latin America that has escalated the global food demand. This has incited debate regarding the possible options for increasing agricultural production in developing countries. As land is a scarce resource in many developing countries, production growth primarily depends on the growth of agricultural productivity. Thus, the issue of increasing agricultural productivity is very important in developing countries. In the past, some studies have been carried out to examine the productivity difference across various countries (Coelliand Prasada Rao, 2005; Nkamleu, 2004; Nin *et al*., 2003; True blood and Coggins, 2003; Shariyanto and Thirtle, 2010). These studies estimated and compared the partial as well as total factor productivity in agriculture across the range of countries. These reports unanimously concluded that developed countries are producing at frontier while developing countries at below the frontier. This shows an ample possibility to increase production through productivity growth in developing countries (Ruttan, 2002). To support this fact Coelli and Prasada Rao (2005) showed that the factor productivity in agriculture between high performing and low performing countries are converging.

Similarly, Martin and Mitra (1999) compared the factor productivity growth in manufacturing and agricultural sectors and concluded that the factor productivity in agriculture is converging over time. Contrary to this result, the study by Shariyanto and Thirtle (2010) indicated that the factor productivity across developed and developing countries is diverging over time. The result seems vary according to the group of countries considered in the analysis.

Many factors affect the growth of agricultural productivity. In developing countries, farming is done in a rural environment that has inadequate physical infrastructure, poor market access and poor resource endowments. In such farming environment, the use of modern agricultural inputs and technology is quite low. Thus, the productivity is below the potential level. This has a set-back effect on the overall agricultural growth which intern affects the pace of economic growth in developing countries. The role of agriculture to accelerate the overall economic growth during the preliminary stage of development is highlighted by many scholars (Diao *et al*., 2007; Tiffin and Irz, 2006). The empirical study also supports the fact that there is a significant correlation between agricultural and overall economic growth in developing countries (Self and Grabowski, 2007). Thus, the productivity growth is indispensible to realize a higher economic growth in developing countries. In this context, the main issue was to explore the reason for variation in agricultural productivity across South and Southeast Asian countries and recommend appropriate policy options. These two regions are important in terms of population size and its growing demand for food due to a gradual betterment of income of mass. The evidence shows that the level of productivity is still quite below compare to the developed countries indicating a huge opportunity to increase the productivity in agriculture in developing Asian countries (Sharma *et al*., 1990). However, it is not practical to recommend policy options comparing the case of developing Asian countries with that of the developed one as these economic groups differ substantially in terms of socio-economic environment, physical infrastructure and resource endowments. Thus, this study was focused only on the low and lower middles income countries from South and Southeast Asia.

South and Southeast Asian regions are geographically near with each other and have lots of similarities in terms of socioeconomic environment of the countries. To compare the situation between two regions, a comparative figure of agricultural value added, GDP per capita and percentage of agricultural population in two regions in the year 1980 and 2007 is presented in Table1. Table 1 showed that the contribution of agriculture in total GDP decreased both in South and Southeast Asia from 1980 to 2007. Comparatively, South Asia had a higher share of agriculture in GDP in both periods. Individually, Nepal represented the highest share of agricultural valued added in GDP while Malaysia represented the lowest share in both periods (Fig. 1, 2). Per capita income more than doubled in all countries. Malaysia represented the highest per capita income while Nepal represented the lowest in both periods. With an increase of per capita income, agricultural population decreased in both regions. Generally, labor is supposed to relocate from agriculture to non-agriculture when an economy undergoes through structural transformation. Comparatively, the relocation of agricultural population was larger in Southeast

Table 1: AGDP and GDP trend of South and Southeast Asian countries

Country	Year	Agriculture, value added (% of GDP)	GDP per capita PPP (constant 2005 international dollar)	Agricultural population (%)
South Asia	1980	37.6	953.2	68.64
	2007	20.6	2378.2	55.42
Southeast Asia	1980	26.8	2304.6	56.34
	2007	12.8	6021.0	38.61

Source: Author's own calculation based on The World Bank (2010). PPP : Purchasing power parity

