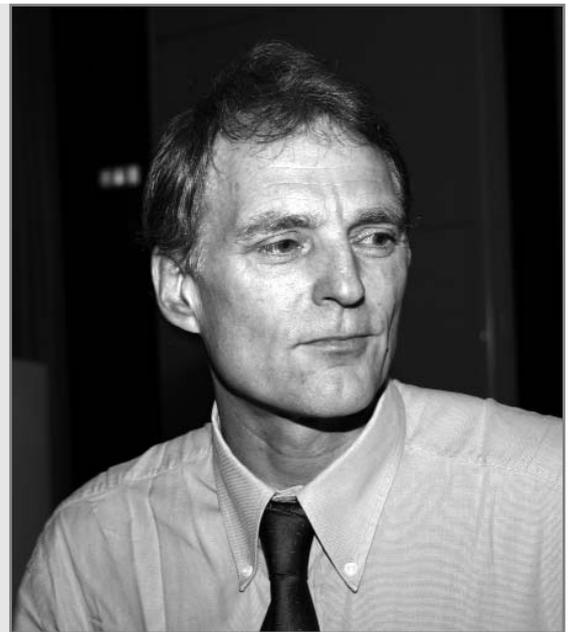24th Annual Ralph Melville Memorial Lecture delivered at the Annual General Meeting held at the Royal Over-Seas League on 13th December 2006.

Globalization and Smallholder Farmers

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Introduction

Globalization and the associated liberalization of world trade are widely perceived as a major threat to developing countries in general and to smallholder farmers in particular. Drawing on global agricultural statistics compiled by FAO and on detailed analyses of household information carried out under the DFID-funded Pro-Poor Livestock Policy Initiative, this paper attempts to review the above perception. The paper is divided into three sections. The first section provides a broad global overview of the endowment with agricultural land in relation to human populations by major geographical region and its implications in shaping agricultural development. The following section presents detailed information on sources of income of rural households in Vietnam and India by household 'types' showing how livelihood systems are adapting in the face of land shortage and illustrates the growing importance of non-agricultural versus agricultural income for rural livelihoods. The third and last section outlines characteristics and consequences of globalization, patterns of trade in agricultural commodities and aims to elucidate how globalization influences the above adaptation process and thereby impacts on rural development and smallholder producers.

Global overview of agriculture

Globally, approximately 5 billion hectares are classified as land used for agriculture (agricultural land comprises native as well as cultivated pasture, land used for annual crops and land under perennial crops but not forest). The industrialized countries account for around one quarter of all agricultural land, for which, at the global scale, there is little scope for expansion, while of the total global population of approximately 6.2 billion, only about 15% reside in industrialized countries. Conversely, South, East and Southeast Asia only account for about one fifth of global agricultural land, while carrying more than half of the world's human population. The inequality in land distribution becomes even more marked when agricultural land is related to agricultural population rather than total population. Global agricultural population is estimated at around 2.6 billion people, of which nearly three quarters live in South, East and Southeast Asia while industrialized countries only account for a mere one percent of global agricultural population. These proportions are detailed in the table below.

Region	1	2	3
Industrialized Countries	24	15	1
Transition Countries	13	7	2
Latin American and Caribbean	16	9	4
Sub-Saharan Africa	18	10	15
North Africa and Near East	9	7	5
South Asia	4	22	28
East and Southeast Asia	16	30	45

1 Proportion of agricultural land (%)
2 Proportion of population (%)
3 Proportion of agricultural population (%)

Trends in agricultural population and availability of agricultural land per agricultural worker are depicted in Figures 1 and 2. As can be seen in Figure 1, over the past 40 years, agricultural population has been decreasing in industrialized and transition countries, remained more or less stable in Latin America and the Caribbean and the Near East and North Africa and has grown in sub-Saharan Africa, South, East and Southeast Asia. Agricultural land per person employed in agriculture has naturally followed the opposite trend and currently ranges from a high of 33 ha in industrialized countries to a low of around half of a hectare in South, East and Southeast Asia (Figure 2). Thus, over these two extremes, agricultural development has been shaped by widely differing necessities. The overriding force driving agricultural development in industrialized countries was the need to increase labour productivity, while in Asia, for farmers to be able to make a living from their small plot of land, increasing land productivity, i.e., value of output per hectare was, and remains, paramount.

