

Farm-level Bureaucrats in Action (and Inaction):
The Distribution of Veterinary Services in Laos and Cambodia

By

Brett M. Ballard

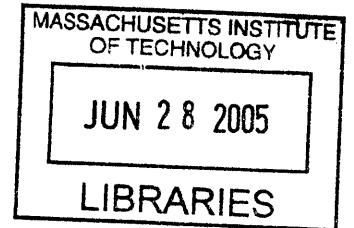
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Abstract

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In this study, I analyze several dimensions of the institutional environment that govern contractual exchange between veterinary service providers and farmers in Laos and Cambodia. I hypothesize that the negotiation, implementation, and enforcement of informal service contracts entail economic and social transaction costs that can distort provider incentives, thereby affecting the quantity, quality, and financial sustainability of services over time. I have employed qualitative field research methods to interview service providers, government officials, and farmers about their role in and perceptions of veterinary service delivery. I focus my analytical attention on the community-based service providers as they are the key institutional link between the supply of and demand for veterinary services at the local level.

In Laos, I analyze the relationship between the mode of agricultural production within a particular agro-ecological setting and the incentives that motivate Village Veterinary Workers (VVs) to provide services. I identify five different service-provider types, including citizen vaccinators, barefoot entrepreneurs, special agents, warrior vaccinators, and dormant providers. In Cambodia, I analyze how exchange relationships between government technicians and farmers, and among government officials of different administrative levels, were structured according to an ethics and logic of patron-client relationships that characterize social interaction in much of Cambodian society. I show how a complex system of shadow revenues and gift exchanges enabled farm-level bureaucrats to distribute animal vaccines and maintain organizational cohesion during ongoing social and political unrest in the early-mid 1990s. I then analyze how informal service contracts between Village Livestock Agents (VLAs) and their clients are governed by local norms of reciprocity and mutual exchange in rural northwest Cambodia. I identify two types of VLA entrepreneurs, charismatic/benevolent and career/professional service providers, who continue to provide services on their own. I also analyze how VLA professional associations can support the sustainable delivery of services by private sector providers.

I conclude that reform measures, including those featuring some elements of privatization and/or decentralization, can be successful only to the degree to which they establish or strengthen supporting institutions that take into account local realities governing contractual exchange between service providers and clients. This observation is especially relevant in situations where current efforts are directed at “bottom-up reform.”

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Brett M. Ballard
Phnom Penh, Cambodia
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Abbreviations/Acronyms

| | |
|-------|---|
| AFSC | American Friends Service Committee |
| CBAH | Community-based Animal Health |
| CWS | Church World Service |
| DAHP | Department of Animal Health and Production (Cambodia) |
| DLF | Department of Livestock and Fisheries (Laos) |
| EUR | Efficiency-use Rate |
| FAO | Food and Agriculture Organization |
| FLB | Farm-level Bureaucracy/Bureaucrats |
| FMD | Foot-and-Mouth Disease |
| HPI | Heifer Project International |
| HS | Hemorrhagic Septicemia |
| NIE | New Institutional Economics |
| NEM | New Economic Mechanism (Laos) |
| NGO | Non-governmental Organization |
| UN | United Nations |
| UNTAC | United Nations Transition Authority in Cambodia |
| VLA | Village Livestock Agent (Cambodia) |
| VVW | Village Veterinary Worker (Laos) |

Preface

My research has been motivated by both a personal interest and professional involvement in the sector of veterinary services. I first became involved with the animal health sector in Cambodia in my capacity as Co-Field Director for the American Friends Service Committee (AFSC) from 1987-1991. The AFSC, along with several other small NGOs, played a disproportionately large role in the animal health sector during Cambodia's economic and political isolation from the Western world during the 1980s. The AFSC helped rebuild the cold chain infrastructure, train *khum* (commune) animal health volunteers, and support a small vaccine production lab that for several years produced up to 1 million vaccines a year for hemorrhagic septicemia (HS).

In 1993-95, I again served as Country co-director for AFSC in Laos where Quaker Service Laos provided similar support for training Village Volunteer Workers (VVs) and establishing a cold chain infrastructure for animal vaccine distribution in conjunction with the Laos government's Department of Livestock and Fisheries (DLF). During this time, I undertook a comprehensive study of the animal health sector and published a paper¹ that examined donor assistance, VVW services, and the technical and managerial aspects of maintaining the cold chain.

In the summer of 1996, I returned to Cambodia to do research for the first-year doctoral research paper at MIT.² I visited five different provinces where I interviewed VLAs, government officials from the Department of Animal Health and Production (DAHP), and farmers in order to explain variations in performance outcomes in various parts of the country. At that time, the military conflict with remnants of the Khmer Rouge was ongoing in various parts of the country, and there was widespread banditry by various local militia groups in certain areas. I began to consider how the government was able to continue distributing vaccines with so few resources during a time when the country was in so much turmoil.

I analyzed my findings using a conceptual framework that I developed based on readings and discussions from a doctoral seminar on the New Institutional Economics. I later rewrote the first

¹ Veterinary Vaccination Support Project: Survey and Assessment (1995)

year doctoral paper to take into account further readings from a class concerning Property Rights in Transition, during which I sharpened my understanding of the problems associated with informal contracting. Following up on a suggestion from one of my professors, I began looking more closely at the sociology and anthropology literature, including Weber (1964), Bourdieu (1977), and Geertz (1973). I also began reading the rural sociology and political science literature concerning patron-client networks in Southeast Asia, including Hanks (1975), Jacobs (1971), and Scott (1972). I then discovered Yang's (1989) work on gift economies in China, after which I developed the concept of gift exchange to help explain the exchange relationships between patron and clients within the DAHP. This work eventually resulted in the second dissertation paper.

The research for the paper on Laos was undertaken in late 1998 and early 1999. After my earlier research in Cambodia, I was curious to explore the relationship between farming systems and incentives. For four months, I traveled from Savannakhet and Saravane in the south to Luang Prabang and Oudomsay in the north interviewing Village Veterinary Workers (VVs) and local government officials, the village chiefs to assess the factors and circumstances that affected variations in performance outcomes. I visited a number of areas featuring different agro-ecological conditions and chose villages on the basis of statistical performance indicators (e.g., number and percentage of large animals vaccinated). During these travels, it became increasingly apparent to me that I might be on the right track with my earlier hunch that incentives might somehow be related to agro-ecological circumstances. In order to help with this line of analysis, I began reading the cultural ecology literature represented by Boserup (1969), Netting (1977, 1993), and Leach (1954), as well as others (e.g., Geertz, 1963).

The final round of field research in Cambodia was originally designed to look at how VLAs and clients formulated informal contracts among themselves. I had been intrigued for some time by Tendler's (1993) reference to flexible contracting which enabled extension agents to tailor or customize services in ways that met the specific needs of individual farmers. I intended to look more closely at such contracting, with a particular focus on the nature of the transaction costs associated with contracting. I had originally planned to do this by working with some of HPI's

² Four-legged Problems, Two-legged Solutions: Veterinary Vaccine Distribution in Cambodia (1996)

local partners in northwest Cambodia. However, during the initial round of fieldwork, I met several VLAs who had been trained earlier by CWS. The more I talked to these VLAs, the more I became interested in their stories of how they were surviving on their own since CWS had shifted its attention to other kinds of programming. It occurred to me that this was a ready-made experiment to test the privatization model in the field. I therefore re-focused my interest in contracting to incorporate the factors and circumstances that affected the VLAs' ability to continue providing services after five years.

In each of the three research exercises, my interviews with VVWs in Laos and VLAs in Cambodia employed a semi-structured interview format that was guided by a written questionnaire. Although I tended to ask a certain number of the same questions of each VLA during each research phase, the general nature and direction of my interviewing tended to evolve and change with each interview according to previous information and insights. In this sense, the research methodology was an iterative process in which each new interview was informed by previous interviews.

My interviews with government officials and farmers were, on the other hand, somewhat unstructured in the sense that most interviews were intended to obtain background information and/or to confirm or test insights developed in VLA interviews. In fact, the circumstances of these interviews were often dramatically different, and as a result of the social context I needed to be flexible and adapt my interviewing to various situations as they developed. For example, several interviews in Cambodia in 1996 with individual farmers developed into large group meetings. These were some of the most interesting discussions I had during the entire course of my research, and they were entirely impromptu events.

Chapter 1

Farm-level Bureaucrats in Action (and Inaction):

The Distribution of Veterinary Services in Laos and Cambodia

1.1. Introduction

Veterinary services in developing countries have been plagued by poor performance outcomes characterized by variations in the quantity and quality of services that are provided to farmers. Scholars and government planners have proposed a variety of reform initiatives designed to improve the distribution and sustainability of such services. A key component of many reform efforts concerns the incentive arrangements that govern exchange relationships between extension agents and their farmer clients. This approach focuses attention on the way informal service providers and clients formulate service contracts. The negotiation, implementation, and enforcement of these service contracts, however, entail transaction costs that can distort the incentives governing the exchange, thereby affecting the quantity and quality of services provided, as well as the distribution of benefits over time.

In discussing the relationship between incentives and contracting, researchers and planners using standard economic models have generally assumed that both parties (1) respond to cash or material incentives, and (2) have more or less the same information (Umali et al, 1992; Leonard, 1993). The new institutional economics and organizational development literature, however, argues that contracting between service providers and farmers is more complicated than such models suggest. For example, researchers have employed principal-agent models to show how asymmetrical information between the service provider and client about service quality can lead to inefficient outcomes (Arrow, 1985; Leonard, 2002). Although principal-agent models provide a useful framework for analyzing service contracts, analysts tend to focus solely on the one-on-one interaction between the two contracting parties involved and do not devote sufficient attention to the role that the broader institutional environment plays in shaping how service contracts are actually negotiated, implemented, and enforced.

Researchers concerned with rural development services have been exploring some of the contextual circumstances surrounding informal service contracting. For example, Geertz (1997) has looked at how attitudes and beliefs about class and gender bias the distribution of credit in rural Bangladesh. In the veterinary sector, Wells (2002) has also explored how social transaction costs associated with gender have tended to distort service contracting between male clients and female service providers in Tanzania. This line of research represents important steps in improving our understanding of the institutional dynamics associated with informal service contracting, but there are still many gaps that require attention.

My research is designed to help fill some of these gaps by analyzing several specific dimensions of the institutional environment that govern incentive structures and informal service contracts between community-based animal healthcare providers and farmers in Laos and Cambodia. In Laos, I analyze the relationship between the mode of agricultural production within a particular agro-ecological setting and the incentives that motivate Village Veterinary Workers (VVs) to provide services. In Cambodia, I first analyze how exchange relationships between government technicians and farmers, and between officials of different administrative levels within the Department of Animal Health and Production (DAHP), are structured according to the ethics and logic of patron-client relationships that characterize social interaction in much of Cambodian society. I then analyze how informal service contracts between private community-based service providers and their clients are governed by social expectations associated with reciprocity and mutual exchange in rural northwest Cambodia.

