Pro-Poor Livestock Policy Initiative
A Living from Livestock
Research Report

RR Nr. 06-10; November 2006

Pig Systems, Livelihoods and Poverty: Current Status, Emerging Issues, and Ways Forward

A. Costales

1. Introduction

Engagement in livestock production is an important income generating activity among agricultural households in rural areas in the developing regions of the world. The rapidly increasing demand for livestock products at the global level, particularly due to increasing populations, increasing per capita incomes, and rapid urbanization in the developing countries, presents opportunities for the rural poor in these countries to participate in and benefit from such growth. On the other hand, in the supply side of the market, new technologies as well as new organizations in production, processing, procurement and distribution systems have emerged to more efficiently meet not only the larger volumes required but also the increasing demand by consumers for food products quality and safety, apart from complying with public rules and regulations governing the trade in livestock products. Within this environment, there is no automatic link between the engagement in livestock as livelihood source by rural households and the increasing demand for livestock products. Strong market links between livestock producers in the rural areas and the growing markets for livestock products within the economy is a necessary condition for taking advantage of these opportunities for increased incomes by rural livestock keepers.

2. The Global Picture

2.1 Differential Responses to the 'Drivers' of Change

Livelihood from livestock among rural households in majority of the developing countries are not specialized stand-alone economic activities but are closely integrated with other agricultural endeavour within the framework of mixed production systems (e.g., crop-livestock). This general statement, however, recognizes that there are also a significant proportion of poor livestock keepers in developing countries that specialize in livestock, such as the pastoralists in the arid zones of Africa, Asia and Latin America. The mixed-farm facet of livestock livelihood is significant in that the potentials to livelihood improvement can be situated within the development stage of agriculture of individual countries at the macro level, and of farms at the micro level within countries. Pingali (2005) classifies the development of agriculture into three broad stages – “traditional”, “modernizing”, and “globalizing”, according to some criteria such as the share of agriculture in GDP, share of labour in agriculture, output mix, importance of scale economies, and market orientation. In terms of the last criterion, ‘traditional’ farms would be more subsistence-oriented, with occasional opportunistic ventures to local markets. ‘Modernizing’ farms would generally market-oriented, with links to domestic markets at the local and/or national level. In most of the developing countries, the “globalizing” farms would constitute only a small proportion of farms in the rural areas. Nevertheless, the integration of the agricultural economies of developing countries to global agricultural trade would have impacts that reverberate in the domestic markets of rural livestock keepers.

The increasing demand for livestock products in developing countries presents a opportunity for increased incomes of households raising livestock or are engaged in the trade of the commodity along the various market chains of the livestock sector. However, the increasing demand for product quality and food safety among urban consumers, and the increasing competition from imports as well as from larger-scale and more sophisticated commercial suppliers, present a challenge particularly for smallholder rural livestock keepers to participate in, compete for, and defend their own market share in the growing demand for livestock products.

The extent to which smallholder rural livestock producers and their market chains can participate in and benefit from the growth in the livestock economy depends on the strength of linkage between the rural farms and the various classes of consumers, intermediated by market chains in both the formal and informal markets (Haggblade, et al., 2005). When that link is strong, supported by functional physical and institutional market infrastructure, accessible to larger-scale and smallholder producers alike, the growth in demand, the technological advances in production, and the growing sophistication in the organization of processing and distribution, would most likely translate to increased incomes of both larger farms and smallholder rural-based producers, meeting such growth and diversity in the demand for livestock products.

When the strength of linkage between livestock producers and consumers are biased in favour of more progressive farmers (e.g., better access to physical and institutional market infrastructure) at the expense of producers with a weaker political voice and bargaining power, then the impacts of growth in the livestock sector would tend to be inequitable. Growth would likely benefit those with better access to lucrative mainstream markets catering to urban centres, while the rest would be consigned to compete among themselves in the marginal markets where growth in demand may not be as strong. Livestock producers shut out from the growth markets may exit from the livestock sector to find alternative livelihoods.

Finally, when at the country level, rural livestock producers are barely connected to urban markets, growth in demand for livestock products could readily be met with increased imports. With local rural producers disconnected from the mainstream markets, the livestock livelihood of rural households would likely stagnate. When this happens to the entire rural sector at the country level, with no source of growth stimulation, agricultural productivity will deteriorate, leading to lower real returns and incomes to agricultural labour, and worsening rural poverty. Along this evolution of events, the exit of households from agriculture, the shift to mean jobs in non-agricultural activities, and the migration to urban centres would be seen as ‘escape valves’ out of deeper poverty, rather than a reflection of the growth in demand for non-agricultural labor.

The considerations above argue that improvements in livestock livelihood as a tool for poverty alleviation cannot be seen and treated in isolation. Pure technical interventions to increase livestock productivity at the farm level would not automatically translate to a sustained improvement in household incomes and to a reduction in poverty. While there are real resource costs to such technical interventions, requiring the use of scarce physical, human, and financial resources from the public or/and private sector(s), the intended benefits to poorer rural households may not necessarily be forthcoming.

3. The Livestock Sector and Pig Systems in Southeast Asia and the Pacific

Asia is a major producer of pigmeat in the world. Table 1 shows that Asia accounts for largest share (43%) of global pig output (Groenewald, 2004). The next major group comprises the OECD countries (37%). In terms of production systems, close to 80 percent of pig output in Asia is produced under ‘mixed’ farms (crop-livestock), while the rest are produced in specialized intensive ‘landless’ systems (Table 2). Landless systems would mostly be strategically located in peri-urban areas. This configuration confirms the predominance of livestock livelihoods being integrated within the gamut of agricultural activities of households within the farm. Within Asia, major concentrations of production are located in Southern China and Southeast Asia, particularly in Vietnam, Thailand, and The Philippines (Figure 1)

Table 1: Shares in volume of pigmeat output, by region, 2004

REGION	Output Volume ('000 MT)	Share (%)
Asia	31,368	42.9
OECD	27,167	37.2
E.Europe & CIS	10,759	14.7
Latin America & Car	3,126	4.3
Sub-Saharan Africa	526	0.7
Other Developed	135	0.2
West Asia & North A	38	0.1
Total	73,118	100

