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Productivity of Agricultural Labour and Land: An International Comparison

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Abstract

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This paper examines partial agricultural land and labour productivity in 1975 and 1980, for different world regions. The results suggest that land and labour productivity are higher in developed countries relative to developing countries. However, agricultural labour productivity differences are more marked than those for agricultural land productivity. The productivity values for 1975 and 1980 indicate a widening of productivity differences, more so in the case of agricultural labour than land.

The paper also proposes an alternative approach to estimating agricultural land and labour productivity. This approach, which regresses agricultural labour productivity on a given level of agricultural land productivity, suggests a narrowing of agricultural land productivity differences, relative to the initial approach, across Africa, Asia and Europe during the 1975-1980 period. A brief discussion of the agricultural development policy implications of the results concludes the paper.

1. Introduction

It is well recognized that international comparisons of production–sectoral productivities are generally constrained by the paucity of appropriate data, particularly in developing countries, and by the fact that values of production aggregates are not comparable because price and output compositions vary considerably from one country to another. Very few international comparative studies of agricultural output and productivity are available (see Paige and Bombach, 1959; Oostroom and Maddison, 1985). A recent study by Hayami and Ruttan (1985) reports large variations in agricultural land and labour productivity across 44 countries, for the years 1960 and 1980, founded on 'wheat-unit'-based agricultural production value aggregates, where one wheat-unit is

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deemed equivalent to 1 ton (2240 lb) of wheat. The wheat-units are defined on the basis of the relative prices of wheat and other commodities in particular countries. This means that the wheat relatives are computed on the basis of national rather than international prices. Recent work by the United Nations Food and Agricultural Organization (FAO, 1986) has established a conceptually sound theoretical framework for the computation of a set of international prices, expressed in a common currency unit, which is more useful than previous methods in the computation of comparable value aggregates for different agricultural sectoral commodity sub-groups across countries.[1] Thus, for the first time, the appropriate data required for international agricultural productivity comparisons are available.

This paper draws on the FAO analysis and attempts a comparison of the partial productivity of the two main factors of production used in agricultural production, viz. land and labour. These productivities are compared over time, for the period 1975–1980, for different world regions, and, in passing, for broadly defined developed and developing country groups. Regression analysis is used in an attempt to relate the principal country characteristics to observed productivity differentials. Since it is generally believed that land and labour productivities are closely related and that the level of productivity of one factor may influence the productivity of the other (Kawagoe and Hayami, 1983), an approach similar to partial correlation analysis is undertaken to adjust for such probable dependence. The results obtained by this alternative approach are contrasted with the initial agricultural land and labour productivity estimates in order to produce more meaningful partial productivity measures across world regions.

The paper is organized as follows. Section 2 describes the data and concepts used. Section 3 reports the empirical results and Section 4 examines, briefly, some agricultural policy implications and comments on the need for further research in this area.

2. Data and concepts employed

The data used in this paper are drawn mainly from the FAO report on intercountry comparisons of agricultural production aggregates (FAO, 1986) and from the FAO Production Yearbook, 1983. The production aggregates relate to 173 commodities produced across 95 different countries. Two concepts of production – total and final output – are used in the FAO reports. Total output includes livestock as well as crops but excludes the value of agricultural services. It is important to note that inclusion of livestock output will tend to

[1]A paper describing a possible alternative approach to conventional solutions of the major index number problems of agricultural output aggregation and of national currency conversion into a common value unit has recently been completed by the authors. See Prasada Rao et al. (1988).

obscure the interpretation of land productivity but a lack of detailed data necessitates the inclusion of livestock in the total output figure. Final output is calculated by deducing agricultural input costs, mainly seed and feed, from total output. In view of the similarity of the results obtained, this paper employs only the final output value aggregate. Hence the productivities are referred to as partial productivities because they are based on final output and as such do not measure the total productivity of agricultural land and labour in particular economies, which are measured using agricultural GDP. Therefore, the main consequence of using the final output concept, as opposed to agricultural GDP, is that the productivities of both agricultural land and labour are probably overstated for developed countries relative to developing countries.[2]

