Pro-Poor
Livestock
Policy
Initiative

Rethinking the Traditional Concept of Livestock Services: A Study of Response Capacity in Thailand, Malaysia and Vietnam

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A Living from Livestock

PPLPI Working Paper No. 41

TABLE OF CONTENTS

PREFACE

This is the 41st of a series of Working Papers prepared for the Pro-Poor Livestock Policy Initiative (PPLPI). The purpose of these papers is to explore issues related to livestock development in the context of poverty alleviation.

Livestock is vital to the economies of many developing countries. Animals are a source of food, more specifically protein for human diets, income, employment and possibly foreign exchange. For low income producers, livestock can serve as a store of wealth, provide draught power and organic fertiliser for crop production and a means of transport. Consumption of livestock and livestock products in developing countries, though starting from a low base, is growing rapidly.

This paper reports the results of a comparative study of the livestock sector in 3 South East Asian countries -Thailand, Malaysia, and Vietnam- at different stages of development and under different political systems that have witnessed rapid livestock sector growth in the last two decades. In all countries this growth has highlighted weaknesses in national capacity to maintain adequate and fair provision of veterinary and other related services and to respond effectively to public health threats. The paper explores aspects of innovation capacity through an investigation of the changing spectrum of services, actor roles and patterns of interaction required to effectively respond to new opportunities and threats facing the livestock sector. Specifically, the paper seeks to develop a better conceptualisation of response capacity and to draw generic lesson on the limitations of current provisions and identify policy and other intervention strategies needed to strengthen this capacity.

We hope this paper will provide useful information to its readers and any feedback is welcome by the author, PPLPI and the Livestock Information, Sector Analysis and Policy Branch (AGAL) of the Food and Agriculture Organization (FAO).

Disclaimer

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Acknowledgements

Jeroen Dijkman, David Leonard and Joachim Otte offered theoretical insight, patient guidance and logistic assistance for this study. In Thailand, I thank Dr. Hans-Gerhard Wagner, Dr. Vantanee Kalpravidh, Dr. Subhash Morzaria, Dr, Vishnu Songkitti, and FAO Regional staff for their support of this study despite their busy schedule. At FAO-Vietnam office, Mr. Vu Ngoc Tien, Mr. Vu Van Thuoc, Ms. Dang Thi Minh Thuy, and Ms. Tran Thi Ngoc Hien offered ideas and help with logistics. Others who helped in one way or another were Dr. Kitti Prasirtsuk of Thammasat University, Dr. Soparth

Pongquan of Asian Institute of Technology, Dr. Wichai Turongpun of Thailand's National Institute of Development Administration, Dr. Montira Rato of Chulalongkorn University, Professor Fatimah Mohamed Arshad, Director of the Institute of Agricultural and Food Policy Studies of Universiti Putra Malaysia, Dr. Sumit Mandal of Universiti Kebangsaan Malaysia, and Dr. Duong Duy Dong of University of Agriculture in Ho Chi Minh City. Finally, I am indebted to my informants who shared their knowledge with me. The views expressed in this study are my personal views, however.

Keywords

Livestock development, response capacity, dynamic markets, Thailand, Malaysia, Vietnam

Date of publication: 27 March 2007.

EXECUTIVE SUMMARY

Dynamic markets have created opportunities and threats that demand livestock producers to innovate constantly. In this context, the traditional concept of livestock services that encompass research, extension, credit and veterinary programs is no longer adequate. This concept is too narrowly centered on technology with insufficient attention to actor linkages, patterns of interactions, institutions, information and marketing. It is also confined to services and service delivery but ignores larger issues concerning policies, institutions and the macro business environment in which producers operate. In regards to technology transfer, the old concept is based on an outdated top-down model.

This study develops the concept of "response capacity" which has recently been suggested as an alternative to the traditional approach to livestock services provision. Essentially this new concept places services in the broader context of changing markets and sectoral governance. It also takes account of not only producers but also government policies and production support systems. In this study, the concept will be broken down into three components, including producer response capacity, government response capacity and sectoral response capacity. The concept will further be tested with empirical evidence drawn from Thailand, Malaysia and Vietnam.

The study makes two main findings. First, the concept of response capacity explains not only the success of Thailand in becoming a world-class livestock producer but also its resilience in recovering from recent disease outbreaks compared to the other cases. Second, the concept is also useful in pointing out structural problems in all three countries that have hindered livestock sector development. Thinking in the traditional way would obscure these problems. However, because the traditional approach to poverty reduction has achieved success in some contexts and new approaches compatible with the response capacity concept have only recently been implemented, it remains to be seen whether they will work.

Based on the findings, the study makes five recommendations.

First, it is recommended that governments adopt a long-term vision of sectoral development and offer adequate political support for this vision. In addition, sector development initiatives must involve the institutionalized participation of all stakeholders or aim to create such participation while resisting populist programs or projects that serve only special interests. Stakeholders' participation in policymaking and implementation is important not only for the sake of fairness but also to improve regulatory enforcement.

Second, government agencies should focus not on providing inputs but on delivering the right legal and regulatory framework for governing the market. Government regulators should keep in mind that regulations from micro-financing to drug management should not be just for the sake of regulation, but must be made to promote production and trade. The right framework must balance the interests of various groups and must facilitate long-term sectoral growth.

Third, the concept of response capacity suggests a more participatory approach to service provision. Effective service delivery, especially in regard to research and extension, requires more systematic inputs from farmers. More broadly, top-down transfer of credit and technology should be replaced by horizontal exchanges among stakeholders. Rather than picking a commodity and relying on their own bureaucratic organizations to channel resources downwards, governments should focus on developing a micro-institutional framework that improves interaction among non-government actors.

Fourth, governments can raise producers' response capacity not only through traditional poverty reduction programs but also by allowing and encouraging farmers and other actors to organize, not only to share resources and information but also to build capacity, and to defend and promote their policy interests. Furthermore, because organizations differ in their ability to increase response capacity, it is important to choose the form of organization that is most effective. Autonomous organizations with a relatively homogenous membership and a cohesive structure are found to be the best form.

Finally, the paper notes the important role of an autonomous and vigorous civil society. Civil society contributes by promoting policy debates and offering forums for disadvantaged groups, and by acting as a knowledge broker. In addition, a vigorous civil society empowers consumers as a group; their demands in the long-term, force producers to take better consideration of social costs, environmental damages and disease risks, thus helping make livestock production more sustainable. Yet the most important benefit from a vigorous civil society is a higher level of transparency in policymaking as a result of public scrutiny. Transparency in turn helps prevent corruption and disease cover-ups which tend to protect state interests and the interests of powerful groups at the expense of smallholder producers.

1. INTRODUCTION

Escalating world demand for livestock products in recent decades has offered producers in developing countries great opportunities to expand. At the same time, however, increased competition, resource constraints, disease threats, and new trade standards are putting ever greater pressure on the sector. In order to survive and prosper under these evolving market conditions, livestock producers must be able to innovate constantly. The livelihoods of poor people linked with livestock may be threatened as the sector consolidates.

Given these developments, the traditional concept of livestock services that encompass research, extension, credit and veterinary programs is no longer adequate. This concept is too narrowly centered on technology with insufficient attention to actor linkages, patterns of interactions, institutions, information and marketing. It is also confined to services and service delivery but ignores larger issues concerning policies, institutions and the macro business environment in which producers operate. As markets integrate, this environment has become critical to the survival and prosperity of producers. In regards to technology transfer, the old concept is based on an outdated top-down model that overlooks the importance of building the capacity of livestock producers to innovate in response to dynamic markets and at the same time safeguarding public health and the livelihoods of poor people linked with the sector.

This study elaborates on and tests the concept of "response capacity" which has recently been suggested as an alternative to the traditional approach to livestock services provision. Essentially this new concept places services in the broader context of changing markets and sectoral governance. It also takes account of not only producers but also government policies and production support systems. In this study, the concept will be broken down into three components, including producer response capacity, government response capacity and sectoral response capacity. The concept will further be tested with empirical evidence drawn from three Southeast Asian countries (Thailand, Malaysia and Vietnam).[1] Parallel to the general trend in the developing world, these countries have witnessed rapid gains in livestock production in the last several decades. Yet this growth has stretched thin their national capacity to maintain adequate and fair provision of services and to respond effectively to public health threats. While all three cases possess dynamic markets, they are at different stages of development and under different political systems. The cases thus offer useful comparative lessons about sectoral changes and appropriate institutional strategies.

The study will be divided into three parts. In the first part, an overview of broad sector trends in three countries and their implications for sectoral governance will be provided. Here I will elaborate on the concept of "response capacity" as a different way of thinking about government's role in livestock sector development beyond traditional service provision. The second section will examine and compare the broad policy environment as it evolved over the last several decades in three case studies. The discussion will recount recent attempts at public sector reforms and trends of decentralization in the political system that affects livestock sector governance and agriculture in general. The third part of the study will focus on recent disease

[1] The study uses the key informant method supplemented by secondary sources. Fieldwork was conducted in three countries for six weeks during November-December 2005. About 15 extensive interviews were carried out with stakeholders in each country, including policymakers, academics, locally-based international experts and industry representatives. Interviews typically lasted for two hours each. Due to time constraint, I was unable to interview sub-national agencies or arrange visits to farms in Thailand and Malaysia. For Vietnam, I was able to interview provincial veterinarian chiefs in Long An and Tien Giang (two provinces in the Mekong delta), researchers and industry executives in Ho Chi Minh and Can Tho, and make a visit to two pig farms in Dong Nai province (northwest of Ho Chi Minh City). These interviews and visits were in addition to interviews with policymakers, academics and international experts in Hanoi, the capital.

outbreaks in the three countries as case studies of response capacity in operation under emergencies.

The study makes two main findings. First, the concept of response capacity explains not only the success of Thailand in becoming a world-class livestock producer but also its resilience in recovering from recent disease outbreaks compared to the other cases. Second, the concept is also useful in pointing out structural problems in all three countries that have hindered livestock sector development. Thinking in the traditional way would obscure these problems. However, because the traditional approach to poverty reduction has achieved success in some contexts and new approaches compatible with the response capacity concept have only recently been implemented, it remains to be seen whether they will work. The conclusions will present suggestions to improve sectoral response capacity in these three countries as well as general recommendations for policymakers based on the response capacity perspective.

2. SECTORAL TRENDS AND RESPONSE CAPACITY

2.1 Sectoral Trends and Issues of Concern

The dominant trend in all three case studies is the rapid growth and commercialization of livestock production (see Appendix). Although all three countries have seen agricultural share of Gross Domestic Product decline over the last several decades, livestock share in agriculture has continued to rise and now accounts for about one-quarter.

Rising demand has offered livestock producers tremendous opportunities for expansion. Among our three cases, Malaysia has experienced the fastest growth in consumption since 1980. For example, consumption of beef and poultry has increased more than five times during the last two decades. Milk consumption has also seen an increase of more than four times, whereas that of eggs has doubled. Pork, the product whose consumption has increased the least in Malaysia, still enjoyed a growth of about 30%. Compared to Malaysia, Thailand and Vietnam have also experienced respectable, albeit less spectacular, growth in demand. Consumption of pork, poultry, eggs and milk has doubled in Thailand and tripled in Vietnam since 1980. Over the same period, consumption of beef has stagnated in Thailand but increased by 75% in Vietnam.

In most cases growth in demand has been met by increased production. There are a few products where production has exceeded domestic demand and become competitive in foreign markets. The most remarkable case is Thailand's poultry sector, which quadrupled production during 1980-2000 and earned nearly $1 billion in exports in 2002 (FAO 2004, 15; Costales 2004, 1). Thailand's milk production has increased more than 20 times since 1980 although this still meets only one-third of domestic demand. Malaysia's swine industry also scored significant success until it was devastated in the late 1990s by the Nipah disease. The areas which all three countries have not been successful in meeting demand are beef and milk. Except for the case of milk in Thailand, production has been unable to keep up with demand or has seen slow growth.

Parallel to developments elsewhere in Asia, growth in production and consumption in these countries has led to the emergence of livestock industries as opposed to the traditional small-holders' production. This emergence is demonstrated in four interrelated processes, including structural integration, specialization, commercialization and closer spatial links between production and consumption. Structural integration can be seen in the growth in scale and vertical integration. These changes are best manifest in the case of Thai poultry and similar trends are also apparent in Vietnam's pig and Malaysia's poultry industries (Costales 2004; Lapar et al 2003, 9). There is evidence of a higher degree of specialization in national livestock production: poultry share in Thailand's livestock GDP has increased steadily from 30% in 1980 to 53% by 2001 (Costales 2004, 3). Specialization in the Thai case is also accompanied by greater commercialization: livestock export value (mostly poultry meat) was about 73% of livestock sector GDP in 2001 (ibid). Commercialization has brought production closer to urban centers which can offer better infrastructure and market access (ibid; Dinh et al, forthcoming).

According to Dennis Hoffman (1999, 9), the emergence of livestock industries in Asian countries has raised four policy issues, including (1) the importance of livestock to national economies; (2) the protection of the environment in the face of increasingly intensive farming methods; (3) the protection of human and animal health and welfare; and (4) the maintenance of social equity which may be affected by rapid commercialization and industrialization. While these are all salient issues, it is

important not to overstate the problems or to attribute their causes *exclusively* to livestock industrialization. First, it is true that, for the first time in the history of these countries, livestock is now an important sector rivaling crops. Changes in the prices or quantities of livestock products can generate shocks in national economies, as Malaysia found out during the Asian financial crisis when its currency plunged and its food import bills, of which fresh meat accounted for a large percentage, soared.[2] Yet while livestock production has generally grown faster than crops in recent decades, its share in agricultural GDP is still less than 25% in all three countries. Although Malaysia now admits that it made a mistake during the 1980s and 1990s in focusing too much on manufacturing at the expense of agriculture, it may be too soon to conclude that Asian policymakers have traded their dreams of national steel, cars, airplanes and satellites for those of chicken, pigs and cattle.

Second, environmental problems are hard to deny as they are obvious to anyone who makes a visit to a farm in these countries. Nonetheless, the impact of environmental pollution by livestock farms is in most cases local. Furthermore, it has been argued that industrialization may in fact reduce pollution, as evidenced in the case of Thai poultry that has adopted the closed system of production (Poapongsakorn et al 2003, 3/1). Similarly, scaling up needs not cause environmental problems. As suggested by the same study, there has been more evidence of serious pollution generated by concentrated small farms than the same problem in a certain area occupied by a single large farm (ibid, 3/4). If this is true, the problem is caused by the concentration of farms, not by their scale. Industrialization needs not mean the concentration of farms in a geographic area. Moreover, large farms clearly have the resources to address pollution more effectively than smaller ones, if they choose to do so.

While environmental problems may be local in scope, the protection of human and animal health—the third issue—is of more immediate concerns. In this case, human lives may be under threat on a global scale. The Nipah outbreak in Malaysia not only devastated the swine industry but killed more than 100 people. Recent outbreaks of highly pathogenic avian influenza (HPAI) have killed nearly 200 people in Thailand, Vietnam and Indonesia and forced the culling of millions of birds. As the virus spread to Eastern Europe in 2005, Western governments have spent billions of dollars in vaccine stock and made detailed plans to prepare for a potential human pandemic. Yet the threat may be exaggerated and the causes of recent outbreaks are still being debated. While industry experts, government officials and international organizations have often blamed small holders and wild life, there are reasons to believe that the concentration of animals in industrial or commercial production facilitated the mutations of more highly pathogenic virus forms that can spread from livestock to human beings (GRAIN Briefing 2006, 8).

The last issue raised by Hoffman, namely the potentially negative impact of livestock industrialization on social equity, is similarly controversial. On the one hand, interviews of trade associations revealed the uncomfortable fact that their membership had shrunk over time.[3] The disappearing members were perhaps small holders having lost out in the competition or failing to recover from price fluctuation cycles or disease outbreaks that destroyed their capital and stock. On the other hand, because livelihoods in rural Asia are increasingly divorced from farming and land and the younger generations of rural dwellers lack commitment to farming, one should not assume that diversifying out of farming always hurts them (Rigg 2005).[4] It has also

[2] Fresh meat accounted for about RM3 billion in RM13 billion of total food imports (see "Foreign Experts to Help Improve Livestock Production," *Utusan Malaysia*, August 2, 2004).

[3] Interview with Malaysian trade association officials, Kuala Lumpur, December 1, 2005. See also Sakpuaram et al for a similar observation in Thailand (2002, 61).

[4] For example, most Thai farmers earn non-farm income and as many as a quarter of the rural population earns most of their income from off-farm jobs (FAO-RAP and APHCA Table 1.3).

been argued that farmers stay poor, in both absolute and relative senses, in many cases not only because of their poor farm income but also because they cannot find off-farm jobs (Rigg 1998).[5] Even if this is true, it does not mean that the government should not attempt to help poor farmers cope better with market shocks by direct assistance. At the same time, it should be accepted that livestock industrialization is likely to be inevitable. In this context, being pro-poor should have broader meaning than direct assistance to smallholder producers only. Rather, it is also about facilitating and mediating sectoral evolution and enhancing sector contribution to poverty reduction and economic growth through a quest for systemic solutions that may well lie beyond the sector.

Despite the controversies, it is still possible to argue that the livestock sector is far more important now than it used to be for the concerned national economies; and that increased production—whether through industrialization, commercialization or simply a larger national herd—may create serious problems of environmental pollution, disease outbreaks and (perhaps short-term) job and income losses for small holders. If industrialization takes place over the long term, some or most of these problems may disappear. Until that stage is reached, however, they demand attention. The issue, then, becomes how to improve producers' and governments' capacity to respond effectively to new developments in the sector.

2.2 The Concept of Response Capacity

The concept of "response capacity" has recently been proposed as an alternative to the traditional concept of livestock services.[6] While "response capacity" is part of general capacity, the concept conveys two specific elements that the general concept does not. One element involves a sense of *urgency*: investment opportunities, disease outbreaks, environmental disasters, volatile capital and price shifts, and fast-track schedules of trade liberalization imposed from outside—all often demand from both producers and governments quick responses. General capacity helps but does not guarantee that actors make timely decisions. The second element of response capacity concerns *local specificity*: for response capacity to be effective, it must be built on an analysis of specific local conditions and needs. General capacity which does not sufficiently stress the specific kinds of opportunities and threats facing actors may generate misguided responses—responses that may be appropriate elsewhere but not in the specific contexts they are meant to address.