In order to guide the field research and subsequent analysis, I have developed a theory of farm-level bureaucracy based on Lipsky's (1980) theory of street-level bureaucracy to help frame the problems associated with informal service contracting within a broader institutional context. According to my definition, farm-level bureaucracies are organizational arrangements composed of (a) front-line service providers, defined as technical agents who interact directly with farmer clients, and (b) those managers, either government or non-governmental organizations (NGOs), who supervise front-line staff. Given poor communication infrastructure and long distances between administrative levels and villages commonly found in rural settings in developing countries, front-line service providers have a considerable degree of autonomy relative to their

supervisors and/or policy makers. Farm-level bureaucrats are routinely confronted with indeterminate and conflicting policy objectives, inadequate resources, and ambiguous levels of client demand. In order to cope with such constraints and obstacles, front-line workers often take advantage of the autonomy within their organization to regulate the type of services that reach farm households. As a result, the distribution of scarce development resources is frequently characterized by variability in the amount and quality of services provided to clients across different locales and over time. In the course of determining which farmers receive how much, and when, farm-level bureaucrats act as informal and autonomous policy makers as well as informal financiers.

Farm-level bureaucrats (FLBs), however, do not act solely within the confines of their organization or in isolation from society. Following North's (1990) definition of institutions as the "rules of the game", the institutional landscape plays a significant role in setting the social and economic parameters and determining the range of options available to FLBs as they organize and implement their work. In this sense, each of the following three papers represents a discrete research project focusing on a particular set of institutional factors and circumstances that govern how FLBs formulate and implement informal service contracts with clients. In this sense, the three papers share common roots in three sets of complementary literature concerning organizational development, new institutional economics, and public finance.

In the next section, I therefore review the literature from organizational development, the new institutional economics, and public finance. In Section 3, I briefly summarize each of the three papers. In Section 4, I discuss several areas in which my research contributes to our understanding of the factors and circumstances that affect service provider incentives and the way they formulate informal service contracts with clients. I conclude in Section 5 by summarizing the main points.

1.2. A Review of the Literature

I first review the problem from an institutional perspective (i.e., organizational development and new institutional economics) that focuses attention on the nature of incentives and contractual exchange between service providers and farmer clients. I then look at the problem from a public

finance perspective that highlights how exchange relationships are further complicated when questions of economic and social trade-offs are introduced by the reality of too few resources and too many expectations.

Institutional analysts have been primarily concerned with the core problem of how to structure contractual arrangements governing patterns of exchange and reciprocity in a way that the motivations and interests of individuals and groups correspond to the goals and objectives of the organization. Weber (1964) observed that different organizational types are characterized not so much by differences in their goals and objectives, but rather by the ways that each system structures incentives (rewards and punishments) to ensure that the actions of individuals and groups are oriented toward achieving organizational objectives. Seen in this context, then, the essential problem for reformers working in developing countries in Southeast Asia has been how to transform traditionally structured systems that are governed by highly personalized relationships between patrons and clients into rationalized systems governed by rules and transparent monetary incentives (Jacobs, 1970; Scott, 1972).

Subsequent researchers have approached this set of problems by recognizing that such transformations must be understood and engineered in an environment in which organizational relationships are influenced by socio-economic and political factors that lie outside the boundaries of the organization. The key institutional linkages that connect organizations to their respective social environments are individuals who often play multiple roles about which there may be conflicted expectations depending on the particular context. For example, donors and government planners may expect VVWs in Laos, or VLAs in Cambodia, to provide affordable services to the poor, while the poor may expect free or discounted services. The evolution in the thinking about the relationship among the individual, organization, and society also suggests that individual behavior within an organization is shaped not only by the way incentives are formally structured according to rationalized rules and procedures, as Weber argued. Rather, relationships are also influenced by socially constructed values and beliefs that individuals bring with them to the organization (Lipsky, 1980; Goetz, 1997). In this sense, new institutional theory has evolved to the point that many different disciplines, including political science, organizational science, and economics can call it home, or at least reside there part-time.

The dilemma that emerges from this assessment concerns how organizations can establish a reasonable degree of control over the actions of front-line service providers without compromising their ability to respond flexibly to the needs of their clients. Seen in the context of rural extension services in developing countries, there have been two fundamentally different approaches for resolving the tension between control and flexibility in order to reduce the gaps between policy intentions and implementation outcomes (Tendler, 1993). Both approaches focus on restructuring the way contractual exchanges between service providers and clients are organized, but differ in the way such exchanges are negotiated, implemented, and enforced. *Supply-side approaches* try to structure the supply of scarce extension services on a formal basis that constrains the flexibility of front-line workers by enforcing stricter adherence to procedural guidelines. One of the most notable examples of this approach is the World Bank's Training and Visiting (T and V) initiative that promotes the dissemination of standardized information, routinized farm visits, and closer supervision and monitoring of front-line staff in accordance with performance-based incentives. This approach has been challenged for its apparent (1) disregard of factors such as job satisfaction and community solidarity that oftentimes motivates front-line staff; and (2) lack of flexibility in the face of farmer interests and needs that vary according to ecological socio-economic conditions, knowledge and information, and political circumstances (Howell, 1988).

Analysts responding to supply-side shortcomings have shared a common concern about how institutional arrangements can be structured to empower front-line workers and farmers to negotiate their own service contracts (Tendler, 1993; Christoplos, 1996). However, proponents of *demand-side approaches* have adopted divergent perspectives concerning the proper roles and relationship between market and State institutions governing the way such contractual arrangements can be negotiated, implemented, and enforced. On one hand, Leonard (1993), for example, observes that State-managed services have often been inherently inefficient and unresponsive to farmer needs. He suggests that farmer clients may be better able to monitor and control the quality of services provided by private vendors than by State agents. Tendler (1993), on the other hand, argues that State-managed services can be successful when there is sufficient flexibility to allow government agents to negotiate informally individualized service contracts to

meet the specific needs and demands of their farmer clients. She argues that centralized government agencies can support “strong local actors” with financial incentives that direct services toward desirable outcomes.

When we look at this set of questions from a public-finance perspective, we find that the conundrums surrounding the most effective way to organize contractual exchange between farm-level bureaucrats and their clients are exacerbated when questions are raised about how the production and distribution of such services can be sustainably financed. One set of problems concerns the fact that planners are invariably faced with competing policy objectives. On the one hand, planners who operate under conditions of resource scarcity are invariably concerned with economic efficiency in terms of optimizing the returns on public sector investments. On the other hand, these same planners operate in environments characterized by competing socio-economic interests and therefore must somehow prioritize the allocation of scarce resources in a reasonably equitable or fair manner. Consequently, the resolution of the tension between economic efficiency and social equity involves determining an acceptable balance of trade-offs that reconcile the supply of scarce economic resources, with seemingly unlimited social and political demands (Donahue, 1989; Smoke, 1994).

A second set of related problems revolves around the practical questions concerning how the demand for development services can best be matched with the supply of such services. This set of questions particularly difficult in rural areas where (1) institutions for mobilizing local revenue to finance public services is traditionally weak, and (2) the resource base (e.g., farm households, villages) is fragmented and generally poor (Blarcom, Knudsen, and Nash, 1993; Oates, 1993). The resolution of such questions is conditioned by the very nature of the problem and the services employed to solve the problems. (Tendler (1989) has aptly referred to this set of questions under the heading “traits of the trade.” For example, the production and delivery of veterinary services are characterized by various externalities associated with ambiguities regarding the public and private good characteristics of preventive and primary services (Umali et al, 1992), and moral hazards associated with asymmetrical information between service providers and clients (Leonard, 1993, 2002).

A third set of problems concerns the fact that in cases where services must be produced outside the local community (e.g., pharmaceutical supplies), ways must be devised to aggregate individual fees and then transfer financial resources upward through a system that involves a series of exchanges between different administrative levels and jurisdictions of the government. For example, in both Laos and Cambodia, animal vaccines are transferred from a central point of production down through the province and district level and, finally, to the village. Meanwhile, the fees collected from services must be mobilized at the local level and then somehow make the return journey back up the administrative chain. In this sense, there are several intermediary steps between supply and demand, and at each step there are opportunities for individuals to siphon off funds. As a result, the production and distribution of vaccines involves a complex set of contractual exchanges between (a) farmers and service providers, and (b) different levels of the bureaucratic operation.

Scholars have identified four institutional mechanisms for organizing contractual relationships. In each case, the fundamental question is how demand for services can best be communicated to producers and suppliers, and how financial resources can be mobilized to finance the production and equitable distribution of services. First, the State, as in the case of Laos, or Cambodia during the 1980s and early 1990s, may organize the distribution and allocation of scarce resources through the use of policy by targeting resources according to specific development objectives (Tendler, 1993 and 1997; Geotz, 1997). Second, the market is allowed to regulate the allocation of services based on the principle that demand is most economically and efficiently connected to producers through the mechanism of prices that people are willing to pay for a particular service (Leonard, 1993, 2002; Umali et al, 1992). The primary institutional mechanism through which this approach is implemented is the private firm (Coase, 1939; Williamson, 1985).

A third response, which entails elements of both State and market approaches, has been for government suppliers to provide services to clients on a user service fee basis that requires farmers to at least partially finance the distribution and production of development services (Smoke, 1994). A fourth way, which is increasingly promoted by international donors in developing countries, has been to place more control over the distribution of resources in the hands of the particular community receiving such services (Midgley, 1986). For example,

community-based animal health care initiatives are now widely employed in countries like Cambodia and Laos (Catley et al., 2002).

Each mechanism, or mix of mechanisms, employs a different set of incentive arrangements that guide the behavior of service providers in ways that are consistent with the policies and objective of the organization. For example, the State has national development priorities that it wishes to implement. In theory, state agents may be rewarded on the basis of how effectively they contribute to the advancement of government policy. Private firms, on the other hand, pursue profits. In principle, staff may be rewarded on the basis of their efficiency and productivity. NGOs often promote cooperative arrangements among various segments of rural communities. Ideally, staff may be motivated by solidarity with the hopes and aspirations of various community groups. As we see in the ensuing three papers, there is rarely, if ever, a case in which there is a perfect match between incentive arrangements and organizational arrangements. In fact, what we usually find is a seeming jumble or confusion of incentives and objectives. The analytical task is how to make some sense out of it all.

1.3. Policy Context

Cambodia and Laos are extremely poor countries that are still recovering from years of civil war and international isolation, and in the case of Cambodia, genocide. In the early to mid-1980s, 85-90 percent of their respective populations were dependent on subsistence farming. The early policy focus in both countries was on increasing agricultural production, with particular emphasis on rice production. Large animals (i.e., cattle and buffalo) were viewed as a strategic factor in national reconstruction and development efforts as they provided draft power, green fertilizer, and transportation. The socialist governments of both countries assumed the predominant role for providing veterinary services (i.e., primarily vaccination services). During the 1980s, both governments depended on international assistance from Soviet and other East Bloc allies for material and financial support, along with a handful of small western Non-Governmental Organizations (NGOs) and UN agencies that provided support for animal vaccines, technical training, and infrastructure development.