Utilization of FAO Production Yearbook data on the agricultural labour force, arable land in use and total agricultural production in different countries for the years 1975 and 1980 enables agricultural labour productivity to be defined as the ratio of final output/total agricultural labour force and agricultural land productivity as the ratio of final output/total arable land. The FAO report provides internationally comparable agricultural production aggregates expressed in value terms using United States dollars as a numeraire currency.[3] The comparable value figures across different countries are derived using the Geary–Khamis (G–K) index number method (Geary, 1958; Khamis, 1970, 1972). Thus, the output of country j, given by q_{1j}, q_{2j}, ..., q_{Nj} is expressed at world average prices themselves expressed in United States dollars. This implies that the value of agricultural output of country j is given by:

$$V_j^* = P_1 q_{1j} + P_2 q_{2j} + \ldots + P_N q_{Nj}$$
$$= \sum_{i=1}^{N} P_i q_{ij}$$

Similarly for country k, the value of agricultural output is given by:

$$V_k^* = P_1 q_{1k} + P_2 q_{2k} + \ldots + P_N q_{Nk}$$
$$= \sum_{i=1}^{N} P_i q_{ik}$$

Given the G–K method, the prices $P_1, P_2, \ldots, P_N$ may be interpreted as world or world average prices. Moreover, these output values are obtained using a

[2]Agricultural GDP values are as yet unavailable primarily because of a lack of data on non-agricultural inputs used in agricultural production, particularly in many developing countries in Africa and Asia.

[3]The FAO uses the concept of 'international dollars' in place of United States dollars although the U.S.A. is used as the base country in its comparisons. This reflects the fact that the FAO results are invariant to the choice of the base country and its currency. However, for easy understanding US$ is used in the text.

single set of prices and may therefore be regarded as constant price aggregates. With the value aggregates all expressed in US$ they are also additive across countries. Thus, regional value aggregates (V^*_R) and world value aggregates (V^*_W) are given by:

$$V^*_R = \sum_{j \in R} V^*_j$$

$$V^*_W = \sum_{j=1}^{M} V^*_j$$

The value aggregates for 1980 are deflated using the well-known Fisher index to yield aggregates at 1975 price levels.

The following analysis is, therefore, based on common sub-sets of countries and agricultural commodities for the period 1975 and 1980. The 95 countries are split into 66 developing and 29 developed countries for which data are available in the FAO reports. Lists of the relevant developed and developing countries together with data on final output, the agricultural labour force and available agricultural land, for 1975 and 1980, are given in Table A in the appendix. Using final output value aggregates, Tables 1 and 2 highlight regional or intercontinental variations. The regional classifications adopted are for Africa, Asia, Europe and 'Others'. A similar exercise is conducted in Tables 3 and 4 using a log-linear regression specification to hold constant the influence of agricultural land productivity on agricultural labour productivity (and vice-versa).

3. Analysis of results

With respect to regional agricultural labour productivity, Table 1 shows that the latter is about US$416 in Africa relative to US$1402 and US$6383 in Asia and Europe, respectively. Relative to Africa, agricultural labour productivity is thus, respectively, about 3 and 16 times greater in Asia and Europe. However, the variation within Asia is greater than within the Africa and Europe country-

TABLE 1

Agricultural labour productivity across world regions (US$ per unit of labour)

Region	No.	1975		1980 (1975 prices)	
		Mean	CV (%)	Mean	CV (%)
Africa	13	415.8	75	422.3	79
Asia	8	1401.6	170	1571.6	168
Europe	17	6382.5	75	8765.6	83
Others	57	3113.2	210	3585.2	219
All	95	3185.0	180	3909.8	186

CV, coefficient of variation (standard deviation/mean × 100).

TABLE 2

Agricultural (arable) land productivity across world regions (US$ per ha of arable land)

Region	No.	1975		1980 (1975 prices)	
		Mean	CV (%)	Mean	CV (%)
Africa	13	251.0	50	271.6	53
Asia	8	927.1	84	992.4	79
Europe	17	1325.8	104	1471.7	101
Others	57	619.5	176	646.4	164
All	95	721.4	151	771.9	144

groups. For the Other countries group the mean level of agricultural labour productivity is about one-half of that in Europe. As could perhaps be expected, the Other countries group produces the largest variation in agricultural labour productivity since the group incorporates heterogeneous developed and developing countries of North and South America. In terms of changes in agricultural labour productivity over the 1975–1980 period, Africa remained much the same, Asia improved by around 12%, Other countries by some 15% while Europe improved most, by some 37%.