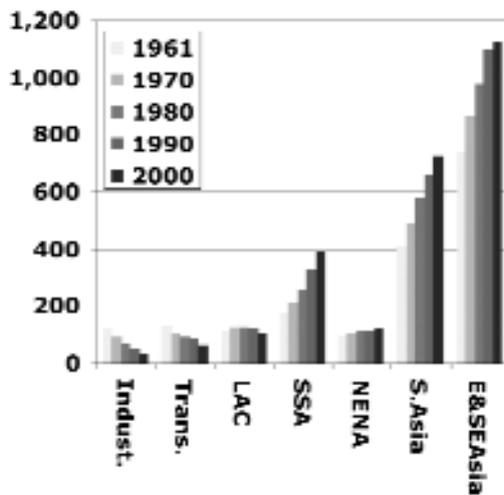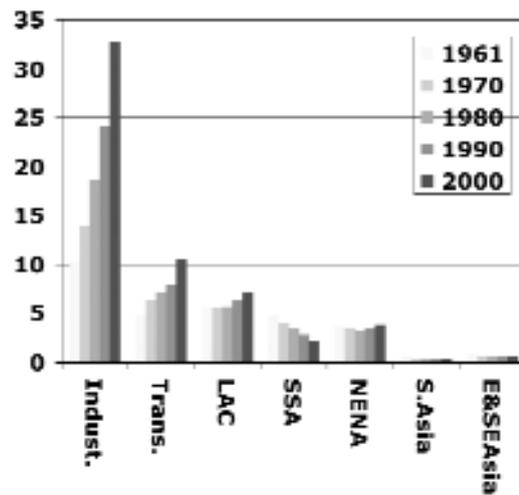**Figure 1.** Development of agricultural population (million) by world region

Figure 2. Development of agricultural land (ha) per person in agriculture by world region

In 2000, the value of global agricultural production amounted to 1.3 trillion International $, of which industrialized countries produced 28%, transition countries 7%, Latin America and the Caribbean 11%, sub-Saharan Africa 6%, the Near East and North Africa 5%, South Asia 14% and East and Southeast Asia 29%. Trends in value of agricultural production and per agricultural worker over the past 40 years are shown in Figures 3 and 4.

Figure 3. Development of agricultural output value (Int$) per worker by world region
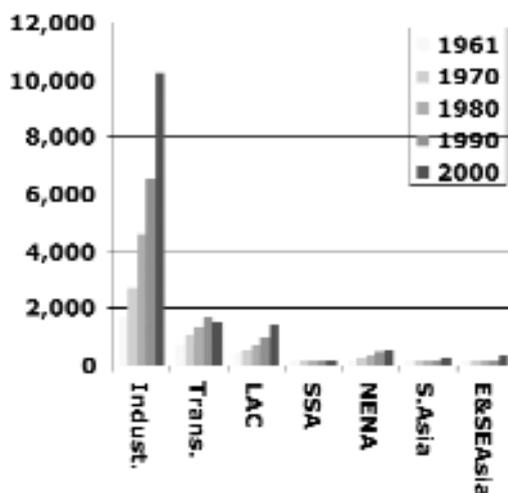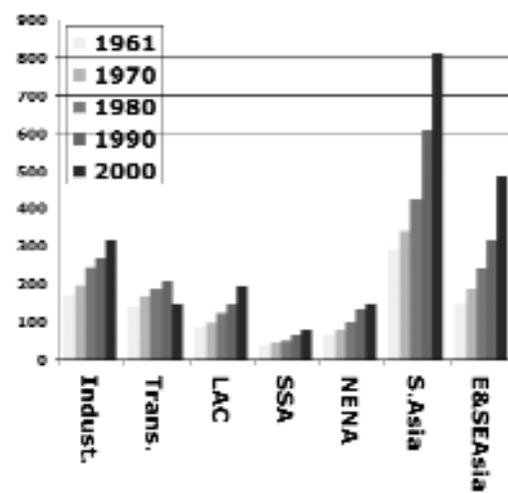
Figure 4. Development of agricultural output value (Int$) per hectare by world region

One way for farmers to increase the value of agricultural output per hectare is by investing in livestock, which provide high value commodities (e.g., milk, eggs) and at the same time enhance crop output by providing fertilizer and draft power. In most regions of the world, livestock numbers are growing at a faster rate than agricultural populations and in East and Southeast Asia, for example, livestock products currently constitute around 30% of the value of agricultural produce, up from about 12% in 1960. By contrast, in industrialized countries, the contribution of livestock to the value of agricultural output has remained stable at slightly above 50% since 1960 and in Western Europe livestock numbers are on the decline.