The basic insight offered by the idea of response capacity is that producers need to innovate constantly in response to the conditions of dynamic markets. Their capacity to innovate in turn depends not only on their technical or entrepreneurial skills and learning ability but also on a host of other factors that serve as interlocking support systems. These factors include patterns of interaction such as partnerships and networks, ways of working such as routines and organizational culture, and of course, government policy. In short, not just knowledge and technology inputs are needed but also the processes that make knowledge available and enable its use, and government policies that safeguard the livelihoods of poor producers.

Although response capacity so far appears to be a powerful and suggestive concept for rethinking service provision, it remains an untested idea. Thus a principal goal of this study is to operationalize the concept as an analytical tool and test it against the empirical experience of the case studies. A systematic way to conceptualize response

[5] This is the conclusion based on a longitudinal study of 77 households in a Thai village at two points in time (1982 and 1994).

[6] The conceptual discussion in this section draws from and extends the original concept proposed by Jeroen Dijkman of the Pro-Poor Livestock Policy Initiative.

capacity, as is proposed below, is to examine it at three different levels: the producer, the government and the livestock sector as a whole. From the perspective of the livestock producer, response capacity (PRC) comes from his or her personal qualities, including level of education (e.g. to access and process information), experience (e.g. to evaluate markets and absorb technology), wealth (e.g. to have slack resources to invest and cope with risks), entrepreneurship (e.g. to innovate and invest), and personal business networks (e.g. to expand business). In any country, PRC is unequally distributed among producers for three reasons. First, inequality is a natural phenomenon: differences in individuals' capabilities exist. Second, unequal distribution of PRC originates from the historical evolution of the sector: the sector may historically be dominated by a few producers whose market position allows them privileged access to capital, information, and government decision-makers not available to ordinary smallholders. The third reason has to do with organizations: some producers are able to organize themselves and multiply their PRC through pooled resources, efficient information sharing, strategic coordination, and cumulative market power. The organization of producers enhances not only the PRC of individual members or the group but also the capacity of the sector as a whole (more below).

In contrast, government response capacity (GRC) involves the ability to make and implement policy transparently and efficiently with inputs from as many stakeholders as possible, including livestock producers, health and other professionals and research communities. Practical constraints in time and resources may not allow all policies to draw on inputs from non-government stakeholders but institutional channels for their participation must be in place. Such organizational structures are, however, needed to ensure *timely* and *specific* responses that are *fair* to relevant stakeholders. In addition, regular interaction among all stakeholders also facilitates knowledge sharing.

Yet producers and government officials do not operate in a vacuum. At any point in time human actions are constrained by the larger social, political and institutional environment—in this case, the macro business environment facing the livestock sector as a whole. While it is producers who make decisions, a favorable environment helps them assess risks and identify market opportunities more accurately. More generally, it also lowers the risks of long-term investment and protects all producers. For their parts, government agencies at any point can only modify but not create an entirely new environment. The reasons are many fold: building institutions takes time; low economic development level places natural limits on institutional capacity; and government actions require the collaboration of private sector.

For the livestock sector as a whole to have strong sectoral response capacity (SRC), this environment must include the following main elements:

1. broad political support for market activities and for private enterprises;
2. competitive output markets and a legal system that effectively regulates markets of livestock and livestock-related products;
3. a stable regulatory framework that does not restrict long-term sectoral growth;
4. efficient and accessible input markets (land, labor, credits, breeders, technologies, feed, and veterinary drugs);
5. an information system that provides relatively accessible, affordable, accurate and timely information about markets, diseases and policies;
6. rich informal and formal organizational and institutional linkages among all stakeholders that facilitate interaction and exchange of information, knowledge and skills; and
7. enforceable industry-wide standards and autonomous trade and other industry associations that can help overcome various collective action problems.

Two important points need to be highlighted. First, these elements interact and affect each other. For example, broad political support (#1) facilitates or at least does not hinder organizational and institutional building (#6 and #7). At the same time, producers' organizations can help raise political support for themselves and for the sector as a whole. The livestock sector does not exist in a vacuum and has to compete for resources with other sectors not only in agriculture but also in manufacturing. Producers' organizations also help the sector cope with pressures from consumers' groups (which may demand price controls for livestock products) or from government bureaucrats (who may want to impose more stringent standards than necessary or practically possible).

Second, SRC can be regarded as the sum of all PRC and their organizations. Obviously, depending on the structure of the sector, big producers or groups of producers may have a disproportionate impact on SRC. In the extreme cases, their success or failure defines the success or failure of the sector. However, the business environment at least in theory can be made to benefit all sector stakeholders equally. A strong SRC is dependent on large producers and smallholders, and all other sector actors if the criteria for evaluation are not only efficiency but also social equity.

As argued here, the concept of response capacity is useful because it suggests a new way of thinking about government involvement in developing the livestock sector at all three levels. First, governments must strive to strengthen their own response capacity (GRC) by making livestock policies that are transparent, efficient and fair. Second, governments can and should attempt to raise the PRC of the less endowed producers through education, brokering of linkages, training, subsidized credits and even land reform. This intervention is justified because governments have the responsibility for correcting social inequality and ensuring equal opportunity. Yet because PRC is only one component of overall response capacity, and government resources are always limited, it may not be wise for bureaucrats and agencies to be actually involved in service delivery. There is no inherent reason why training and subsidized credit services cannot be contracted out to private or non-profit providers. In fact, government hierarchies—except in genuinely decentralized systems—are inherently unsuitable to the provision of timely and locally specific services. Furthermore, in both centralized and decentralized systems, services can be and have often been used as political goods whose efficient and fair distribution is hard to guarantee if bureaucrats are involved in delivery. In systems where local bureaucrats are not sufficiently paid—which is the situation in most developing countries today, motivation is always a problem and central supervision is often too costly and ineffective. Supervision of outside contractors may not be easy but perhaps in many circumstances is less difficult.

The greatest danger of bureaucrats' close involvement in service delivery, however, is their being distracted from improving the response capacity of the entire livestock sector (SRC)—where governments have a unique role to play. While producers have some power to improve their personal capacity, except strong trade associations and a few very large producers, most have little power to influence the macro business environment of the sector as a whole. This is a role specifically for governments, although it is important to reiterate that SRC is not built in a short time and any policy at a particular point in time can only have a marginal impact on it.

How does a government improve SRC? It is suggested that it can work to:

1. cultivate a mentality supportive of agribusinesses and livestock producers while retaining its general concern for public interests (e.g. consumers' interests and the interests of other sectors);
2. prevent monopolies and regulate markets;
3. make long-term strategic plans for livestock development and create a stable macro regulatory framework favorable to the sector;
4. remove constraints on input markets, if any;

5. effectively collect, process, transmit and disseminate information, especially market and disease information;
6. facilitate informal and formal organizational and institutional linkages among all stakeholders for the exchange of information, knowledge and skills.
7. support business associations and marketing channels and, through these associations and channels, create, monitor, inspect, certify and enforce industry standards.

In sum, for the livestock sector to respond effectively to market opportunities and threats, a government has broad roles to play not only by increasing its own GRC but also by facilitating the strengthening of the response capacity of individual producers (PRC) and that of the entire sector (SRC).

This analysis of response capacity suggests that the "traditional" concept of livestock services that encompasses research, extension, credit and veterinary services needs to be re-examined. From the perspective of public goods theory, this traditional concept is sound. Governments do have a unique role to play in research, technological development (for certain technologies that are too risky for private entrepreneurs to adopt), and veterinary services. Nevertheless, in light of what was discussed thus far about response capacity at three levels, the traditional concept is too narrow. First, unlike the response capacity concept which regards as critical governments' capacity to make policy in a transparent, efficient and fair way, the traditional concept is about implementation and not policy. While implementation is obviously important, sound policymaking capacity should not be overlooked. Second, the traditional concept has nothing to say about the role governments must play in facilitating or constructing a business environment (SRC) favorable to livestock production. A strong SRC is highly dependent on an enabling political and policy environment: the reserved role for governments.

Third, the effectiveness of technology-centered traditional approaches in dealing with equity may be suspect. At present, poverty reduction programs that offer subsidized credits and extension assistance to poor livestock farmers are commonly implemented by extension staff and state agricultural banks. Yet these centralized agencies confront intractable organizational problems if they are involved in these kinds of projects. First, they may have considerable technical expertise but little socio-economic knowledge of poverty. Second, their extensive administrative branches reaching down to every district are useful but these are organized typically to carry out uniform central policies but seldom to make (or adapt those) policies specifically for local needs. State agricultural banks are further handicapped by strict regulations designed for large-scale commercial lending but not for small loans. For these reasons, these traditional bureaucracies naturally face significant difficulties in implementing livestock-based poverty reduction programs that require organizational flexibility, local familiarity and some understanding of the poor and the rural societies they live in. This is not to say that traditional approaches always fail or are totally useless. The traditional method of service delivery has brought many results, as will be clear in the case studies. Nevertheless, the issue is more one of efficiency as when organizational rigidities create access problems for the poor and poverty programs end up benefiting better-off farmers more. From the perspective of response capacity, by contrast, poverty reduction programs to improve the PRC of those less endowed are an important contribution by government. Yet the concept emphasizes the need for services that are timely and locally specific, and suggests that governments should be aware of their inherent organizational limitations and of the danger that direct involvement in service delivery may distract them from strengthening their own GRC and from facilitating SRC. The concept of PRC also suggests that governments can raise PRC not only by training and credit but also by helping or at least allowing farmers to organize. Besides knowledge sharing and credit pooling activities, organizations are useful for ensuring access to policymakers and political support for farmers large or small.

The fourth problem of the old concept concerns its assumption of technological development as a top-down one-way process from research to extension to farmers. This assumption has brought numerous failures as new technologies worked in national labs but failed at the farm level. Given these failures, it is no longer acceptable to think of producers and other sector actors as mere receptors and not co-inventors. In contrast, the concept of response capacity gives equal emphasis to producers, government and the sector as a whole. It is more sensitive to the roles played by multiple actors and the knowledge stocks in the process of technological progress, and it stresses the role of government as the facilitator, not the actual sole provider.

Finally, the traditional concept overemphasizes technology transfer at the expense of supporting markets and providing information. In contrast, the concept of response capacity does not exclude traditional livestock services, such as research and extension services, but subsumes these under the broader concept of SRC and emphasizes the information and marketing values of these services rather than their technological utility. While technologies are important, for most livestock products and disease control technological discoveries are less critical than borrowings and adaptations to local conditions for marketing purposes. In dynamic markets, technology without consideration of markets is useless and even harmful in cases when farmers adopt a new technology and succeed in expanding their herd or flock only to lose everything when market prices plunge.

The next section will trace the development of the livestock sector in recent decades in Thailand, Malaysia and Vietnam. The main focus will be on changes in the political economy of livestock sector governance, the evolution and status of livestock service delivery mechanisms, and the impact of government policy on PRC and poverty reduction. To summarize the findings, the analysis suggests that there is room to improve the RC in all three countries although they are not at the same level. Historically, there has been an entrenched government mentality that is expressed either in the neglect of livestock (compared to crops) and agriculture (compared to manufacturing), or in an outright hostility to small holders (compared to large farms) or to private enterprises (as opposed to state-owned ones). This mentality has been translated into low agricultural investment, restrictive policies, discrimination against private producers, poor protection of small holders, and a lack of strategic planning for long-term sectoral development. Thailand has moved away from this mentality since the 1980s, Malaysia in the 1990s, and Vietnam just recently.

Second, in the conception of services there has been an excessive focus on technology transfer at the expense of almost everything else, including information, marketing, industry standards, and regulatory enforcement. All three countries suffer from this bias although the problem is worst in Vietnam. Participation in the global market, for all its costs, has contributed greatly to the efforts to create industry standards and regulatory reforms in three countries.

Third and relatedly, there is an over-reliance on bureaucratic hierarchies to deliver services while neglecting the macro policy environment and business networks and associations. Thailand has had the least problems in this area while Vietnam has the most. Bureaucratic hierarchy is still critical for disease control purposes but ironically recent public sector reforms attempted to get rid of it where it is needed the most (Leonard 2003). Finally, policymaking concerning the sector has often been opaque and highly politicized. This is manifest in costly and ultimately unsuccessful programs of sectoral development that served the needs of politicians but not those of other sector actors, including producers. Rumors of cover-up are commonly heard in cases of disease outbreaks in all three countries. All three suffer from this problem although Thailand has the freest press and government officials tend to be more exposed in these incidents.

Through the three case studies the concept of response capacity is partially validated as a useful analytical tool for rethinking service provision. While the traditional package of extension, credit and veterinary services remains relevant, it is more useful to consider it in a broader context of policy transparency, fairness, political support for the sector, constraints on input markets, relationship between the government and trade associations, various kinds of informal and formal linkages among stakeholders, and the role of farmers in research and extension. There is a caveat, however. Although the evidence indicates the superiority of the response capacity approach in raising productivity and in responding to disease outbreaks, the jury is still out in terms of poverty reduction programs. In all three case studies governments have pursued the traditional approach with respect to these programs. There have been recent experiments in decentralization and participatory approaches that share some of their basic assumptions with the response capacity concept; yet it is too early to evaluate their results.

3. THE POLITICAL ECONOMY OF LIVESTOCK DEVELOPMENT IN THAILAND, MALAYSIA AND VIETNAM

3.1 Thailand

3.1.1 Agricultural and Rural Development Policy

Thai agricultural development since 1945 can be divided into three periods.[7] Up until the late 1950s, rice and rubber dominated agricultural production, accounting for between 70% and 90% of Thai agricultural exports (except fisheries). From then until the early 1980s, Thai agriculture underwent the first wave of diversification in which the combined production of maize, cassava, sugar and kenaf for export overtook that of rice and rubber. Since the early 1980s, a second wave of diversification has taken place, being led by canned fruits, animal products (mostly frozen chicken) and horticultural crops. As a result, the share of rice and rubber in agricultural exports fell to below 30% by the end of the 1990s (Shigetomi 2004, 296).

Government policies have shifted over time to becoming more favorable to agriculture. Throughout the 1960s, the government pursued import substitution for industrialization; its intervention in agriculture was limited to irrigation projects.[8] While the economy grew at a respectable rate of 7% per annum, key agricultural products (rice and rubber) were heavily taxed (ibid, 297). The duty levied on exported rice accounted for more than 10% of total government revenue (ibid, 301). High economic growth and the commercialization of agriculture during this period led to increasing inequality, as evidenced in the increase of the Gini coefficient from 41.4 in 1962 to 49.9 in 1971 (ibid, 304).

A series of watershed political events took place in the early 1970s that caused a sharp turn in government policy. Mass protest movements in which poor farmers played an important role toppled a military government in 1973 (although the military seized power again in 1976). At the same time, the communist insurgency expanded in many rural areas and attracted significant mass and elite support. To win peasants' "hearts and minds," over the next decade the government phased out the export tax on rice, organized rural cooperatives and farmers' groups, offered price supports for agricultural commodities, devalued the currency, promoted direct foreign investment in agriculture, and began to formulate a comprehensive rural development strategy. A range of projects were implemented, including a crop diversification program that provided guidance and subsidies to farmers and a project that injected 500,000 baht to every sub-district for infrastructural development (ibid., 349). Although land distribution in rural Thailand was not extremely inequitable, most farmers did not have titles to their land, which prevented them from obtaining credit.[9] Hence the government passed the Land Rent Control Act and the Land Reform Act and started a land-titling program with the help of international institutions (Ministry of Agriculture and Cooperatives website; World Bank Precis; FAO-RAP and APHCA 41). Data on the early 1980s suggests that rent control, land redistribution, credit subsidies, price

[7] This paragraph relies on Shigetomi (2004, 295-309).

[8] In the 1980s, about half of government investment in agriculture (which then accounted for about 10% of total public investment) was spent on irrigation, one-quarter on the off-season Employment Generation Program, and most of the rest on interest subsidies (Turton 1992, 61-62).

[9] According to latest government data, 60% of poor farm households work their own land (two-thirds of these own less than 5 rais or 0.8 ha). 12% work on rented farms and 27% are landless (Shinawatra 2005, 35). Most of poor farmers are not landless.

supports and other programs were implemented in only limited areas and benefited mostly better-off producers (Turton 1992, 60-62).[10]

Political changes in the early 1990s again gave the government a new imperative to support farmers. While the communists had been defeated by the late 1980s, a failed attempt by the military to intervene into politics in 1992 galvanized popular opposition and contributed to the rapid democratization of the political system. Free elections for national and local legislatures now make rural voters' support crucial to political parties. Furthermore, farmers' groups now stage regular protests to demand price supports, land compensation and other favorable policies that the government can no longer suppress or ignore.[11] While it may be easy to buy the votes of many poor farmers and co-opt their organizations,[12] politicians have also sponsored many policy initiatives designed to promote agricultural production (in part because these programs promise lucrative contracts for local politicians and central bureaucrats to distribute to their clients).[13]

The current government led by Prime Minister Thaksin Shinawatra, for example, has been adept at courting farmers' votes with rural development programs. During the campaign in 2001 in which Thaksin's *Thai Rak Thai* (Thais love Thais) party won, Thaksin in fact promised to buy and lend two million cattle to farmers.[14] Since he assumed power in 2001, Thaksin has launched a flurry of ostensibly pro-poor and pro-farming policies.[15] Five main programs include debt suspension for farmers, the Village and Urban Community Fund, universal health care, One Tambon (sub-district)-One-Product," and People's Bank (Chandoevwit 2003). Since 1992 successive governments have enacted several administrative decentralization laws to increase popular participation in local decision-making and to empower locally elected committees at sub-district level by training them in development planning, budgeting and other management skills (Nelson 2001; Arghiros 2002). Thaksin's programs adopt these ideas of previous governments but critics have noted that the primary emphasis of his programs is easy credits to secure rural electoral support rather than sustainable development (Nelson 2001, 246-250). It is true that, thanks in great part to these programs, Thaksin and his party won by a landslide in his re-election bid in 2005; for the first time in Thailand's democratic history a political party won an absolute majority of votes (Kuhonta and Mutebi 2004).

3.1.2 Livestock Policy and Services

Livestock policy has followed the general trend of agricultural policy. Until the 1980s, the government did not promote livestock but maintained policies that may be fine in principle but in practice have hurt the sector, such as tariff on imported maize and soybeans and regulations on slaughterhouse ownership (they must be owned by local authorities) and licensing (slaughtering must be licensed by the Ministry of Interior) (Poapongsakorn 1982, 101; Ranong 1999, 11). Recently the protection of maize and soybeans has been changed so as not to hurt livestock producers: while importers of

[10] Most projects at the time were implemented either by the Ministry of Interior or the military (for anti-communist purposes) and only limited information seems available.