In the late 1980s, poor performance outcomes in the agricultural sector prompted the governments of both countries to adopt more flexible market-based policies in which the State gradually reduced its role in economic affairs. The Lao government adopted a New Economic Mechanism (NEM), but maintained tight control over the social and political affairs, as well as various economic matters, such as foreign investment. Although international NGOs were allowed to operate under close control, the development of a domestic civil society has not been tolerated. In this sense, the Lao government's continued dominance of the socio-economic and political spheres of the country, and the virtual absence of an open civil society, has limited the ability of donors and private entrepreneurs to innovate and experiment with new approaches to providing rural-development services.

In Cambodia, however, the relationships between civil society and government has evolved dramatically in the context of new political and economic realities over the past decade. Following the implementation of the 1992 Paris Peace Accords, Cambodia introduced a more liberal political system that included multi-party elections for national office. NGOs and other civil society organizations were also allowed to work directly at the community level, which represented sharp break from previous practice in which all organizations were required to work through government agencies. Such changes in Cambodia have created an environment that is more conducive to programming innovation and policy reform than is found in Laos.

Poor performance outcomes in the veterinary sector of both countries have also prompted a variety of reform initiatives. Although the nature and pace of such reform in Laos have been somewhat slow in comparison to Cambodia, there have been some attempts to introduce new approaches for delivering veterinary services, albeit under the domain of the government. One approach concerns the establishment of model villages, which receive targeted development assistance from the government. Although such models are beset by a number of problems, including questions associated with how such villages are chosen, they introduce the concept of community contracting in areas where poorly functioning markets may not support individual, private contracting. In some areas where intensive rice farming systems are rapidly evolving, the economic and social realities of commercial agricultural production may also prompt changes in

the way certain services are provided. The subject of Chapter 2 concerns the delivery of veterinary services in this unique policy context.

Meanwhile, the reform process in Cambodia has been moving at a somewhat rapid pace in the direction of privatized service delivery. Donors had long criticized the government for waste, corruption, and poor management based on traditional patronage systems. They have promoted rational, modern management reforms in which the government would adopt a regulatory role while leaving services delivery to the private sector. The government's management of the veterinary sector is the subject of Chapter 3. At the same time, NGOs working directly at the community level soon established parallel service-delivery systems that challenged government hegemony in the veterinary sector. The central focus of these new service delivery systems concerned the training and equipping of private, community-based service providers, the Veterinary Livestock Agents (VLAs), who are the subject of Chapter 4. The veterinary services sector has evolved with the further development of a free market economy in which increasing amounts of pharmaceutical supplies are being provided by the private businesses.

Such changes in Cambodia are also taking place at a time when other bold innovations are underway in the political administration of the country. Perhaps the most potentially far reaching changes concern the newly elected Commune Councils, which are a key component of efforts to decentralize government in Cambodia. Although the Commune Councils are expected to provide a variety of services in the future, much work remains to be done in terms of capacity building and identifying revenue sources to finance their activities. In many respects, the privatization of service delivery in certain sectors and the decentralization of certain activities of the government are interfacing at the Commune Council level. In this sense, the evolution of veterinary services in both countries provides an excellent opportunity to analyze changes in the relationship between the state and private sector in terms of the rural development service delivery.

1.4. A Summary of the Three Papers

The study of veterinary service delivery in the socio-economic and political context of Laos and Cambodia also provides an excellent opportunity to further explore and test some of the theoretical foundation for much of the current thinking about the public policy of rural service

delivery. For example, these papers examine assumptions that service providers are primarily motivated by cash incentives *and* that cash is generally available. These cases also provide a deeper understanding of how asymmetrical information between service providers and clients affects the negotiation, implementation, and enforcement of informal service contracts. These cases are especially interesting in this regard as they unfold within a context of an ongoing clash between tradition and modernization that distort the relationships between service providers and clients at the local level.

Table 1.1: Summary of the Three Papers

| Country | Time Period | Mode of Delivery | Topic |
|------------------|--------------------|------------------|----------------------------------|
| Laos: Case 1 | mid-late 1990s | Public Sector | Citizen Vaccinators/Other Types |
| Cambodia: Case 2 | 1980s–mid 1990s | Public Sector | Patrimonial Administration |
| Cambodia: Case 3 | Late 1990s–present | Private Sector | Informal Contracting/InstSupport |

The methodological utility of studying the relationships between motivation and incentives, and the dynamics of contractual exchange in Laos and Cambodia is also highlighted by the fact that each case involves a complex chain of players, including farmer clients, public and private sector service providers, bureaucrats, policy makers, and donors. Most of them are involved in one way or another in some form of contractual exchange, and all of them are most definitely grappling with the problems associated with how to allocate and distribute a scarce resource in accordance with a set of potentially conflicting policy objectives. We can learn a great deal more about the factors and circumstances impinging on these kinds of decisions by looking at how these struggles play out in different places and at different periods of time.

One final comment concerning the decision to study veterinary services in Laos and Cambodia concerns the degree of access that I enjoyed to all the main players. As noted in the preface, I had worked previously in both countries and had developed a deep practical understanding of the issues involved, while getting to know many of the principle players. In countries like Laos and Cambodia the old adage holds especially true: *It is not necessarily what you know, it is who you know that is important*. In this sense then, I have enjoyed a degree of access shared by only a few researchers in this area. My access to the field was of course complemented with a deeper understanding of the theoretical and policy issues that I developed from my academic studies. In

terms of research, then, one's access to the field and their grounding in the theoretical literature go hand in hand.

Case 1, Laos Village Veterinary Workers (VVs)

In the paper on Laos, I analyze how changes in the mode of agricultural production affect the financial sustainability of vaccine distribution. I first examine the interdependent relationship among (a) local ecologies, (b) farming systems, and (c) the role and management of large animal in the context of each mode of agricultural production. I then argue that the dominant mode of production in a given locale shapes the nature of the incentives that are available to different types of front-line farm-level bureaucrats. In Laos, I have identified and characterized five different types of front-line FLBs: citizen vaccinators, barefoot entrepreneurs, warrior vaccinators, special agents, and dormant vaccinators. I introduce several new performance indicators in order to analyze the potential for financial sustainability for each type of service providers. I conclude that mismatches between incentive structures and modes of exchange undermine the financial sustainability of this system over time. As the mode of agricultural production becomes increasingly commercialized, and as local politicians intervene, one sees evidence of further distortions in the allocation and distribution of services.

Case 2, Patrimonial Administration in Cambodia

In the second paper, I analyze how changes in the socio-economic and political circumstances in Cambodia affected the way farm-level bureaucrats within the government's Department of Animal Health and Production (DAHP) relate to one another and their farmer clients. I examine how relationships within farm-level bureaucracies are governed according to the ethics and logic of patron-client hierarchies that structure social exchange in Cambodian society at large. I argue that patrimonial incentives are structured in the context of a gift economy that proved to be remarkably adaptive to the economic and political changes in Cambodia during the early to mid 1990s. This system resulted in a fairly efficient distribution of services in terms of matching scarce supplies with demand for services, although such efficiencies were short-term and not necessarily socially equitable. However, by the mid-1990s, these patron-client hierarchies were under attack by donors on the one hand, and farmers on the other hand, who no longer viewed

themselves as clients obligated to accept vaccinations services as gifts from more powerful government patrons, but rather citizens entitled to certain standards of fair and objective service delivery.

Case 3, Cambodia Village Livestock Agents in the Private Sector

The third paper picks up the story in Cambodia at about the time when large donors (e.g., The World Bank) were promoting the privatization of veterinary services. At the same time, NGOs were experimenting with community-based approaches to animal health care that involved the creation of a new class of service provider working at the local level. These two complementary approaches were wedded in a project in Northwest Cambodia in which the World Bank provided financial support for an international NGO to train and equip approximately 198 Village Livestock Agents. Five years later, this project represented a kind of experiment in which the sustainability of this particular privatization model for rural development services could be tested under actual field conditions. I found that a significant number of VLAs, including a high percentage of those who are female, have since stopped providing services. In order to understand why some VLAs continued working while others stopped, I analyze social and economic transaction costs associated with negotiating, implementing, and enforcing informal service contracts between private sector farm-level bureaucrats and their farmer clients. Based on this analysis, I identify two types of entrepreneurial VLA, benevolent/charismatic and career professionals, who continue to provide services and explain why. I also explore the factors and circumstances that affect the capacity of professional associations to provide institutional support for the VLAs.

1.5. Contributions and Common Themes

My research contributes to our understanding of the factors and circumstances that affect the delivery of rural development services in developing countries in several ways. First, many analysts assume that incentive structures are constant over time. My research sheds new light on how the evolution of motivations and incentives of front-line service providers are shaped and influenced by dynamic changes in the agro-ecological and socio-political environment. In Laos, I identified several different service provider types according to their motivation and incentive structures, and linked these structures to the predominant mode of cultivation in their area. In

Cambodia, I show how incentives for government technicians evolved along with the liberalization of both the economic and political system. I also identify two types of entrepreneurial service provider in Northwest Cambodia and show how they manage their financial and social resources in order to continue providing services in a rapidly evolving free market environment.

Second, my research adds to our understanding of how informal service contracts are negotiated, implemented, and enforced at the local level between front-line service providers and their farmer clients. For example, the problems associated with asymmetrical information between service providers and clients are well known in the literature on contracting. My research in Laos and Cambodia analyzes the signals and clues that front-line service providers use to assess where farmers might be willing and able to pay for services and that farmers use to assess the quality of services. In this sense, VLAs in Northwest Cambodia routinely must devise strategies about managing farmer requests for services on credit, while clients observe the VLAs' inventory of pharmaceutical supplies and the condition of their equipment (e.g., syringes). I show how imbalances in information can lead to the development of "lemon markets" in the veterinary sector.

Third, my analysis of informal service contracts between front-line service providers and their clients focuses attention on the mode of exchange and its relationship to the sustainable organization of service delivery. Analysts generally assume that the predominant mode of exchange is cash. I found, however, that in certain areas of Laos, VVWs sometimes provide vaccination services for in-kind payments (e.g., rice, chickens) or are otherwise rewarded by the community (e.g., exemption from civil guard duty). From an administrative point of view, in-kind payments for service present problems when VVWs do not have enough cash to repay vaccines that they obtained on credit. I also observed on more than one occasion that government officials accepted chickens as repayment for vaccines obtained on credit. The cumulative effect of such arrangements over time undermines the government's ability to finance sustainably the production and distribution of veterinary vaccines.

In Cambodia, government vaccination services were originally provided for free. However, government technicians eventually began to accept cash in order to cover supply costs and provide themselves with a modest income. Meanwhile, the distribution of vaccines across administrative boundaries was largely governed by a system of gift exchange in which vaccines were provided in expectation of future gifts or favors. The quality and quantity of these gifts has had an important affect on where vaccines are ultimately distributed. For example, vaccines were directed to one relatively remote area despite the fact there were few large animals there. Local officials, however, were able to obtain meat from a rare animal that was used as a gift in exchange for vaccines. Later in Cambodia, the private exchange of veterinary services (i.e., treatment) for cash has been mediated by social expectations concerning credit and discounts for family, friends, and the poor. In this sense, public policy objectives to make development services affordable for the poor are, in many respects, more effectively implemented and enforced by the local public than by government agents.