The next section attempts to provide some insights into the adjustments that rural households make to counteract the relative decline of agricultural land in view of alternative livelihood opportunities by detailed analysis of case studies from Vietnam and India.

Rural income sources: examples from Vietnam and India

In Vietnam, based on data from the 1998 Living Standards Measurement Survey (LSMS), the average annual income of rural households is in the order of US$ 750 (the national poverty line is set at US$ 650), of which around 60% is derived from agriculture (this includes consumption of home produced goods). More detailed analysis of the data, however, reveals considerable heterogeneity in rural households. Based on differences in the proportion of income derived from agricultural *versus* other sources ('diversified' *versus* agricultural households) and the proportion of agricultural produce marketed (commercial, semi-commercial, subsistence agriculture), five household 'types' could be identified:

1   'diversified' households (deriving more than 50% of their income from non-agricultural activities), with commercial agricultural activities (more than 75% of agricultural produce sold),

2   'diversified' households with semi-market-oriented agriculture (between 25 and 75% of produce sold),

3   commercial agricultural households,

4   semi-commercial agricultural households,

5   subsistence agricultural households (less than 25% of agricultural produce sold).

Average income by source of these five household types is shown in Figure 5 and regional differences in frequency of household types are displayed in Figure 6.

Figure 5. Average annual household incomes (in USD) of rural Vietnamese households by source
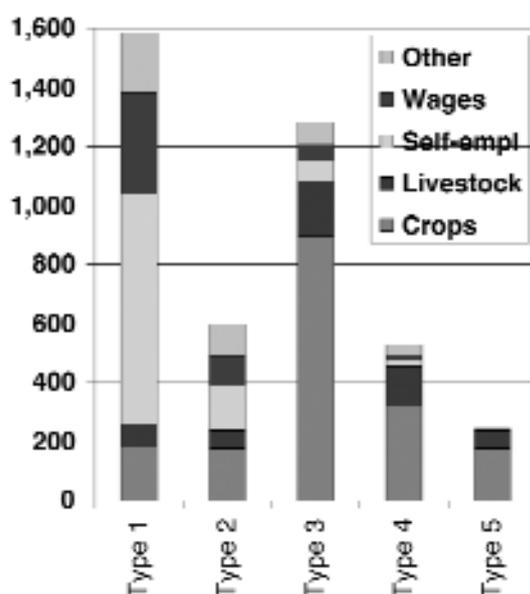
Figure 6. Frequency of household types by region in Vietnam
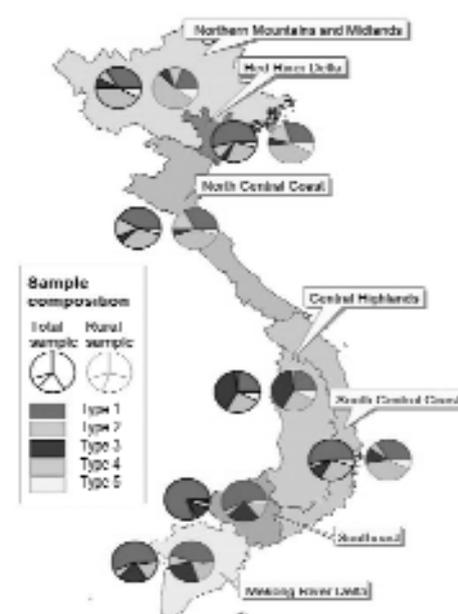
'Diversified' households, i.e., households earning most of their income from non-agricultural sources, constitute 45% of all rural households nationally and 'type 1' households are the most common type of household (35%) in rural Vietnam, also achieving the highest average annual income. The second most common type of household are 'semi-commercial' agricultural households, constituting around one third of all rural households, while

commercial and subsistence agricultural households make up 17% and 6% of rural Vietnamese households. As can be seen in Figure 6, semi-commercial agricultural households dominate in rural Northern and Central Vietnam, while in the more developed Southeast and Mekong river delta commercial agricultural households dominate among agricultural households with non-agricultural households constituting the majority of rural households.