[11] Missingham (2003) examines the history of The Assembly of the Poor, a major mass protest movement.

[12] See Ockey (2000) on the prevalence of vote-buying in rural Thailand.

[13] An example is a recent scandal involving a National Assembly member from the ruling party who is also the Assistant to the Deputy Minister of Agriculture and Cooperatives. This official diverted the public fund used to buy 300 cattle for poor farmers to his sister's company. The government paid Bt 13,000 for a cow whereas the market price was Bt 5-10,000. Cattle recipients turned out to be political canvassers with ties to him rather than poor farmers. He was also alleged to be involved in a similar deal involving fertilizer. "Cattle Scandal: Chuwit Hoofs It," *The Nation*, November 20, 2002.

[14] The program was later changed to the provision of bull semen rather than cattle to farmers, leading opposition parties to call Thaksin a liar. "Cattle Scheme a Lot of 'Bull': Farmers," *The Nation*, August 15, 2005.

[15] In early 2006, Thaksin was forced to resign in the face of intense protests against his corrupt business deals, but later returned as acting Prime Minister. He was ousted in a military coup in late 2006.

livestock inputs are required to buy domestically produced soybean at a specified ratio, they can now receive a tax refund (Ranong 1999, 19). The government relaxed its control over processing facilities and encouraged foreign investment in modern slaughterhouses for poultry in the 1970s but has not done so for pigs.

The implementation of livestock policy lies in the purview of the Department of Livestock Development (DLD) under the Ministry of Agriculture and Cooperatives. Established in 1942, the DLD is responsible for promoting livestock production through research, extension and disease control. Besides central offices and research institutes, DLD claims to have 9 regional bureaus of animal health and sanitation, 76 provincial offices, 847 district units, 7,800 sub-district Technology Transfer Centers, and 34,197 "voluntary livestock workers" (DLD website).[16] The DLD's budget increased from about 3% to more than 8% of livestock GDP during 1982-1993, which reflected increased government attention to this sector (Poapongsakorn et al 1995, 99). Livestock services have been primarily oriented towards production promotion and disease prevention (Ranong 1999, 11). During 1982-1995, for example, extension accounted for roughly 50% of DLD's total budget, whereas the share for disease control was about 20% (Poapongsakorn et al 1995, 105). The DLD does not help farmers with marketing.[17] Two-thirds of DLD's extension budget in 1995 was spent on production promotion (artificial insemination, "animal production" and dissemination of forage crops), of which one-half (or 32.25 % of the total budget) was devoted to ruminant production.[18]

Among the three case studies, Thailand has been most active in promoting cattle and dairy production, less through breeding than through the import of exotic stock. *Breeding services* have always been limited and mainly involve an artificial insemination program for dairy cows (in contrast, the pig and poultry industries – which often are more important to the poor -- rely entirely on services provided by the private sector). Even in the dairy sector the government does not have a strong record of services. Its promotion of the hybrid of American, Australian Brahman and Thai native cows has produced cows with very low reproductive rates (Ranong 1999, 8).[19] The fee policy for AI services has not been consistent (sometimes charged, sometimes not). AI is not provided in a timely fashion and overall is inadequate due to limited budget (ibid. 10).

Livestock research spending is higher in Thailand than in the other cases (Fan et al 2003, 11-12).[20] Latest available data indicates that although research on livestock and fisheries has received an increasing budget since the early 1980s, crops accounted for more than 50% of MAAC research expenditure in 1995 (Poapongsakorn 1995, 94). Within the DLD, research budget was about 2% of total budget compared to 50% for extension in the same year (ibid., 105). Research focus has changed from diseases in the 1980s to animal husbandry in the 1990s (ibid, 104). Shigetomi (2004, 345) reports a close collaboration between government and big poultry corporations in research but this does not benefit the average farmer. Reflecting on the diversification program for both crops and livestock in the mid-1990s, Poapongsakorn and his collaborators highlight several problems in the ways research is organized. First, research is almost neglected from the beginning of the program and plays only a

[16] The number of Technology Transfer Centers appears to be a future goal rather than the actual number, as this program was just started in 1999. Interviews with DLD officials (Bangkok, November 21 and 22, 2005) suggest that the presence of DLD officials below district level is quite thin (no more than a few officials at the sub-district level and below).

[17] There is a marketing board for dairy products under the MAAC. The Ministry of Trade also has some programs to help farmers with marketing for their crops.

[18] This is the latest year when data is available but there is no reason to expect much change to have happened since. It is not clear if "ruminant production" means beef or dairy cattle or both.

[19] Of course, the problem had less to do with breed than with climate, nutrition and other management issues.

[20] Annual research budget of the MAAC is about $80-90 million (Fan et al 2003, 11). During 1990-1995, research budget of the DLD has ranged from $65 to 144 million baht, or 0.16% to 0.4% of livestock GDP (Poapongsakorn 1995, 99).

trivial role during implementation (ibid, 112). Technology comes either from abroad or from the private sector without being tested for local applicability and farmers are left to bear the risk. A second problem that increases the chance of failure is that research has focused on commodities, not on mixed farming which is the real condition at farm level. Third, the research budget is insufficient and far too low relative to the extension budget. The authors suggest two reasons for this phenomenon. For one, research is risky and time-consuming; thus it cannot respond quickly to the needs of policymakers who tend to prefer short-term returns. For another, policymakers are not aware of the fact that technology is location specific and often blame insufficient extension and farmers' attitudes for any problems (ibid, 118). While their criticisms are appropriate, the authors focus more on the balance between research and extension but do not sufficiently emphasize the importance of farmers' and other stakeholders' participation and knowledge sharing processes more generally which the program clearly lacked. More money for research may not solve any problems if these processes are neglected.

The provision of *extension services* has evolved over time, following the trends in many developing countries.[21] Up to the 1980s, extension was focused on providing technology to help farmers raise production, mainly through intensification. After the closure of the land frontier, the emergence of water shortage as a problem, and the worldwide fall of commodity prices in the late 1980s, government extension programs switched to diversification and sustainable agriculture. The lessons from these programs are still relevant today. In these programs, it has been noted that government approach to extension allowed little input from below (Sirisup and Kammeier 2003).[22] Project packages, budgets and target areas in each province were designed at the top and assigned through the vertically organized bureaucracy (provincial, district, subdistrict). With the help of the District office and district branch of the Bank of Agriculture and Agricultural Cooperatives (BAAC), subdistrict extension officers were responsible for finding farmers interested in the program, encouraging them to join, visiting farms, and working with them to make a detailed farm plan and obtain approval for credits. Credits and inputs were arranged at the central level to be distributed through the bureaucracy. Besides its top-down character that allowed for no flexibility at local levels, the program lacked adequate preparation: the national program was implemented even before the results from pilot projects were evaluated. There was no help with marketing new products; neither was there monitoring after implementation. Drop-out rates were high (40-50% in the long run) and extension officers did not want to revisit the farms for fear of meeting with those who had dropped out and fallen in debt as a result of their participation in the program. Since 1999, the government has initiated a program to establish a Technology Transfer Center in all subdistricts. The government claims that these centers are explicitly designed to encourage farmers' active participation in devising and implementing rural development strategies for their sub-districts. The impact of these centers remains to be seen.

In terms of *credit services*, since 1975 the government has expanded the formal credit system into the countryside by requiring commercial banks to lend to farm households a certain percentage of their total deposits (Siamwalla et al 1990, 274-5).[23] Yet critics have charged that increased government credits have mostly benefited better-off rural households. A main reason for most poor farmers not to qualify for government loans is their lack of land title (Srijantr 2003, 152). Rather than helping poor farmers, the expansion of government credit may have hurt them

[21] This paragraph relies on Sirisup and Kammeier (2003).

[22] This is a recent study of the long-term impact of the diversification programs in the mid-1990s.

[23] Siamwalla et al (1990, 275) warns that government data on loans in this program may be exaggerated because government's monitoring of commercial banks has been lax and the method of enforcement is not through audits but "moral suasion" and "general studies."

because wealthier farmers dominating government-sponsored farmers' cooperatives enjoy better access to cheap credits and become more productive and competitive (Siamwalla et al 1990, 293).[24]

Credit at subsidized rates has also been used specifically to promote the beef and dairy industries. In the early 1990s, the government imported tens of thousands of breeding animals from Australia to help farmers diversify away from cassava (Poapongsakorn 1995, 142). To join, farmers were required to own at least 10 *rais* (1.6 ha) of land. Difficult climate and inadequate food caused many cows not to reproduce and the program to fail ultimately. One source estimates that breeding stock, cashew nut trees and silk projects caused 28,000 farm households to owe a combined debt of Bt 2 billion to the BAAC with no ability to pay back. A similar fate may await a recent Ua-Athorn cattle project worth Bt 10 billion.[25] In this scheme, a state enterprise was set up to buy one million pure-bred calves to lend to poor farmers who sell the heifers back less 7% interest. It was insisted that farmers would not need any capital to join; they were only required to have access to sufficient grazing area. This project was launched in 2004 before the election and there were many signs that it was merely a vehicle for politicians to distribute patronage during an election year.

The dairy industry has seen greater development thanks in large part to government subsidies. On the supply side, the government provided farmers with a loan to cover the cost of 5 (imported) dairy cows, housing, and digging a pond (Ranong 1999, 8-9). Participating farmers must have at least 10 *rais* of pasture (or half if they have reservoirs with sufficient year-round water supply). The government also encourages farmers to form cooperatives equipped with cold tanks to preserve the milk. The number of dairy cooperatives rose from 13 in 1986 to more than a hundred by 1997. The government controls domestic milk prices and requires importers of powdered milk to buy domestically produced fresh milk at a specified proportion. In 1992, it launched the School Milk Project to provide free milk to students. The government spent Bt 6 billion by in 1999 (compared to Bt 279 million in 1992) to buy 300,000 tons of fresh milk for the program. This was 50% of total domestic consumption of that year.[26]

Thailand also shared the decentralizing trend in *veterinary services* that took place in most Asian countries in the 1990s (Mudbhary 1999). Under the DLD there are 9 regional veterinary research and diagnostic centers operating in cooperation with 76 provincial offices and a commercial-scale vaccine production unit (Poapongsakorn et al 2003, 3/2). Regional and provincial offices have been given increasing autonomy within fiscal limits. The DLD also tried recently to privatize its vaccine production business without success (Ranong 1999, 12). The bulk of veterinary services has been concentrated on the ruminant and pig sectors and Thailand has succeeded in eradicating such diseases as rinderpest and haemorrhagic septicaemia. The DLD's longstanding program to control FMD, however, has not been successful. The degree of unreported disease is very high, leading to widely different statistics (Kehren and Tisdell 1997, 3-4).[27] Lack of technical expertise at the village level, failure to control animal movements—especially across national borders—and inadequate supply of vaccine are other main reasons (Ranong 1999, 12; Poapongsakorn et al 2003, 3/2).

[24] It has been argued that the effect is not large, however. Despite the government's increased role since the 1970s, real interest rates (2-4 times larger than government rates) in the informal credit sector did not change in the next 20 years (ibid, 272).

[25] "Ua-Athorn Cattle: Cash-Cow Project Heads to Cabinet," *The Nation*, June 11, 2004.

[26] The program is facing a land constraint as farmers want to expand their dairy stock but do not have additional land for pasture. The average pasture per dairy cow was 2 rais but was reduced to 0.7 in 1997 (Ranong 1999, 10).

[27] In 1995, for example, the DLD's Yearly Report cited the number of FMD infected animals in Thailand to be 6,330, but in another document it published, the number was 1,012. In an OIE publication that republished data reported by DLD, the number for the same year was only 63! (Kehren and Tisdell 1997, 3-4).

The DLD has talked of a plan to set up FMD-free zones in a few years but whether it has an effective plan of action remains to be seen.

Abattoir control continues to be a difficult issue for the DLD. According to government critics, crude government restrictions on slaughtering activities were ostensibly designed to protect public health but in reality discouraged private investment in slaughtering facilities while not being effective in disease control. The charges and income tax levied on every pig traded or slaughtered are so high that they have encouraged underreporting and illegal slaughtering (Poapongsakorn 1982, 102; Ranong 1999, 11). Bangkok, for example, has only two private slaughterhouses of "acceptable standards" (according to the municipal government's Consumer Protection Board) that process 1,100 pigs a day. The rest of the pigs consumed, estimated at 10,000 a day, are processed by facilities under various local authorities which may not have adequate sanitary conditions.[28]

To be fair to the government, pigs are more difficult to regulate than poultry because the former are almost entirely consumed domestically. Unlike poultry exporters who have to meet strict requirements to export their products, there is little incentive for pig traders to improve sanitary conditions of slaughterhouses as long as Thai consumers continue to accept existing standards. Tight regulations of slaughterhouses have only generated traders' evasion, bribes or other illegal behavior. The government seems to have recognized the futility of regulations without sufficient incentives for compliance. Recently it has adopted a more comprehensive approach by establishing slaughterhouse committees in each province, training slaughterhouse owners or managers, providing credits to those willing to upgrade their facilities, and launching public relations campaigns to educate consumers about food safety issues.[29] The goal is for all privately owned slaughterhouses to be registered, checked and certified regularly in the near future.

3.1.3 Thailand's Response Capacity

As reviewed above, Thai GRC is generally strong, especially for poultry. Compared to Malaysia and Vietnam, Thailand was a pioneer in its early promotion of agribusinesses with a special focus on livestock. The general business environment is favorable to livestock development (except the pig industry). This strength is indicated in a collaborative relationship between the government and big agribusinesses, relatively competitive livestock markets, the existence of long-term, strategic sectoral development plans, and a well-developed commercial banking sector that is required by the government to serve the needs of (mostly large) agribusinesses.

The success of Thai poultry exports in world markets during the last 30 years is primarily thanks to Thai producers' entrepreneurship and response capacity but government policy clearly played a significant role, especially initially, as shown in the case of Charoen Pokphand (CP) Group, Thailand's and Asia's largest agro-conglomerate that pioneered in poultry production for export (Goss et al 2000, 515-516). CP began in 1921 as a shop owned by two Chinese brothers selling seeds and expanded into feed production in the 1960s. In the 1970s after the government lifted control over chicken slaughtering facilities, CP began to organize contract production of poultry for export. With help from American and Japanese partners in marketing and technology and from Thailand's commercial banks in finance, CP soon emerged as Thailand's largest company engaged in poultry production, processing and marketing. Thailand's poultry export growth of 66% per annum during 1975-1985 was primarily driven by CP and a few other competitors. The Thai government's policy to encourage

[28] "Behind the Door: It's Our Way or the Highway." *The Nation*, August 6, 2002.

[29] Interview with a DLD section chief, Bangkok, November 21, 2005.

foreign investment in this sector and its negotiations with the Japanese government to reduce import tariffs for Thai chicken contributed to the success of this commodity (Shigetomi 2004, 363). By the 1990s, CP had moved into retailing, real estate, telecommunications and petrochemicals and had also invested significantly in animal feed production in China and other Asian countries. In 1995 the Group's total turnover was US$4 billion and it employed 100,000 employees in 20 countries. CP is not the only successful agribusiness in Thailand: a majority of Thai major non-financial corporations engage in agribusiness (Suehiro 1992, 58).

As will be seen later, livestock producers in Malaysia and Vietnam have benefited less from political support; and perhaps this is why few large private livestock businesses have emerged there. On the other hand, this favorable environment in Thailand may have gone too far in favor of big businesses: the cozy relationship between national politicians and poultry industry giants, and that between local politicians and dairy cooperatives, now raise the suspicion that state policies may have served special interests too well. In a recent scandal, for example, it was revealed that extensive networks covering at least 49 provinces had been siphoning off money from the budget to buy school milk.[30] Officials responsible for buying milk from manufacturers were accused of colluding with suppliers to accept milk of poor quality or nearly expired milk for consumption by students in return for kickbacks. The provincial governor of Nong Khai and his livestock chief were caught demanding bribes from milk producers and were arrested. The DLD Secretary-General was dismissed by the Prime Minister after it was disclosed that his sister operated a company that supplied 30% of the milk to public schools.[31]

A critical feature of Thailand's strong SRC is the extensive network of trade associations. There are trade associations for each commodity, which offer effective liaison between the government and producers. The Thai Broilers Processing Exporters Association is perhaps the most important of its kind in livestock. This Association claims that its official mission is to "act as a regulating and service agency for the large number of Thai chicken meat producers and exporters." The association is run at the top by the few largest producers and serves as the vehicle for these producers to control production and prices, to advise the government on industry policies, and to participate in international negotiations beside government officials.[32] The association has enjoyed tremendous support from the government but more research needs to be done about its mode of interaction with government agencies and its behavior as a cartel in the industry.

The Thai government has also launched many programs to reduce rural poverty through the traditional approach. While relatively successful with respect to dairy (which however reached very few beneficiaries), it failed to lift the cattle industry. Overall, there are two problems with these programs. For one, intervention has benefited mostly the better-off farmers. Programs to promote diversification and livestock production in the early 1990s, in particular, have been shown to generate three kinds of responses from smaller producers. One kind of response was taken by better-off farmers who were already diversifying; government cheap credits and other subsidies offered opportunities for them to continue with diversification. A second type of response came from those farmers that lacked capacity to expand on their own but who were attracted by cheap credits and government promises. In this group there were many who succeeded but also many that failed and sank into debt. A third kind of response involved farmers at the bottom of the market who faced land

[30] "Milk Money: Scandal Touches High-Level Bureaucrats;" "I Was Asked to Pay Kickbacks;" "Milk Scandal: Scams Said to Be Worth Bt530m;" "School-Milk Scandal: Ministry Plans Broad Probe;" and "Skimming of Milk Budget 'Widespread';" *The Nation*, August 21, 22, 24 and September 11, 2002, respectively.

[31] For a systematic analysis of corruption in Thailand, see Phongpaichit and Piriyarangsan (1996).

[32] Interview with an executive of the association, Bangkok, November 18, 2005.

and labor constraints and were left out. The second problem concerns the dairy program: while it has helped production and consumption to double [from a very low base] through direct price and demand subsidies, it is not clear whether and when the dairy industry can ever survive without subsidies, which now pay for 50% of the milk consumed nationally. Continuing decentralization promises more active participation of farmers and villagers in local affairs, but whether this will make the program self-sustaining in the future is not clear. It is, however, still too early to know the results of decentralization efforts in the last decade.