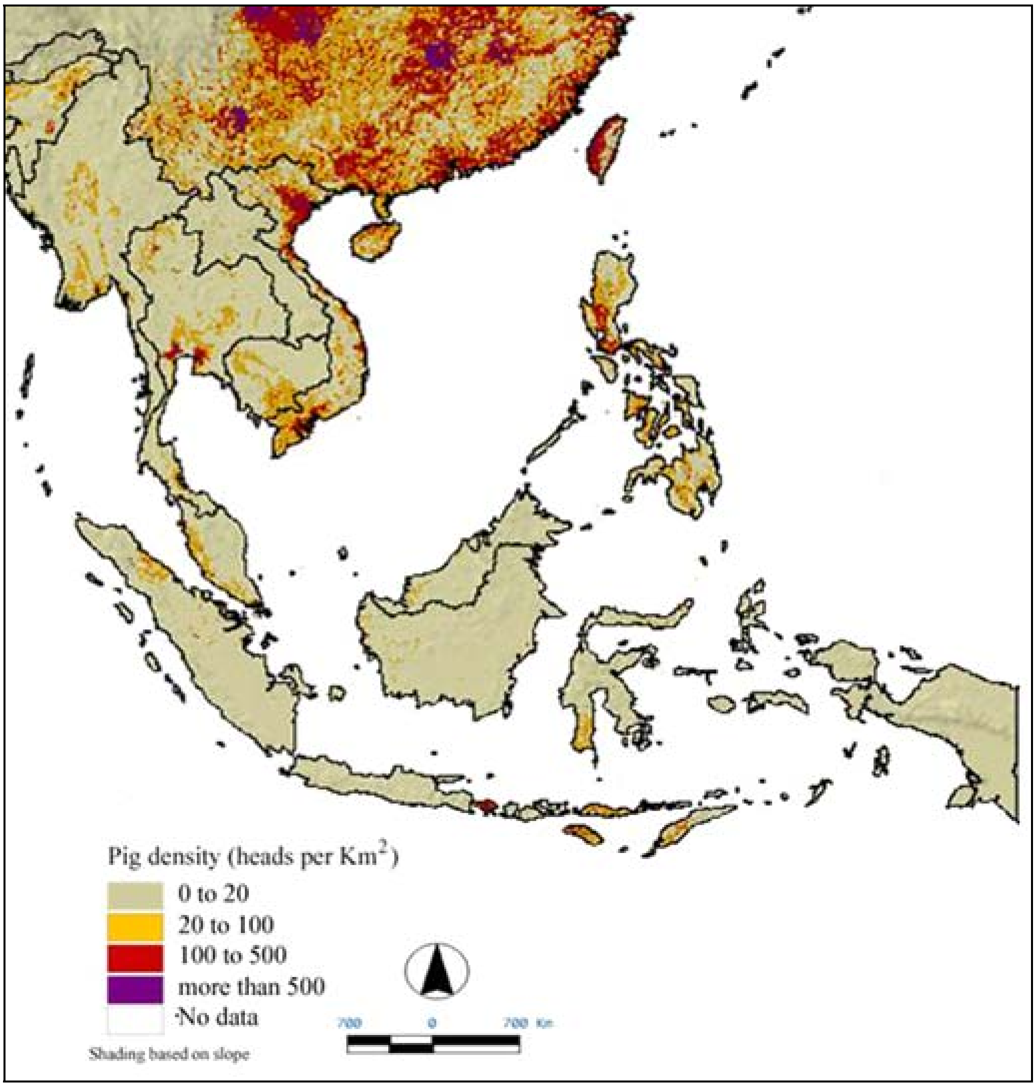
Source: Groenewold, 2004

Table 2: Distribution of pig output by production system in Asia, 2004

Production Systems	Percent share
Mixed Crop-Livestock	78.1
Landless Intensive	21.9
Landbased Extensive	0.0
Total	100

Source: Groenewold, 2004

Figure 1: Concentrations of pig production in South China and Southeast Asia.



Source: FAO, 2006

3.1 Agriculture and the Livestock Sector

The significance of Agriculture in the respective economies of the countries in SEA and The Pacific vary in terms of their relative contribution in GDP. Table 3 shows that Agriculture is relatively more important in lesser developed economies of Myanmar, Lao PDR, Cambodia, Timor Leste and PNG (between 30 % and 50% share in GDP) than the rest of the countries. For all countries, the relative significance of Agriculture in the economy exhibited a declining trend between 1990 and 2005.

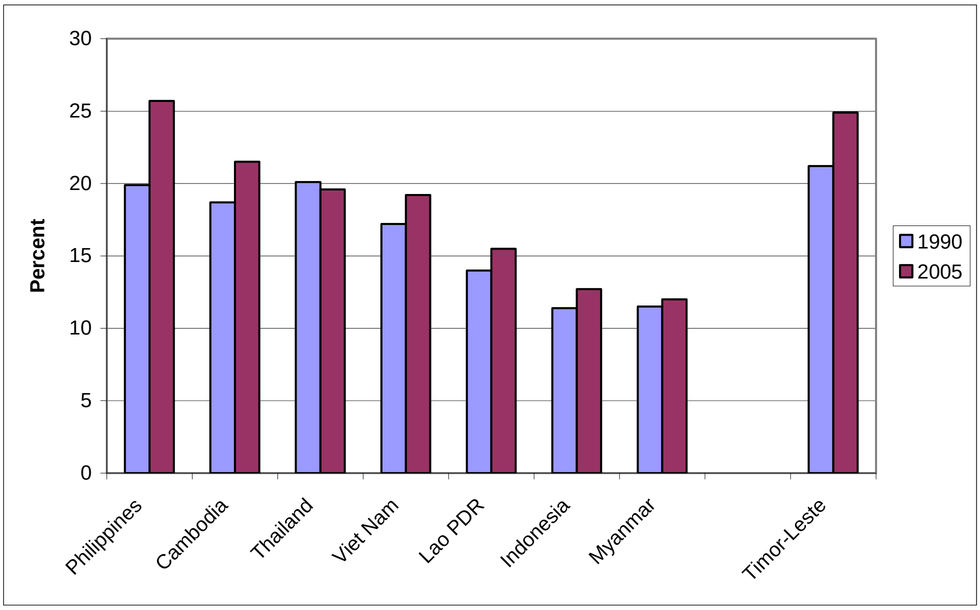
Table 3: Share of Agriculture in total GDP, 1990-2005 (In percent)

Country	1990	2000	2005
Myanmar	57.3	57.2	50.6
Lao PDR	61.2	52.6	47.0
Cambodia	55.6	37.9	32.9
Viet Nam	38.7	24.5	20.9
Philippines	21.9	15.8	14.4
Indonesia	19.4	15.6	13.4
Thailand	12.5	9.0	9.9
Timor-Leste	29.8	25.8	31.6
Papua New Guinea	29.0	30.8	33.1

Source: ADB, 2006

The significance of the livestock sector in the agricultural economy also varied among countries. Livestock has a relatively greater contribution in the agricultural GDP of The Philippines, Cambodia, Thailand, and Timor Leste (20-25% share) as compared to the rest (Figure 2). Except for Thailand, the share of livestock in Agricultural GDP improved from 1990 to 2005. What this indicates is that even as the contribution of Agriculture as a whole in GDP was declining, within Agriculture, the role of Livestock was becoming more and more important as a contributor in the Agricultural economy. This indicates that the livestock sector was posting a more rapid growth than the other sectors of agriculture combined. Thus, in SEA and The Pacific, a strong source of growth among rural households for income generation and poverty reduction is the livestock sector.

Figure 2: Comparative trends the share of livestock in Agriculture GDP, 1990-2005 (In percent of Agriculture GDP)



Source: FAOSTAT, 2006

3.2 Meat Consumption Patterns and Trade

Per capita meat consumption shows quite variations among countries in SEA and Timor Leste (from 10 kg to 48 kg per capita). Table 4 shows that in general, higher per capita consumption (>25 kg) is associated with the countries with more developed economies and with higher per capita incomes (Malaysia, Thailand, The Philippines, Vietnam) as compared to the rest. In all countries, however, the increasing in per capita consumption between 1990 and 2002 reflects the growing demand for meat products.

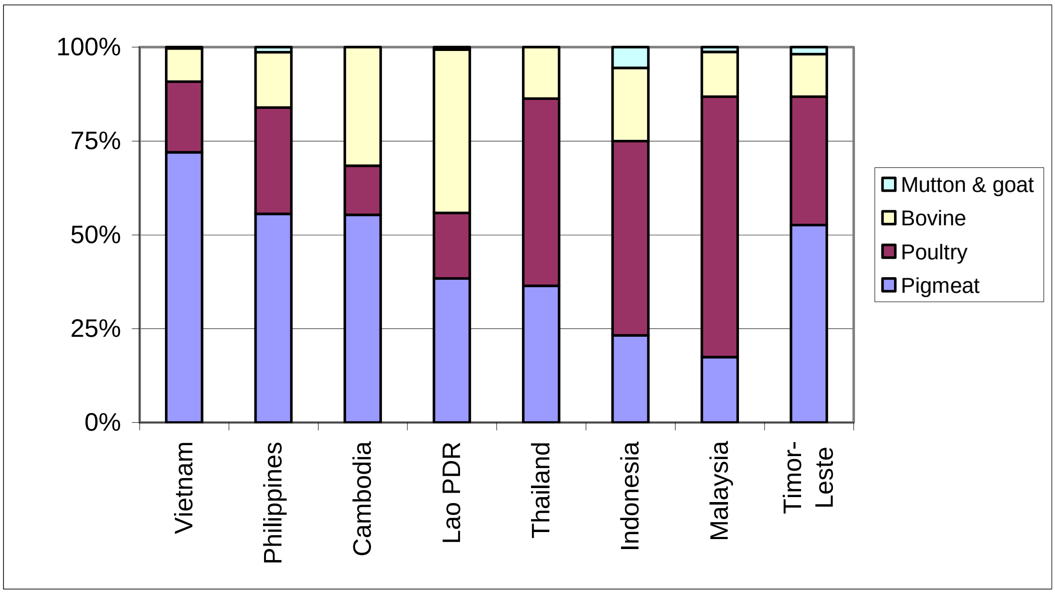
Table 4: Growth in per capita meat supply (consumption), 1990-2002. (In kg)

Country	1990	2002
Malaysia	38.1	48.0
Philippines	17.9	29.6
Viet Nam	15.7	28.2
Thailand	22.8	27.0
Cambodia	12.3	14.8
Lao PDR	11.2	15.5
Indonesia	8.0	9.6
Timor-Leste	17.6	21.7

Source: FAOSTAT, 2006.