Fourth, my research also contributes to our understanding of how the mode of exchange governs interpersonal and administrative contractual exchange by highlighting the role of credit. Generally speaking, the rural development literature tends to discuss credit in terms of its role promoting investment in agricultural production. My research extends the discussion on credit to include the delivery of development services by examining the role that informal credit arrangements plays in facilitating (or inhibiting) contractual exchange. For example, in Laos, VVWs routinely obtained vaccines on credit from district DLF officials. In the Cambodian DAHP, provincial officials accumulated credit in the form of favors that would have to be repaid later when they provided district technicians with vaccines. In Northwest Cambodia, private sector VLAs often provide services on credit, even when they know they might not be paid back promptly. I show how these kinds of credit relationships affect the way contractual exchange is organized within both the public and private sector.

Fifth, I analyze how exchange relationships within traditional bureaucratic systems are structured in Laos and Cambodia. The traditional theories of the firm referred to above assume that contractual exchanges are more economically efficient when managed within the framework of a single (rational) organizational entity. However, the focus on economic efficiency is somewhat

misplaced, as it does not adequately take into account questions concerning the efficiency of social and political relationships. For example, my paper on administrative gift exchange in Cambodia not only shows how contractual relationships can be mediated by non-cash resources, it also shows how such systems can produce socially and politically efficient outcomes over a certain period of time under certain circumstances. These observations further refine our understanding of how contractual exchange can be efficiently organized to achieve desired policy outcomes. The articulation of how gift exchange has worked in the Cambodian veterinary sector has far wider applications than just Cambodia or the veterinary sector. For example, my analysis may help explain how certain human health services, such as family planning, are distributed by the government in rural area. In other sectors, such as education, my methodology focuses attention on how services and/or finances may be transferred from one administrative level to another.

1.5.1. Additional Themes

One important theme that runs through all three papers concerns the role and impact that cold-storage technology has had on the distribution of veterinary services in both countries, particularly vaccination services. In both countries, the supply of vaccines for some of the most important animal diseases required refrigeration in order to remain viable. Donors invested considerable resources in developing cold chain infrastructure based on the belief that such technology would improve performance outcomes measured in terms of the number and percentage of buffalo and cattle vaccinated in a particular area over time. Donors viewed the introduction of this technology as essentially *trait-taking* in that new core technology could be managed within the existing context of management and technical skills (Hirschman, 1967).

In fact, when kerosene-fueled units were first introduced, vaccination rates often increased and then maintained a consistent edge over those districts without such technology for several years (Ballard, 1995). These refrigerators were, however, subject to frequent breakdowns. In Laos, for example, such breakdowns accounted at least in part for some of the high attrition rates referred to in Chapter 2 among VVWs who had no other sources for vaccines. In order to avoid some of the maintenance problems associated with kerosene technology, donors introduced solar-powered equipment thinking that this technology was easier and less costly to maintain. This equipment, however, also began to breakdown after brief periods of use. In this sense, the

introduction of solar equipment merely exchanged one set of management problems associated with kerosene technology for a much more complex set of problems associated with a more modern imported technology. The problems associated with refrigeration technology became even more acute as donors began to withdraw support from the public sector. This problem is referred to in Chapter 3.

The introduction of and ongoing problems with the cold-chain technology, therefore, affected the delivery of veterinary services in both countries. One such affect concerns the relationship to the attrition rate of service providers already referred to above. Another important affect, albeit one not easily observed, concerns the efficacy of the vaccines, and consequently, of the vaccination services. The frequent breakdowns, and subsequent failure, of many of the units suggest that at least some vaccines were not properly refrigerated. Although the efficacy of the veterinary services provided in Cambodia and Laos, including vaccination and treatment, and their actual impact, are not the subject of this study, such questions nevertheless suggest that reform measures in the veterinary sector should include quality control measure for pharmaceutical products. It should also be noted that the expanded supply of electricity in many rural area in both countries has helped improve refrigeration facilities.

A second, and somewhat related, theme that runs though all three papers at one level (e.g., State bureaucracy) or another (e.g., farm households) concerns the ongoing clash between the forces of tradition and modernization. This includes the technology of veterinary science in which new scientific methods of disease control and care are being introduced in a village society where people often have little education and whose understanding of health (i.e., human or animal) is often governed by superstition and magic.³ This being said, the many problems associated with refrigeration technology referred to above suggest that the reluctance of some farmers to vaccinate their animals may seem inadvertently wise.

The clash between tradition and modernization also concerns the administration of State bureaucracies in which new scientific (rational) methods of management are being introduced in

³ See Fadiman (1997) for an excellent account of a “collision of two cultures” between the traditional beliefs of the Hmong of Laos about human health and modern, American medical practices.

countries where social and political relationships are governed by the logic and ethics of patron-client hierarchies. Moreover, this includes attitudes toward governance in which people have traditionally understood public services as gifts that they are obligated to accept in their roles as clients of powerful government patrons. Some people, at least in Cambodia, are beginning to believe they are entitled to such services in their role as citizens, and/or paying customers. Others, however, may resist as such changes could threaten their access to sources of livelihood or security.

1.6. Conclusion

The variability of performance outcomes in terms of the quantity and quality of veterinary services in Cambodia and Laos raises the question of how can governments and/or private markets provide organizationally and financially sustainable services in the context of public administration chronically short of both human and financial resources and markets that routinely misbehave?

The organizational development literature is concerned with structuring contractual arrangements in such a way that the motivations and interests and individuals and groups correspond to the goals and objectives of the organization. The key dilemma in this regard concerns how organizations can establish a reasonable degree of control over the actions of front-line service providers without compromising their ability to respond flexibly to the needs of their clients. Such insights prompted me to consider how organizations, including government and civil society associations, are structured in traditional societies such as Laos and Cambodia. I concluded that the logic and ethics of patron-client hierarchies have played a profound role in terms of structuring organizational relationships within the veterinary sector, and consequently the distribution of veterinary services.

New institutional economics (NIE) theorists approach this set of problems by considering how information about the quality of services affects the way informal service contracts are negotiated, implemented, and enforced. This perspective also considers the way such contracts structure the incentives of both service providers and clients. Many NIE analysts, however, place considerable emphasis on the economic aspects of contractual exchange. I observed that in

traditional societies such as Laos and Cambodia, this emphasis must be expanded to incorporate the social component of informal contractual exchange. In this sense, my reading in the rural sociology and anthropology literature complemented the insights of the new institutional economics.

The public-finance literature led me to examine how contractual exchange can be organized so that the production and distribution of such services can be sustainably financed. One set of problems concerns the fact that planners are invariably faced with competing policy objectives. A second set of problems concerns how the demand for development services can best be matched with the supply of such services. A third set of problems concerns the fact that in many rural areas, services must be produced outside the local community and then provided and financed through a system of administrative exchange. There are several institutional mechanisms that can organize such contractual exchanges, including the State, the market, and private firms or NGOs.

In order to tackle this set of problems, I developed a theory of farm-level bureaucracy that tries to encompass these various strands into a comprehensive analytical framework that focuses attention on the service provider as an autonomous policy maker working within a social and economic context that is much broader than their own department (the State), company or NGO (private firm), or association (the market). In this sense, I consider the informal contractual exchanges between the front-line service providers and their farmer clients in terms of how they can be efficiently aggregated into a financially and organizationally sustainable system of service delivery.

This approach enables me to examine reform initiatives in terms of what Geertz (2000) has referred to as “local knowledge.” The lessons are threefold. First, informal exchanges between farmers and service providers and the more formal exchanges between different levels of bureaucratic are inextricably linked. Second, the reform of the farm-level bureaucracies must be engineered on the basis of a comprehensive understanding of how macro and micro institutions governing service contracts are linked. Finally, these various approaches are all concerned with engineering the most effective relationship between State, civil society, and economy. In this

sense, planners must be able to recognize the circumstances under which each sector tends to perform best and identify how the comparative strengths of each can be most efficiently and effectively coordinated.

These observations also remind us that traditional modes of exchange at the local level between service providers and clients, as well as within public-sector bureaucracies, are as much social as they are economic. The general lesson is that the design and implementation of rural-development service reforms that integrate the comparative strengths of macro-institutions may also require the introduction of new institutions that can accommodate both the social and the economic modes of exchange at the local level.

Chapter 2

Citizen Vaccinators and Other Service Provider Types:

Village Veterinary Workers in Laos

2.1. Introduction

Researchers have devoted considerable effort explaining the pervasive differences between policy intents and implementation outcomes that characterize agricultural extension programs in developing countries. Many recent explanations that provide a foundation for institutional reform focus on the incentive arrangements that govern exchange relationships between extension agents and their farmer clients. This line of research highlights the need for flexible contracting that enables service providers to tailor their services to meet the individual needs of specific farmers, even though there is a considerable difference of opinion concerning whether the State or the market is the most effective institutional mechanism for governing such contracts (Leonard, 1993; Tendler, 1993; Christoplos, 1996).

One area of study that requires further analysis concerns the differences that exist among various front-line service providers in terms of their motivation for performing such work in the first place. This is especially important as analysts frequently assume that service providers are solely motivated by cash incentives, although the actual opportunity for financial reward often fluctuates or is negligible in rural areas characterized by widespread poverty. In this sense, policy planners need to understand how motivational differences influence the way various service providers and clients respond to dynamic changes in local farming systems now taking place in many developing countries. Ultimately the main focus of such questions, and the focus of my research, concerns how can governments organize financially sustainable services in the context of public administrations chronically short of both human and financial resources and markets that routinely misbehave?

In this chapter, I analyze how the incentive arrangements for village veterinary workers (VVs) in Laos might help explain variations in animal vaccination performance outcomes observed

over time and across different administrative jurisdictions. This research is conceptually rooted in Lipsky's (1980) work on street-level bureaucracy, in which public service providers must often devise their own means of allocating scarce resources in the absence of clear guidelines and conflicting policy objectives. In her work in rural Bangladesh, Goetz (1997) analyzed how front-line agents in rural credit programs distribute loans in a context of similarly ambiguous objectives and inadequate resources. Goetz argues that front-line staff respond to various incentive arrangements according to their beliefs, attitudes, and personal biases concerning class and gender. Her research suggests that agricultural extension workers may also respond differently to varying incentives in a context of conflicting policy objectives, ambiguous demand, and scarce resources.

In Laos, I identified five different types of VVW that I refer to as citizen vaccinators, barefoot entrepreneurs, special agents, warrior technicians, and dormant workers. I argue that changes in the mode of cultivation at the village level in response to the government's market-oriented development policies are accompanied by corresponding shifts in the demand for and supply of veterinary vaccines that (1) alter the incentives shaping the interactions among VVWs and their farmer clients, and (2) consequently, affect the Lao government's ability to implement effectively a user-fee system that can sustainably finance the production and transport of vaccines. The picture that emerges from the analysis suggests a crazy-quilt mosaic of motivations and incentives that helps explain the public-finance dilemmas that countries such as Laos face in terms of providing financially sustainable rural development services. Such dilemmas are also exacerbated when distribution decisions are made according to political and patronage relationships irrespective of sound financial management practices.