Compared to a decade earlier, electoral politics has greatly increased the appeal of poverty reduction programs to politicians. The importance of rural votes to politicians has led to the recent massive injection of capital into rural communities. Analyses of these programs have been contradictory, and it may simply be too early to tell whether these programs will succeed in helping the poor or if they will, like their predecessors, burden them with debt.[33] A careful study of the Bt 75 billion Village Fund program in 8,000 villages has shown that rural household debt rose 20% from 2000 to 2002 while income stagnated.[34] Given farmers' newly-found power through mass protests, the government may have set its own trap. Prime Minister Thaksin's debt relief program launched in 2001 was in fact a response to protests by those farmers who had participated and suffered heavy losses in the earlier diversification programs.[35] While he reaped immense popularity from this and similar programs, one wonders how much future Thai governments would have to pay if they didn't work.

3.2 Malaysia

3.2.1 Agricultural and Rural Development Policy

Agricultural production in Malaysia since independence (1957) has seen tremendous growth and diversification. As in Thailand, the role of rubber and rice in Malaysia's agriculture has declined over time (Arshad and Shamsuddin 2000, 106-8). The contribution of rubber to GDP fell from one-quarter in the 1950s to less than 7% today. Palm oil has long replaced rubber as Malaysia's most important export; the country produced about 50% of world's output and 65% of world exports of palm oil in 1992 (Fold 2000, 477). Since 1980, other commodities such as vegetables, fruits, pork, poultry and fish have also experienced rapid growth. Livestock (mostly poultry and pork) had the second fastest growth rates after fisheries during 1966-2000 (Arshad and Shamsuddin 2000, 108).

Multiethnic Malaysia is organized as a federation comprising 13 states. Ethnic Malays, almost all of whom are Muslims, account for 60% of total population while the proportions of Chinese and Indians are 28% and 9%, respectively (Lim 2002, 102). Constitutionally state governments are vested with significant power in regards to land, mining, agriculture, forestry, local administration, housing, and local markets.[36] Federal and state governments share responsibility for animal production, protection of wild animals, veterinary services [veterinary services are the instrument for the following four activities], animal quarantine, public health, sanitation, disease

[33] An early evaluation of the Village Fund and People's Bank programs can be found in "Village Fund: Doubts Remain over Debt Payment," *The Nation*, February 21, 2002.

[34] "Debt Balloons under Village Fund Scheme, Survey Finds." *The Nation*, November 16, 2004. Also interview with Dr. Wichai Turong-pun, the head of the research team, Bangkok, November 21, 2005.

[35] "Rural 'Victims' Demand Action," *The Nation*, September 6, 2001; "Farmers March to Bangkok," *The Nation*, February 2, 2002.

[36] "State List," Constitution of Malaysia. There are additional powers for Sabah and Sarawak, the two states that joined the federation after Malaysia had gained independence.

prevention, drainage and irrigation, and land rehabilitation.[37] Although the federal government has supreme authority and controls major sources of revenues, federal policies touching on issues in which states have constitutional authority require negotiations or political resources to be expended. Several informants with long experience working in the Ministry of Agriculture and Agribusinesses (MAA) go so far as to claim that the Ministry is merely "a puppet," meaning it has little power to shape the situation at the local level.[38]

Unlike Thailand which has seen much political upheaval and a trend towards democratization in recent decades, Malaysian politics has been relatively stable. Since independence, the government has been dominated by Barisan Nasional (National Front or BN), a coalition of four ethnic parties: the United Malay National Organization (UMNO), the Malaysian Chinese Association (MCA), the Malaysian Indian Congress (MIC), and (since the 1970s) the (mostly Chinese) People's Movement Party (Gerakan). UMNO is the most powerful partner in the coalition and can be considered the ruling party. There are two main opposition parties: the largely Chinese Democratic Action Party (DAP) and the Malaysian Islamic Party (PAS). DAP is strong in Chinese constituencies and for decades PAS has controlled state governments in one or two northern states with overwhelmingly Malay populations.

Despite BN's domination, individual politicians of the coalition often face stiff fights to retain their seats, among themselves as frequently as with opposition candidates (Crouch 1996, 56). Elections therefore are real contests in which massive amounts of money and patronage are spent to court votes. Another crucial aspect of the electoral system involves a bias in favor of rural votes—which in some cases outweigh urban votes by a ratio of 4:1 (Ibid., 58). This rural bias was first set up by the British and consolidated during the early years of UMNO rule to maintain Malay political domination because most rural dwellers were (and still are) Malays (Lim 2002).

Electoral politics has had deep impact on rural and agricultural development. In the early years, the government continued the laissez-faire policy of British rule; public expenditures were kept to infrastructural upgrading and the provision of rural services (Lim 1973, 183-184; Rudner 1983, 424; Shari 1992, 81). These limited efforts did little to reduce rural Malay poverty. Following the election of 1969 in which Chinese constituencies gained substantially at the expense of Malay ones, severe race riots broke out that led to hundreds of deaths. Realizing the need for radical change, the government shifted to a much more interventionist approach. The so-called New Economic Policy (NEP) and several Five-Year plans implemented during 1971-1990 represented a comprehensive strategy of poverty reduction targeted at Malays. This strategy was carried out through the massive land resettlement program, the Muda irrigation scheme, the national networks of credit, marketing and community organizations set up or expanded under NEP, and the first National Agricultural Policy (NAP1) for 1984-1990 (Lim 1989; Mahfoor et al 2001, 388). By the late 1980s, NEP had succeeded in reducing poverty dramatically although government programs were criticized for benefiting better-off farmers and BN supporters the most (Shamsul 1986; Shari 1992).

During the 1990s, government intervention was reduced and an increased role of the private sector was called for, as evidenced in the new National Development Policy for 1991-2010 (which succeeded the NEP) and the Second National Agricultural Policy (NAP2) also for 1991-2010 (Milner and Mauzy 1999, 72-73; Shari 1992, 87-90; Mahfoor et al 2001, 393). Another change concerned food production. Although there were some efforts under NEP to achieve food self-sufficiency, the new policy for the 1990s downplayed this issue in part because of the emerging land and labor shortage and in

[37] "Concurrent List," Constitution of Malaysia. These areas may overlap. Public health apparently refers only to human health but one can certainly interpret it to mean cases when animal diseases such as HPAI pose public health threats.

[38] Interviews, Kuala Lumpur, December 6, 2005.

part because of available cheap imports from Indonesian rice to Indian beef (Arshad and Shamsuddin 2000, 104-105).

While Malaysia achieved spectacular growth especially in manufacturing during the 1980s and 1990s, its food imports increased from RM 3.5 billion in 1985 to 7.7 billion in 1995 and 10 billion in 1997. The financial crisis of 1997-1998 during which the ringgit lost more than one-third of its value forced the government to reassess its priorities; hence the introduction of the Third National Agricultural Policy (NAP3) for 1998-2010 which prioritizes food security.[39] Some of the main goals concerning livestock in NAP3 concern the faster commercialization of poultry production for export,[40] the deeper integration of livestock production with plantation crops, and the building of Malaysia's status as an "international *halal* food hub." The overall approach is to achieve self-sufficiency through large-scale livestock production: "Small producers with backward technologies will be encouraged to expand their scale and employ advanced technologies."[41]

3.2.2 Livestock Policy and Services

Historically livestock had received more government attention than in the recent past. In the 1960s and 1970s, there were several attempts at raising the self-sufficiency rates in beef and dairy products—at the time being 85% and 5%, respectively—to 100%, and to reduce the dependence on imported feed (Young et al 1980, 246; Ahmad 1994). As part of NEP, the government established *Majuternak* (State Livestock Development Corporation) in 1972 in charge of livestock marketing, investment, regulation and abattoir management (Department of Livestock Services 1994, 149-152, 203, 236, 310). From 1972 until 1983 when *Majuternak* was dissolved, it directed several ambitious livestock development projects. During this period, it distributed more than 10,000 dairy crossbred cattle, offered training to more than 6,000 (Malay) farmers, and established 40 Milk Collecting Centers around the country (ibid., 611-654). The amount of milk collected in 1974 was 100,000 liters but increased to more than 10 million liters by 1985. Collected milk was guaranteed consumption through a government project to supply free milk to school children in rural areas. Besides dairy cattle, *Majuternak* imported tens of thousands of exotic beef cattle to distribute to Malay farmers, built several cattle farms and new abattoirs, and even attempted to stabilize prices of beef through subsidies. After Mahathir Mohamad became Prime Minister in 1981 and gave higher priority to industrialization, privatization and trade, the corporation was dissolved. Following its closure, all the projects were either terminated or scaled down greatly. There is no information about how successful these projects were. With Mahathir's liberalized trade regimes established in the mid-1980s, food imports began to increase sharply. Over time self-sufficiency in beef has decreased to about 20% in 2000 whereas the rate for milk remained at 5% (Loh 2002).

Another distinct character of the Malaysian case is the preoccupation with beef and dairy industries by all past and current governments. While poultry and pig producers have benefited from the liberal investment climate and rapid economic growth during the 1980s and 1990s, they have received limited government help and have even been burdened by many adverse policies. For example, prices of chicken meat have been under government control since the 1980s in the name of protecting poor consumers. Prices of eggs are also controlled during part of the year.

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[39] Food imports increased further in 2003 to RM 13 billion (Jinap and Shamsuddin 2004). Main food imports include cereals, vegetables, fruits, dairy products, beef, mutton, and fish.

[40] Because Malaysia is already self-sufficient in poultry, expansion is aimed for export to earn hard currencies that can be used for the import of other foodstuffs.

[41] Statement by Dr. Hawari Hussein, Director-General of DVS, as quoted in Khairunnisa Sulaiman, "Revolusi penternakan" [The Livestock Revolution]. *Utusan Malaysia*, September 6, 2005.

For religious reasons, the pig sector is tolerated but not supported by the federal government.[42] In the words of a local academic, the pig sector is something national Malay politicians "can't swallow but can't spit out." The NAP3 in which food self-sufficiency is a top priority touts the prospects of Malaysia to be an international *halal* food hub but speaks of pig production as an industry that needs to be "stabilized" (Abdul Rahman 2001, 104). The importance given to self-sufficiency explains in part why beef but not pork was selected as a priority: Malaysia is self-sufficient in pork with excess capacity for export whereas beef and mutton meet only 20% of domestic demand. But pig production accounts for nearly 20% of national livestock production (in value terms) and used to be quite competitive in the regional market whereas cattle make up less than 5% of output and are internationally uncompetitive; the point is that the former may possess a stronger base for development than the latter.[43]

At state level, support for pig farmers varies greatly. Governments in several overwhelmingly Muslim states no longer issue new or renew licenses to pig farms.[44] Malay politicians in other states have also sought to adopt similar measures, only to stir up Chinese opposition.[45] Despite government neglect and Muslim hostility, the sector has been able to survive and prosper thanks to strong Chinese demand for the product, to Chinese political clout in some local governments or constituencies, and to Malaysia's geographical proximity to Singapore (which closed all its pig farms in 1990). Before the outbreak of the Nipah virus in 1998-1999, the pig industry exported one-quarter of its total output to Singapore as live pigs. The value of this trade was RM449 million, making Malaysia the biggest pig exporter in Southeast Asia at the time (Abdul Rahman 2001, 105).

Besides religion, there may be other explanations for Malaysia's lack of interest in livestock production in general. The early success of rubber and then palm oil has made the development of other products less necessary. If rubber and palm oil can convert solar energy more efficiently than livestock can, why bother?[46] Both favorable climate and massive investment in industrial crops over several decades have given Malaysia a global comparative advantage in these crops while other sectors, including livestock, fell behind. For example, the price of local beef is nearly twice that of imported Indian beef.[47] While Malaysia's pork and poultry do better, these industries depend up to 70% on imported ingredients (Loh 2002).

The recent NAP3 stresses the importance of food security but the expansion of industrial crops based on cutting-edge biotechnologies remains the top priority. Although this strategy is appealing to both Mahathir and his successor since 2003, Abdullah Badawi (both have vowed to make Malaysia an industrialized nation by 2020), the unsurpassed political and economic clout of the plantation sector is certainly a factor. In every Five-Year Plan since the 1960s, the Federal Land Development Authority (FELDA) has resettled tens of thousands of poor and landless farming families in new land to develop government estates of rubber and palm oil.[48] By 1995, FELDA had established 309 schemes and 158 estates totaling a cropped area

[42] Interview, Kuala Lumpur, December 6, 2005.

[43] T. C. Loh (2002) citing government data for 1999.

[44] Interview, Kuala Lumpur, December 6, 2005.

[45] See a recent debate in the state assembly of Penang in "Unfair to close pig farms," *The Star*, December 9, 2005, p. 30.

[46] This explanation is mentioned in an interview but it is unclear whether this is true or whether policymakers actually take this fact into consideration.

[47] At retail level, Malaysian beef costs RM 14-16, whereas Indian beef RM 8 per kilogram (Interview, Kuala Lumpur, December 7, 2005). The price of the latter has recently increased to RM 9-10, which Malaysia has blamed on the "cartelization" of Indian sellers (*The Star*, February 14, 2006).

[48] FELDA is the largest but other large land development agencies are Rubber Industry Smallholders Development Authority (RISDA) and Federal Land Consolidation and Rehabilitation Authority (FELCRA).

of about 720,000 hectares (Fold 2000, 476).[49] As the single biggest plantation owner which produces 30% of Malaysia's palm oil, FELDA employs millions of farmers, is an important channel in the patronage network of the ruling coalition, and provides it with a reliable base of electoral support. Commercially, Felda Holdings Limited is a profitable enterprise that comprises 27 subsidiaries, 12 joint-ventures and 10 associate companies locally and abroad—a great source of revenue and national pride.[50]

Since the introduction of NAP3, the government has drafted a Food Trade Balance Plan which aims at changing the current food trade deficit of RM4 billion to a surplus of RM 1.7 billion in 2010.[51] Plantations are exhorted to integrate cattle rearing with palm oil with the goal of raising the current number of plantation cattle from less than 100,000 to 1 million by 2010.[52] The allocation for agriculture in the 2005 budget reportedly increased by 33% and new hires are being made at the Department of Veterinary Services.[53] The new Ninth Five-Year Plan (MP9) for 2006-2010 has allocated RM 11.4 billion for agricultural development, an increase of 70% compared to the previous Five-Year Plan.[54] A new 2,000-hectare feedlot dubbed "Beef Valley" that can keep up to 150,000 cattle is scheduled to start operating in 2007—this feedlot would singly double Malaysia's self-sufficiency rate in beef.[55]

Independent from the orientation of government policies, long-term developments and future shifts in commodity prices may favor livestock development. On the one hand, rapid economic growth and urbanization over three decades have created a new affluent middle class whose demand for high-quality food, including livestock products, has increased sharply and become a drain on foreign exchange. The financial crisis in 1997 only exposed this vulnerability. On the other, Malaysia's palm oil, which accounts for 35% of total value added in agriculture, is facing stiff international competition from industrialized countries' vegetable oils (Fold 2000). Evidence in the last two decades suggests that certain livestock products do have great potential. As Appendix 1 indicates, during this period domestic production has increased in response to rising demand for livestock; contributions from livestock and fisheries to total value added in agriculture, 7.6% and 14.4% respectively in 2003, have now exceeded those of rubber (6.7%), cocoa (5.9%) and rice (3.5%) (Jinap and Shamsuddin 2004, 3).

Turning to livestock services, the Department of Veterinary Services (DVS) under the Ministry of Agriculture and Agribusiness is the agency primarily responsible for livestock development and animal health in the country. This agency employs about 3,000 staff; and among 1,600 technical support staff, about half work in state and local governments (Nor et al 2003). DVS oversees several animal research institutes, 14 breeding farms and seven abattoirs. In each state, DVS has a livestock office and a veterinary service center. This office in turn supervises district offices in the state.

Livestock services such as extension and credit are also provided by other agencies, including the land development authorities (FELDA, FELCRA, RISDA, etc.) and the Farmers' Organization Authority (FOA). The Farmers' Organization Authority (FOA) is

[49] For comparison, the total area under paddy cultivation of Malaysia was 666,000 ha in 1995 (Arshad and Shamsuddin 2000, 104).

[50] Felda Holdings is 49% owned by the government through FELDA and 51% by FELDA employees. In 2004 its revenue was RM7.8 billion and net profit RM340 million (Hanim Adnan, "New MD to Push Felda Ops Abroad." *Star*, December 5, 2005, p. 7.

[51] "Advisory Panel to Boost the Agricultural Sector," *Utusan Malaysia*, September 30, 2004.

[52] "KL Wants 1 M Cattle on Oil Palm Land," *The Straits Times*, October 31, 2001.

[53] "Malaysia to Bring about Transformation of Agriculture: Official," *Xinhua News Agency*, September 11, 2004. Also interview with a DVS official, Putrajaya, December 2, 2005.

[54] Fatimah Arshad, "RMK-9 Era Pertanian" [MP9 spells the agricultural era], *Utusan Online*, April 5, 2006.

[55] "Beef Output to Increase by 34 Percent under 9MP, Says Muhyiddin." *Bernama*, April 6, 2006.

a huge bureaucracy set up in 1973 to channel government financial and material support to local farmer groups it helped establish and operate. Currently FOA has more than 200 sub-divisions at the district level and nearly 7,500 units at the village level.[56] It employs nearly 3,000 staff, 60% of whom work at the district level and below. Total registered "membership" is about 700,000 farmers. FOA offers training and loans to Malay smallholders, some of whom borrow to raise livestock. As concerns the land development agencies, they also view livestock keeping as a supplementary activity to improve the income of small holders and plantation workers, especially during periods of replanting long-term industrial crops. Small grants are distributed annually by local branches of these agencies or by local government officials (through DVS) to farmers, often in the form of chicks or calves together with follow-up extension and veterinary services. These grants draw on the centrally allocated budget for local poverty reduction and rural development but decision-making power rests entirely in the hands of local officials. While poor farmers may benefit, it has been noted that patronage often trumps poverty as the criteria for government help (Shamsul 1986; Rogers 1989).