The relative importance of pigmeat as compared to other sources of meat again shows wide variations among countries in the region. Figure 3 shows that pigmeat is the most dominant source (>50% of meat consumption) in Vietnam, The Philippines, Cambodia, and Timor Leste. On the other hand, poultry is the most popular meat source for Malaysia, Indonesia, and Thailand. The lesser significance of pigmeat in Malaysia and Indonesia could be traced to cultural and religious traditions influencing tastes and preferences of the general population.

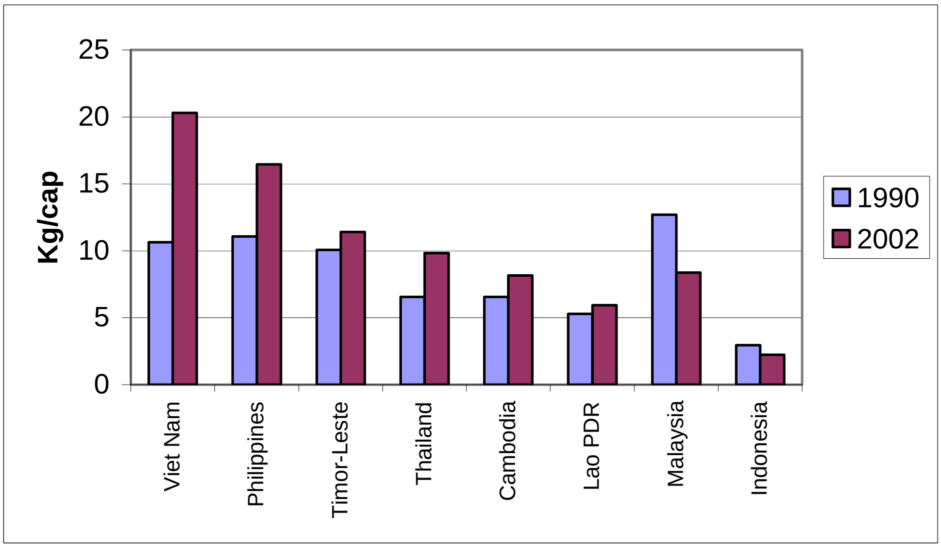
Figure 3: The relative importance of pigmeat and other meat types, various countries, 2002 (In percent of total meat consumption)



Source: FAOSTAT, 2006

Figure 4 reveals that in terms of absolute quantities, the popularity of pigmeat consumption is maintained in Vietnam, The Philippines and Timor Leste (>10 kg/cap), although Thailand is rapidly approaching the 10-kg mark. Indonesia, and to a lesser extent, Malaysia, continue to be countries where pigmeat consumption is relatively not favored. In all the countries in the region except Indonesia and Malaysia, per capita consumption of pigmeat exhibited a significant increase between 1990 and 2002, with the largest absolute and relative improvements taking place in Vietnam, where large strides in economic growth had been taking place.

Figure 4: Trends in levels and growth of per capita pigmeat consumption in various countries, 1990-2002 (In kg)



Source: FAOSTAT, 2006

The differences in consumption patterns show that for a number of countries, pigmeat is significant and occupies the largest component of meat consumption, and in these countries, the increase in meat consumption levels have been relatively rapid. However, it is also the case that for some countries, other meat types carry greater importance, as seen in the dominantly Islamic countries of Indonesia and Malaysia, where even per capita consumption of pigmeat is declining.

3.3 Net Trade Position in Pigmeat

The net trade position in pigmeat also shows contrasting performance among the countries in the region. Table 5 shows that Thailand and Vietnam have emerged as the leading net exporters of pigmeat, with even Indonesia showing positive value. On the other hand, Timor Leste, Malaysia, and The Philippines are shown to be net importers, with imports gradually increasing their role as source of domestic supply of pigmeat. The net exports position of Thailand and Vietnam points to the challenges for exporters in these countries to maintain and defend current export markets and niches, as well as to break new export markets as food safety standards continue to be tightened especially in markets of developed countries. For net importing countries, the influx of imports present the challenge to domestic producers to compete in supplying domestic consumers, particularly in the large urban centres, with pigmeat that are comparable with imported products, not only in terms of price, but also in terms of product quality, food safety, and product packaging. It becomes evident that competition at the farm level is influenced by competitiveness also along the entire chain that lead to domestic consumers. For countries such as Indonesia, Lao PDR and Cambodia, focusing on domestic markets and internal competition among producers would be the more pressing issues.

Table 5: Net exports position in pigmeat trade, 1992-2002.
(As percentage of total domestic supply)

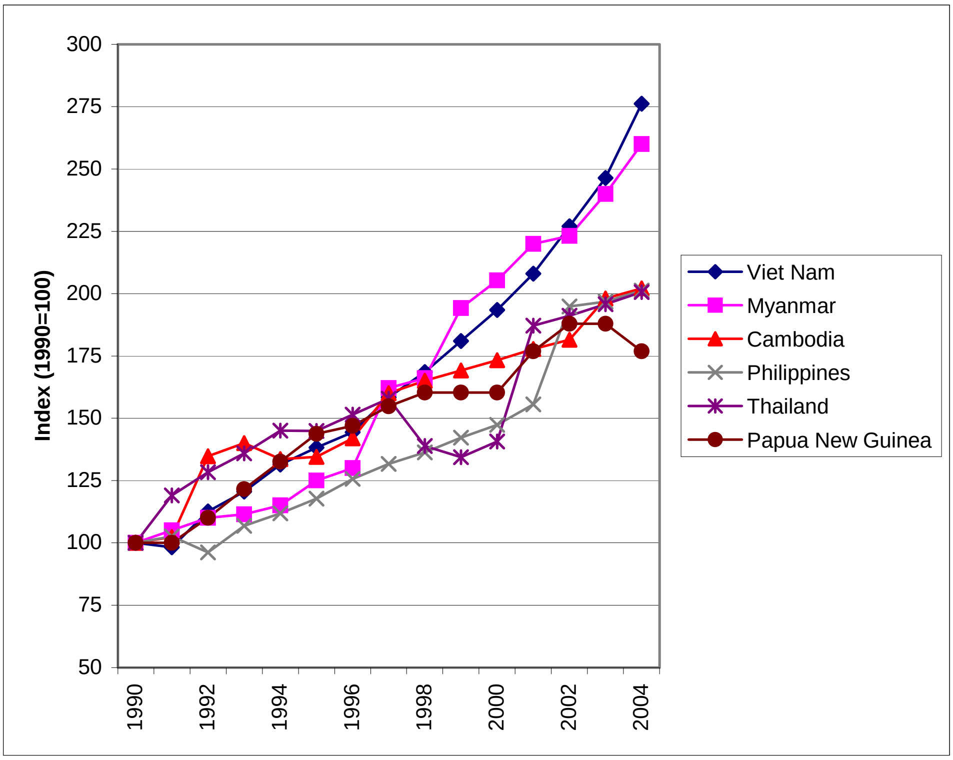
Country	1992	2002
Thailand	0.3	2.6
Viet Nam	2.1	2.3
Indonesia	-0.4	0.5
Laos	0.0	-0.01
Cambodia	0.0	-0.02
Philippines	-0.1	-2.5
Malaysia	-2.7	-4.2
Timor-Leste	-7.0	-10.4