Generally speaking, for the vaccine-distribution system, the government assumes that the individual VVWs bear the bulk, if not all, of the risk associated with procuring, transporting, and administering vaccines. For the barefoot entrepreneurs, this may be appropriate given the fact that they are primarily motivated, and rewarded, by profit. In the case of the citizen vaccinators and special agents, however, there may be a mismatch between incentives and motivation, on the one hand, and the degree of risk they may have to assume, on the other hand. I develop new performance indicators, such as efficiency use rates (EUR) and payback rates, to assess the

degree to which the various VVWs types are able to manage such risks. These indicators help identify policy measures that take into account the contextual nature of VVW incentives and motivations.

I conclude that areas with high EURs and payback rates are more sustainable over time than areas where EURs and payback rates are low. The areas with high EURs and payback rates tend to be in areas with intensive modes of agricultural production where barefoot entrepreneurs are prevalent. The areas with low EURs and payback rates tend to be areas with extensive modes of cultivation where citizen vaccinators predominate. The factors that promote sustainable service delivery include service providers who are motivated by cash incentives, the use of cash as the sole medium of exchange for vaccination services, individual contracting, and good organization. The question, then, is how to promote better EURs and payback rates, especially in areas where citizen vaccinators operate? One potential solution concerns those cases where citizen vaccinators achieved high EURs and payback rates. These cases involved villages with good administrative leadership, as well as rules that promoted community-wide vaccination efforts. This suggests that some form of community contracting may be a viable alternative to individual contracting under certain circumstances.

2.1.1. Methodology

Using statistics from the Lao government's Department of Livestock and Fisheries (DLF) for 1996 and 1997, I selected seven districts that had high vaccination rates or numbers, or both, and three that had low rates and/or numbers. In each district, I interviewed DLF officials in addition to village leaders (*nai-ban* in Lao), when available, and the VVWs from at least four villages. The villages included those with both poor and good vaccination histories and represented a mix of different farming systems and ethnic groups (See Table 2.1 below). I conducted 44 interviews with VVWs during a four month period of October 1998–January 1999.

Table 2.1: District and Village Selection

| | District | Province | Performance (Vax: % and No) * | Farming System |
|-----|-----------|---------------|----------------------------------|-----------------------|
| 1. | Songkhone | Savannakhet | High % + No. | Intensive, Commercial |
| 2. | Phine | Savannakhet | Low % + No. | Mixed |
| 3. | Saravane | Saravane | High No. | Mixed |
| 4. | Sayaburi | Sayaburi | High % + No. | Mixed |
| 5. | Phiang | Sayaburi | High % + No. | Mixed |
| 6. | Nambok | Luang Prabang | High No. | Mixed |
| 7. | Ngoi | Luang Prabang | Low % + No. | Mixed |
| 8. | Namor | Oudomsay | Low % + No. | Extensive, Swidden |
| 9. | Hoon | Oudomsay | High % + No. | Mixed |
| 10. | Phonehone | Vientiane | High % + No. | Intensive, Commercial |

Source: Author's Survey (October 1998 – January 1999)

* Vax = Vaccination

The chapter is structured as follows. Section 2 discusses the policy context, as well as the supply of and demand for veterinary vaccination services in Laos. Section 3 discusses each of the five vaccinator types identified in the course of the research. Sections 4 and 5 together discuss the motivation and incentives of the different vaccinators types in the context of the various agro-ecological systems found in Laos. Section 6 then introduces several new performance indicators in order to analyze the potential financial sustainability of service delivery within this context. Section 7 considers this assessment in the context of the political administration of Laos. Section 8 concludes the chapter with recommendations for policy and future research

2.2. Policy Context

Approximately 85% of the population in Laos, numbering about 4.5 million, is engaged in various modes of subsistence agricultural production. There are as many as 68 ethnic groups distinguished from one another by their socio-economic, cultural, and political organization of village life. The upland minority groups, who together comprise about 35% of the total population, generally practice extensive modes of shifting or swidden cultivation, including slash and burn, while the majority lowland Lao groups primarily practice more intensive modes of wet rice paddy cultivation.⁴ The socio-economic and cultural divisions that separate the upland and

⁴ Extensive modes of cultivation are characterized by low population densities and low frequencies of cultivation over time in a particular area. Intensive modes of cultivation are characterized by higher population densities and higher frequencies of cultivation over time in a given area (Boserup, 1965; Netting, 1977 and 1993).

lowland groups constitute the fundamental fault-lines along which Lao society tends to divide and compete over political power and scarce development resources (Gunn, 1984; Stewart-Fax, 1991; Ireson and Ireson, 1991; Evans, 1998).

Since the New Economic Mechanism (NEM) reforms in the mid-1980s, the Lao government has adopted a number of measures to diversify and increase agricultural production. Such measures include investments for large-scale irrigation projects and fewer restrictions on the import of farm machinery (e.g. hand tillers, rice mills). Given the important role that large animals play in agricultural production, the government has also tried to expand and improve the quality of the buffalo and cattle populations through a variety of veterinary extensions services, the most important being immunization against the often-fatal disease *hemorrhagic septicemia* (HS). Another policy objective of the Lao government has been to reduce slash and burn swidden cultivation in upland areas in order to preserve forest assets and reduce the amount of soil erosion that can affect large-scale investments in hydroelectric power projects. Both forest conservation and hydroelectric power construction entail relocating upland communities to lowland areas where they must adopt new techniques of wet-rice cultivation, and/or promoting animal husbandry as an alternative source of income.

The responsibility for implementing the government's policies regarding livestock and veterinary services rests with the Department of Livestock and Fisheries (DLF) in the Ministry of Agriculture and Forestry. International donors have financed most, if not all, of the veterinary projects implemented by the DLF. Following the withdrawal of Soviet and East Bloc assistance in the early 1990s, the primary source of support for the veterinary sector has shifted toward multi-lateral and Western sources. For many years, the Food and Agriculture Organization (FAO) supported the vaccine production laboratory in Nong Teng near the capital of Vientiane. Since then, the quantity and range of vaccine production have declined as the Lao government is not able to provide sufficient financial support for the laboratory. The government occasionally receives in-kind gifts of animal vaccine from neighboring countries, such as Thailand. Meanwhile, Non-governmental Organizations (NGOs) and other donors have provided financial

support for training and equipping the VVWs. Government technicians from the national or provincial level conduct the training.

2.2.1. Traits of the Trade

Veterinary vaccinations have been classified as a mixed good in the sense that they feature elements of both private and collective goods (Umali, Feder, and de Haan, 1992). For example, farmers who vaccinate their animals benefit exclusively from the service, while herd owners benefit collectively as vaccinations prevent or reduce the spread of disease. The general public also benefits when the transmission of certain animal diseases to humans is prevented or reduced (e.g., anthrax). In many developing countries, including Laos, the majority of farmers are unable, or unwilling, to purchase vaccines, and as a result, markets for veterinary vaccinations often function poorly. In order to promote agricultural production and public health, governments may use their comparative advantage in coercion, information, and resources to provide vaccines at partially or wholly subsidized rates (Leonard, 1993).

Though cattle and buffalo are subject to a variety of diseases in Laos, I focus on *Hemorrhagic Septicemia* (HS) as it is (a) the most common disease found among large animals; (b) the most important disease in terms of morbidity and mortality rates; and therefore (c) of primary concern to the Lao government and farmers. Before looking at the various VVW types, I first discuss how the market for animal vaccination services is conditioned by what Tendler (1989) has referred to as *the traits of the trade*.

2.2.1.1. Demand

HS is a highly contagious form of *pasteurellosis* that is transmitted through contact among animals in common watering or grazing areas and during the transport of diseased animals or meat. The morbidity rate of the disease is influenced by factors such as diet and work-related stress, high animal population densities, and climatic conditions. The mortality rate is extremely high and death usually comes quickly, which means that treatment interventions are often ineffective (De Alwis, 1993). The main strategy for preventing disease outbreaks is to vaccinate animals on a regular basis. In cases where sporadic and seemingly unpredictable outbreaks have already occurred, VVWs and government technicians try to vaccinate herds around the affected

area as quickly as possible (Mosier, 1993). However, poor communication networks in rural areas inhibit the flow of information about outbreaks, thus slowing the response time by government officials who oversee vaccine delivery.

Second, the observable results of vaccinating animals against HS are ambiguous. For example, animals that have been vaccinated occasionally die from other diseases that are confused with HS, while animals that have not been vaccinated often do not contract any disease at all. Such problems stem from several factors, including the fact that about 10% of cattle and buffalo at any given time have a natural immunity to HS (Mosier, 1993). The DLF also lacks proper facilities with which to make accurate diagnosis, while VVWs routinely diagnose any ailment as HS. Such confusion has led many farmers to doubt the efficacy of vaccines. The practical result is that they tend to vaccinate animals more frequently in the aftermath of disease outbreaks, but as memories of such events recede, they do so less often over time. These factors have conspired to make the demand for vaccination services in many areas extremely difficult to predict.

2.2.1.2. Supply

The supply of vaccines is conditioned by two factors that are related to the nature of the disease. First, there are two methods for producing HS vaccine. One type is an oil-adjuvant vaccine that provides protection for up to one year. The second type is an alum-precipitate vaccine that provides only six months of protection. Most farmers in Laos tend to prefer the alum-based vaccine because they believe it is less injurious to the animal, and VVWs also prefer this type, as it is easier to inject into the animal. This means that the supply costs for providing year-round coverage for an animal with alum-based vaccines is essentially double that of the oil adjuvant. It also suggests, though, that VVWs may have more opportunities each year to earn money from vaccine sales.

Second, both types of vaccines contain organic agents that must be maintained at cool temperatures (0-5C) in order to remain viable. The DLF, with donor support, maintains a cold-chain network of refrigerated storage facilities located at various provincial and district offices around the country. In principle, the maintenance and repair of cold-storage units should be financed from the sale of vaccines, and/or from the government budget. However, the irregular

flow of financial resources from both vaccine sales and the government revenues, as well as the lack of spare parts in many areas, undermines the ability of most district officials to maintain refrigeration units over long periods of time.⁵ Poorly functioning refrigerators affect vaccine quality and may help explain why some animals that have been vaccinated still get HS. These factors, along with financial problems and production delays at the national lab in Vientiane, often make the supply of quality vaccines unpredictable, especially in areas further away from provincial and district offices.

The key institutional linkage between the supply of and demand for veterinary vaccination services at the local level is the VVW. The VVWS are usually selected by their village committee and trained by government technicians with donor support to provide services to farmers in exchange for a modest fee established by national DLF officials. The fee is designed to provide village vaccinators with a financial incentive as well as to enable them to purchase and then transport vaccines from the district offices to their respective villages. District officials should then use the proceeds from vaccine sales to VVWs to obtain vaccines from provincial offices. Provincial offices, in turn, have a similar exchange relationship with the Nong Teng vaccine production facility.

2.3. VVW Motivations

From my field research, as noted earlier, I identified five predominant types of VVWs in terms of their motivation, including the citizen vaccinator, the barefoot entrepreneurs, the special agents, warrior vaccinators, and dormant vaccinators (See Table 2.2 below).