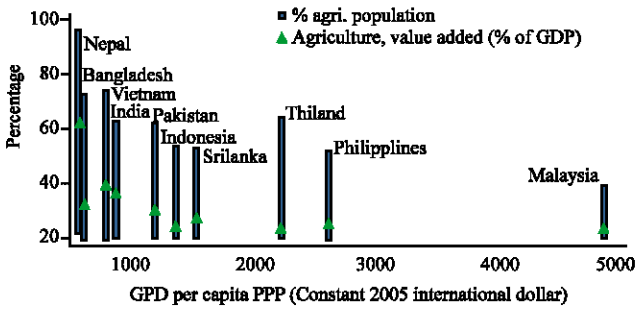

Fig. 1: Comparison of AGDP, agricultural population and per capita GDP, 1980

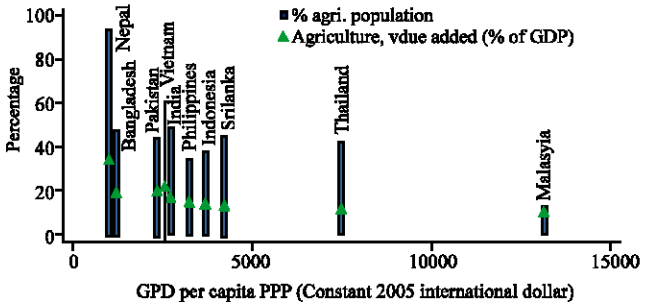

Fig. 2: Comparison of AGDP, agricultural population and per capita GDP, 2007

Asia compare to South Asia. Individually, agricultural based population was more than 60% in Nepal, Bangladesh, Thailand, Pakistan and India while, other countries like Indonesia, Srilanka, Philippines and Malaysia had agricultural based population less than 60% in 1980. All countries witnessed a decrease of agricultural population in 2007 compare to 1980; however, the rate of decrease was not proportional across the countries (Fig. 1, 2).

MATERIALS AND METHODS

This study was carried out in 2009. In this study, the regression analysis was carried out to estimate the cross-country production function by considering cross section and time series data of 10 South and Southeast Asian countries from 1980 to 2007. First, land productivity and input use per unit land was calculated to compare the trend of agricultural productivity and input use in agriculture in South and Southeast Asian countries. Second, an aggregate agricultural production function was estimated from cross-section, time-series data for 10 South and Southeast Asian countries for the year 1980-2007. The production function was specified as:

$$Y_{it} = \beta_0 + \sum_{j=1}^{4} \beta_j X_{jit} + u_{it} \quad (1)$$

where, Y_{it} is the log of aggregate agricultural output per hectare of agricultural land for the ith country in year t. The variable X_{jit} represents input j for ith country in year t, where, j represents labor, fertilizer, tractor and livestock. The β_j term is parameter to be estimated and u_{it} is an error term.

In the third part of the analysis, average annual growth in production was deconvoluted into growth in land area and land productivity. The following accounting framework was used in this study: Q is log of output, Y is log of productivity and A is log of agricultural land area.

$$(Q_{it}-Q_{i0}) = (Y_{it} - Y_{i0}) + (A_{it}-A_{i0}) \quad (2)$$

Output growth is the sum of land productivity growth and the rate of land expansion. The regression results obtained from estimation of Eq. 1 were used to express land productivity growth as a function in changes in inputs.

$$Y_{it} - Y_{i0} = \sum_{j=1}^{4} \hat{\beta}_j (X_{jit} - X_{ji0}) + (\hat{u}_{it} - \hat{u}_{i0}) \quad (3)$$

where, Y_{it}-Y_{i0} is the continuous growth rate of land productivity. $\hat{\beta}_j (X_{jit} - X_{ji0})$ is a weighted aggregation of input intensities.