Source: FAOSTAT, 2006

3.4 Production Response to Increased Regional Demand for Pigmeat

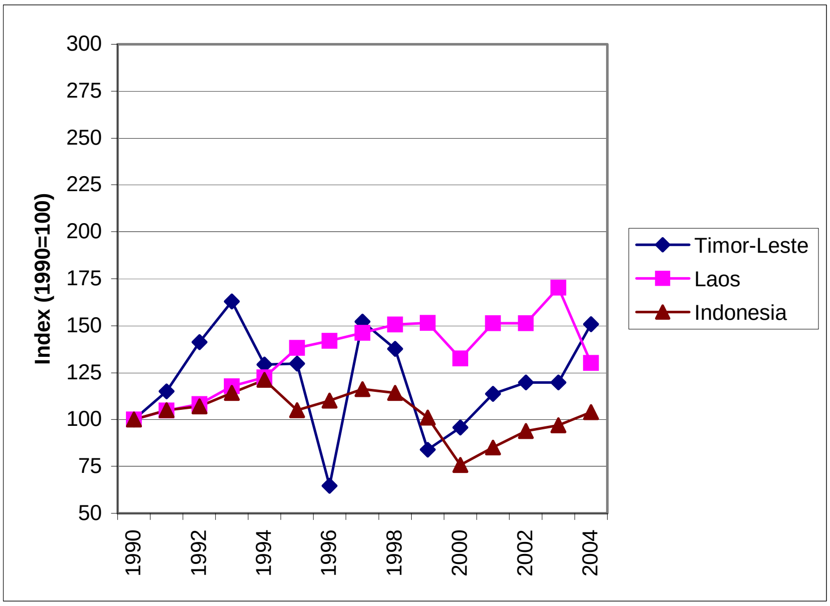
The production response of the pig sector in countries in SEA and selected Pacific Countries to increasing pigmeat demand in the region do not show a corresponding uniform rapid increase in output. Observing the trends in the output index covering the years 1990-2004, countries could be grouped into ‘high growth’ and ‘slow growth’ countries. Figure 5 shows that for ‘high growth’ countries, output increase by 2004 was by 75 percent to 175 percent of their 1990 levels. These included the countries of Vietnam, Myanmar, Cambodia, The Philippines, Thailand, and Papua New Guinea. For the ‘slow growth’ countries, Figure 6 shows that output increased only four to 51 percent over the same period. These countries were Indonesia, Lao PDR, and Timor Leste. Slow growth in Indonesia may be attributed weak domestic demand due to cultural reasons, where per capita consumption of pigmeat have in fact been on the decline, but even then, the positive net exports position of Indonesia, although still relatively small, indicate that growth in demand may be located outside the country, but local production may be facing constraints to respond to these potentials. On the other hand, slow growth in Lao PDR and Timor Leste does not point to slow growth in domestic demand but may indicate the existence of barriers impeding a more rapid domestic production response. For Timor Leste in particular, rather than domestic production picking up, imports of pigmeat have become an increasingly significant source of domestic supply. In general, there needs to be a deeper investigation on the lack of positive response in production in these countries.

Figure 5: Trends in growth of pigmeat production in 'fast growth' countries, 1990-2004 (Index: 1990=100)



Source: FAOSTAT,2006

Figure 6: Trends in growth of pigmeat production in 'slow growth' countries, 1990-2004 (Index: 1990=100)



Source: FAOSTAT,2006

Even for the apparently ‘high growth’ countries, there needs to be a deeper investigation on which types of production systems were more rapidly responding to growth in demand in the domestic as well as international markets. This is important in establishing whether or not there are links between growth in the sector and poverty reduction among the households that dominantly engage in the activity. Where there are such links, it is important to establish the dynamics of how links these work.

4. Agriculture and Poverty Linkages

Among the SEA and selected Pacific countries, Table 6 shows that there are wide differences on the overall poverty incidence, using the respective national poverty thresholds, with Malaysia and Thailand having the lowest poverty rates. What is generally true, with the exception of Myanmar, is that rural poverty incidence is significantly higher than in urban areas. For more that half of the countries represented, the proportion of households living below the poverty threshold was between 35 and 46 percent.

Table 6: Comparative rural and urban poverty incidence by country (In percent).

Country	Rural	Urban
Philippines (1999)	41.4	15.0
Lao PDR (2002)	41.0	26.9
Cambodia (1997)	40.1	18.2
Viet Nam (1997)	35.6	6.6
Myanmar '(2000)	22.4	23.9
Indonesia (2002)	21.1	14.5
Thailand (2002)	12.6	4.0
Malaysia (1999)	12.4	3.4
Timor-Leste (2001)	46.0	26.0
P.N. Guinea (1996)	41.3	16.1

Source: ADB, 2006

Rural households, in general, depend on agriculture, directly or indirectly, for livelihood. For more than half of the countries represented, between 57 and 82 percent of the total labour force were employed in the agricultural sector (Table 7).

Table 7: Proportion of labour force employed in agriculture, by country
(In percent of the labour force)

DMC	Percent
Lao PDR (2003)	82
P.N. Guinea (2005)	72
Myanmar (1997)	63
Viet Nam (2005)	57
Cambodia (2004)	60
Indonesia (2005)	44
Thailand (2005)	43
Philippines (2000)	37
Timor-Leste	…

Souce: ADB, 2006

The above figures indicate that for intervention to reduce poverty in these countries, these measures must be undertaken in the locations where the poor where are found (predominantly in the rural areas), and must have a positive impact on the economic activities that the poor are already engaged in (predominantly in agriculture). Furthermore, within agriculture, the interventions must focus on the economic activities and sub-sectors that have potentials growth and increased incomes for households engaged in them, directly or indirectly. These would be the agricultural products experiencing significant growth in demand in domestic markets, particularly in the major centres of demand – the urban areas. Such products would generally involve those with relatively higher income elasticity, such as meat and milk, as well as higher-value crops (e.g., fruits and vegetables). The existence of strong consumption or/and production linkages in the economic activities of the rural poor where intervention is targeted would increase the likelihood that interventions made at the production and marketing chain levels bring about sustained increases in incomes of rural households, thereby making headways in rural poverty reduction.

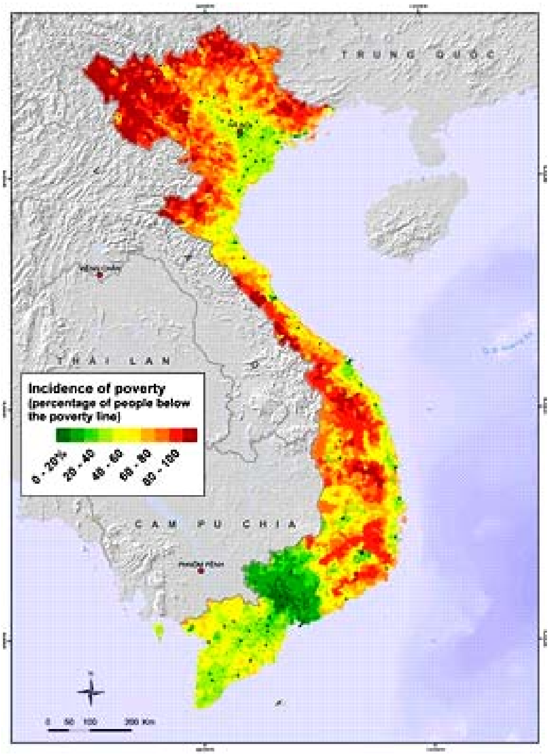
While the initial target markets may be the large urban centres, the significance of smaller towns should not be overlooked, as the consumption linkages created by sectoral growth at the farm and at the rural-to-urban market chain levels can create additional sources of demand growth closer to the production centres. Too, while agricultural products with higher income elasticity would be obvious targets for income generation among rural households, one should not forget that for poorer households both in the rural and urban areas, the access to (availability and affordability) basic food staples is a necessary ingredient to poverty alleviation. Improving the productivity and markets of the basic staples sector should not be ignored. Thus, in considering pro-poor intervention strategies involving livestock livelihood of households in the rural areas, one always has to return to the basic framework that livestock is an integrated aspect of the agricultural livelihood of rural households rather than a singular specialized activity of pure 'livestock producers'.