Table 2 shows that regional agricultural land productivity is also lowest in Africa, at US$251, followed by Other countries, Asia and Europe, recording, respectively, US$620, US$927 and US$1326. Relative to Africa, agricultural land productivity is about 3 and 5 times greater in Asia and Europe. The variation is greater in both Asia and Europe than in Africa. With respect to increases in agricultural land productivity over the 1975–1980 period, Europe ranks first, with an increase of some 11%, followed by Africa and Asia, with increases of around 8% and 7%, on average, then by Other countries, recording an increase of some 4%. Therefore it appears that the land productivity differences across world regions and, by implication from the above country groupings, between developed and less developed countries, have widened less markedly relative to the labour productivity differences over the period 1975–1980.

3.1. An explanation of productivity differences

While Tables 1 and 2 provide a general outline of productivity differences between developed and developing countries, and across different continents, it is more useful to identify the major factors that influence variability in the levels of productivity across world regions. The estimated regression results explaining inter-regional variations in agricultural labour and land productivity are reported, respectively, in equations (1) and (2):

$$\ln Y_{LB} = \underset{(24.88)^*}{5.76} + \underset{(7.22)^*}{0.64 \ln X_1} \qquad (1)$$

$$- \underset{(-4.30)^*}{0.45 \ln X_2} + \underset{(3.28)^*}{0.64 D_1} - \underset{(-3.34)^*}{0.74 D_2} + \underset{(0.17)}{0.05 D_3}$$

$$\bar{R}^2 = 86.7\%; M = 55$$

$$\ln Y_{LD} = \underset{(24.88)^*}{5.76} - \underset{(-3.99)^*}{0.36 \ln X_1} \qquad (2)$$

$$- \underset{(-4.30)^*}{0.45 \ln X_2} + \underset{(3.28)^*}{0.64 D_1} - \underset{(-3.34)^*}{0.74 D_2} + \underset{(0.17)}{0.05 D_3}$$

$$\bar{R}^2 = 61.1\%; M = 55$$

where Y_{LB} and Y_{LD} represent land and labour productivity, X_1 is arable land/agricultural labour force, X_2 is AgGDP/GDP, D_1, D_2 and D_3 are, respectively, dummy variables for Europe, Africa and Asia, the 't' ratio is in parentheses, and * indicates statistical significance at the 5% level. The relevant data are available for only 55 countries (Appendix) and the data on GDP and AgGDP are drawn from United Nations (UN, 1982).

Equation (1) explains about 87% of the variation in agricultural labour productivity. Agricultural labour productivity is positively related to the land/labour ratio (X_1) but negatively to the AgGDP/GDP ratio (X_2). This suggests that agricultural labour productivity is higher in countries where more land per unit of labour is available. Thus land scarcity does not necessarily mean higher agricultural labour productivity. It is well known that a higher AgGDP/GDP ratio is a characteristic of developing countries relative to developed countries. These regression results, therefore, suggest that agricultural labour productivity is generally lower in developing countries relative to developed countries. In this vein, Kawagoe et al. (1985, 1988) report that scale economies partly explain this difference in agricultural labour productivity between developed and developing countries. It should also be noted, however, that Moll (1988) raises some questions about the methods Kawagoe et al. use to obtain their results.

The sign and statistical significance of the regional dummy variables for Africa, Asia and Europe reinforce the preceding commentary on Table 1, except in the case of Asia. This implies that if the land/labour ratio is considered, agricultural labour productivity in Asia is not statistically different from that in the other regions. Perhaps this result is a reflection of the relatively greater number of agricultural labour-surplus economies in Asia compared to the other world regions.

Equation (2) suggests that agricultural land productivity is negatively related to the land/labour ratio (X_1) and to the AgGDP/GDP ratio (X_2). That is, land availability, captured by the variable land per unit of labour (X_1), is neg-

atively related to land productivity. This suggests that, in general, land scarcity is associated with higher land productivity. It is interesting to note that land scarcity was not related to higher labour productivity in the previous regression. However, land productivity is lower in countries characterized by a higher share of AgGDP in GDP, i.e. in developing countries. Agricultural land productivity, as indicated in Table 2, is higher in Europe and lower in Africa relative to other countries. Agricultural land productivity in Asia is statistically no different from other countries.