2.3.1. Citizen Vaccinators

Citizen Vaccinators articulate their primary motivation to serve as VVWs in terms of public service for their respective communities. They often speak of feeling honored to be selected by community members or village elders and feel a sense of duty and obligation to serve all members of the community. They readily acknowledge that they seldom make much, if any, money – though many acknowledge some rewards in the sense of status in having a publicly

⁵ A 1995 survey showed that cold-storage facilities invariably broke down soon after donors withdrew support, which in turn precipitated a dramatic reduction in services in a given area (Ballard, 1995).

recognized position that involves some degree of contact with outside agents of the government and, on occasion, foreign donors. A few even suggested that they sometimes go into debt because they are not always able to cover the costs associated with vaccinating animals, particularly in areas where actual demand is difficult to predict ahead of time. Several citizen vaccinators observed that their service actually entails benefits, such as assistance with tasks like transplanting and harvesting, and that they would be occasionally exempted from serving as local village militia or public guards. Such benefits, however, did not appear to be the primary motivation for public service.

2.3.2. Barefoot Entrepreneurs

Barefoot entrepreneurs also tended to articulate their sense of honor of being selected and initially discussed their motivation in terms of serving the community. However, they readily voiced deeper explanations concerning the practical aspects of needing to earn cash in return for their efforts. These VVWs were often engaged in other types of income-generating activities in addition to the vaccination services. For example, seven VVWs had received previous training as local health workers, dispensing medicines and advice for people in the community in return for small fees. This practice easily translated into a similar approach regarding animal health work, and it is probably one of the main reasons the community originally selected them. Entrepreneurial vaccinators often provided veterinary treatment services as well, and it was this income that frequently enabled them to cover the costs of veterinary vaccinations. In this sense, people in this group perceived themselves as village-level health professionals in the broadest sense of the word and were prepared to serve anyone who could pay for the service.

2.3.3. Special Agents

Special agents often started out either as citizen vaccinators or barefoot entrepreneurs when first selected by the community, but they eventually evolved into a type of mercenary that served only extended family members and/or local village elites. In this sense, special agents routinely argued that they could not provide services to poorer members of the community because they did not have money, or could not otherwise afford it. Though they may make a modest amount of money for their efforts, their primary motivation is not financial as their particular rewards were derived from membership in and service to a particular sub-group of the community, either the family and/or the local elite. In this sense, their rewards were somewhat similar to the citizen

vaccinators in that they could usually expect assistance from family members in terms of help with certain tasks. In one village where many animals had been sold to finance hand-tillers purchases, the remaining owners, many of whom were related or otherwise associated with local leaders, combined forces to sponsor one of their family members to become a VVW.

2.3.4. Warrior Vaccinators

This group represents a specialized set not of VVWs per se, but rather government technicians. These vaccinators work on the frontlines of the Lao government's efforts to transform upland modes of production away from slash-and-burn agriculture, while extending the territorial reach of the State in remote areas through development services. As noted earlier, one of the primary policy objectives in this regard is to encourage -- if not to force, as in the case of so-called planned resettlements -- upland people to adopt more sedentary forms of paddy cultivation and/or commercially oriented animal husbandry. The delivery of vaccination services is a tangible aspect of the effort to convert people to modes of production that closely resemble the rice culture of the predominant lowland Lao groups. Indeed, government officials and technicians sometimes speak of teaching "ignorant and uneducated upland people more scientific ways of agriculture." According to this view, the failure of upland people readily to adopt new technologies, such as veterinary vaccines, is attributed to their lack of education and persistent animist beliefs that spirits cause most maladies.

For certain upland groups, however, such "civilizing" activities may be perceived as an assault on the socio-economic, cultural, and political fabric of their communities. In this sense, efforts to promote more sedentary forms of wet-rice cultivation may represent an effort to bring these groups, who are often ethnic minorities, under the control and authority of a government that is predominantly lowland Lao. As a result, I view the upland's people's reluctance to adopt new forms of technology as an active form of everyday resistance to the encroaching influences of centralized State authority⁶ that believes the superiority of lowland Lao cultural values and economic practices are the foundation of a new ideology of modernization and development. According to this perspective, then, we might look at the vaccination needle and syringe as a

⁶ The concept of *everyday resistance* comes from James C. Scott's *Weapons of the Weak: Everyday Forms of Peasant Resistance* (1985).

type of weapon used to bring certain upland groups under the influence of the advancing interests of the State.

2.3.5. Dormant Vaccinators

Dormant vaccinators are those VVWs who, once having been trained, stop providing services for one reason or another. For example, in two districts of Xiang Khouang province, 127 VVWs were trained during the period 1987-89. However, in 1995, only 15 were still actively working as VVWs, thus giving an attrition rate of 88% over a five-six year time period (Ballard, 1995).⁷ I expected a close correlation between the attrition rate, on the one hand, and the vaccination rates and volume, on the other hand, given the fact that the VVWs, as noted above, act as the key institutional linkage between supply and demand.⁸ Predictably, in Xiang Khouang and other areas with high attrition rates, the two standard performance indicators declined dramatically during the same period. In this sense, I find the attrition rate to be one of the more powerful indicators that I can use to predict performance outcomes across districts and over time.

In the earlier survey referred to above, I found that the most frequently cited reasons for dormancy were marriage and/or relocation, employment, and farmer apathy. During subsequent conversations, dormant vaccinators explained that the lack of interest on the part of many farmers made it difficult to plan ahead with any degree of confidence. This was especially so in upland areas where animals were grazed further away from the village, and when VVWs finally obtained vaccines they all too often found that the animals were not available. This inevitably led to frustration, and, in some cases, a loss of money for those VVWs who had used their own resources to obtain vaccines. Some dormant citizen vaccinators even spoke of feeling betrayed by their neighbors, but agonized over whether they should abandon their own commitments to the community. The dormant barefoot entrepreneurs, however, were more business-like about such problems. They concluded that they were not able to earn enough money to cover expenses and so decided not to continue with vaccine work. As for the dormant warriors, even though they did not leave government service, they abandoned their efforts to promote vaccination services in

⁷ Among the very few women who were trained as VVWs, the attrition rate was nearly 100 percent over a 2-3 year period of time.

⁸ The vaccination rate refers to the percentage of animals vaccinated over a year in a particular area. The volume simply refers to the total number of animals vaccinated in a year in a particular area. These two measures are the standard performance indicators used by the DLF and donors.

upland communities. Not only were they frustrated by the resistance they often encountered in such areas, they -- not unlike the VVWs -- also had difficulty obtaining vaccines because of their remote locations and/or lack of functional cold storage facilities.

Table 2.2: Service Provider Type Summary

| VVW Type | Motivation | Evidence | Financial Incentives | Non-pecuniary Rewards |
|-----------------------------|---|---|--|--|
| Citizen Vaccinators (CV) | Public Service to Community | Said they feel proud/ honored to be chosen | Make little money; accept in-kind; take on debt (second) | Status; Contacts w. govt/donors; special privileges |
| Barefoot Entrepreneurs (BE) | Household income; Practical need for cash | Do other tasks for fees, (e.g., vet treatments) | Cash payments are source of HH income (primary) | Image as village level health professional (secondary) |
| Special Agents (SA) | Serve family and local elites | Former CVs or BEs, evolve into mercenaries | Modest cash income. | Attachment to family and elites |
| Warrior Vaccinators (VWs) | Government technicians transforming upland production | Teaching uneducated people more scientific modes of production | Government salary, and occasional service fees | Extending reach of the State, civilizing upland groups |
| Dormant VVWs | Lack farmer interest; can't afford it; vaccines not available | Cited marriage, relocation, other employment; frustration, feeling betrayed | Lost money | No job satisfaction |

2.4. Agricultural Transitions and the Role of Large Animals

This variation in VVW motivations can be explained in the context of the sweeping socio-economic changes taking place throughout rural Laos as individual households and communities adopt new modes of agricultural production. The most significant effects of such changes concern the role that large animals play in a particular farming system (See Table 2.3 below).

Researchers can locate different modes of cultivation along a continuum of farming systems that represent a variety of socio-economic, cultural, and political responses on the part of village communities to different mixes of local ecological factors and production technologies (Hanks, 1972). At one end of the continuum are those farming systems that involve extensive forms of

swidden cultivation, including slash-and-burn cultivation, practiced by different groups in the middle and upper hills of Laos. In these farming systems, large animals do not play a significant role in crop cultivation, as household labor is the primary input. The care and management of large animals does not require much labor as animals *free range* in the nearby forests until they are caught for sale or slaughter. They are, nevertheless, important as repositories and symbols of household wealth and status and often play significant ceremonial roles (e.g., marriages, funerals) among various cultural groups. Social relationships within many of these communities recall Scott's (1976) moral economies in which communal patterns of exchange and reciprocity are governed by norms entitling each member of the community to at least a subsistence share of village production.

Further along the farming-system spectrum are more intensive modes of rainfed wet rice paddy production that may or may not also involve some means of traditional irrigation. As a result of their reliance on rain for agricultural production, many of these farming arrangements involve single-cropping production cycles (i.e., they cultivate one crop of rice per year). In these systems, large animals play a crucial role in agricultural production by providing traction power, transport, and natural fertilizer. As a result, some portion of household labor must be allocated for animal care and management. Unlike swidden systems where animals are allowed to free range, more time is devoted to grazing, collecting fodder, and protection from theft or from attacks by other animals.

At the far end of the spectrum are more commercialized farming systems that rely in part or completely on mechanized power rather than on large animals. Many such systems in Laos have emerged in areas where the government has promoted large-scale irrigation systems that make two or three rice crops per year possible. The allocation of household labor undergoes a profound change in these areas as more effort must be devoted to earning cash in order to support the shift to mechanized power and purchase productive inputs such as fertilizer. As a result, there is both less need for large animals and less labor available to care for animals. In contrast to subsistence-based moral economies, these intensive rice-producing areas recall Popkin's (1979) rational communities where individual, competitive producers cooperate with one another primarily to advance their own self-interest.