5. The Dynamics of Pro-Poor Livestock Sector Development and Poverty Reduction: The Case of Vietnam

5.1 Location of the Poor

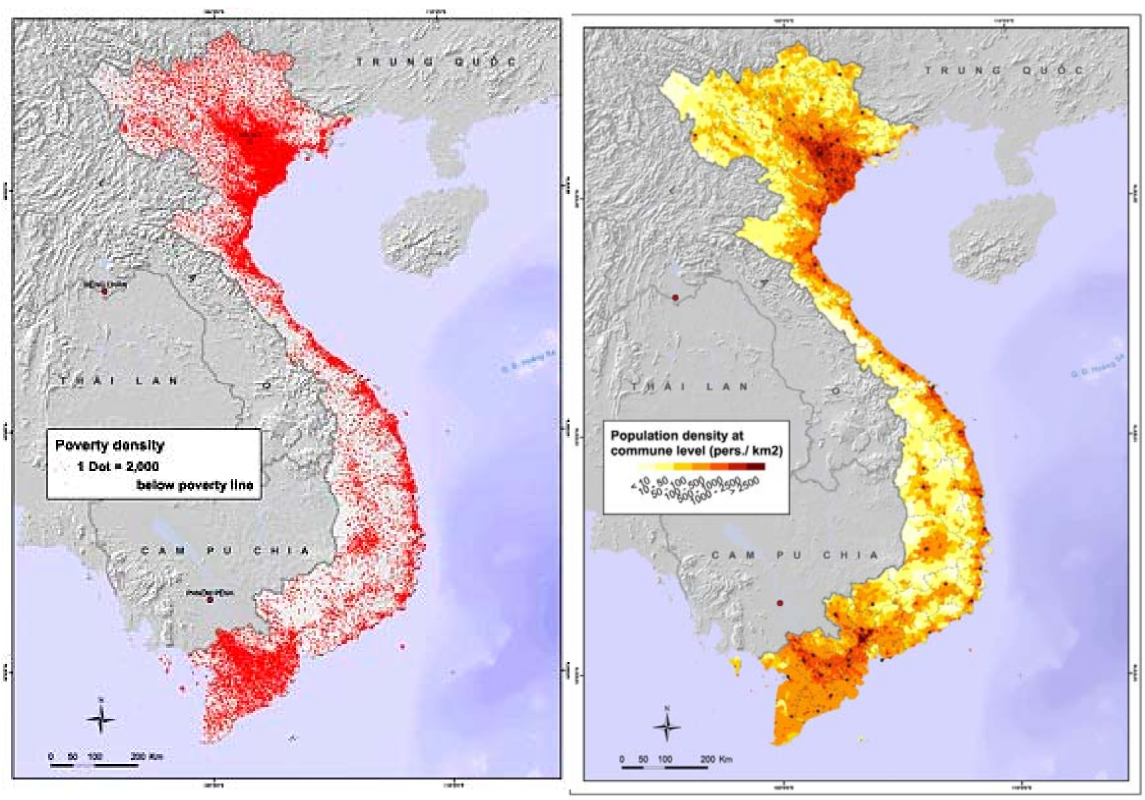
Information on the distribution of poverty across geographic areas in a particular country are a powerful tool in locating poverty alleviation interventions. In the case of Vietnam, poverty maps generated from such information reveal that poverty incidence is most acute in the Northern Mountain Regions as well as in the Central Highlands, which generally could be described as the more remote rural areas (Figure 7a). On the other hand, poverty density maps show that a greater number of poor households are located in the same areas where there are high population concentrations, meaning, in and close to the large urban centres, but more particularly so in the north as compared to the south (Figure 7b). Both maps indicate the two aspects of poverty among households – the static and the dynamic aspects. Poverty incidence remains acute in areas with little economic activity and opportunity (remote rural areas), and poor households move and gravitate to where economic opportunities exist for them to earn their livelihood, most likely where the economic activities are occurring, in or close to large population centres. Evidently, for the poor in the rural areas, their livelihoods are closely linked to agricultural production activities. For the poor in and around the cities, livelihoods will me more varied, including being engaged in activities along the market chains that link rural production areas to major consumption centres. For the poor in these locations, which may not be engaged in livestock or more general agricultural production activities, an important element of poverty alleviation intervention is the improvement in their real incomes and purchasing power through lower consumer prices of basic staples as well as livestock products.

Figure 7a: Geographic distribution of poverty incidence in Vietnam, 2002



Source: VLSS 2002

Figure 7b: Geographic distribution of poverty density and population density in Vietnam, 2002