For India, analysis of income and income sources of 'typical' dairy households, categorised into 'landless', the predominant 'small-scale' (1 ha of land or less) and 'larger' (>1 ha land) dairy producers was carried out in Haryana, Orissa and Andhra Pradesh. The analysis revealed that landless dairy farmers obtain most (70% or more) of their income from off-farm work, that farmers owning 'larger' farms obtain most (75% or more) of their income from their farm, while small-scale farmers present a mixed picture (Figure 7). Similar patterns were found in Pakistan and Bangladesh.

Figure 7. Sources of income for typical landless (1-4), small-scale (5-9) and 'large' (10-14) Indian dairy farms
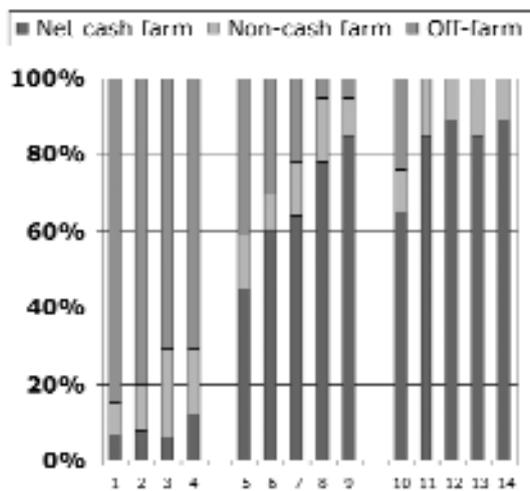
Figure 8. Return from labour (US$/100 hours) in the dairy enterprise in relation to the local wage rate (zero line) for typical landless (1-4), small-scale (5-9) and 'large' (10-14) Indian dairy farms
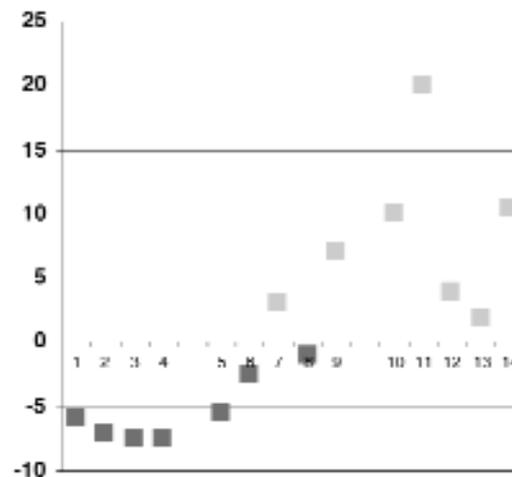
As can be seen in Figure 8, return from labour in the dairy enterprise for landless dairy farmers is below the local wage rate in all four cases, but above the local wage rate in all 'larger' farms, while again the picture is mixed for the group of small-scale dairy farms. For landless households it thus seems that engagement in dairy farming is a means to allocate excess family labour, for which currently there is no demand on the labour market, to productive use, despite the fact that the labour market provides their main source of income. Farmers endowed with productive assets above a critical threshold appear to be capable of managing these to obtain returns from their labour above those obtained in the labour market, and therefore focus on their farm as main means of securing their livelihood, at times generating non-family on-farm employment opportunities. Small-scale dairy farmers, as mentioned above, present a mixed picture, some achieving returns from labour above those prevailing in the labour market while others, as is the case for landless dairy farmers, achieve very low returns from labour and would benefit from an expanding labour market.

The conclusions that can be drawn from these data are that agriculture (still) is the main source of income in rural areas and that most rural households derive some income from agricultural activities, but that non-agricultural income is increasingly important and households are diversifying in response to economic forces. The direction of this diversification is determined by a household's initial endowment with productive assets, its access to credit, and market and employment opportunities. Variation in productivity, in terms of land, livestock and labour productivity between households is large; however, on-farm labour productivity of resource-poor farming households is often extremely low. For these low-resource households the rural labour market is crucial for improving returns for labour and hence the level of income. Broad-based agricultural growth, best mediated through farms above a critical asset level (still relatively small though), represents a major stimulus for the development of the rural labour market both through horizontal (consumption) and vertical (production) linkages. The next section addresses the role that 'globalization' may play in the process of rural household adaptation.