Government plantations now keep about 20% of the national cattle herd but this activity is considered a "social responsibility," not as something economically justified.[57] Because plantations are organized around industrial crops, adequate support services are not available for livestock production, including the supply of genetic material, veterinary services, capital for expansion, and marketing opportunities for livestock keepers.[58] Perhaps this limited role for livestock is only rational given the profitability of industrial crops. However, unless plantations invest significantly into these services, deep and profitable integration remains a distant dream.

Livestock *research* is primarily located in the Malaysian Agricultural Research and Development Institute (MARDI) and universities with veterinary or animal husbandry programs. Most research focuses on cattle and, to a lesser extent, poultry. Pigs are largely ignored. In 1995 MARDI had a budget of about RM 36 million or half of public funding for agricultural research (Fuglie 2001, 121-122). Perhaps less than 20% of this budget was for livestock.[59] There are few middle-level staff, which is evidence that MARDI's research on livestock has suffered from recent government neglect. While all senior staff in the livestock division have PhDs, most are to retire in 1-2 years and young replacements are still under training.[60]

Since 1995, a new policy to encourage closer collaboration between research institutes and private businesses may have contributed to the marginalization of livestock research in MARDI. Under this policy, MARDI underwent a major reorganization: its principal emphasis was no longer to work with farmers but with agribusinesses (Fuglie 2001, 121-122). Equal stress was to be placed on research as well as on technological transfer and commercialization. The financial goal was to raise 60% of MARDI's revenue from the private sector, up from about 12% in 1995. While linking research to commercialization is a laudable goal, this may have created a problem for MARDI's livestock division because it does not possess much expertise in

[56] Each of these sub-divisions and units are supposed to be autonomous "members" but financially and administratively they have little autonomy.

[57] Interview, Kuala Lumpur, December 7, 2005.

[58] For example, see the evaluation of a program to develop sheep-rubber integration in plantation owned by RISDA in the 1980s (Halib 1992, 243-244).

[59] Interview with a MARDI executive, Kuala Lumpur, December 7, 2005.

[60] Interview, Kuala Lumpur, December 7, 2005. To be sure, competition from industries has drawn young talent away from agriculture and contributed to a shortage of livestock professionals. A symbolic indication of this competition is that the premier national university for agriculture, Universiti Pertanian Malaysia (University of Agriculture), changed its name in 1997 to University Putra Malaysia (University of Malaysia's sons or princes). A college administrator told me that agriculture was then viewed as a sunset sector and the school thought that the new name would help it attract more students and find jobs for its graduates (Interview, Kuala Lumpur, December 7, 2005).

pig and poultry—the successful industries in which key players are private businesses. The division was forced to discontinue its dairy research program three years ago because no private entrepreneurs could be found to adopt its technology, but it does not seem ready or willing to switch from cattle and dairy, in which it currently specializes, to pig and poultry. Although large commercial players in pig and poultry production may be able to obtain information and technology from elsewhere, MARDI can still play a coordinating role in these sectors, linking domestic producers to regional research efforts and disseminating latest research results.

Similar to the situation in Thailand, another problem with research and extension services in Malaysia involves single-commodity approaches and the lack of a thorough understanding of the situation at farm level (Halib 1992, 243). There has been little on-farm research to demonstrate the economic feasibility of new technologies, which explains why private actors have been reluctant to adopt them (Mukherjee 2001). Livestock development programs often assume that households or farmers focus on a particular crop or animal. This may be why success stories are few, and these few naturally were confined to big farms which fitted the assumption of researchers and development agencies (Halib 1992, 243).

Poverty reduction and rural development programs since the NEP have used *credit* services as a principal tool. Most credit is allocated to the crop sector, not livestock. The legal framework for credit services has strengths as well as weaknesses. On the one hand, commercial banks are required to maintain loans to Malays at 30% of total loans outstanding and to set aside a certain percentage for small businesses (McGuire et al 1998). The law does not specifically target poor people and these loans tend to benefit only better-off and better connected Malays. For microfinancing, analysts have noted many unnecessary legal restrictions. NGOs are not allowed to engage in microfinance (although exemptions on a case-by-case basis can be obtained) and to accept deposits from the general public (if accepted these savings cannot be used as loanable funds). There are minimum capital requirements that prevent the establishment of small banks. In many cases ceiling interest rates ostensibly to prevent exploitation of the poor can constrain microfinancing which requires the charge of high rates to compensate for the greater cost of processing small loans (McGuire et al 1998).

As is the case with extension services, credits are also provided by agencies such as FELDA and FOA. The FOA offers direct loans to its members or guarantees for loans at commercial banks with subsidized interest rates. For example, its entrepreneur development scheme provides typical loans of RM 25,000 each to farmers to raise livestock or grow fruit trees. The loan is to be repaid in five years and a 7% service charge is levied at the time of initiation.[61] The organization uses annual government grants to establish revolving funds estimated to be about RM 40 million. How effective this service has been is not known. The repayment rates as percentages of total loans are not kept because the organization operates more like a government bureaucracy than a financial institution. Funds are typically channeled through the organization's hierarchy from federal to state to district to individual members.

Among microfinancing organizations, the largest and best-known is the Grameen-style Amanah Ikhtiar Malaysia (AIM) which was established in 1987 and by 2002 operated in six states with 90,000 clients and RM 141 million in disbursed loans (Ilias 2004).[62] AIM is not self-sufficient and relies entirely on large grants or zero-interest loans from government and government-related agencies for its capital and operation costs. In 2003 a government audit found significant fraud and the entire board was replaced. At the time of the audit, the percentage of portfolios at risk was 17% and the drop-

[61] Interview with FOA executives, Kuala Lumpur, December 7, 2005.

[62] Data in 1994 indicated that 28% of AIM was for agriculture and 15% for livestock (Conroy 2002).

out rate was 44%, but overall the organization still had collection rates of above 95% and the portfolios at risk originated from a few particular products (Sukor 2004; Ilias 2004). Since the scandal, AIM appears to have recovered under new leadership but the important question about its ability to be eventually self-sufficient remains.

Providing *veterinary* services is a major responsibility of the DVS, which supervises one national and five regional veterinary labs, and a system of veterinary centers down to the district level. Services include disease diagnosis and treatment on request together with various disease prevention programs. In recent years, especially after the Nipah outbreak in 1998-1999, the DVS has launched several programs to improve food safety and strengthen disease control and surveillance. These programs include a national SPS plan, an accreditation scheme based on Good Animal Husbandry Practice, and a Veterinary Health Mark Scheme. The accreditation program is on a voluntary basis and has involved many farms which export livestock products to Singapore.[63]

Despite its many accomplishments, the Malaysian government has failed to organize or invest in modernizing slaughter facilities. Currently the DVS supervises seven "Type B" abattoirs owned by the government but leased out to private operators. There are 48 smaller abattoirs maintained by local governments and 96 others run privately. No "Type A" abattoirs of export standard exist (Abdul Rahman 2001, 107). This was not a concern before the Nipah crisis because Malaysia then exported live pigs but these abattoirs are now a precondition if the country's pig sector is to resume large-scale export in the future. However, the plan for a new national system of modern abattoirs has been hindered by insufficient funding and the failure to secure approval from state governments for the selected sites. Government control over diseases is weak as evidenced in the estimate that up to 40% of large animals are slaughtered illegally.[64]

The abattoirs represent part of a larger problem, which is the DVS's lack of capacity to implement and enforce food safety, environmental protection and disease prevention measures at farm level. This problem stems in part from the federal system in which local governments have wide discretion over land use and in part from the ability of producers to play politics with local officials. The Animal Ordinance of 1953 (before Malaysia became independent) is still in force, albeit with several amendments; this ordinance gives each state in the federation the authority to act within its boundaries in matters of disease control.[65] Even this technically outdated law with lenient punishment for violations has been ineffective.[66] The Minister of Agriculture recently threatened to enforce the Ordinance (he admitted that "it had yet to be enforced") but this is unlikely to happen.[67] Only when there is a serious epidemic or zoonotic threat that crosses state boundaries can federal agencies take action.

Another cause for enforcement problems has to do with the presence of a large pig sector in a Muslim-majority country. National politicians prefer not to mention this sector while local Muslim politicians often seek to ban it outright rather than taking

[63] Interview, Kuala Lumpur, December 2, 2005. Singaporean authorities themselves often monitor production at those Malaysian farms approved for export.

[64] Illegal slaughtering occurs because producers want to avoid the fees imposed by locally or privately managed slaughterhouses. According to government data during 1982-1990, between 150 and 550 cases of illegal slaughtering were caught each year. The reported number of pigs illegally slaughtered increased 30% during this period to about 1 million animals, whereas the number of cattle fell from 30,000 to 20,000 a year (Department of Veterinary Services 1994, 311).

[65] The law applies only to those states on the peninsular. Sabah and Sarawak have their own ordinances and report directly to the OIE (Nor et al 2003, 487).

[66] Interview, Kuala Lumpur, December 2, 2005. It is reported that farmers could easily get away with violations by paying a small fine or by bribes.

[67] On this occasion the Minister also promised that Malaysia would get rid of foot and mouth disease in 2009; the disease affected 1,800 cattle in 2005. *Bernama*, January 25, 2006.

into consideration legitimate Chinese demand for the product. Matters concerning pigs are for ethnic Chinese to deal with and there are not enough Chinese staff in some departments of the government to handle the work.[68] At the farm level, pig farmers—whether justified or not—withhold information from the government because they do not trust it to handle the matter fairly. As farmers everywhere, they want to avoid personal losses when they don't report diseases to the government. Yet there are reasons to suspect that religion plays a role in the mistrust farmers hold for government officials.

3.2.3 Malaysia's Response Capacity

Malaysia's GRC is relatively strong, especially in terms of great political support for private businesses and investors. There are no large state enterprises in the livestock sector except *Majuternak* during the 1970s,[69] and the regulatory framework inherited from the British is not cumbersome. The country has a well-functioning banking sector and no significant constraints on inputs exist. An environment conducive to business development and foreign investment has facilitated the modernization of poultry production that took place thanks in part to foreign capital and technologies.

The government has immense capacity in areas where it chooses to prioritize, such as land development, poverty reduction, industrial crops, and above all, manufacturing. Despite their critics, Majuternak, FELDA and other land resettlement schemes have contributed significantly to reducing rural poverty. Through NEP and subsequent plans, the government proves that it is capable of formulating long-term visions and short- to medium-term plans to achieve long-term goals. The only problem is that agriculture in general and livestock in particular was neglected during the 22-year reign of Prime Minister Mahathir (1981-2003). Insufficient government investment in livestock research and services and the absence of production incentives clearly disadvantage Malaysian livestock producers compared to those dealing with other products.

Not only has the government neglected but it has imposed price controls over chicken and eggs—which may be politically useful but which cripples the poultry industry in the long run because producers see no benefits in increasing production capacity. The argument that price controls of chicken and eggs protect poor consumers is untenable. Meat consumption accounted for less than 3% of poor rural Malaysians' income and 6% of poor urban Malaysians in 1993 (calculated from Department of Veterinary Services 1994, 163).[70] Standard economic theory tells us that surpluses motivate producers to produce more and competition tends to reduce prices in the long run. Given the price ceilings, large producers have no other choices but colluding to cut production if needed to push prices up to the ceilings.

In terms of trade associations, the picture is mixed. The Federation of Livestock Farmers' Association of Malaysia (FLFAM) is the only association of its kind which currently represents (mostly Chinese Malay) producers' interests all over the country.[71] The association functions effectively in disseminating information and coordinating joint decisions on price and production targets. A weakness of FLFAM compared to the Thai Broiler Processing Exporters Association is its broad membership that includes not only pigs but also chicken, and not only producers for export but also those for domestic markets. This reflects the lower level of specialization in Malaysian livestock industry compared to Thailand, which has reduced the ability of

[68] Interview with a DVS official, Putrajaya, December 2, 2005.

[69] FELDA controls a large cattle herd but the corporation does so not with the goal of making profits and is generally lukewarm about expanding its stock.

[70] The poor are defined as having income below RM 199 in 1993 ringgit.

[71] For history of the FLFAM, see Department of Veterinary Services (1994, 262-265).

the association to promote collective issues affecting the entire industry. But the weakness of FLFAM also stems from it lacking the authority and a centralized structure to make policy binding to its members. Perhaps this was a reason for its being largely ignored by the government. For example, some FLFAM officials have proposed industry-wide standards of biosecurity to no avail.

In terms of poverty reduction, the Malaysian government has been effective in reducing poverty and socio-economic inequality between Malays and non-Malays through the traditional approach. Programs in these areas have generated employment and cash for rural Malays through land development schemes and direct subsidies of inputs such as fertilizers or breeding stock. Nevertheless, Malaysian programs have encountered two problems of a similar nature to those in the Thai case. First, better-off farmers have benefited the most and in many cases subsidies have benefited only clients of local politicians. In a classic study of local politics, Shamsul (1983, 472) gives an example of a local assembly representative who diverted a cattle-rearing project from one kampung where there was a large suitable grazing area to another kampung which was her support base but had no grazing land. This is certainly not an isolated case. Second, government subsidies have generated dependency in the sense of encouraging "a welfare-state mentality in which the villagers expect the government to do more and more for them while they sit back and wait for more politically inspired benefits" (Rogers 1989). FOA officials, for example, have charged the Department of Agriculture (the extension services for crops under the MAA) of "spoiling" farmers with their generous grants that drove them away from programs promoted by the FOA.[72] Competition among local politicians and state agencies to distribute government subsidies may help particular farmers but this is no substitute for institutions and organizations that potentially sustain the long-term development of the sector.

3.3 Vietnam

3.3.1 Agricultural and Rural Development Policy

Vietnam's agricultural development since independence (1954) includes two distinct phases. In the first phase, the leadership of the North followed the socialist models of the Soviet Union and China—albeit implemented at a slower tempo because of war (Tran T. Q. 1998, 12-27). This model called for the collectivization of agriculture on an ever larger scale in order to raise production and surpluses. Most, if not all, of the surpluses would be controlled by the state and diverted to developing heavy industries. Under this system, Vietnam's agriculture experienced stagnation and steady decline over time. By the time the country was unified, the North relied mostly on foreign aid for its food. In the South, which enjoyed more favorable natural conditions and which was placed under a capitalist system until 1975, agriculture saw some growth and even mechanization towards the end of the war (ibid., 26). After unification under the northern leadership, the socialist system was extended to the whole country. With inadequate and decreasing state investment,[73] with much less foreign aid to buttress food consumption, and with peasants' increasing resistance, Vietnam's agriculture quickly collapsed, resulting in two large-scale famines in 1979 and 1988.

[72] The FOA received government funding of RM 57 million while the Department of Agriculture got RM 160 million.

[73] State investment outlays in agriculture accounted for 20% of the budget in 1976 and fell to 15% in 1990, whereas outlays in industry was 32% in 1976 and rose to 38% in 1990 (Tran T. Q. 1998, 8).

Circumstances and leadership changes led to economic reforms and the second phase since the early 1980s. These reforms involved the gradual dissolution of collectives, the reduction of state intervention into markets and production, and the opening of the country for international trade. Following the reforms, in a few years Vietnam transformed from an importer of rice to the world's second largest exporter. As the economy resurges thanks to liberalizing policies, agricultural production has expanded and diversified greatly. After 20 years of reform, Vietnam has developed strength in many exported commodities such as fisheries, vegetables, fruits, coffee, tea, pepper and nuts. Among livestock products, pigs have seen the greatest growth, exceeding rising domestic demand, while chicken, beef and dairy production have increased to lesser extents (MARD 2005, 20-23).

Like its economy, Vietnam's political system has undergone significant changes in recent decades. The Vietnamese Communist Party still stands unchallenged at the apex of the system, making all decisions concerning matters of political importance and concerning staffing of the state bureaucracy. However, evolving relationships between the party and the state, between state agencies, and between central and local governments have decentralized the old socialist system and empowered other social actors. Two broad aspects of the system deserve special attention for their impact on agricultural and rural policies. First, the current regime came to power by leading a tortuous national movement for independence. In addition, in its early years it was deeply influenced by Maoist methods of peasant mobilization and actually championed a land reform in the 1950s that matched the Chinese land reform in the degree of radicalism. Significantly, the government today continues to base its legitimacy on this nationalist and populist legacy. The regime is thus especially sensitive to issues of poverty, social inequality and peasants' conditions—if not in reality, then in the image it wants to give the outside world.

Second, while the regime hopes to maintain a pro-poor, pro-peasant reputation, the legacy of Stalinist central planning runs deep. That the reforms since the mid-1980s were carried out on a trial, piecemeal basis in response to the forces of circumstances and without a fundamental change in thinking allows this Stalinist legacy to last. This legacy continues to be manifest in two main orientations. One is the systematic distrust of private enterprises and the tendency to take control as much as possible. This orientation is often couched in ideological terms but also reflects the convergence of powerful interests among party apparatchiks, central bureaucrats and managers of state monopolies to maintain their power and privileges—now that they have to cede to the private sector some role in developing the economy. The second orientation is an institutionalized urban bias that views the rural economy as a bastion of backwardness that may be temporarily useful to exploit for industrial development but that is something to get rid of eventually. This bias has lessened in recent years but is still the underlying logic of government policy priorities.

Official views and policies on rural development since the late 1980s significantly reflect the enduring legacies of socialism and the contentious nature of the reforms. The first reforms, including decollectivization, were enacted in a crisis situation; they were never meant to contradict fundamental socialist principles of public ownership of land and the central role of the state sector in the economy. After their initial success in liberating farmers' productivity, there was little political will to push for further reforms in agriculture that would force the reassessment of those principles. At the same time, a boom in foreign direct investment in industries attracted all government attention and caused a general neglect of agriculture.

By the mid-1990s, agricultural growth had slowed down while local corruption and land disputes following decollectivization generated many rural protests, the largest of which took place in 1997 in Thai Binh province with the participation of 3,000

villagers. This event shocked the regime and prompted the formulation of a long-term approach to rural development.[74] The new approach called for increased investment in agriculture to modernize production, create structural transformation, reduce rural poverty, and in the long term, guarantee rural stability. Despite its new terminologies and sense of urgency, the new policy still stressed the central role of state and cooperatives in the rural economy and the need to restrict land concentration. The government subsequently enacted a new law for "grassroots democracy" which allows greater participation and transparency at the village level, and several initiatives for rural industrialization, including policy measures to promote estate farms, fisheries, industrial crops and livestock. These programs were poorly designed; farming estate legislation was particularly vague in its language about the size of farms allowed—reflecting the political concerns of the regime.[75] The government's poverty reduction program implemented since 1998 has been more successful than other programs, although some studies have shown that the impact was not equal across communities with the poorest still left out (van de Walle 2004).