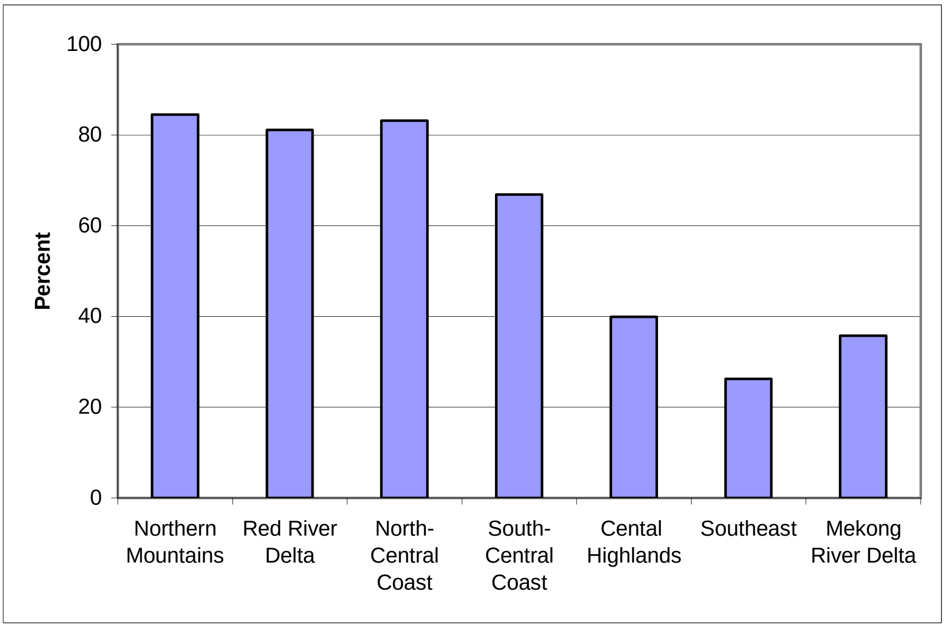


Source: VLSS 2002

5.2 Pig Production Among Rural Households

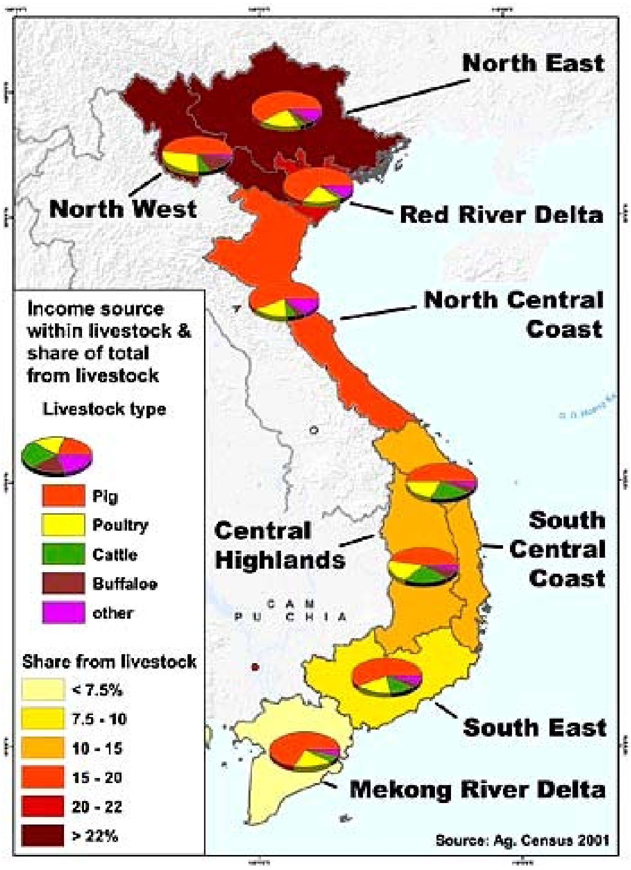
How relevant is the economic activity of pig production among rural households in Vietnam? Figure 8 shows that in four of the seven major geographic regions in the country, more than 60 percent of all rural households engage in pig production. Most of these regions are in the north and central parts of the Vietnam. These are the same regions where rural poverty incidence is among the highest. In these same regions, income from livestock provides a significant contribution total household income, particularly in the northern regions where the contribution is of livestock reaches not less than 20 percent of household income. Figure 9 reveals that of total livestock income, income from pigs is the most dominant, where in most of the regions, income from pigs constitutes greater than half of total livestock income. In Figure 10, the grouping of households into income quintiles also reveals that there are differences in the relative significance of income from pigs for households in the north and central regions, in contrast to the households in the southern regions of Vietnam. First is that in general, income from pigs has greater significance to households in the north than in the south. Second, for households in the north and central regions, income from pigs holds greater significance to households belonging to the lower income quintiles (poorer) than to those in the higher income quintiles. In contrast, in the southern regions, income from pigs obtains greater significance to households belonging to the upper income quintiles (richer). The differences in the patterns of relative significance of incomes from pigs among income groups, in the north and in the south, point to the potentially different distributional impacts of a singularly-directed intervention that promotes growth in the pig sub-sector. Furthermore, as there are differences in access to markets and services among pig production systems (e.g., household-based smallholder farms vs. large commercial farms), it matters which production and marketing systems are supported by a single-directed pig sector promotion intervention in anticipating the pattern of distributional impacts of such sectoral intervention.

Figure 8: Regional distribution of ownership of pigs by rural households in Vietnam, 1998 (In percent of households)



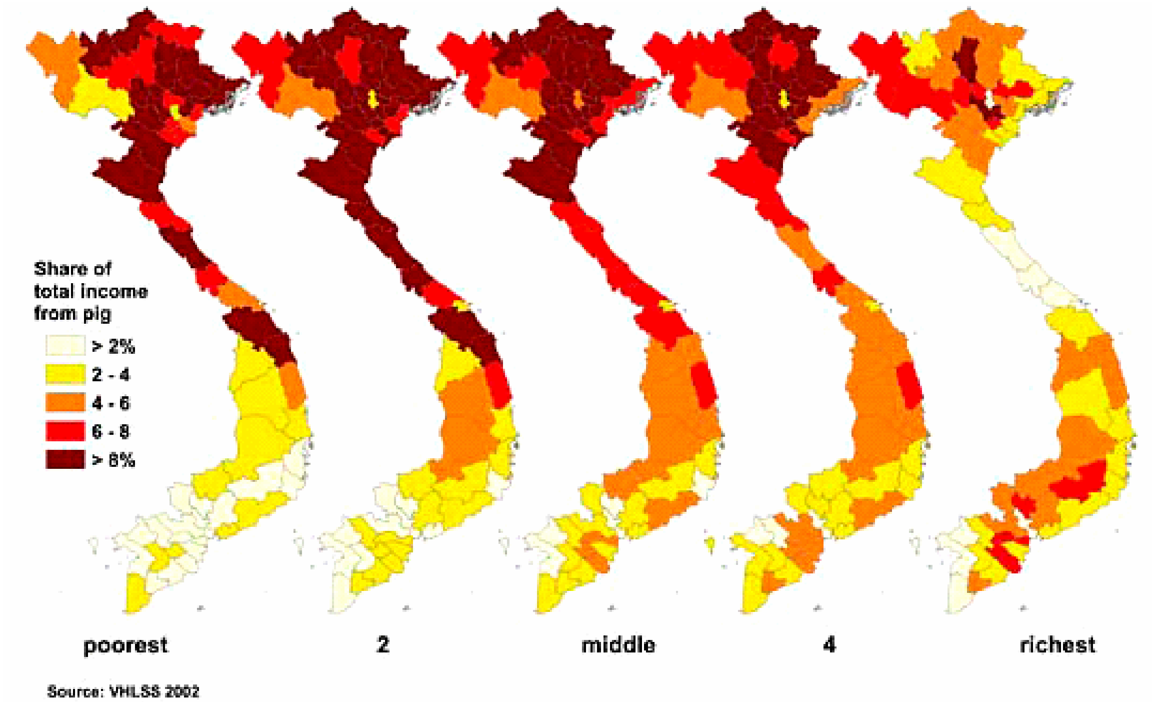
Source: VLSS 1998

Figure 9: Share of livestock in total income and distribution according to livestock sources, 2001



Source: Agricultural Census 2001

Figure 10: Distribution of the share of total income from pig, by income quintile and province, 2001



5.3 Typologies of Rural Households and the Integration of Pig Production and other Livestock in Livelihoods

In dealing with the variety of sources of income of rural households in Vietnam, one could classify households as "Agricultural" (where >50% if total income are derived from agricultural activities) or "Diversifying" (where their income from agriculture is less than 50% of total income). Table 8 shows that the majority of rural households remain to be "Agricultural" (56%), but the proportion of "Diversifying" households is already quite significant. Agricultural households can further be classified as to the extent of market orientation (or the degree of dependence of household income on home production). "Subsistence" oriented (>75% home produced), "Semi-commercial" (25-75% home produced), or "Commercial" oriented (<25% home produced). It is important to note that the greater majority (close to 60%) of Agricultural households are those that are already integrated in markets but not yet intensively commercialized. This has an important bearing on the direction of interventions that are aimed at reducing poverty among rural households in Vietnam. For Diversifying households, they could also be classified according to significance of home production into "Semi-market oriented" (>25 % home produced) and "Market oriented" (<25% home produced).

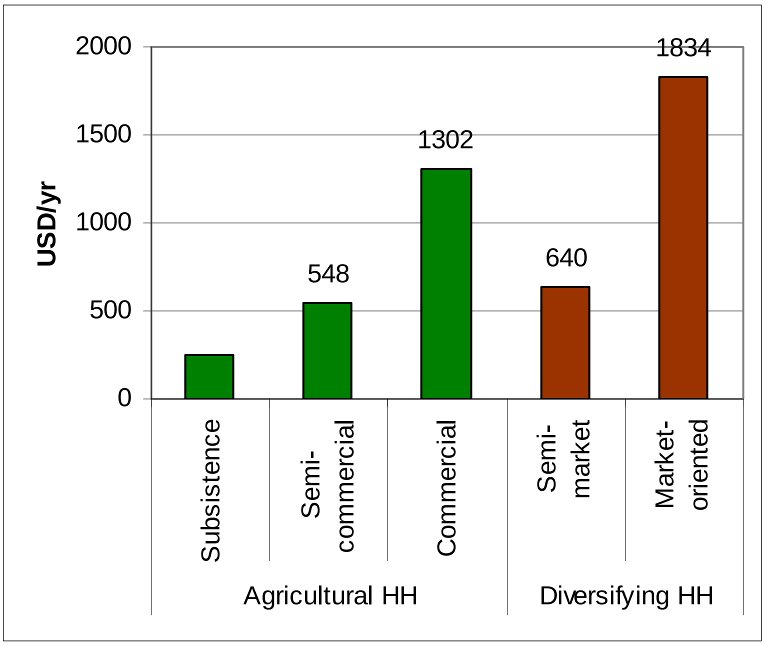
Table 8: Distribution of rural households by livelihood categories and market orientation (In percent of sample)

CATEGORY	MARKET ORIENTATION	Percent of HH
	Subsistence (>75% home produced)	6.1
Agricultural	Semi-commercial (25-75% marketed)	33.0
	Commercial (>75% marketed)	16.5
	Sub-total	**55.6**
Diversifying	Semi-market (>25% home produced)	9.5
	Market-oriented (<25% home produced)	34.8
	Sub-total	**44.3**

Source : Maltsoglou et al., 2005

Figure 11 reveals that within both categories of households (Agricultural and Diversifying), the groups with higher market orientation had higher mean household incomes. The most market-oriented households had mean incomes that were more than double the incomes of less market oriented households. Thus, among rural households in Vietnam, the level of household incomes have more to do with their strength of linkage to markets rather than on their being “Agricultural” or being “Diversifying” households.