Time series data were collected from 1980 to 2007 and included 10 countries; 5 from South Asia (India, Bangladesh, Sri Lanka, Nepal and Pakistan) and 5 from Southeast Asia (Thailand, Malaysia, Vietnam, Indonesia and Phihppines). This study used FAOSTAT data on crop and livestock production. FAO uses the international dollar to estimate crop and livestock production values. To obtain comparable data from different countries, previous studies measured aggregate production in wheat-equivalent units (Hayami and Ruttan, 1971, 1985). This method avoids the use of exchange rates but introduces unpredictable biases in the measure of total output (Rao *et al.*, 1991). Thus, production data from FAOSTAT which is measured in international dollars, was used in this study. Output was measured on a per hectare basis to avoid problems of heteroscedasticity. Data on agricultural inputs including agricultural land, tractor usage, fertilizer, agricultural labor and hvestock were obtained from FAOSTAT. Land measure was represented by the total hectares of agricultural land. The economically active agricultural population represented agricultural labor. The number of livestock was considered fixed capital. To compile different types of livestock into an aggregate unit, a weighted total was used where, weights values were referenced from (Hayami and Ruttan, 1971). Variables including fertilizer and tractor usage were considered working capital.

RESULTS AND DISCUSSION

Table 2 illustrates the average figure of land productivity and input use across the South and Southeast Asian countries during 1980-1990 and 1991-2007. Every country witnessed an increase in land productivity from 1980-1990 to 1991-2007. However, the increase was not proportional across the countries. Vietnam and Bangladesh secured the highest increase while Srilanka got the lowest increase in land productivity from 1980-1990 to 1991-2007. Comparatively, land productivity was lower in Nepal and Indonesia in both periods. To illustrate the comparative position of countries in terms of land and labor productivity, a two-way scatter plot was drawn and presented in Fig. 3. Malaysia had the highest labor productivity while Vietnam had the highest land productivity. Indonesia represented the lowest land productivity. Nepal is placed at the point that represents lower land and labor productivity.

In general, an increase in agricultural inputs per unit of land was observed in all countries from 1991 to 2007, compared to data from 1980 to 1990. Input intensification is an important source of

Table 2: Average land productivity and input use

Country	Year	Land productivity (Int. $ ha^{-1})	Fertilizer/land (kg ha^{-1})	Tractor/land (No./1000 ha)	Livestock/land (No./1000 ha)	Labor/land (No./1000 ha)
Indonesia	1980-90	440.00	44.19	0.35	380.79	818.64
	1991-07	650.34	63.78	1.73	576.91	1017.93
Malaysia	1980-90	652.35	97.92	2.12	278.22	295.62
	1991-07	881.72	161.30	5.21	353.76	231.52
Philippines	1980-90	684.27	33.84	0.74	594.39	849.72
	1991-07	961.11	60.99	1.02	796.36	1099.57
Thailand	1980-90	557.52	25.52	1.57	522.13	861.57
	1991-07	787.74	80.51	9.11	538.72	989.74
Vietnam	1980-90	981.89	58.50	3.45	1089.58	2720.78
	1991-07	1569.51	203.00	14.13	1450.85	3082.75
Bangladesh	1980-90	793.70	59.50	0.45	1937.02	2871.69
	1991-07	1239.45	141.11	0.60	2824.02	3845.16
India	1980-90	508.00	43.84	3.39	1280.90	970.78
	1991-07	771.56	91.20	10.98	1515.49	1300.81
Nepal	1980-90	451.06	10.25	0.72	1886.32	1315.02
	1991-07	731.42	19.13	1.34	2408.56	2058.60
Pakistan	1980-90	583.62	53.99	6.25	1338.67	537.37
	1991-07	953.48	103.41	12.64	1961.36	705.64
Sri Lanka	1980-90	742.97	72.01	3.40	979.25	1271.90
	1991-07	805.42	101.80	3.55	751.44	1542.90

Source: Authors' own calculation based on FAOSTAT, FAO (2010), Int. $ stands for International dollar