Overall trade and investment data indicate that the urban bias remains despite rapidly increased public investment in agriculture in recent years. Fiscally, state expenditures for agriculture stay at about 5-6% of total national budget, which is low by regional standards and compared to agricultural contribution to GDP (World Bank 2005, 86-91).[76] At the same time, the state has been generous with its state-owned enterprises (SOEs). The debt of nearly 400 SOEs in agriculture to the budget and state banks doubled from VND 7.5 trillion to 15.7 trillion during 1998-2003, or twice the agricultural budget in 2003 (ibid.). While the tax burden on farmers has not been particularly heavy compared to international standards, in the early 1990s agriculture was severely hurt by overvalued exchange rates and trade restrictions such as tariffs and quotas (Barker et al 2004, 11). From the late 1990s until the present, trade protection given to industries continues to direct domestic and foreign investment away from agriculture (ibid., 13).

3.3.2 Livestock Policies and Services

Since the introduction of a new rural development approach in the late 1990s, the government has issued a strategy document and a series of policy measures for developing major agricultural commodities.[77] For livestock products, the government has selected pork and dairy as two commodities for special attention. Pork is aimed primarily at export because Vietnam has been exporting pork on a small scale, whereas dairy production is for import substitution as 90% of Vietnam's domestically consumed milk is imported. The goal for pork is for Vietnam to export 80,000 tons by 2005, up from about 27,000 tons in 2001 (Dinh X. T. et al 2004, 19). For dairy, the goal is to expand the stock from 40,000 cows in 2001 to 100,000 in 2005 to meet 20% of domestic demand of milk; a further goal of 40% self-sufficiency is set for 2010.

To achieve these numeric goals, three kinds of measures are provided for. The first kind involves increased credits and public spending to expand the national herd and

[74] Nghi Quyet So 06-NQ/TW cua Bo Chinh Tri ve mot so van de phat trien nong nghiep va nong thon [Political Bureau Resolution no. 6 on rural and agricultural development], November 10, 1998.

[75] Vu (2003) discusses the farming estate legislation and the cattle program in detail.

[76] The Vietnamese data include estimates of indirect public expenditure such as the Program 135 or the exemption of agriculture land tax in 1993. The comparable rates for China, India and Thailand range from 8 to 16%. To be sure, a low rate of public expenditure does not itself justify an increase because state investment in infrastructure or education also contributes to long-term agricultural growth. On the other hand, increased public expenditures in Vietnam have also counted heavily on official development assistance: ODA disbursements for agriculture accounted for 88% of the agricultural budget in 1997 and still for 46% in 2001 (World Bank 2005, 91).

[77] See Bo Nong Nghiep va Phat Trien Nong Thon [MARD] (2001), esp. Nghi Quyet 09/2000/NQ-CP [Resolution] (June 15, 2000) on structural transformation of the rural economy; Quyet Dinh 166/2001/QD-TTg [Decision] (October 26, 2001) on the pig sector; and Quyet Dinh 167/2001/QD-TTg [Decision] (October 26, 2001) on the dairy sector.

to upgrade processing facilities, vaccine production and slaughter houses. The second kind of measures is to provide export subsidies for pork, tax incentives for imported feed, and assistance in finding export markets. Third, the government plans to improve extension services, establish trade and trade associations, and encourage contract farming and other forms of organizational links to promote production. Public expenditure data do show an increase in livestock share (both the husbandry and veterinary components) of the agricultural budget from 4.0% to 5.4% during 1999-2002 (Department of Finance 2004, 16). This is still low compared to the share of livestock in total agricultural output values, which was 17% in 2000 (Ibid., 43).

The new programs to promote livestock production reflect the official goal of rural industrialization but there is much politics and patronage going on behind the scene. First, it is puzzling that poultry has been ignored even though it seems more appropriate for Vietnam than dairy. This may be explained by an apparent correlation between the market shares of SOEs in the relevant markets and the strategic commodities selected for promotion: three SOEs jointly account for about 10% of the pig market (but nearly 100% of Vietnam's exported pork because only they possess the few abattoirs that meet strict sanitary standards), whereas one single SOE (Vinamilk) monopolizes 70% of the dairy market.[78] In contrast, SOE's presence in poultry is negligible. Clearly those SOEs involved in pigs and dairy stand to benefit the most from government investment; the selection of these commodities was hardly unrelated to this fact.

Second, the dairy program appeared to be a way for provincial authorities (with the collusion of some central officials) to milk the central government. While the pig program has generated little interest, a race among provinces to get into the dairy program took place after its introduction. At first, the national program called for the development of dairy production in 30 out of 64 provinces that had climate more suitable to exotic cattle than others (Luthi 2005, 34-35). Four months later, the government issued a decision adding two more provinces to the list. A month later, virtually all provinces were made eligible for the program.

Why did provinces scramble to join this program? First, participation in a large investment project described as the "white revolution" could bring prestige to provincial government leaders who normally have terms in office of less than five years. This prestige would boost the prospects for promotion to central positions regardless of the actual results the program would bring to their provinces five years down the road. Second, the dairy program financed the import of a large number of high-quality exotic cattle in a short time, which promised lucrative contracts for provincial cadres to distribute to their cronies.[79] In contrast, the pig program did not call for the import of breeding stock and therefore drew little interest. Following the scramble to join the program was the rush to import exotic cattle with little preparation in the training of farmers, the construction of facilities or the sources of feed. When a large number of imported cattle died or were found to be of poor quality and carry no genetic records, officials who had gone to foreign farms to inspect the cows admitted that they were cheated by foreign dealers.[80] Yet foreign fraud could not be blamed when cattle bought abroad at about USD 739 per head (inclusive of transport) were resold domestically at an average price of USD1,300 (billed to government accounts or to state banks as loans to farmers) (Luthi et al

[78] Dinh X. T. et al (2004, 31) cites data from Booth (2003) that three SOEs (Vissan, Ha Long and Animex) produces about 150,000 tons per year or about 10% total production in 2001. For dairy, data are from Luthi et al (2005).

[79] The targeted rate of increase in milk production was set to be 35% annually over the first five years and 20% in the subsequent five years. This would be translated in an increase of 40% of the national herd every year in the first five years and 20% thereafter (Luthi et al 2005, 85). In fact, Vietnam signed an agreement worth USD 60 million with Australia for the provision of 75,000 live dairy cattle during 2001-2005 (ibid., 39).

[80] "De co con bo sua Vietnam, can 20 nam nua" [Twenty more years needed for Vietnam to have a dairy industry]. *Tuoi Tre*, September 16, 2003.

2005, 39). By late 2003, central officials had tried to distance themselves from the program while the Prime Minister ordered an auditing of the program in a province.[81] More may follow.

Although it is still too early to evaluate the new livestock programs, initial results do not appear encouraging. The annual growth rates of pork production after 2001 and before have showed no change, averaging at 7% (Dinh X. T. et al 2004, 3). The volumes of pork exports indicate random changes with no clear pattern of increase (ibid., 20). The only success is the dairy program that has more than doubled the cow herd (reaching the target of 100,000 one year earlier than planned) and milk production in a short time.[82] However, the program has generated extreme volatility in the markets of breeding animals and feed.[83] In particular, the market price of a dairy breeder exceeded VND 20 million when the program was most popular but has since fallen to about VND 5 million, or by 75%.[84] High production cost and low milk price have forced many dairy farmers to sell their once expensive dairy cows for slaughtering. Within the last two years, the size of the dairy herd has fallen steeply (up to 80% in one province).

Who gained and who lost? Farmers, including those with substantial experience in dairy, paid dearly: in Tra Vinh province in the Mekong Delta where the dairy herd has fallen by 80% just in the last 6 months, farmers now owe about VND 10 million for each cow they owned after having sold them for slaughtering. This was in spite of the subsidy they received of 60% of the cost of a dairy cow at the start of the program. Major beneficiaries have been the state-owned Vinamilk and other market intermediaries. With its monopoly, Vinamilk has refused to raise its farmgate buying prices, which remain constant at VND 3,000-4,000 per kilogram for the last decade.[85] These prices are found to be lower than equivalent prices in China and Thailand and are about 50% lower than the cost of imported powdered milk after its conversion into liquid form.

The current administrative system overseeing livestock *services* is built on the national network of research institutes, breeding centers and veterinary administrative units established during the socialist years. In that period, livestock was considered secondary to crops (rice). At the farm level, services were provided by collectives, which were the owners of all draught animals and the sole legitimate buyers of farmers' small livestock such as chicken or pigs. In the aftermath of decollectivization in the late 1980s, the Ministry of Agriculture and Rural Development (MARD) has been reorganized many times. Currently, responsibility for the livestock sector is shared among the Animal Production Department, the Animal Health Department and a Center for Extension Services.

A recent survey (IFPRI 2001) provides detailed information about livestock services. As part of the trend to decentralize, since the mid-1990s *breeding* centers have been allowed to engage in commercial activities such as producing breeds for fattening. These centers accounted for about 19% of poultry stock and 10% of pig stock among

[81] "Nhap bo sua giong phai 'ganh' trach nhiem" [Someone has to take responsibility for importing cow breeders of bad genes], *VietnamNet*, October 7, 2003; "Nong dan co the kien cac cong ty ban bo kem chat luong" [Farmers can sue companies selling cattle breeders of bad quality], *Tuoi Tre*, September 29, 2003; "Thanh tra viec mua ban bo khong du tieu chuan" [Auditing ordered for buying and selling cows of bad quality], *Tuoi Tre*, October 2, 2003.

[82] Luthi et al (2004, 30, 58) estimates the total amount of milk processed in 2003 to be 126,000 tons (official statistics is 158,000 tons) compared to 64,000 tons in 2001.

[83] "Gia thu mua sua co the tang len 4.000 dong/kg" [Buying price of milk can increase to 4,000 dong per kilo], *VietnamNet*, July 28, 2005; "Cuu dan bo sua!" [Save the dairy herd!], *VietnamNet*, September 15, 2005. See also Luthi et al (2005, 11, 83).

[84] "Pha san chuong trinh nuoi bo sua!" [The dairy project goes bankrupt!] and "Ai 'giet' dan bo sua?" [Who killed the dairy herd?", *Tuoi Tre*, September 12 and 13, 2006.

[85] Vinamilk, which is publicly listed on the emerging Vietnamese stock market, is worth $1 billion. The company has also benefitted from its export to Iraq (during the embargo), and has recently expanded into banking, packaging, housing, beer and coffee. "Vinamilk gia 1 ti do" [Vinamilk estimated worth $1 billion], *Tuoi Tre Online*, May 12, 2006.

the farmers surveyed. In large markets, they had a share as high as 30%; in others, almost none. Their services were geared towards large farmers; only about 5% of small holders obtained their breeding stock from them. With a national network of breeding centers, the Vietnamese government appears to offer its farmers more extensive services than Thailand and Malaysia; yet because the bulk of government services was directed to commercial activities, the difference is perhaps only nominal. In addition, the model of combining public and commercial activities in Vietnam has been criticized in the IFPRI survey as making more complex the tasks of preserving the national breeding stock and improving its genetic quality.

The livestock *research* budget is low but its share in the agricultural research budget has been increasing from 9% in 1996 to 13.5% in 2004 (Department of Finance 2004, 42).[86] More than half of the research budget is spent on salaries (IFPRI 2001, 1-18). The distribution of agricultural research facilities reflects the centralized orientation of the system: there are 17 research institutes located in the Red River Delta where Hanoi is based. The rest of the total of 25 institutes are located elsewhere, with only 2 based in the Mekong delta—the region that contributes a third of Vietnam's agricultural output (World Bank 2004, 23). Although budget has increased tremendously in recent years, research capacity is hindered by past legacies. Actual research skills of staff are reportedly low because of poor English and because of decades of international isolation (IFPRI 2001, 1-18). While researchers may be technically competent, their knowledge of industry, market, trade, environment and global economics is limited.

Institutionally, leading research institutes lack vision, independence to set research priorities, and capacity to organize effective research strategies. The National Institute of Animal Husbandry (NIAH), Vietnam's premier research institute, has operated like a fund disburser: research budgets granted from above are distributed across numerous projects submitted from below.[87] A second institutional weakness concerns the lack of coordination between universities and research institutes. Even the best Vietnamese universities are far behind their Thai and Malaysian counterparts in the professionalism of faculty and management, the level and methods of instruction, and the resources available for both faculty and students. Research institutes are placed under the line ministries and entitled to a share of their ministries' budgets. Universities belong to the Ministry of Education and Training, which has little money for research. Both the worsening shortage of human resources and those institutional weaknesses are well-known and in recent years donors and the government have paid much attention to alleviating these bottlenecks. Overseas training has recently produced many middle-level researchers on a par with their counterparts elsewhere, but real change can come only when their number reaches a critical mass or when they reach senior positions. Competitive bidding of research projects has also been tried but university autonomy is not yet acceptable.[88]

In contrast to Thailand where *extension* services are directed from the center, in Vietnam the provinces are responsible for them (World Bank 2005, 101). A national center for extension service (in crops, livestock and forestry) in charge of overall coordination was established in 1993. Each province has 15-20 extension professionals and about 70% of all districts have extension agents. Below the districts, if communes hire extension workers, they have to pay out of their own budgets. Funding for all extension services has more than doubled at both national and provincial levels during

[86] Barker et al (2004, 22) cites other sources suggesting that the share of livestock research was 13.9% in 1997 and 18.5% in 2000. Vietnam's public expenditures for agricultural research rose from VND 151 billion to 198 billion over 2000-2003 (World Bank 2005, 99-100). Yet the share of research in total agricultural budget has remained at 2-2.5% compared to 10% in Thailand and 6% in China.

[87] Interviews, Hanoi, December 12-13, 2005.

[88] After years trying in vain to reorganize national universities, the government has given up and decided to establish a brand-new university at world-class level.

1999-2003. National budget in 2003 was VND 68 billion, whereas expenditures from all provinces which pay for provincial and district workers were a combined VND 117 billion (World Bank 2005, 101). Fees for services contributed another VND 17 billion to the budget in 2003. About 20% of the above expenditures were directed to livestock (IFPRI 2001, 1-17). Besides the formal system, mass organizations and surviving cooperatives provide limited services. There are also thousands of voluntary agricultural extension clubs.

Surveys of farmers have indicated widespread dissatisfaction with government extension services. There can be many reasons for this negative feedback. The lack of funding and varying levels of funding among provinces suggest uneven and inadequate services. The few extension workers in each district serving thousands of farming households necessarily means that service reach is shallow. Because of insufficient staff, the trickle-down model must be applied but this does not guarantee that the benefits of services eventually reach the poorest in a given community (Beckman 2001, 18). Even in richer provinces with more extension workers, they are found to be more available to better off farmers (Hicks 2004). Another problem exists in the training of extension workers who currently can assist farmers in technical issues but have little or no knowledge of markets, credits and regulations. Extension services focused only on technical aspects with no market information have often made farmers more vulnerable when world prices plunged (Beckman 2001, ix).

Credit services are provided by a plurality of organizations, including the Bank for Agriculture and Rural Development (BARD), the Bank for Social Policy (BSP; formerly Bank for the Poor), the People's Credit Fund (PCF), the Farmers' Association (FA), the Women's Union, and various donors' microfinancing schemes (Vu 2003, 19-22; Bui 2004; Smith 2004). Among all services, the credit sector is probably burdened the most by the socialist legacy. This is because state-owned commercial banks like BARD are still the largest source of formal credit (Bui 2004, 200; Barker et al 2004, 23). While BARD has a nationwide network of branches, it has been shown to have a bias in favor of SOEs, large farmers, and urban businesses (Ibid.). SOEs receive a large amount of loans regardless of their performance while strict requirements in the forms of land title are applied to non-state customers.[89] State banks are also notorious for cumbersome procedures and rampant corruption that lead to high transaction costs for all borrowers (Bui 2004).[90]

The biases and corruption can be explained in part by the fact that like all state banks, BARD generally operates like a bureaucracy rather than a business, i.e. lending decisions are shaped more by political rather than by commercial concerns and loans treated more like political favors than capital for business. The politicized nature of the banking system is manifest in ceiling interest rates imposed by the government "to aid the poor." As standard economic theory would lead us to expect, these controls lead to more demand than supply.[91] On one hand, banks fail to mobilize private deposits, which can earn higher returns elsewhere. On the other, they are forced to ration credit. This in turn contributes to the above-mentioned red tape, corruption, and biases in favor of SOEs and large farmers. While state banks often have more than they can lend, ironically lack of credits has been identified by private enterprises as the most serious challenge to their expansion (Barker et al 2004, 24). To be fair, weak property rights—a clear enduring legacy of socialism—make it difficult for banks to assess loan applications. At the same time, bank executives and staff are career government employees who often have little knowledge of

[89] SOEs accounted for 85% of state credits in the early 1990s; by 2000 their share was reduced to 29% (Barker et al 2004, 23).

[90] Farmers in Dong Nai province told me that loans could not be obtained without connections and small bribes to bank officials in the form of free meals and cash. SOEs certainly have to pay just like private borrowers but conditions for them are more favorable. Interview, Bien Hoa, December 23, 2005.

[91] State banks' interest rates are set at about one-half or one-third of the rates in the semiformal sector (Bui 2004, 202-3).

businesses; they usually cannot and do not bother to appraise business prospects based on cash flows, credit history, sale revenues and other information beyond fixed assets.[92]

Poverty reduction programs must be credited for having pumped more credit subsidies into rural areas in recent years through the banking system or mass organizations. But these programs are seen as job generation programs, not restricted to the poor, in fact have reached few poor farmers, and up to now have met serious repayment problems (World Bank 2004, 32). Microfinancing schemes whether operated by mass organizations or by international NGOs have generally performed much better than state banks in targeting the poor (Ibid.). The legal framework for their activities is still undeveloped and the question of dependency on foreign funds remains (Vu 2003).

The organization of *animal health* services in Vietnam is decentralized similarly to its extension system.[93] The Animal Health Department under MARD is in charge of animal health policy and supervises six regional veterinary centers. Provincial governments are responsible for funding their own veterinary departments and district veterinary stations. Below the district level services rely on about 50,000 private providers who are paraveterinarians (Delquigny et al 2004, 37-39). Some provinces allocate budget to hire paraveterinarians at commune level for a limited mandate that includes assistance in twice yearly vaccination campaigns, monthly reporting on disease situations, inspection of markets and provision of some training to farmers.