3.2. An alternative approach

It is possible to use an alternative method of obtaining agricultural land and labour productivity comparisons. The justification for using this alternative approach stems from the strong probability that agricultural labour productivity (land productivity) may not be free from the influence of agricultural land productivity (labour productivity). The alternative approach adopted here is similar to the partial regression technique. Agricultural labour productivity is regressed on agricultural land productivity and the residuals are saved. These residuals represent levels of agricultural labour productivity when the land productivity effect is completely removed. Since this approach is not quite realistic these labour productivity levels are examined for different countries when land productivity level is kept at a given level. This paper simply assumes the geometric average to be the given level. A similar procedure is followed for agricultural land productivity.[4] The resultant, comparable agricultural labour and land productivity values are presented in Tables 3 and 4.[5]

Table 3 shows that in terms of regional estimates, if the land productivity effect is removed from agricultural labour productivity then agricultural labour productivity is higher in the Other countries group – including both North and South American countries – relative to Europe, and also that agricultural labour productivity is higher in Africa than in Asia. In a sense this implies that land in Europe and Asia is relatively more productive than in the Other countries group and in Africa. Hence, the ratio by which agricultural labour productivity in Europe is higher relative to that in Africa is now 3 to 4 times compared to about the 15 times reported in Table 1. In terms of the increase in agricultural labour productivity over the 1975–1980 period, Europe increased most, by about 19%, followed by Africa, by about 10%, and Asia, by

[4]The magnitudes of the adjusted productivity levels are obviously conditional on the levels chosen. Since this exercise selects the geometric mean as the given level, caution should be exercised in interpreting the results. The absolute values may not be very meaningful. Thus the analysis is restricted to the relative magnitudes of the adjusted productivities.

[5]The logarithmic form is selected in preference to the linear form since it produces a better fit. Further, the logarithmic form has the additional advantage of ensuring non-negative figures for the adjusted productivities. This cannot be guaranteed in the case of the linear form.

TABLE 3

Agricultural labour productivity holding constant the effect of agricultural land productivity (US$ per unit of labour)

Region	No.	1975		1980 (1975 prices)	
		Mean	CV (%)	Mean	CV (%)
Africa	13	855.3	96	946.2	97
Asia	8	640.5	96	663.0	90
Europe	17	2747.9	59	3283.0	56
Others	57	3387.9	242	4047.4	253
All	95	2699.5	240	3201.3	252

TABLE 4

Agricultural land productivity holding constant the effect of agricultural labour productivity (US$ per ha of arable land)

Region	No.	1975		1980 (1975 prices)	
		Mean	CV (%)	Mean	CV (%)
Africa	13	385.3	54	423.4	57
Asia	8	964.9	68	1024.5	60
Europe	17	719.7	73	744.1	71
Others	57	547.6	84	587.5	84
All	95	591.4	81	629.9	80

about 4%. Clearly, as noted earlier, the agricultural labour productivity gap widened during the 1975–1980 period.

Table 4 indicates that agricultural land productivity at the mean level is highest in Asia followed by Europe, Other countries and Africa. Comparison with Table 2 suggests that agricultural land productivity is relatively overstated in Europe due to higher labour productivity. Perhaps agricultural labour is more skilled in Europe than elsewhere. This result could of course also reflect the influence of high protection levels in the European Economic Community. In terms of growth in agricultural land productivity over the 1975–1980 period, Africa and Asia, with growth rates of 9% and 6%, respectively, did slightly better than the growth rate of 3% for Europe, thereby reducing the agricultural land productivity gap across regions.[6]

[6]The authors repeated the regression analysis conducted in Section 3.1 for agricultural labour and land productivity values obtained via the alternative approach of Section 3.2. Since the results obtained were very similar to those obtained from the regressions in Section 3.1 they are neither reported here nor discussed any further.

4. Some policy implications and conclusions

A comparison of partial agricultural labour and land productivity values in comparable units, i.e. United States dollars, suggests wide variation in agricultural productivity across countries. Agricultural labour productivity differences are more marked than agricultural land productivity differences. In general terms, agricultural labour and land productivity are lowest in Africa and highest in Europe. Over the period 1975–1980, the disparity between developed and developing countries increased more in the case of agricultural labour than in land productivity.

An alternative method of obtaining comparable productivity values yields some different results. The disparity between developed and developing countries is less marked than initially reported; agricultural labour productivity is lower in Asia than in Africa; agricultural labour productivity differences between developed and developing countries have widened, whereas agricultural land productivity differences have narrowed, over the 1975–1980 review period. Clearly, agricultural labour and land productivity affect each other and the effect of one on the other must be held constant in order to produce meaningful partial productivity measures across countries or regions. A tentative conclusion is that agricultural land productivity is influenced more by agricultural labour productivity than vice-versa.