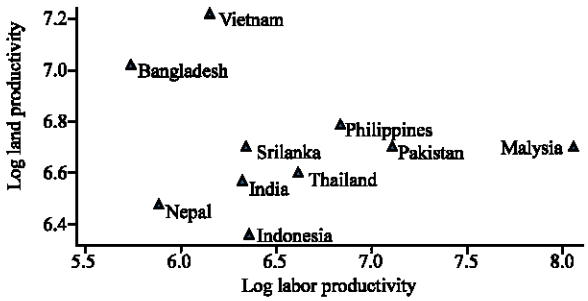

Fig. 3: Two-way scatter plot of land and labor productivity (1980-2007)

growth in land productivity. Thus, variation in land productivity among nations may be attributed to differences in input intensification. Fertilizer and tractor are considered as modern inputs in agriculture. Fertilizer usage increased in all countries during 1991-2007. But the increase in fertilizer usage was not uniform across all countries and regions. Malaysia used the highest amount of fertilizer per unit land during 1980-1990; while, Vietnam topped the list during 1991-2007. Specifically, fertilizer usage in Vietnam and Thailand increased more than three-fold from 1980-1990 to 1991-2007. In other Southeast Asian countries, fertilizer usage increased by approximately 50-90%. In South Asia, Srilanka used the highest amount of fertilizer per hectare during 1980-1990, while Bangladesh topped the list during 1991-2007. Alternatively, Nepal used the lowest amount of fertilizer in both periods. Specifically, fertilizer usage in Bangladesh increased by more than two-fold while other South Asian countries witnessed an increase of 40-100% from

1980-1990 to 1991-2007. The average regional value of fertilizer usage indicated that the level of fertilizer applied in Southeast Asia was higher than that of South Asia. Tractor is considered another modern input in agriculture. In many parts of South and Southeast Asia, tractor is also used as a mean of transportation for agricultural products. The second column of table 1 shows tractor usage per 1000 hectares of agricultural land. A comparison of data from 1980-1990 and 1991-2007 revealed that tractor usage increased in all countries. Comparatively, Vietnam, Thailand, Malaysia, India and Pakistan increased tractor usage at higher rates. During 1980-1990, Pakistan had the highest tractor usage per unit of land; however, during 1991-2007, Vietnam displayed the highest tractor usage.

Livestocks and labor are considered as traditional inputs in agriculture. In this study, the economically active population was considered a proxy for agricultural labor. Labor per hectare of agricultural land increased in almost all countries except Malaysia, where labor decreased during 1991-2007 relative to 1980-1990. In all countries, an increase in the number of livestock per unit of land was observed, except in Srilanka, where the number of livestock decreased. The number of livestock per unit of agricultural land was highest in Bangladesh in both periods. With the exception of Sri Lanka, all South Asian countries had more livestock per unit of agricultural land than Southeast Asian countries. In summary, investment in fertilizer and tractors per unit of land was higher in the Southeast Asian countries, while labor and livestock were higher in the South Asian countries. The correlation between livestock and fertilizer was -0.21, indicating that a higher use of fertilizer may suppress the number of livestock and vice versa. In rural areas, farm yard manure from livestocks is an important source of fertilizer. In general, countries with a higher number of livestock also had a lower number of tractors. The correlation between tractor usage and livestock input was -0.40. Thus, livestock power may be a substitute for machinery in some countries, especially in South Asia. Varying input levels and patterns might have caused differences in land productivity in South and Southeast Asian countries.

After accounting input use and land productivity, the overall production growth was estimated and was divided into growth in land area and land productivity growth using Eq. 3. Sample countries were classified into two groups, South Asia and Southeast Asia and result is presented in Fig. 4. The result indicated that an increase in land productivity was the main cause of production growth. Comparatively, the contribution of land expansion to the increase in production was higher in Southeast Asia (24%) while it was zero in case of South Asia. This indicates that South Asia has limited land resources compared to Southeast Asia. Thus, the major part of production growth in agriculture should come through productivity growth which intern depends on input intensification and factor productivity. There is a big difference in input intensification among South and Southeast Asian countries. Thus, there

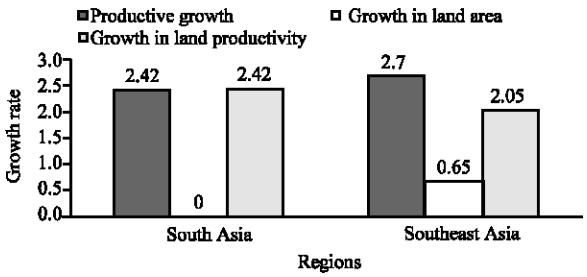

Fig. 4: Production growth divided into land area and land productivity growth

is still a high opportunity to gain productivity applying higher chemical fertilizer and other modern inputs per unit land in these countries.