While the system is still evolving, there are well-known institutional problems. First, the devolution of authority to provincial and commune governments makes the creation of a coordinated national strategy very difficult (IFPRI 2001, 1-12). This devolution by itself is not a problem, but Vietnam's political system in the recent past allowed little local autonomy and its uneven distribution of socio-economic resources among local administrative units creates great variations in local capacity. All local governments have strong disincentives to report disease because they would be the first to bear the cost of response programs, but the problem appears to be worst in poorer provinces and in the Northern part of the country which lived much longer under central planning. Second, the regional centers have failed in their supposed role to coordinate among provinces. They now exist thanks to fees collected from quarantine services for imported and exported goods. As provincial veterinary officials are accountable only to provincial governments, these regional centers cannot supervise, regulate or enforce any rules. Third, the entire system suffers from lack of resources: data collection, storage and retrieval capacity is poor; staff at lower levels have inadequate diagnostic skills; and locally produced drugs are of poor quality (ibid.). Disease surveillance and inspection are ineffective in part because of the low level of professionalism among local veterinary officials. In the midst of the recent FMD outbreak, for instance, district veterinary staff in at least three provinces were found to receive bribes or to fail to inspect animals before issuing travel permits. These corrupt and incompetent officials helped spread the disease to many other provinces.[94]

3.3.3 Vietnam's Response Capacity

Relative to Thailand and Malaysia, there are some areas in which Vietnam is in a better position. For example, compared to their Malaysian counterparts, Vietnamese poultry producers face no price controls. Pig production is now a government priority

[92] Interviews with farmers in Dong Nai province, December 23, 2005.

[93] "Decentralization" in the administrative and fiscal but not democratic sense (Leonard and Marshall 1982).

[94] "Thu y nhan lot tay tien 'chay' gia suc LMLM" [Veterinary officials receive bribes and issue travel permits to animals with FMD], *VietnamNet*, June 17, 2006.

not like in Thailand where it is neglected or in Malaysia where it is restricted. At the same time, Vietnam's GRC is on the whole much weaker than that in Thailand and Malaysia. While it has been two decades since Vietnam embarked on economic reforms, past socialist legacies are still strong. First, there is weak political support for the private sector. Second, some markets (such as dairy products) are dominated by SOEs which still have the ears of government officials when they make budget allocations or draft national plans. The success of Vinamilk is less a result of technological and organizational innovation like Thailand's CP than its monopolistic share of the market granted by the state.

Third, constraints on inputs such as land and credits faced by Vietnamese farmers have not yet been removed despite some government efforts to do so. Property rights are ambiguous—another legacy of socialism. While Thai producers also face land title problem, state banks' domination over the formal credit sector and the weak informal sector in Vietnam make the collateral requirement issue more hurtful. Fourth, compared to Thailand and Malaysia, Vietnamese producers have far less access to information about markets, diseases and policies. This is a legacy of production based on central plans in which markets were banned and in which development was imposed from the top down. Although economic reforms have liberated markets, information channels are still limited.

Fifth, Vietnam also falls behind other case studies in the establishment and enforcement of industry standards but this appears to be only a temporary problem. In Thailand and Malaysia the creation of these standards was primarily driven by the demand from domestic exporters of livestock products. Livestock products in Vietnam have not been exported on any large scale and Vietnam's foreign markets (Russia and Hong Kong) have not been the kind that requires strict sanitary or packaging standards. Given Vietnam's membership in the WTO before long and better prospects for livestock export, industry standards may be developed soon. Vietnam's successful development of industry standards in the fisheries sector which earns $2 billion annually from export is an indication of its response capacity in this respect.

Sixth, relative to Thailand and Malaysia, Vietnam's livestock associations and other forms of organizational linkage to promote information sharing and to solve collective problems are underdeveloped. The Vietnamese system has relied on mass organizations but these are essentially political and social organizations whose economic role is limited. They are also centralized organizations with fairly limited capacity to absorb inputs from below and to represent producers' interests. The formation of voluntary producers' associations has been promoted by central decrees but legal and institutional constraints exist from central to local levels. In Malaysia, Chinese producers' associations lack political support but they have done a good job in coordinating and promoting collaboration. Voluntary extension clubs for information sharing have emerged in Vietnam but these are still confined to village or commune scale.

Although Vietnam's PRC is much lower than the other cases in part because it is much poorer, the main reason is the institutional legacies of socialism. Recently the Vietnamese government has made significant investment into poverty reduction but these programs have not been more effective than their Thai or Malaysian counterparts in targeting the poor or in reducing dependency over time. One advantage that Vietnam enjoys while the others don't is the greater aid foreign donors provide. This source of support has been crucial in expediting the process of transformation from a centrally planned economy to an open market system. Besides funds, foreign donors have assisted Vietnam especially in research, training, transfer of institutional knowledge, and long-term strategic planning. A concern one may have with foreign aid is the reliance on technical solutions instead of institutional reforms. Because the latter are difficult and require ideological shifts, powerful interests within the Vietnamese government may choose to accept only those foreign funds earmarked for technical rather than institutional solutions. Technical fixes may bring

fast results, fat contracts and are politically correct but they may not be effective over the long term without an appropriate institutional structure. There is no guarantee that institutional reforms will catch up in time, and in any case this is a political process that foreign donors may have little influence.

4. DISEASE OUTBREAKS AS CASE STUDIES OF GOVERNANCE SYSTEMS UNDER CRISIS

The discussion thus far has focused on long-term evolution of livestock services and sectoral political economy. It has highlighted the strengths and weaknesses of each country in terms of its response capacity. Malaysia's GRC is as strong as Thailand's GRC but livestock has been neglected in the former until the late 1990s. Vietnam's GRC is weakest owing to past socialist legacies and government neglect until recently. Foreign assistance is helping Vietnam catch up but the gap is still large. All three governments have sought to reduce poverty in the traditional way through livestock programs and have achieved some success. They share the same problems in implementing poverty reduction programs, including corruption, mistargeting and dependency. In this section, the contrasts between the case studies are further demonstrated as they confronted serious disease threats. The snapshots of these countries under crisis can add lively details to the larger picture presented above—especially concerning the vulnerabilities of each country to particular problems.

Thailand's most serious livestock disease outbreaks in recent years (2004, 2005) were caused by the highly pathogenic avian influenza. Early incidents of massive chicken deaths involving the virus were found in November 2003 but, for fear of losing export markets, the government quietly carried out quarantine while declaring that the cause was diarrhea and bronchitis but not bird flu.[95] By mid-January, the number of chickens culled had reached tens of millions and several veterinarians, opposition politicians and the Consumer Power Association had publicly accused the government of lying and covering up the outbreak to protect the large poultry producers. Government officials from the Prime Minister to the Agriculture Minister continued their denials before conceding in late January that they had been wrong.

Once it had been admitted, the government moved quickly to set up "red zones" for quarantine purposes while still trying to protect (large) producers. True to his style, PM Thaksin, a billionaire before entering politics, sought to calm the public by pledging to use his own money to pay Bt 3 million to the family of any victim of bird flu who died after eating cooked chicken or eggs.[96] The government was also quick to reject outright vaccination as an option, citing that vaccination did not save China from a second outbreak.[97] The proposed measures to prevent future outbreaks included the ban on fowl transport, the registration of all fowl farmers, the insertion of microchips in fighting cocks, and increased disease surveillance and slaughterhouse inspection. Loans and land were also provided to "landless farmers" with monthly income above Bt 10,000 to raise chickens in 20 chicken-farming estates to be set up in the near future.[98] Open farms were encouraged to switch to closed farms for increased biosecurity.

The measures received full support from poultry exporters and their associations but generated prompt condemnations from various quarters. Focus on the Global South, a Bangkok-based foreign NGO, defended small farmers and criticized the Thai government for acting in the interest of large poultry exporters.[99] The Secretary-General of the National Health Office publicly chastised the DLD for the attempt at

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[95] "Bird Flu Fears: 'Govt is Lying about Crisis;" "They Knew in December;" "Cover-Up Began Last Year," *The Nation*, January 16 and 23, 2003.

[96] "PM's Bt3m Challenge," *The Nation*, February 1, 2004.

[97] "Bird-Flu Crisis: Govt Comes Up with New Action Plan," *The Nation*, February 1, 2004. In November 2005, there were smaller bird flu outbreaks and Thaksin's decision against vaccination was again controversial. An industry representative who I interviewed refused to discuss the matter while some DLD officials changed the subject when asked (Interviews, Bangkok 17, 18 and 22, 2005).

[98] "Bird Flu Aftermath: Loans, Free Land for Chicken Farms," *The Nation*, March 15, 2004.

[99] Isabelle Delforge, "The Flu that Made Agribusiness Stronger," *Bangkok Post*, July 5, 2004.

cover-up.[100] The microchip idea was dismissed as a scheme to enrich politicians. The Moor-Duck and Goose-Farmers and Traders' Club threatened to demonstrate if the transport ban was not lifted in 7 days. The Fighting Cock Professional Promotion Association opposed the ban on vaccination and demanded that it be lifted after 3 months.

In response, the Prime Minister allowed the vaccines to be used for fighting cocks but not farm chickens. To stress his point, he even rejected a request made by the DLD chief for Bt 300 million to produce avian flu vaccine—just as a precautionary measure.[101] The idea of microchips was also dropped. With their tremendous financial capacity and full government backing, large poultry exporters such as CP have shown surprising resilience after losing millions of dollars in poultry exports and in stock prices. No longer able to export uncooked chicken following the outbreak, they have successfully switched to cooked meat, exports of which rose by 80% from 193,000 tons in 2004 to 350,000 tons in 2005.[102] This move actually helped them in the long run to enter processing activities with greater value-added and to avoid rising competition from new comers like China which relies on lower labor costs.

What emerges from the above description is clear. The Thaksin government supported large producers at the expense of small holders. Policy-making lacked transparency and technical advice was simply brushed aside. Decisions were not made in a timely or fair manner. Nor was the effort to control the virus effective: the crisis subsided in March but new cases occurred in July. The government was not free to act as it wished, however: A vigorous civil society, including opposition politicians, the media, academics, foreign NGOs and interest groups, was able to hold it accountable to some extent. While Thai GRC was limited, its PRC (large corporations) and SRC were strong as evidenced in the swift reorientation of poultry exporters from uncooked to cooked chicken.

Let us now turn to Malaysia, which was severely struck by the Nipah virus in 1998-1999 but which succeeded in quickly stamping out bird flu outbreaks twice in 2004 and 2006 with little damage. The Nipah outbreak took place in Perak in an area with clusters of pig farms that had been expanding rapidly in the previous decade and created large and poorly managed cesspools of pig waste (Abdul Rahman 2001). These cesspools, it would later be speculated, provided a favorable environment for the mutation of the virus from a form associated with wildlife to one that could kill human beings (ibid. 110). The first human deaths from the virus were reported in November 1998 but Japanese encephalitis (JE) was suspected to be the cause. The government ordered measures to eliminate mosquitoes, vaccinate the local population with the JE vaccine, and clean up the environment. Even before the human deaths occurred, pig farmers had observed serious respiratory signs among some pigs in their herds and responded by quickly selling them off. In January 1999, a new human case occurred near pig farms in another state and the DVS ordered culling and imposed a ban on transportation of pigs but this was too late. In February several cases appeared among workers at the largest abattoir in the country. By March workers at 11 abattoirs had been found infected with the virus, leading Singapore to place a ban on pigs imported from Malaysia.

The disease was later discovered not to be JE but a strange virus that appeared to come from wild bats. Overall 105 people died and production capacity was cut by half. The government offered RM10 for every pig culled but farmers demanded RM200. After repeated appeals by the FLFAM, the government agreed to raise

[100] "Bird Flu: Livestock Dept under Fire;" "Microchip Plan Draws Scorn;" "Farmers Squawk over Transport Ban," *The Nation*, July 16, July 17, September 26, 2004.

[101] The intense political pressure on DLD bureaucrats and technical managers is confirmed in many interviews with foreign experts (Interviews, Bangkok, November 15 and 16, 2005).

[102] The Poultry Site, http://www.thepoultrysite.com/LatestNews/?AREA=LatestNews&Display=7566 (March 9, 2005).

compensation to RM50. The government also made other funds available to farmers who were willing to quit pig production. Many state governments have since no longer issued new licenses to pig farms. Although supply capacity has never recovered and Singapore still maintains the ban on live pigs, by 2005 the industry had become profitable again. Rising demand and limited supply has caused prices to soar. Despite the hardened attitude by the government toward pig farming and the uncertain future of the industry, surviving producers do not appear to be concerned about improving farm biosecurity.

The Nipah outbreak offers an interesting contrast to the bird flu case in Thailand. Throughout and after the event, government support for pig farmers—large or small—ranges from low to none. There was no cover-up and the misdiagnosis appeared to be a genuine technical error. Government control measures were also effective: the virus has disappeared since (but of course the Nipah outbreak was also much easier to control than the bird flu epidemic). However, the failure of the government to improve biosecurity at farm level may foretell future crises, or at least limit the growth of the industry. GRC is thus mixed. SRC is similarly mixed: although Chinese pig farmers have been able to turn an adverse situation to their advantage, they could have done far better with full government support. Without this support, it may be impossible for them to improve biosecurity and expand to foreign markets. Even worse, another Nipah disaster may strike again.

The Nipah was "a wake-up call" for the DVS, which has since focused more on strengthening the national laboratory network and disease surveillance. This effort may have contributed to Malaysia's superior performance with regard to the bird flu epizootic that devastated their neighbors. The Avian flu virus was found twice in Malaysia in 2004 and 2006, but both times it was detected during routine surveillance. Thanks to early detection and effective control, the outbreaks did not spread and damage has been minimal compared to that in Thailand or Vietnam.[103]

Among the three cases, Vietnam has suffered the most from bird flu outbreaks (2003, 2004, and 2005).[104] This poor performance clearly reflects Vietnam's lower overall level of development compared to the other two case studies. The low professionalism of the average officials, academics, producers and traders is accumulated and translated into the larger scale of the damage. But there was more to the story than Vietnam's development level. The first signs of the virus were detected as early as July 2003 but the disease spread unadvertised as the government adopted a policy of quiet containment for fear of hurting tourism (Delquigny et al 2004, 44).[105] Only when outbreaks had occurred in more than 10 out of 64 provinces were they publicly admitted. By February 2004, 57 provinces had seen outbreaks before the spread was halted.

The scale of outbreaks in the early months of 2004 threw the entire government into chaos. The central government ordered provinces to undertake quarantine measures and organize culling but provinces, especially poorer ones, dragged their feet while demanding central subsidies for the campaign. Provinces are entirely responsible for declaring outbreaks and quarantines in their jurisdictions and it took as long as a month for them to act, from the time samples were first taken to the official announcement.[106] Facing pressure from foreign donors and to nudge local governments

[103] "Relax, Go Eat Your Chicken—Says Vets," *Bernama*, June 2, 2006.

[104] There was a severe FMD outbreak in mid-2006 that affected most provinces and exposed similar kinds of problems as in the bird flu crises.

[105] Delquigny et al does not speculate why authorities failed to take the first cases seriously but a livestock official told me that informal suggestions were made to Ministry officials for an aggressive response but top leaders either were not informed or failed to take action. Interview, Ho Chi Minh City, December 22, 2005.

[106] "Vi sao Cuc truong Cuc Thu Y rat buon?" [Why was the Director of the Veterinary Department sad?]. *VietnamNet*, February 4, 2004.

into action, three Deputy Prime Ministers and six Ministers besides numerous lower ranking central officials were sent around the country to rectify the situation. Feeling that the normal chain of bureaucratic command had broken down, the Communist Party's Political Bureau intervened with an order to mobilize party organizations into the act.[107] Subsequently a donor-funded vaccination campaign was launched in mid-2004 but outbreaks appeared again later in the year, in late 2005 and, most recently, in late 2006.

The events clearly indicate that Vietnam's GRC suffered from the lack of transparency and from overall ineffectiveness. Unlike Thailand, no opinions different from those of officials were heard among civil society actors. Policy was also not fair. Besides compensation which was inadequate and late to come, there were no efforts to protect the industry with a view towards its eventual recovery. The blame was placed entirely on small holders and wildlife and the plan was to restructure the industry to eliminate their role. Some urban governments banned all livestock raising activities in their areas and sent teams around neighborhoods to kill all wild birds. Ho Chi Minh City government declared a "Three-Don'ts" campaign: Don't eat, don't keep and don't transport poultry.[108] The state-controlled media, while frankly reporting weak government coordination, contributed to the panic, which hurt those producers whose stock was not affected by the disease. Only months after the poultry sector had suffered devastating losses, less from culling than from losses of customers and tumbling prices, was the Minister of Agriculture seen on television eating cooked chicken. Compared to Thailand or even Malaysia, Vietnam's SRC and PRC are clearly underdeveloped as (private) producers lack both economic might and political support to protect themselves in similar situations. Not only smallholders but larger producers were hit: Cargill was forced to close down its chick breeding farm in 2005.

[107] *Vietnam News Agency*, February 8, 2004.

[108] "TP. HCM: Cong bo gia den bu gia cam va cac bien phap "3 khong" voi dich cum," [Ho Chi Minh City: Announcing compensation amount for culled fowls and Three-Don't campaign to deal with bird flu]. *VietnamNet*, February 3, 2004.

5. RETHINKING GOVERNMENT'S ROLE IN SECTORAL DEVELOPMENT

The livestock sector has great potential in dynamic markets for meeting rising demand and for rural development. Even though the sector cannot grow as fast as manufacturing, it grows faster than most crops and contributes to more healthy diets, food security, foreign exchange and rural income. At the same time, growth has also created new concerns about disease threats, environmental pollution and inequity in the rural economy.

This study calls for the need to rethink government role in livestock development. The traditional approach that emphasizes the delivery of research, extension, animal health services and credit as the focus of government activities is argued to be too narrow. The concept of response capacity with its PRC, GRC and SRC components places the sector within the broader political economic context of sectoral governance and dynamic markets. In the new thinking, the scope and the mode of government intervention in the sector must be redefined. In terms of *scope*, government intervention should encompass more than service delivery and poverty reduction. Governments are advised to use macro policies more aggressively to create a favorable business environment for the sector (as well as for the whole economy of which the sector is a component). Concerning the *mode* of intervention, the facilitating role of governments is emphasized equally to that of providing goods or enforcing regulations. The new concept also stresses the need for increased participation of non-government actors in policymaking, implementation, scientific research and service delivery.