From an agricultural policy perspective there is plenty of scope to introduce measures in the interests of increasing agricultural labour and land productivity, but more so labour productivity, in developing countries. Agricultural labour productivity can be increased by improved health and education programmes. Land productivity could be increased by improved irrigation schemes, soil-erosion prevention programmes and by the use of modern strains of crops and fertilizers. It is significant that the alternative approach adopted in this paper suggests that increasing labour productivity would in turn increase land productivity as conventionally measured. This result further suggests that relatively greater emphasis on agricultural development policy should be placed on health and education policies in developing countries.

Finally, although this paper presents original productivity measures relating to agricultural land and labour, they are still preliminary estimates. Further research should concentrate on developing productivity measures for sectors other than agriculture, a proper conceptualization of productivity when more than one factor is involved and extension of the above productivity measures to include agricultural gross domestic product based productivity measures and comparisons.

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APPENDIX

Country	1975			1980		
	Final output (US$ million)	Agricultural labour (million)	Agricultural land (million ha)	Final output (US$ million)	Agricultural labour (million)	Agricultural land (million ha)
Africa						
1 Algeria[a]	1 137.2	2.0	7.5	1512	2.1	7.5
2 Angola[a]	650.8	1.1	3.5	698	1.2	3.5
3 Burundi[a]	385.1	1.6	1.3	570	1.6	1.3
4 Cameroon[a*]	869.9	3.0	6.4	1277	3.2	6.9
5 Chad[a]	52.3	1.4	3.0	494	1.4	3.1
6 Egypt[a]	3 893.4	5.3	2.8	5737	5.9	2.4
7 Ethiopia[a*]	078.2	10.1	13.7	3226	0.4	13.9
8 Ghana[a]	1 032.8	2.0	2.7	1264	2.2	2.8
9 Ivory Coast[a*]	1 140.2	2.9	3.5	1981	3.3	3.9
10 Kenya[a]	1 241.4	4.3	2.2	1936	4.9	2.3
11 Madagascar[a]	1 066.2	3.3	2.8	1551	3.5	3.0
12 Malawi[a*]	407.7	2.1	2.3	666	2.2	2.3
13 Mali[a]	478.1	3.1	1.8	751	3.3	2.0
14 Morocco[a*]	1 379.4	2.4	7.7	2276	2.7	7.9
15 Mozambique[a]	583.0	2.7	3.1	877	2.9	3.1
16 Nigeria[a*]	5 175.1	15.3	30.0	7702	16.2	30.4
17 Senegal[a*]	700.3	1.6	5.0	480	1.8	5.2
18 Somalia[a]	486.5	1.0	1.1	736	1.4	1.1
19 South Africa	4 059.1	2.8	13.4	6305	3.0	13.6
20 Sudan[a]	2 040.5	4.0	12.2	2867	4.5	12.4
21 Tanzania[a*]	1 516.9	5.6	5.0	2589	6.2	5.2
22 Tunisia[a*]	813.7	0.6	4.9	1164	0.6	4.7
23 Uganda[a]	1 623.9	4.0	5.4	1884	4.4	5.7
24 Zaire[a]	1 678.6	8.3	6.1	2470	8.9	6.3
25 Zimbabwe[a*]	752.2	1.3	2.5	1187	1.4	2.5
*North and Central America***						
26 Canada*	7 684.3	0.6	43.4	1 1583	0.5	45.2
27 Costa Rica[a*]	520.8	0.2	0.5	780	0.3	0.6
28 Cuba[a]	1 709.4	0.8	3.1	2739	0.7	3.2
29 Dominican Rep.[a*]	744.3	0.8	1.3	1120	0.8	1.4
30 El Salvador[a*]	560.9	0.7	0.7	821	0.8	0.7
31 Guatemala[a*]	820.1	1.1	1.6	1355	1.2	1.8
32 Haiti[a]	451.3	1.8	0.9	638	1.9	0.9
33 Honduras[a*]	382.6	0.6	1.6	732	0.7	1.8
34 Mexico[a]	7 485.8	7.0	23.2	1 2257	7.2	23.3
35 Nicaragua[a]	547.8	0.3	1.2	559	0.4	1.2
36 U.S.A.*	77 410.3	2.6	188.2	11 4293	2.2	190.6
*South America***						
37 Argentina[a*]	10 510.8	1.5	34.5	1 6166	1.4	35.2
38 Bolivia[a*]	559.3	0.9	3.3	807	0.9	3.4
39 Brazil[a*]	19 302.5	14.3	60.4	3 2136	14.6	71.1
40 Chile[a*]	1 374.9	0.7	5.3	1963	0.7	5.5
41 Colombia[a*]	3 621.9	2.2	5.3	5947	2.1	5.6

APPENDIX (*continued*)