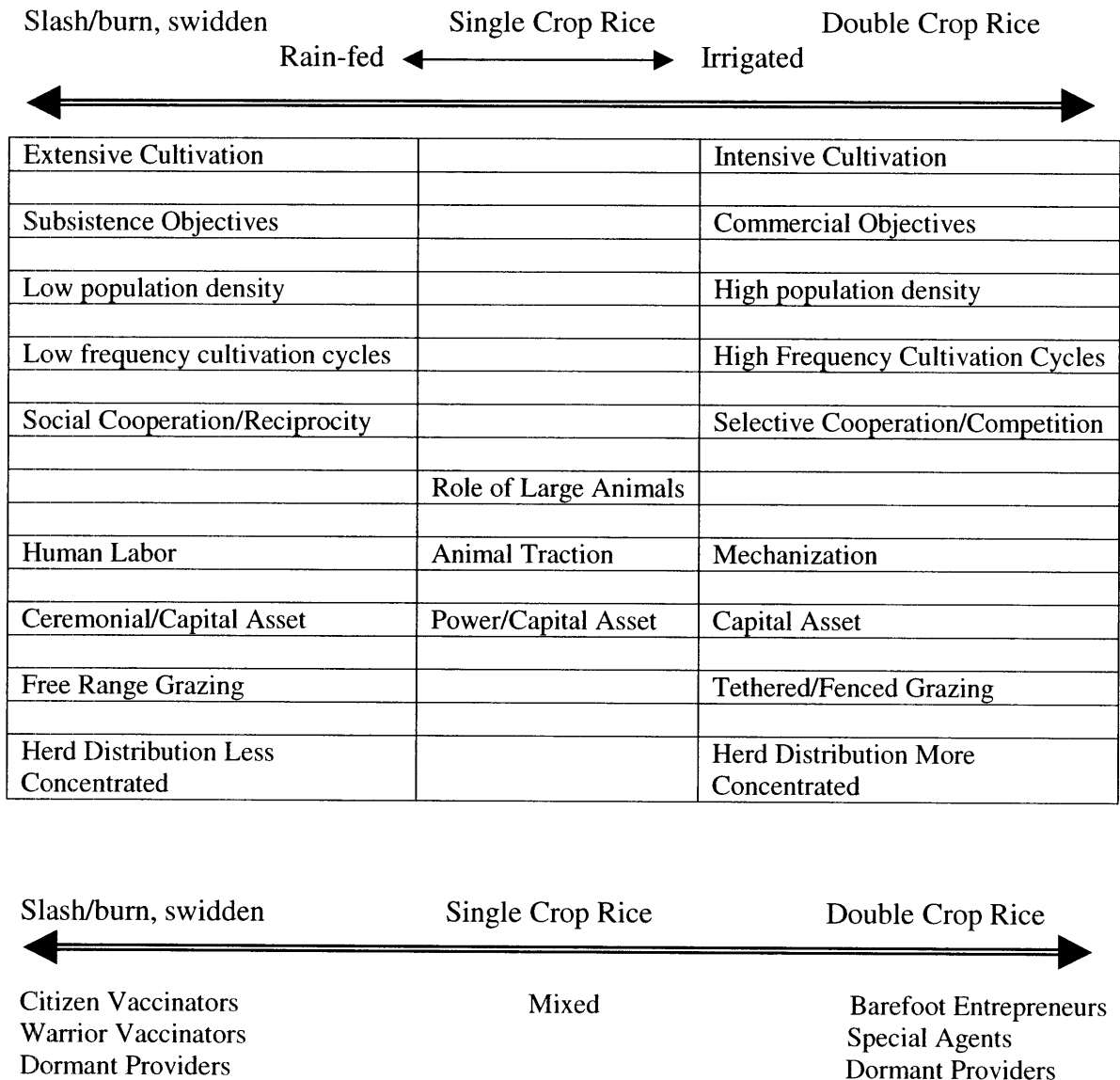
The progression from one farming system to another, however, is rarely linear, and as a result many villages throughout Laos feature diversified modes of cultivation. For example, in many villages where the primary mode of cultivation involves extensive swidden practices, farmers may also maintain small parcels of land where they produce some wet-rice paddy. As a result, such villages may feature fairly significant village-wide herds made up of a number of different household herds. Depending on their location relative to markets and grazing areas, as well as the availability of labor, some households may also husband large animals for commercial exchange.

The transition from one mode of cultivation to another affects the structure and distribution of household and community herds in two ways. First, the number of animals that a particular household owns may change. For example, in upland communities where swidden farmers are adopting wet rice cultivation, families may acquire animals for the first time or add to their current herds. However, in communities where families are moving from single to double-cropped wet rice production, families often reduce the number of animals they own. In these areas, the distribution of large animals is increasingly concentrated in the hands of fewer households as some farmers sell their animals in order to acquire more land and/or farm machinery. Others, perhaps those who start off with larger herds, may at the same time retain ownership at least of some animals for various reasons, including commercial husbandry.

One reason for this phenomenon is that the relationship between household labor and animal management changes as the area devoted to intensive wet-rice farming expands. For example, the introduction of larger-scale irrigation systems often entails the expansion of land that is brought under cultivation as well as increases in the possible number of crops each year. Farmers respond to these changes by concentrating their herds on the reduced land available near the village and/or seek new grazing areas further away. The land available for grazing during the dry season is further reduced as communities move toward double cropping of wet rice. Concurrently, the time available for animal care is reduced as a result of the demands of a second round of field preparation, planting, and harvesting. Farmers must construct fences around cultivated areas to protect them from animals, while purchasing, or renting, labor-saving capital

inputs, such as hand-tillers and rice mills. As noted above, farmers tend to finance at least some of these purchases through the sale of livestock. Depending on the seasonal cycle, they graze the remaining livestock further away from the village, and/or tether them near the home, if there is enough household labor available to gather fodder.

Table 2.3: Cultivation and Providers Type Model



2.5. Motivation and Context

The distribution of VLA motivations is somewhat uneven when I looked at them in the context of the prevalent mode of production in a particular area. However, several patterns emerge that suggest the basis of a useful discussion concerning the relationship between motivation and context as it may affect the public finance. First, even though I found citizen vaccinators in all areas where different modes of cultivation were practiced, most were located in upland areas where subsistence modes of swidden or rainfed paddy cultivation were more prevalent. Many of these areas were characterized by barter and in-kind exchange, though in some places cash was being increasingly used as market influences expanded.

I found the barefoot entrepreneurs, however, most frequently in areas where single- and double-cropped rice cultivation prevailed, especially where there is a higher degree of commercial exchange. Although there is therefore some degree of overlap between the two, I draw a distinction between those areas where in-kind barter and cash exchange are practiced. In this sense, then, citizen vaccinators are much more prevalent in subsistence areas of production where the prevailing or significant exchange is conducted according to barter and in-kind, while barefoot entrepreneurs are more prevalent in those areas where the exchange of goods and services is facilitated through cash. Although citizen vaccinators do not necessarily work for the express purpose of earning cash, they frequently report accepting things such as eggs or even chickens as a token of appreciation expressed either by an individual or the community at large. The entrepreneurial vaccinators, however, are primarily interested in receiving cash, and prefer to provide vaccination services on the basis of credit rather than accept a gift as payment. In this sense, the medium of exchange, either in-kind or cash, seems to play a key role in matching VVW motivations with incentives in a particular area.

Although I found special agents in different areas, they are most prominent in areas where irrigated rice production had sparked a transition from animal to mechanized power. This stands to reason in many respects, as these are areas where the distribution of animals is concentrated in the hands of fewer households, and so an analyst might expect that those remaining animal owners may join forces to ensure their access to state-supported services. The analyst might also expect that special agents would be primarily motivated by cash payments, and indeed some of

them reported earning some profit for their efforts. However, this does not appear to be the sole motivation for their work as many report receiving gifts and favors that more closely resembled the rewards for citizen vaccinators. The warrior vaccinators, on the other hand, faced considerable difficulties. They are often located in upland areas where the role of animals and the general lack of cash exchange conspire along with people's resistance to make demands for such services especially problematic. The supply of vaccines is also extremely difficult in terms of transport and cold storage.

Table 2.4: Farming System and VVW Type Summary

| Mode of Cultivation | Mode of Exchange | VVW Types | Accountability, Risk |
|--|------------------------------------|------------------------------------|--|
| Extensive Areas, slash/ burn, swidden | Some cash, barter, in-kind, credit | Citizen Vaccinators predominate | Accountable to the community, but VVW bears the risk |
| Single and Double Crop Paddy | Cash and credit | Barefoot Entrepreneurs predominate | Accountable to paying clients, VVW bears risk |
| Single Double Crop, Paddy Mechanization | Some cash, gifts and favors | Special Agents | Accountable to sub-groups in the village, groups bear risk (?) |
| Extensive Highland areas, slash/ burn, swidden | Lack of cash | Warrior Vaccinators | Accountable to State, clients bear risk (?) |
| Mixed Modes | | Dormant Providers | Services no longer available |

Finally, one of the most significant differences among the various VVW types concerns who receives services, and, as a result, to whom the VVW is actually accountable. This, in turn, raises questions about who should ultimately bear the burden of risk associated with providing vaccination services. In this sense, then, I make the following generalizations (See Table 2.4 above). Citizen vaccinators are morally obligated to serve, and are therefore accountable to, the community at large. In principle, then, the community probably should assume the risk associated with providing vaccination services. Barefoot entrepreneurs provide services to anyone who is willing and able to pay cash for the service, and are therefore more directly accountable to their clients. Since the entrepreneurs provide services for profit, it is appropriate that they bear the burden of risk. The special agents serve, and are therefore accountable to, specific segments of, or groups within, the village community, either extended family members

or village elites. In principle, it seems that the group that is to be served by the special agent should be responsible for the risks. Meanwhile, the warrior vaccinators, given their status as government agents are, ultimately, accountable to the State, which should assume the risk associated with providing services in these circumstances. Some of the warriors also expressed strong feelings about the difficulty of representing Lao culture in upland areas, particularly in the higher mountains, where ethnic minority groups resisted their services.

2.6. Motivation, Finance, and Organization

How then can I link this set of observations concerning motivation and context to assess the potential sustainability of the financial arrangements governing the distribution of vaccines? One approach is to develop a set of performance indicators that link the incentives available to VVWs to the revenue available to district and provincial officials, and ultimately national. The first such indicator is the *efficiency-use rate (EUR)*, which refers to the number of vaccinations a VVW is able to perform with any given number of bottles of HS vaccination. For example, given that each bottle of HS vaccine contains 30 doses, a VVW who obtains five bottles from the district but only does 75 vaccinations has a 50% efficiency use rate. This indicator focuses specifically on the financial incentives governing the work of the VVWs as well as their ability to continue purchasing vaccines from the district over time. Moreover, this indicator is also useful in terms of analyzing the efficiency with which scarce vaccine resources are used. As VVWs often throw away vaccines they do not use, a low EUR suggests a high degree of waste. Even more worrisome is the fact that some VVWs use expired vaccines, which inhibits the efficacy of the vaccine.

A second indicator is the *payback rate*, which is closely related to the EUR. This indicator refers to the percentage of money that a VVW actually pays to the district for a certain number of bottles of vaccine relative to what they should pay. For example, if a VVW takes five bottles of HS vaccine, which cost 1,500 kip per bottle, he or she then owes the district 7,500 kip. Occasionally the VVW will pay for the vaccine at the point of exchange, but more often the transaction takes place on a credit basis. If a VVW is unable to pay all the money back due to a low EUR, and eventually pays back only 3000 kip, the payback rate is 40 percent. A district's ability, in turn, to pay the province back for vaccines is undermined when too many VVWs have

low payback rates. Low payback rates on the part of enough districts, in turn, subvert a particular province's ability to pay back the Nong Teng laboratory for the vaccines.

These indicators are useful tools for analyzing the relationship between EUR and payback rates according to each vaccinator type. For example, in upland areas, citizen vaccinators often reported that they were not able to use all the vaccines they had obtained because people could not easily capture free-ranging cattle or buffalo. Indeed, they often showed opened bottles containing varying amounts of expired vaccine. In this sense, then, the citizen vaccinators, as well as the warrior vaccinators, often had low EURs, which, in turn, led to low payback rates. Citizen vaccinators also frequently faced unusual predicaments concerning the mode of payment. Although they readily accepted in-kind payments in exchange for their service, it was difficult for them to pay back the district officials with a currency of rice, eggs, or other such things, even though in some places this is exactly what happened. In these cases, even though the EUR may be high, the payback rate, in terms of cash, would, in fact, be low. Although such situations may seem somewhat unusual at first glance, such arrangements represent a very real problem in terms of public finance in countries where a substantial number of people do not always use cash to facilitate exchange of goods and services.