The case studies demonstrate that the concept of response capacity is useful as an analytical framework to evaluate the performance of the livestock sector and government intervention in each country. While the sector in all three countries has benefited from rising demand, there are significant variations in performance across and within each country. Thailand has displayed the strongest performance in general while Vietnam the weakest. In terms of variations across sub-sectors within each country, Thailand has achieved great success in poultry but not in other sectors. Malaysia has done well enough in poultry and pigs to meet domestic demand (currently Malaysia's per capita meat consumption is among the highest in the world). Vietnam's per capita meat consumption is low and its production capacity is still trying to catch up with demand across all sub-sectors.

Each country is found to face particular problems which would be obscured if not viewed from the response capacity perspective. Thailand's wide-ranging decentralization and rural development projects implemented in recent years need to be closely monitored. The process promises much in terms of local empowerment but also contains the risk of rising rural indebtedness. In addition, the position of the poor in this process is not clear although groups that champion their interests have blossomed thanks to recent democratization. Sector-specific problems involve unhygienic slaughterhouses for large animals, persistent corruption in the school milk project and the lack of transparency in policymaking. Large poultry exporters have contributed to Thailand's success but they may have become too powerful.

Turning to Malaysia, the tenuous relationship between the government and pig farmers perhaps poses the biggest problem. Alleviating this problem not only liberates the potential of this sub-sector but also reduces environmental pollution and disease threats. While the new Prime Minister Abdulla Badawi has reverted the policy of his predecessor and given more attention to agriculture and livestock, the legacy of neglect over two decades poses a real challenge. New and ambitious government initiatives focused on beef and dairy may or may not be sufficient to overcome that legacy even though market trends seem to favor them.

Finally, Vietnam needs to confront the durable legacies of socialism. Urban bias and systemic discrimination against private entrepreneurship are still pervasive. While the government-business relationship has been reformed in recent years, it still falls short of what ought to be. Yet political support for legitimate private entrepreneurship is an essential requirement for a strong sectoral response capacity. On a different issue, central-local relations are still evolving and need to be watched closely as this seems to be the most serious hole in government response capacity. As seen in the dairy program and avian flu outbreaks, local autonomy is officially limited but the central government in reality has little control over its own budget or over developments on the ground. This situation allows corrupt bureaucrats and politicians to benefit handsomely while public interests are hijacked. The suggested solution is not for greater central command except in certain matters such as disease control, but for a clarified relationship and greater local accountability and capacity.

Reviewing livestock-based poverty reduction programs in three case studies yields only mixed implications for the concept of response capacity. These programs, which were all pursued in the traditional way, reportedly achieved great success even though critics have noted serious problems such as systematic miss-targeting and abuses by politicians. There are recent programs that share with the response capacity concept emphases on government role as a facilitator, stakeholders' participation and interlocking support systems for farmers. An example is a project operated by the Agronomes & Veterinaires Sans Frontieres in several Northern Vietnamese provinces in the last five years. With only a small amount of foreign and government funding, province-level veterinary networks have been established that hold regular monthly meetings of hundreds of veterinarians and para-veterinarians, publish monthly newsletters and organize training for farmers. The underlying idea of this approach is similar to the response capacity concept: Horizontal networking and interaction helps improve information flows, surveillance of diseases, and knowledge and skills sharing. However, whether this program will eventually be adopted by local governments is open to question.

Beyond the case studies, the concept of response capacity can offer more general recommendations for policymakers on livestock development. Following are suggestions focused on five different aspects: development planning, regulation, service provision, the role of organization in poverty reduction and sectoral development, and the role of civil society.

First, it is recommended that governments adopt long-term rather than short-term vision of sectoral development. This vision must take into full consideration economic, technological and political parameters. In addition, sector development initiatives must involve the regular participation of all stakeholders or aim to create such participation while resisting populist programs or projects that serve only special interests. Regular participation may not improve decision-making efficiency but it is an effective method to ensure policy transparency and fairness. In all our three cases long-term development plans or projects are found to be inadequate for giving more attention to technology than to market forces and for being responsive to political and bureaucratic needs more than to the requirement of participation.

Stakeholders' participation in policymaking and implementation is important not only for the sake of fairness but also to improve regulatory enforcement. All three countries in this study encounter significant compliance problems with their sanitary and environmental regulations. The lack of an adequate incentive structure is clearly a main cause of those problems but at a deeper level, the blame goes to the failure of governments to acknowledge the legitimate needs of certain producers, traders or consumers. While ostensibly made to serve public health needs, government regulations in many cases may discriminate based on religious reasons (the case of Malaysia's pig farmers) or based on a general despise for the "backward" smallholders (environmental regulations), or lack an understanding of how markets work (slaughterhouses). It is argued that regulatory enforcement can be much improved if

the process of making and enforcing regulations is reformed to involve all stakeholders or their representatives. This is essentially what it means for governments to act as facilitators.

Second, government agencies should focus not on providing inputs but on delivering the right legal and regulatory framework for governing the market. An example is farmers' lack of credit to expand production. It is suggested that policies must be directed at clearing away credit market bottlenecks such as legal and effective restrictions on micro-financing rather than at offering producers cheap government credits. Consider another example, which is the insufficient supply of veterinary drugs and the chaotic drug market. To alleviate these problems from the perspective of response capacity, government agencies should not engage in drug production as Thailand and Malaysia once did or Vietnam is still doing. What these governments are recommended to do is to simplify currently cumbersome procedures for drug licensing, offer tax incentives for foreign or domestic drug companies to invest in domestic production and distribution, and create an effective system to disseminate drug information to farmers.[109] Current regulations make drugs of high quality expensive to be produced or imported while failing to protect farmers from drugs of poor quality and illegally imported or produced drugs which are readily available in the market. Government regulators should keep in mind that regulations on micro-financing, drug control and other matters should not be just for the sake of regulation, but must be made to promote production and trade.

Turning to service provision, the concept of response capacity suggests a more participatory approach. Effective service delivery, especially in regard to research and extension, requires more systematic inputs from farmers. More broadly, top-down transfer of credit and technology should be supplemented with and eventually replaced by horizontal exchanges among stakeholders. Rather than picking a commodity for concentration and relying on their own bureaucratic organizations to channel resources downwards as is now common, governments should focus on developing a micro-institutional framework that improves interaction among non-government actors across levels of production and consumption hierarchies, in input as well as output markets, and across geographical boundaries. Governments should facilitate trade and other kinds of organizations that would connect and aggregate sectoral interests to overcome collective action problems. What the Agronomes & Veterinaires Sans Frontieres has been doing in Northern Vietnam in the last five years is an example of such a micro-institutional framework. Even in countries with a vibrant market economy and information flow such as Thailand and Malaysia, similar networking systems can be especially helpful to poor farmers.

Fourth, most existing programs to raise PRC are found to focus on poverty reduction. Yet PRC can also be increased if farmers along with all other sector actors are allowed and encouraged to organize, not only to share resources and information but also to defend and promote their policy interests. Political support for the sector and for smallholders cannot be assumed to be always or adequately available given the sharpening inter-sectoral and intra-sectoral competition for resources and for access to policymakers as economic development spreads. Within the livestock sector, smallholders often bear the brunt of criticisms and losses in disease outbreaks, whether in capitalist Thailand or socialist Vietnam. Thailand's Fighting Cock Professional Promotion Association suggests the need for farmers to organize.

[109] Interviews with sales agents of a private veterinary drug company in Kuala Lumpur and Ho Chi Minh City. Vietnam's MARD owns several veterinary drug companies; one of them has been "equitized" (privatized) whose shares are now owned by MARD officials and employees. In the case of the other unequitised companies, profits are often distributed internally within MARD besides or before turning over to the state. My informants suggested cases of clear conflict of interest involving these companies.

Yet organizations differ in their ability to increase PRC and SRC, and the question is how stakeholders should organize. In this study, the Thai Broiler Processing Exporters' Association is the most effective. Specialization, a homogenous membership and a cohesive structure allow this organization to take uniform positions and promote members' interests aggressively. Malaysia's FLFAM is able to coordinate production but the broad-based nature of its membership and its lack of a cohesive structure deny the organization the ability to formulate shared policy positions and to earn respect from the government. Top-down state-sponsored organizations in Vietnam such as the Farmers' Association do not really represent farmers. When the government told people not to eat chicken whether sick or not, this organization did nothing to defend livestock farmers. To be sure, private organizations need to act in concert with government officials for the best impact. The Thai organization has the firm support of the Thaksin government whereas its Malaysian counterpart often acts alone.

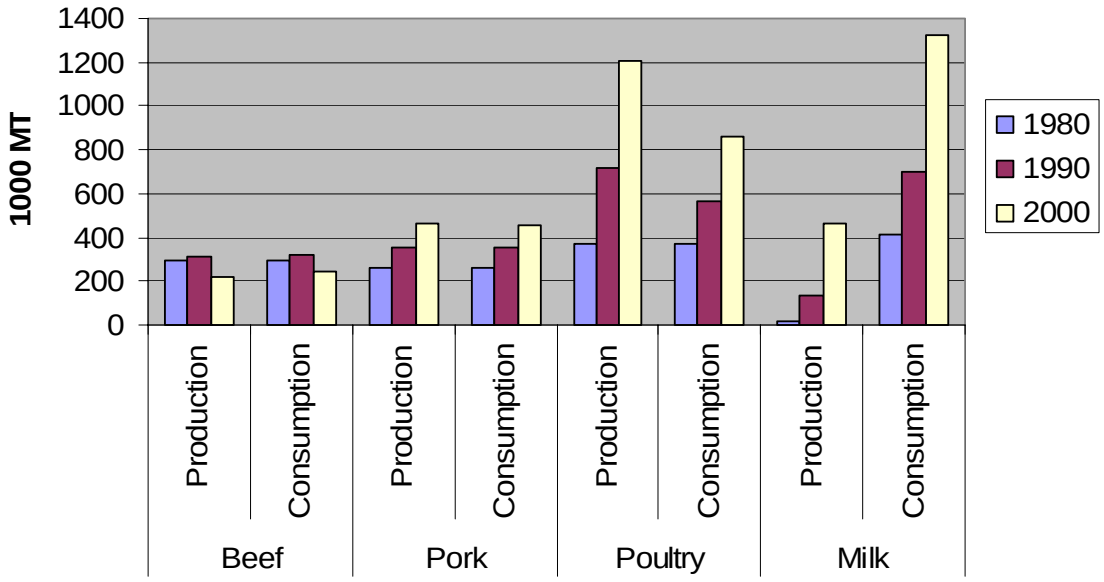
Finally, the important role of an autonomous and vigorous civil society should be emphasized. A civil society does not increase response capacity directly. Rather, it contributes by promoting policy debates and offering forums for disadvantaged groups. We have seen that smallholders did not suffer from so much blame in the bird flu crisis in Thailand as their counterparts in Vietnam did. At the same time, a civil society often raises the voices of consumers as a group. This may create pressures on the livestock sector in the short run, yet demands from consumers' groups in the long term can help producers take better consideration of social costs, environmental damages and disease risks, thus helping make livestock production more sustainable. Yet the most important benefit from a vigorous civil society is a higher level of transparency in policymaking as a result of public scrutiny. We have seen that livestock programs in all three case studies suffer from rampant corruption, which hurts poor farmers most. Transparency also helps prevent disease cover-ups which tend to protect state interests (security and tourist dollars) and the interests of powerful groups (large exporters) at the expense of smallholders.

APPENDIX: GROWTH TRENDS IN LIVESTOCK PRODUCTION

Thailand

	1980	1990	2000
Agri GDP in total GDP	23.2%	12.5%	10.5%
Livestock GDP in Agri GDP	17.9%	23.0%	23.6%
Livestock GDP in total GDP	n/a	2.9%	2.5%
Pop in agri (million)	29.6 (64%)	31.1 (57%)	30.8 (49%)
Beef (1000 Mt)			
production	297.7	313.1	220.5
consumption	293.2	316.7	248.2
Pork (1000 Mt)			
production	265.1	357.7	460.7
consumption	264.8	356.9	457.9
Poultry (1000 Mt)			
production	374.1	720.1	1202.3
consumption	374.1	566.8	863.8
Eggs (1000 Mt)			
production	417.5	708.9	799.8
consumption	320.6	554.7	615.7
Milk (1000 Mt)			
production	18.8	136.5	465.4
consumption	410.1	702.8	1326.7

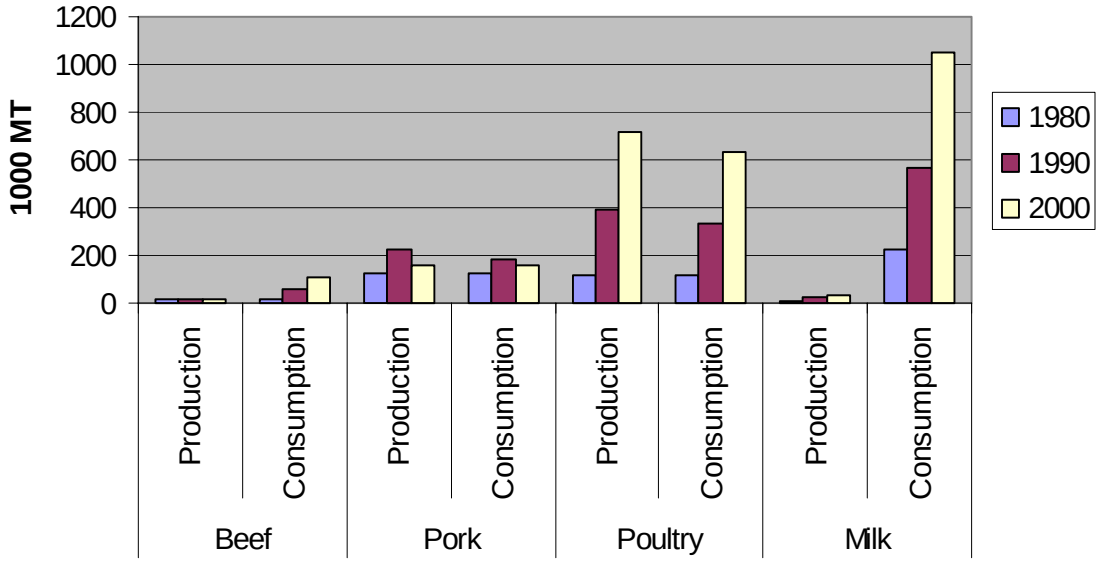
Source: Knips (2004)



Malaysia

	1980	1990	2000
Agri GDP in total GDP	22.2%	18.7%	10.5%
Livestock GDP in Agri GDP	n/a	n/a	7.6% (2003)
Pop in agri (million)	5.4 (58%)	(50%)	4.07 (43%)
Beef (1000 Mt)			
production	13.0	13.7	17.5
consumption	20.5	57.4	110.6
Pork (1000 Mt)			
production	122.6	226.6	159.8
consumption	122.8	179.4	160.7
Poultry (1000 Mt)			
production	114.5	388.6	714.3
consumption	117.2	337.3	635.2
Eggs (million)			
production	2311	5555	6642
consumption	2311	5058	5727
Milk (million liters)			
production	8.2	28.9	29.5
consumption	223.8	569.1	1050.2

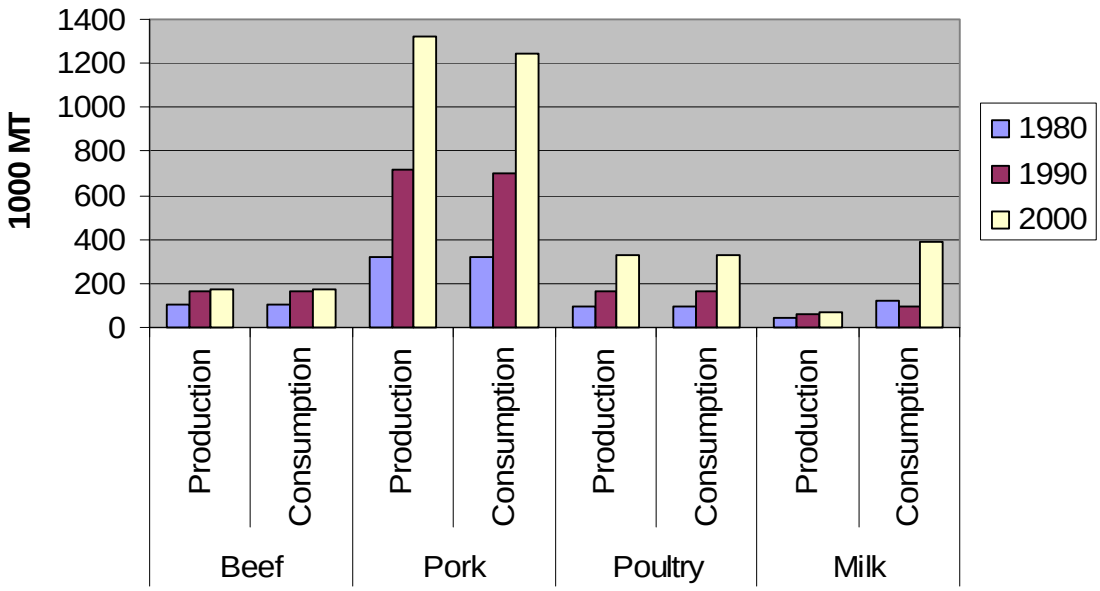
Source: Malaysia Perangkaan Ternakan (2003, 6-8) JPH website; Pazim (2000, 129); Jinap and Shamsuddin (2004)



Vietnam

	1980	1990	2000
Agri GDP in total GDP	n/a	37.5%	24.3%
Livestock GDP in Agri GDP	16.2%	21.5%	22.3%
Livestock GDP in total GDP	n/a	8.1%	5.4%
Pop in agri (million)	38.7 (73%)	47.1 (71%)	52.6 (67%)
Beef (1000 Mt)			
production	102.7	162.7	175.6
consumption	104.3	162.9	175.7
Pork (1000 Mt)			
production	322.7	719.3	1318.7
consumption	322.2	702.6	1248.4
Poultry (1000 Mt)			
production	97.9	166.9	327.4
consumption	98.3	166.9	328.4
Eggs (1000 Mt)			
production	55.3	97.11	178.8
consumption	48.8	83.3	166.8
Milk (1000 Mt)			
production	41.7	60.3	70.7
consumption	119.3	97.5	385.3

Source: Knips (2004)



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