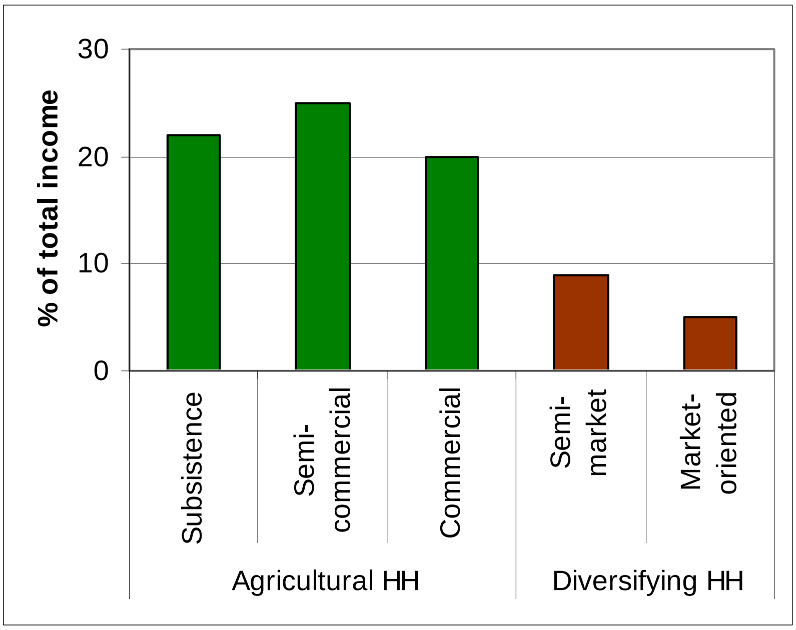
Figure 11: Comparative household income levels by HH category and market orientation (In USD/yr)



Source: Maltsoglou et al., 2005.

Figure 12 shows that in rural Vietnam, income from livestock has greater significance among "Agricultural" households (ranging between 20 to 25 percent of total income) than among "Diversifying" households. This validates the status of livestock livelihood as integrated into whole agricultural livelihood of the rural household, rather than as a singular specialized livelihood of livestock households.

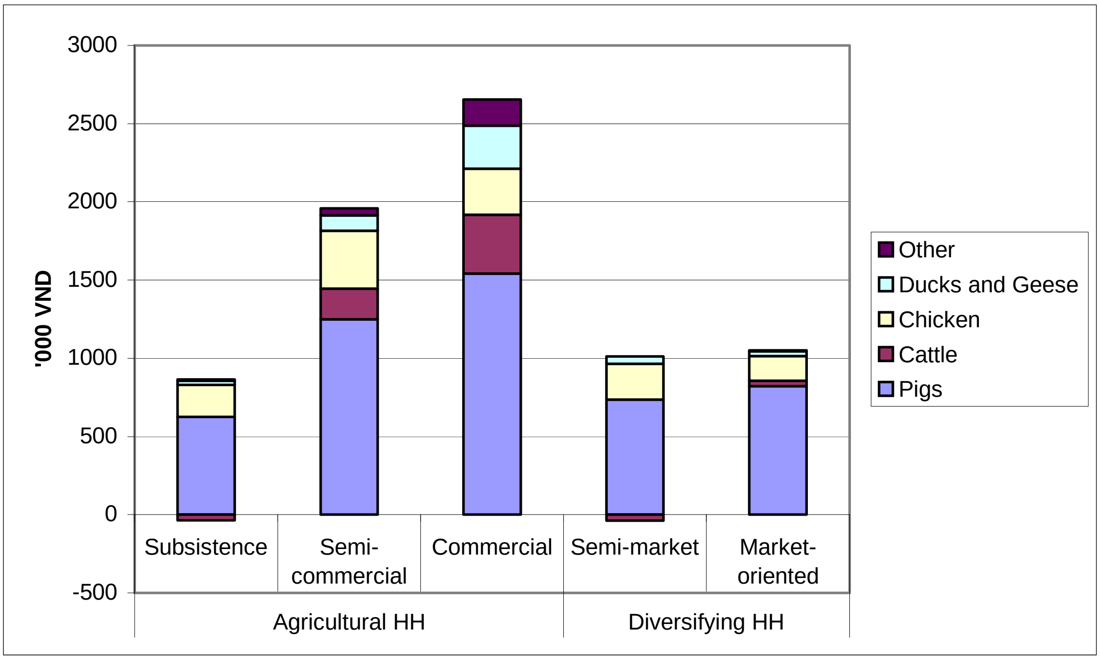
Figure 12: Share of livestock in total income,
by HH category and market orientation (In percent of total income)



Source: Maltsoglou, et al., 2005

The degree of market orientation has a more telling impact on livestock income among Agricultural households than for Diversifying households. For all household types, income from pigs dominate as contributor to livestock income. Particularly among Agricultural households, Figure 13 also shows that the greater the market orientation, the higher the mean income from pigs. Subsistence-oriented households depend more on pigs and chicken as source of livestock income. As agricultural households become more commercialized, income from livestock also become more diversified to include income from cattle and other fowls as well.

Figure13. Value of livestock income from various livestock species, by HH category and market orientation.(In '000VND/yr)



Source: Maltsoglou, et al., 2005

From the configuration of rural households, it can be asserted that the impact of livestock sector interventions would largely fall on Agricultural households than on Diversifying households. Within the category of Agricultural households, as the largest proportion belong to the group of "Semi-commercial" households (59%), the type of intervention in the livestock sector that would have the widest coverage would be one that would have the impact of improving the terms of exchange of those already extensively participate in markets, and move them to a more gainful intensive engagement. Such more intensive engagement is exemplified by the 30 percent "Commercially oriented" farm households that were earning more than twice as much income as their "Semi-commercial" counterparts. Policy and institutional interventions that address, as broadly as possible, the market barriers to pig production and trade that "Semi-commercial" farm households face, which would have the impact of improving their terms of trade, would most likely also benefit the already quite "Commercially-oriented" group. This should not necessarily pose a distributional problem as the wider the coverage of the positive impacts, the wider the direct income improvement effects, the more extensive also the secondary income effects, and the stronger would be the poverty reduction impacts. For subsistence-oriented agricultural households, improving the terms of trade would have impact only on their incomes arising from their small proportion of marketed output. Alternative measures of direct poverty alleviation that would the capacities and limitations of these households would be more suitable measures than pure market improvements.

5.4 Directions for Intervention in the Livestock Sector for Poverty Reduction in Vietnam

When the objective of poverty reduction is an explicit dimension of policy, intervention in the livestock sector must be viewed within the whole agricultural livelihood configuration of rural households in Vietnam, not as an isolated sectoral intervention. A significant information to take note of is that more that 60 percent of household income comes from marketed agriculture, as shown in Table 9. The market linkage is essential, as seen in the differences in total mean income levels of “Commercial oriented” agricultural households as compared to “Subsistence oriented” and “Semi-commercial” households, and more particularly the significant difference in the levels of livestock income between the “Commercial” and “Semi-commercial” households on the one hand, and the “Subsistence oriented” households on the other. The importance of market linkage is even more evident in pig production as among the three agriculture household types, between 94 to 99 percent of the value of all pig produced is derived from sold output (2002 VLSS).