In the second part of the analysis, the aggregate production function was estimated. In this analysis, the relationship between land productivity and agricultural inputs per hectare was estimated. Cobb Douglas functional form was used. Hausman test was conducted to determine whether the fixed or random effect model is appropriate for the estimation. In Hausman test chi-square value came significant. Thus, the estimation was conducted in the fixed effect model. Eq. 5 presents the result of panel regression which explains the percentage change in land productivity due to one percentage change in fertilizer, tractor, livestock and labor per hectare of land. All estimates were positive and statistically significant. The greatest increase in land productivity was caused by labor (0.4) and then by livestock (0.36). This result concurs with those of previous studies. For instance, Kawagoe *et al.* (1985) estimated that the response in land productivity of least developed countries was 0.6 for labor and 0.27 for livestock. Frisvold and Ingram (1995) estimated that the response of Sub-Saharan African countries were 0.97 for labor and 0.31 for livestock. Additionally, Fulginito and Perrin (1998) estimated a response of 0.33 for labor and 0.4 for livestock in 18 developing countries. The production elasticities of fertilizer and tractor were 0.21 and 0.12 respectively. The estimates of fertilizer and tractor usage were also similar to previous studies. To observe an interaction effect between livestock and fertilizer and tractor and labor, interaction terms were included in regression analysis. However, interaction terms were not statistically significant and were subsequently removed from the analysis:

$$Y = .25 + 0.21^{***} F + 0.12^{***} T + 0.36^{***} LV + 0.40^{***} L \quad (5)$$

(R^2 within = 0.85, between = 0.38 and overall= 0.44)

F = 394.28*** Hausman test: χ^2 66.97***

where, Y is land productivity, F is fertilizer per hectare, T is tractor per ha, LV is livestock per hectare and L is Labor per hectare

The regression coefficient was used for growth accounting using Eq. 3. A summary of growth accounting by region is presented in Fig. 5 and 6. Results suggested that an increase in fertilizer usage per hectare explained a majority of growth in land productivity in South and Southeast Asian countries. Fertilizer usage accounted for 34% of growth in land productivity of South Asia. While in case of Southeast Asia, fertilizer usage accounted for 40% of growth in land productivity. Tractor usage per unit of land explained around 27% of land productivity growth in South Asia while in case of Southeast Asia, it accounted for 34% of growth in land productivity. The contribution of labor was comparatively higher in South Asia. Only 5% of growth in land productivity was attributed to labor in Southeast Asia. Alternatively, the contribution of labor in South Asia was 19%. This indicates that the population pressure on limited land resource is higher in South Asia compare to Southeast Asia. The contribution of livestock growth in the growth of land productivity was 10% and 16% in South Asia and Southeast Asia respectively. It indicates that the modern inputs accounts for more than 60% growth in land productivity in these regions. Past studies have also got similar results. Study by Fulginito and Perrin (1998) estimated the total contribution of fertilizer and tractor to the production growth in 18 least developed

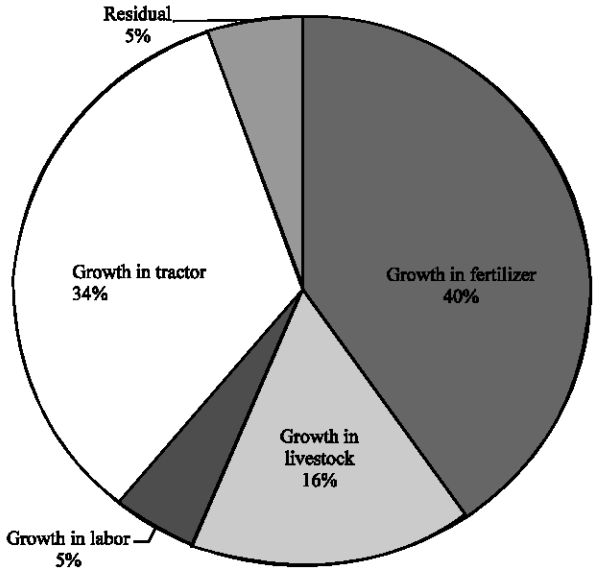

Fig. 5: Contribution of inputs in the growth of land productivity in Southeast Asia