Country	1975			1980		
	Final output (US$ million)	Agricultural labour (million)	Agricultural land (million ha)	Final output (US$ million)	Agricultural labour (million)	Agricultural land (million ha)
42 Ecuador[a]*	1 163.2	1.0	2.6	1719	1.1	2.5
43 Paraguay[a]*	624.4	0.4	1.2	1074	0.5	1.9
44 Peru[a]*	1 545.5	1.8	3.2	2031	1.9	3.4
45 Uruguay[a]*	1 045.8	0.1	1.4	1497	0.1	1.4
46 Venezuela[a]*	1 504.1	0.8	3.6	2362	0.9	3.8
Asia						
47 Afghanistan[a]	1 369.2	3.8	8.0	1896	3.8	8.0
48 Bangladesh[a]	5 018.4	22.4	9.1	6841	25.2	9.1
49 Burma[a]	2 783.1	7.1	10.0	4550	7.2	10.0
50 China[a]	75 218.1	274.6	99.7	10 9933	273.7	99.5
51 India[a]*	44 851.6	161.4	168.0	6 2860	166.9	168.3
52 Indonesia[a]*	8 781.4	29.4	19.7	1 4546	30.4	19.5
53 Iran[a]	3 488.5	4.0	16.4	5167	4.1	13.7
54 Iraq[a]	917.5	1.2	5.3	1407	1.3	5.4
55 Israel*	724.4	0.1	0.4	1090	0.1	0.4
56 Japan*	11 427.2	8.5	5.1	1 4681	6.6	4.9
57 Kampuchea[a]	483.1	2.1	3.0	502	1.8	3.0
58 Korea, N.[a]	1 721.2	3.5	2.1	2733	3.7	2.2
59 Korea, S.[a]*	3 118.3	5.8	2.2	4412	5.6	2.2
60 Malaysia[a]	1 890.8	2.2	4.2	3541	2.3	4.3
61 Nepal[a]	993.7	5.9	2.3	1252	6.4	2.3
62 Pakistan[a]*	6 326.4	11.8	19.8	1 0008	12.6	20.3
63 Phillipines[a]*	4 299.0	7.5	9.8	6957	7.7	10.9
64 Sri Lanka[a]*	1 002.1	2.5	2.1	1730	2.7	2.1
65 Syria[a]	1 174.5	1.0	5.5	2381	1.1	5.7
66 Thailand[a]	5 651.4	14.7	16.7	8972	15.7	18.3
67 Turkey[a]	8 499.2	10.5	27.7	1 3346	10.0	28.5
68 Vietnam[a]	3 384.6	16.4	6.2	5205	17.3	6.6
Europe						
69 Austria*	1 907.4	0.4	1.6	2774	0.3	1.6
70 Belgium-Luxembourg	2 569.9	0.2	0.9	3599	0.1	0.8
71 Bulgaria[a]	2 628.8	1.9	4.3	3621	1.5	4.2
72 Czechoslovakia	3 547.2	1.0	5.3	5220	0.8	5.2
73 Denmark*	2 533.0	0.2	2.7	3803	0.2	2.7
74 Finland*	1 105.1	0.4	2.5	1561	0.3	2.4
75 France	18 355.2	2.4	19.0	2 8810	2.0	18.6
76 German D.R.	4 399.2	1.0	4.9	6180	0.8	5.0
77 Germany, Fed. Rep.*	12 340.8	1.5	7.6	1 8500	1.2	7.5
78 Greece*	3 265.4	1.6	3.9	4933	1.5	3.9
79 Hungary*	3 647.1	1.0	5.5	5316	0.8	5.3
80 Ireland*	1 790.9	0.3	1.0	2911	0.3	1.0

To be continued

APPENDIX (*continued*)

Country	1975			1980		
	Final output (US$ million)	Agricultural labour (million)	Agricultural land (million ha)	Final output (US$ million)	Agricultural labour (million)	Agricultural land (million ha)
*Oceania***						
92 Australia	9 071.6	0.4	42.4	1 2493	0.4	44.2
93 New Zealand	3 219.8	0.1	0.4	5211	0.1	0.5
94 Papua New Guinea[a]	399.5	1.2	0.4	620	1.3	0.4
95 U.S.S.R.**	56 409.8	26.0	232.2	7 8823	22.0	232.0

[a]Developing countries marked (66).
Countries in regression analysis marked * (55). 'Other' areas in tables and analyses marked **.
Sources: FAO Production Yearbook (1983) and FAO (1986).

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