Table 9: Sources of income of rural households in Vietnam, 2002 (In percent)

INCOME SOURCE	Share (%)
Marketed Agriculture	62
Self-employment	18
Wages	9
Other	11
Total	100

Source: VLSS 2002

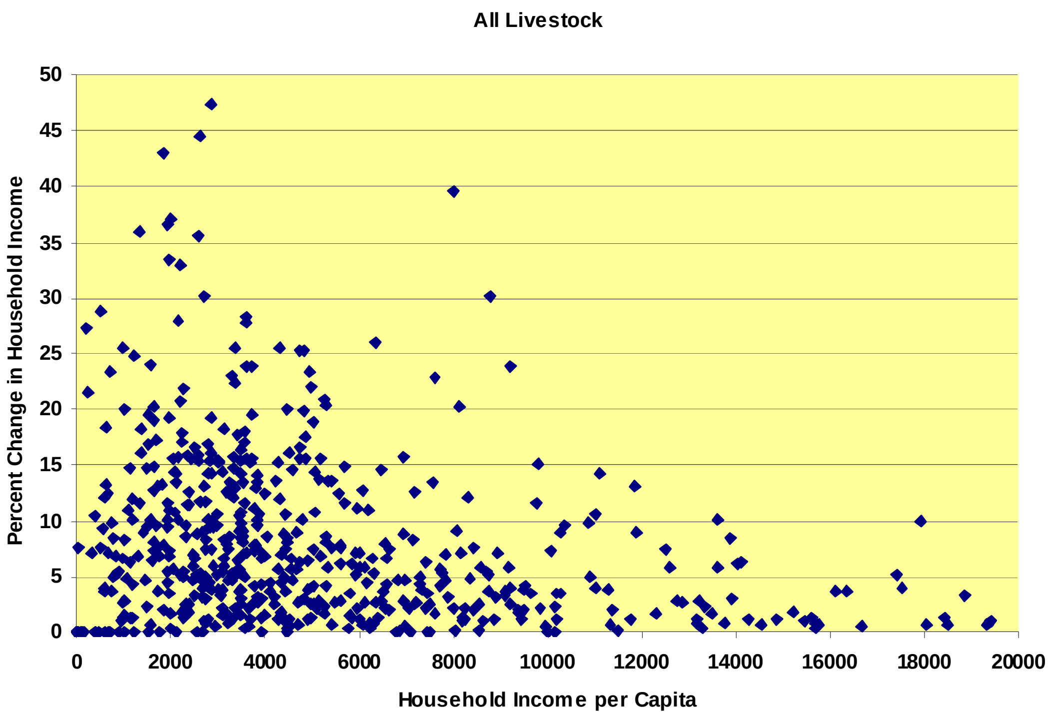
For agricultural households, the income from marketed agriculture depends on a complex of market supply chains extending from the farmgate to urban households, and even to foreign households as in the case of pig production in Vietnam. Increasing marketed income from livestock is not just a matter of increasing pig holdings or improving their physical productivity. These additional livestock holdings must earn positive net returns from market engagement (i.e., not traded at a loss). The income generating capacity of household investments in livestock depends to a large extent on the terms of trade that farmers get in their linkage with markets. PPLPI research on these linkages indicate that the terms of participation are still far from achieving their potential to help the rural poor (Roland-Holst, et al., 2006 PPLPI SC Meeting). Understanding these complex linkages require investigation into the nature of barriers at work that worsen these terms of market participation, and on the impacts of these are along the market supply chains.

Microeconomic fundamentals assert that in broad terms, the terms of market participation of rural producers can be improved by measures that impact on either the revenue or cost side, or both, of the balance sheet of these market participants. The revenue side could be improved either by an increase in the volume of marketed output or an increase in the farmgate value (price) per unit of output. On the cost side, the terms of participation are improved when measures undertaken lead to a reduction in the cost per unit of output marketed. The income improvement and poverty reduction impacts of interventions that improve the terms of trade of market participants is magnified when the positive impacts filter through to market participants at various stages along the market supply chains.

5.5 The Pro-Poor Impacts of Livestock Policy Change

The configuration of engagement in livestock of various types of households has a bearing on the distributional impact of policy change in the livestock sector. The previous section revealed that income from livestock has a relatively larger significance to incomes of lower income households in general, and among lower income agriculture-dependent households in the rural areas in particular. Too, the level of market engagement of agricultural households has a direct bearing on the level of their livestock incomes. Taking into consideration their respective current levels of market engagement, as well as the inter-sectoral linkages of the livestock sub-sector, simulation experiments on the distributional impact of a generic livestock promotion policy change that improves livestock productivity growth by seven (7) percent annually, show that in general, poorer households would realize greater relative income improvements than would wealthier households (Roland-Holst, et al., forthcoming PPLPI WP). The spread of relative changes in household incomes across households is shown on Figure 14. Thus, interventions in the livestock sector, as they work through the market chains, that improve the livelihood of rural households at the farm and along these chains, will have direct impacts in poverty reduction in Vietnam.

Figure 14: Distribution of impact of a 7-percent annual increase in livestock productivity on households, by income levels.



Source: Roland-Holst, et al., 2006

6. Conclusion

The demand for livestock products has exhibited a fairly rapid growth in Southeast Asia and The Pacific. For pigmeat in particular, demand has also shown a similar strong growth, with the exception of the predominantly Muslim countries of Malaysia and Indonesia. At the macro level, the pig sector in the respective countries of Southeast Asia and The Pacific have exhibited different responses to growth in demand, with majority also exhibiting rapid growth in output, but with a few countries showing slow growth or stagnation.

The sectoral response to increasing demand for livestock products in general depends on the strength of market linkage between rural producers and the mainstream urban markets for these products, and even with external markets where these are present.

Livelihood from livestock is a significant component of total household income, particularly for the lower income households, as exemplified in Vietnam. Most agricultural households are linked to markets for their produce, and derive the larger part of their household income from such market engagement, although at varying intensities, with the degree of market linkage positively related to the level of income from livestock, as well as to total household income, particularly for rural agricultural households.

Pure technical interventions the increase livestock holdings or physical productivity at the farm level may not automatically result to improved incomes of rural households engaged in livestock. Livestock keepers must be able to gain positive net returns from marketing their additional livestock, otherwise, the incurring of losses due to market engagement would lead them deeper into indebtedness. Strengthening the market linkages in a way that improves their terms of trade for the livestock products of rural agricultural households has significant potentials in improving the incomes of rural households with livestock livelihood, and in reducing poverty.

References

ADB. 2006. Asian Development Bank Key Indicators 2006. www.adb.org/statistics

Epprecht, M. 2005. Geographic Dimensions of Livestock Holdings in Vietnam: Spatial Relationships among Poverty, Infrastructure and the Environment. PPLPI Working Paper No. 24. FAO, Rome, Italy.

FAOSTAT. 2006. Commodity Balance Sheets.

Groenewold, J.P. (2004). Classification and Characterization of World Livestock Production Systems: Update of the 1994 Livestock Production Systems with Recent Data. FAO AGAL, Rome.

Haggblade, S., P. Hazell and T. Reardon. (2005). The Rural Non-Farm Economy: Pathway Out of Poverty or Pathway In?“. IFPRI, ODI and Imperial College London. Proceedings from the Research Workshop on The Future of Small Farms, June 26-29, 2005, Withersdane Conference Centre, Wye, UK.Pingali, P. 2006.

Maltsoglou, I. and G. Rapsomanikis. 2005. The Contribution of Livestock To Household Income in Vietnam: A Household Typology Based Analysis. PPLPI Working Paper No. 21. FAO, Rome, Italy.

Pingali, P. (2006). Agricultural Growth and Economic Development: a view through the globalization lens. Presidential Address to the 26th International Conference of Agricultural Economists (IAAE), Gold Coast, Australia, 12-18 August 2006. FAO 2006.

Roland-Holst, D. J. Otte and S. Kazybayeva. 2006. Modelling the Poverty Impacts of Livestock Policy Change: Evidence from Vietnam and Senegal. PPLPI Steering Committee Meeting presentation material. FAO, Rome, Italy.

Contact

Achilles Costales
Livestock Economist - Pro-Poor Livestock Policy Initiative
Food and Agriculture Organization - Animal Production and Health Division
Viale delle Terme di Caracalla 00153 Rome, Italy
Tel: +39 06 57054521 Fax: +39 06 57055749
Email: Achilles.Costales@fao.org
PPLPI website at: http://www.fao.org/ag/pplpi.html