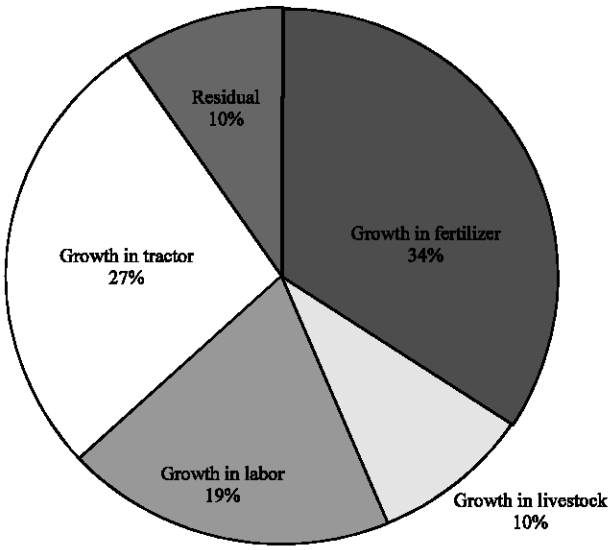

Fig. 6: Contribution of inputs in the growth of land productivity in South Asia

countries and showed that the contribution of fertilizer and tractor inputs was around 80 percent. However, the result of Solow residual in this study contradicts the previous result obtained in developing countries. The result of positive technical change in this study could be due to considering recent data and only including developing countries from Asia. Many previous studies on total factor productivity considering a mix of developed and underdeveloped countries indicated that developing countries have experienced a technological regression (Trueblood and Coggins, 2003; Nin *et al*., 2003; Luh *et al*., 2008; Nkamleu, 2004; Shariyanto and Thirtle, 2010). Thus, if estimation is done including developed countries, the magnitude of the result could be different.

The contribution of technical change to the growth in land productivity was found higher in South Asia compare to Southeast Asia as indicated by Solow residual. This could be due to land scarcity in the South Asian countries. Induced growth model proposed by Hayami and Ruttan (1971), advocated that the technical change in agriculture depends on the relative scarcity of resource endowment and factor prices. The relative scarcity of land resource in the South Asian region could be the cause of higher contribution of technical change in the overall land productivity growth.

Table 3 presents a comparative growth accounting across the countries based on the aggregate production function. Aggregate production function represents an average technology in the regions. The result indicated that average annual production growth was the highest in Vietnam and the lowest in Srilanka. Malaysia, Vietnam and Pakistan had the annual production growth rate higher than 3% while rest of the countries had annual production growth rate less than 3%. In South Asia, Pakistan had the highest production growth. The contribution of land expansion to the production growth was higher in Malaysia (41.19%), Vietnam (33%) and Indonesia (30.3%). All countries in South Asia except Pakistan and Srilanka had negative contribution of land expansion on production growth. Most of the South Asian countries, which productivity level was below than that of the Southeast Asian level, exhibited a higher growth in land productivity. Thus, result has supported the view that underdeveloped country working below the frontier has higher potential to increase productivity compare to those that are near to the frontier (Sharma *et al*., 1990). Individually, Pakistan represented the highest land productivity growth while Srilanka represented the lowest land productivity growth. Among Southeast Asian countries, Vietnam represented the highest land productivity growth.

Growth in fertilizer usage was found as the main contributor in land productivity growth in all countries except Indonesia where growth in tractor input represented the main contributor. The contribution of livestock was relatively higher in case of Indonesia, Vietnam and Pakistan. The contribution of labor was comparatively higher in all South Asian countries. Alternatively, the contribution of labor was negative in Malaysia. This indicates that the labor relocation from agriculture to non-agriculture sector is relatively higher in Malaysia. The contribution of tractor was the highest in Thailand and negative in Srilanka. Comparatively, all Southeast Asian countries except Philippines had higher contribution of tractor usage on the productivity growth.