Globalization and its possible impacts on smallholders

The current globalization wave is characterized by increasing mobility of capital, goods and services resulting in accelerated rates of international knowledge/technology transfer and expanding non-farm employment opportunities. Concomitant developments comprise the establishment of complex supply chains of composite products combining inputs of diverse geographical origin and a strong push towards harmonization of standards, of which sanitary standards for food products are of particular relevance for agricultural producers, processors and retailers.

In 2000, global exports of agricultural commodities amounted to US$ 415 billion in value terms (with US$ 76 billion of livestock products), thereby only accounting for around a third of agricultural production and less than three percent of overall global trade (US$ 15.5 trillion). As can be seen in the table below, most trade in agricultural commodities and particularly in livestock products takes place between industrialized countries. For agricultural products as a whole, Latin America and the Caribbean is the major net exporting region, North Africa and the Near East the major net importing region while for the other regions agricultural exports and imports are more or less balanced. With respect to livestock products, industrialized countries are significant net exporters while East and Southeast Asia joins North Africa and the Near East as a net importing region.

| Region	Proportion of agricultural exports (%)	Proportion of agricultural imports (%)	Proportion of livestock exports (%)	Proportion of livestock imports (%)
Industrialized Countries	67	66	84	72
Transition Countries	4	6	5	5
Latin American and Caribbean	12	7	6	7
Sub-Saharan Africa	3	2	<1	1
North Africa and Near East	3	7	1	6
South Asia	2	2	<1	<1
East and Southeast Asia	10	10	4	9

Given that the demand for food is virtually saturated in industrialized countries while is it rapidly growing in most developing countries and that most food is produced in the region where it is consumed, the food industry, as other industries, will increasingly invest in developing countries. Investors will target areas where demand density is high, the investments are 'safe' and a basic infrastructure is in place. Thus, densely populated Asia will be preferred over sub-Saharan Africa, and within Africa, more densely populated coastal and temperate regions will be preferred over remote, semi-arid regions.

Although it is generally assumed that greater 'openness' can confer aggregate growth benefits, the detailed effects of economic openness on growth, among many economy-wide trends, are not easy to anticipate. The above assumption was tested for Vietnam, using an economy-wide general equilibrium model, linked to detailed occupational choice models, where individual household responses to external policies and events are modelled. The model is dynamic and covers the period 2004 to 2010. Three policy scenarios were assessed against a dynamic baseline situation, representing 'business as usual' or no change in status-quo policies. The first alternative scenario assumes a policy of unilateral liberalization by Vietnam (removal of all import tariffs and export subsidies), the second alternative considers full global liberalization (same as previous scenario plus removal of all tariffs by other countries), while the third alternative scenario assumes removal of all export subsidies but reduced cuts in tariffs by developing countries and no cuts in tariffs by least developed countries (Doha Special Differential Treatment – 'Doha STD').

Changes in poverty incidence by province relative to the baseline scenario are displayed in Figure 9. Of the three alternative scenarios, 'global liberalization' is expected to provide the largest benefits in terms of poverty reduction, closely followed by 'unilateral liberalization', while in the Doha SDT, in some provinces poverty is reduced while in others it is increased compared to the 'business as usual' baseline scenario. The finding that 'unilateral liberalization' is expected to provide economic benefits supports the view that, at least in the case of Vietnam, greater 'openness' leads to efficiency gains, which do filter through to a large proportion of the

population, while the limited impact of the 'Doha STD' scenario indicates that the remaining policy distortions prevent major adjustments from occurring.