Table 3: Land productivity and growth accounting

	Growth			Land productivity growth explained by growth			
Country	Production	Land area	Productivity	Fertilizer	Livestock	Labor	Tractor
Indonesia	2.93	0.89	2.04	0.4578	0.5796	0.152	0.8604
Malaysia	3.35	1.38	1.97	0.5775	0.2628	-0.776	0.5340
Philippines	2.11	0.21	1.90	0.5922	0.3708	0.364	0.0480
Thailand	1.884	0.006	1.878	1.2747	-0.1584	0.144	0.9708
Vietnam	3.94	1.30	2.64	1.4049	0.5076	0.076	0.6168
Bangladesh	2.19	-0.27	2.45	0.8988	0.522	0.400	0.1152
India	2.37	-0.01	2.38	0.8547	0.144	0.468	0.7500
Nepal	2.79	-0.03	2.82	0.4179	0.3024	0.860	0.3336
Pakistan	3.10	0.24	2.86	0.7749	0.6948	0.516	0.5052
Srilanka	0.50	0.07	0.43	0.3717	-0.6948	0.248	-0.0192

Source: Authors' own calculation based on the FAOSTAT, FAO (2010). Values are calculated based on the Eq. 3 and the coefficients from aggregate production function

It should be noted that the production growth based on input intensification has a certain limit in a given technological condition. Technological change is prerequisite for higher production growth. Previous studies on agricultural productivity in South Asia showed that there is a general technological regression in the South Asian agriculture that has hampered the productivity growth (Kumar *et al*., 2008). Government apathy towards investment on research and infrastructure are given as the cause of low technical change in South Asia. However, this study found a positive technical change in both South and Southeast Asia but its contribution to the productivity growth is very minimal.

CONCLUSION

Average annual production growth was higher in Southeast Asia compare to South Asia. Deconvolution of production growth into land productivity and land area indicated that only land productivity growth explains the growth in agricultural production in South Asia while land productivity as well as land expansion explains the production growth in Southeast Asia. This indicates that cultivable land is very scarce in South Asia and almost all-cultivable land is already brought under cultivation. Thus, the increasing land productivity is the only option to escalate the production growth in South Asia.

Input intensification of South and Southeast Asian countries are different and lead to a large disparity in land productivity. Every country has experienced an increase in land productivity from 1980-1990 to 1991-2007. Vietnam and Bangladesh had higher land productivity while Indonesia had the lowest land productivity. Comparatively, fertilizer use per unit land was higher in case of Indonesia, Vietnam, Bangladesh, Pakistan and Srilanka. Tractor use per unit land was comparatively higher in Thailand, Vietnam, India and Pakistan. All South Asian countries except Srilanka had higher livestock intensification compare to the Southeast Asian countries. Labor intensity was higher in Nepal, Bangladesh, Vietnam and Srilanka. Different level of input intensification across the countries could be due to difference in resource endowments, government policy and level of economic development.

Fertilizer appears to be the most important input that explains around 34% growth in land productivity in South Asia and 40% growth in land productivity in Southeast Asia. The higher contribution of fertilizer usage suggests the importance of biological technology in improving land productivity. The relative scarcity of land resource in these regions demands a higher use of fertilizer per unit land to augment land productivity. After fertilizer, tractor usage was found to be important variable for explaining growth in land productivity. The contribution of tractor usage in the growth of land productivity was higher in Southeast Asia compare to South Asia. Tractor input is relatively more important in Southeast Asia compare to South Asia due to relatively scarce labor resource. The contribution of labor was higher in South Asia while the contribution of livestock was higher in Southeast Asia. This indicates that in South Asia, a higher proportion of population depends on agriculture for daily livelihood and growth in non-agricultural sector could not absorb the agricultural labor. On the basis of the result, it can be concluded that there is a need to increase fertilizer use in these regions. The respective country report shows that a direct subsidy is used as a tool to promote fertilizer in many of these countries while some countries have totally liberalized the fertilizer marketing. There is a debate on literature whether the withdrawal of fertilizer subsidy increases or decreases the rate of fertilizer application. Obviously, liberalization increases the cost of fertilizer and ultimately cost of production. Many small farmers may find it difficult to bear the increased cost. But, the increased productivity may offset the increased cost. Further research is needed to see how these countries can augment the rate of fertilizer use.

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