Figure 9. Predicted changes in poverty incidence in Vietnam by province for three liberalization scenarios relative to a 'business as usual' baseline projection

a *(see below)*   b *(see below)*   c *(see below)*
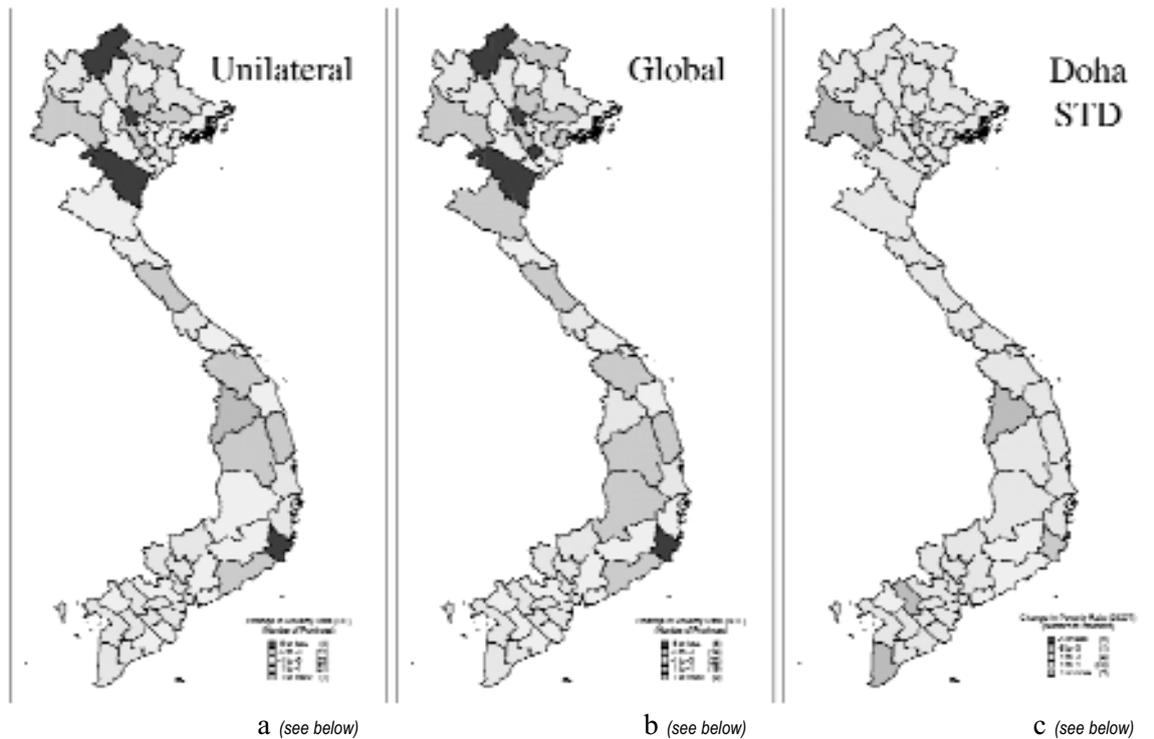
The temporal pattern of income changes and reflects extensive adjustments in both the rural and urban sectors. Generally speaking, urban households benefit monotonically from greater outward orientation, following the customary logic about increasing domestic efficiency, competitiveness, and falling consumer prices. The result for rural households is qualitatively and quantitatively different, however, and there is a distinct 'J' curve adjustment, where rural incomes are initially stagnant or even declining and then rise later in the simulation interval. Closer examination of the economic fundamentals explains this process. Initially, rural households encounter declining prices for staple products that face increased international competition (primarily rice). In response to this, they diversify production over time. Simultaneously, urban incomes are rising and goods, such as livestock, with higher income elasticities become significantly more profitable. In this way, rural incomes recover and show above-baseline appreciation over the remainder of the simulation period.

The interactions between agriculture and the rest of the economy are extremely complex and it is difficult to make predictions for particular cases without comprehensive and at the same time detailed economic models. However, it does appear that 'globalization', shaped by appropriate policies, can counteract the pauperizing effect of land scarcity on agriculture-based societies by facilitating knowledge, technology and capital transfer required to increase agricultural productivity of 'full-time' farmers and promote rural industrialization, thereby generating rural non-farm employment alternatives for marginal smallholders.

Key to legends for Figure 9

a Change in Poverty Rate (UL) (Number of Provinces)		b Change in Poverty Rate (GTL) (Number of Provinces)		c Change in Poverty Rate (DSDT) (Number of Provinces)	
-5 or less	(4)	-5 or less	(5)	-5 or less	(0)
-5 to -3	(11)	-5 to -3	(14)	-5 to -3	(1)
-1 to -3	(23)	-1 to -3	(22)	-1 to -3	(4)
1 to -1	(21)	1 to -1	(19)	1 to -1	(50)
1 or more	(1)	1 or more	(0)	1 or more	(5)

✳