The entrepreneurial vaccinators and the special agents, however, generally had higher EURs, and therefore their payback rates to the districts were often much higher as well.⁹ This was especially so in cases in which the vaccinators would assess beforehand how many people wanted to vaccinate their animals before making the trip to the district. As mentioned earlier, some of these vaccinators even collected money ahead of time to cover the purchase of the vaccines. Even though vaccinators would sometimes take profit in the form of in-kind payment, these vaccinators would pay the district in cash. In some cases, the high EUR rates achieved by these vaccinators were also facilitated by door-to-door service. This is especially easier to do in lowland Lao villages where animals were tethered close to houses that were located near one another. Generally speaking, the entrepreneurial vaccinators performed a greater volume of vaccinations than did the special agents, simply because they were serving a larger animal

⁹ I discuss in more detail below what transpires between the district, province, and Nong Teng in terms of payback rates.

population. On the other hand, special agents often reported higher vaccination rates than did the entrepreneurs because they were serving a specific clientele of animal owners who organized themselves in this manner with the express purpose of obtaining vaccinations. This is a relevant consideration because the actual volume of sales ultimately affects the potential revenue available to the Nong Teng laboratory.

It appears then that organization plays a key role in stimulating higher efficiency use rates, better payback rates, and, ultimately, a higher volume of vaccine sales. This observation underscores two important roles that VVWs play in terms of mediating the demand for and supply of vaccines in their villages. First, as the only individual in the village with any training whatsoever concerning veterinary health, the VVW is the main conduit of information for farmers. In principle, such information should both motivate farmers to vaccinate their animals as well as enable them to assess the quality of service. This places a high premium on the quantity and quality of training that a VVW receives from the DLF as well as the status and trust with which people in the community view the VVW. Indeed, these two factors are deeply inter-related, which helps explain why so much attention is placed on selecting people with good reputations in a particular community.

Second, VVWs must work in close cooperation with village leaders to mobilize local farmers to vaccinate their animals at the appropriate time in the cultivation cycle. In practical terms, this means that the actual turn-out for vaccinations often depends on the relationship between the VVW and the village leader (*nai-ban* in Lao). For example, in several villages where low turn-outs were reported despite a history of recent HS outbreaks, the *nai-ban* had failed for one reason or another to support the VVW's work. Conversely, in areas where good turnouts were consistently reported, the *nai-ban* actively supported the efforts of the VVW. Indeed, in several villages, the *nai-ban*, or deputy *nai-ban*, and the VLA were one and the same person, or the *nai-ban* had at one time been a VVW. In other villages, particularly in those of ethnic minorities, the VVW was related to the *nai-ban* one way or another, although this did not always assure good turnouts. The fact that the position of VVW seems to serve as a stepping-stone to higher office in some villages suggests another potential source of motivation for some VVWs.

There is also another factor that seems especially important with longer-term implications for policy reform in this sector. In several villages where good turnouts were consistently reported, there is a system of rules governing the community's organization of vaccination services. In each case, farmers were required to vaccinate their animals or face the possibility of fines. This, of course, raises questions about how such rules are negotiated and enforced. The district DLF, sometimes at the behest of political personalities from that locale, had designated some communities as "model villages," which then received special support to promote activities such as animal vaccinations and small animal husbandry. In order to receive such services, "model villages" agreed to adopt certain rules, including frequent vaccination of animals. This system of rules in effect shifted the burden of risk from the individual vaccinator to the community. These types of arrangements, especially in areas where citizen vaccinators predominate, suggest that community contracting may represent a viable alternative to the practice of (individual) flexible contracting.

In one model village with a mixed farming system where a highly motivated citizen vaccinator had been serving, the rules were rigorously applied with the active support of the *nai-ban*. The high turnouts resulted in almost 100% vaccination rates, which, in turn, stimulated high EURs and payback rates. As this vaccinator had been serving for several years, it appears that such systems may also contribute to lower attrition rates. However, in another model village where rainfed paddy rice was the predominant mode of cultivation, the enforcement of village rules was not as rigorous. Part of the problem stemmed from the fact that vaccine supplies at the district office were somewhat irregular. As a result, low turnouts lead to lower vaccination rates as well as low EURs and payback rates. I could not ascertain if the low payback rates and reported supply problems were related. Although the citizen vaccinator in this village had not yet quit, there was some degree of frustration. Under similar circumstances, an entrepreneurial vaccinator may have already retired from this line of work.

This pattern suggests that vaccine distribution will, over time, be directed to areas where VVWs are able to achieve high EURs and payback rates, while vaccinating a relatively high percentage and volume of animals. At first glance, such areas seem to correspond primarily to those farming systems where entrepreneurial and -- in some instances -- special agents thrive, namely

single- and double-cropped rice producing areas that are more commercially oriented. In some cases, where there is a high degree of organization at the community level, as in some of the model villages, vaccines can also be directed to areas where citizen vaccinators predominate. However, most areas where subsistence swidden and single cropped rice farming prevails are characterized by citizen and warrior vaccinators, who are unable to maintain high EURs and payback rates, as well as vaccination rates and volume.

In terms of providing a potential base for a sustainable cost-recovery system based on user fees, these patterns correspond to efficiency models of service distribution that suggest scarce services should be targeted to areas where there is sufficient demand from people willing to pay that encourages service providers to perform well and to perform consistently. Such models argue that veterinary services are most efficiently provided in areas characterized by a high density of animals where transport and supply costs are relatively low. They assume that farmers are more or less consistently willing to pay a price that enables service providers to earn money for the service and that service providers are primarily, if not solely, motivated by cash incentives (Umail et. al, 1992). Although such models, at first glance, seem to include room for some degree of flexible contracting between service providers and farmer clients, they do not appear to include consideration for service providers such as citizen vaccinators, who are primarily motivated by public service on behalf of the community, and who are willing to accept various types of non-cash rewards. Where then do public-spirited service providers fit, and how can they be accommodated in a policy that seeks to promote more efficient targeting of scarce services?

One way for planners and policy makers to solve the dilemma posed by citizen vaccinators who work in subsistence areas for non-cash rewards is to promote the concept of community contracting for services. In this sense, the community as a whole would assume responsibility for financing the purchasing and transport of the vaccines rather than expecting the VVW to carry the burden. Although such a system may work well enough in the case of most barefoot entrepreneurs and certain special agents, especially those who are sufficiently well organized to collect down-payments before obtaining vaccines, socio-economic circumstances often preclude citizen vaccinators from doing so on their own. However, if members of the community were to agree ahead of time to purchase vaccines collectively, then the VVW could proceed with some

degree of certainty that he or she would not be left with costs and that there would be a sufficient demand to justify their efforts. Such a process of community contracting would help promote higher EURs and payback rates, as well as boost the percentage and volume of animals vaccinated in a given village. The actual rewards for the service could, of course, still follow the principle of flexible contracting in which the VVW and community agree on appropriate rewards.

Special care would have to be exercised, though, in the case of warrior vaccinators who could abuse the concept of voluntary community contracting by imposing such a process on the entire community. For the most part, warrior vaccinators have targeted their efforts at individual households who can easily avoid them should they choose to refuse, or resist, their services. However, it is not inconceivable that front-line technicians, who are primarily accountable to the State, and not the farmer client or community at large, would try to boost vaccination rates and volume, and perhaps their own standing within the department, by forcing communities to accept animal vaccinations.

2.7. Administrative Context

Even if the problems associated with low EUR and payback rates can be overcome with better organization at the village level, either through flexible contracting or community contracting, there are also several managerial problems that undermine the financial sustainability of the entire vaccine production and distribution. First, the system of financial accounting, as in many other developing countries, is notoriously porous with little, if any, transparency. Such problems, not surprisingly, are most pronounced when it comes to handling cash. Officials at both the district and provincial level do not receive sufficient or timely budgets for administrative supplies and other operating costs, and therefore use cash from vaccine transactions to finance work-related expenses as well as supplement their meager salaries. Second, accounting procedures are rudimentary at best, and it is extremely difficult to monitor payments received for vaccines that have been dispensed. As a result, it is often difficult for anyone at the provincial level to say for sure how many bottles of vaccines have been sent to a particular district, and even more difficult to say what the outstanding balance of payment is for those disbursements. In addition, no one can say how much payment has been received, and what it has been used for --

including paying back the Nong Teng laboratory. In other words, payback rates are often unknown, and rarely recorded.

Such problems are exacerbated by the fact that no one individual or institution has clearly defined jurisdictions and responsibility for coordinating the production and distribution of animal vaccines in Laos. For example, the Nong Teng lab is under the direction of the DLF and, as a result, its budget comes from the central government via the Ministry of Agriculture and Forestry. However, the district and provincial departments of livestock and fisheries are under the authority of the provincial governments, which receive their budgets from the Ministry of Finance. In this sense, there is an institutional disconnect between the production and distribution of vaccines in terms of the gap in authority and jurisdiction that exists between various national level departments and their provincial counterparts.

This then leads to a third observation, namely that the distribution of vaccines -- particularly at the national and provincial level -- is often governed according to the logic and ethics of personal relationships and political patronage. For example, in the event of a disease outbreak in an area where a high-ranking government or party official comes from, the Nong Teng laboratory is often obliged to send vaccines to that province despite the fact that they may not have paid for vaccines that the laboratory had previously sent. This practice has subverted the Nong Teng lab's ability to become self-financing, as no one is able to collect on delinquent accounts. A second example concerns the role that friendship plays in governing the distribution of scarce vaccine resources. One of the strongest such bonds have been formed among staff during the 1980s while they were being trained in the former Soviet Union or other socialist allies (e.g., Mongolia). Despite low or non-existent payback rates, vaccines may be routed from one level to another (e.g., from the province to a district) when government staff know and trust one another on a personal basis.

Another set of distribution puzzles concerns the role that foreign donors have played in helping train VVWs and establishing cold-chain systems. Although such efforts are necessary given the government's chronic lack of funds, the results sometime have unintentional consequences that result in misdirected vaccine distribution. In cases where vaccination services have been

established in lowland rice-producing areas where animal densities are high and demand is consistent, entrepreneurial and even citizen vaccinators are able to achieve high EURs and payback rates, as well as high percentages and volumes, which may, in turn suggest lower attrition rates among trained VVWs. However, in upland areas, donors along with the DLF have tried to target development resources to ethnic minority communities, albeit not necessarily for the same reasons. As noted before, these areas are characterized by small animal populations, high transport costs, and ambiguous demand. These areas, such as in Xiang Khouang cited above, often have low EURs and payback rates along with very high VVW attrition rates over time. Such patterns tend to emerge soon after donors depart after having "completed" their animal health projects.

As a result of political patronage and personal friendships, as well as donor patronage, vaccines are frequently distributed to areas where they are not necessarily needed or wanted, and seldom, if ever, paid for. Such practices ultimately undermine the DLF's ability to target scarce vaccine supplies according to its own policy objectives. It appears, then, that efforts to match VVW motivation and incentives with individual and community-based approaches to flexible contracting must be done in a context of wider-scale administrative reform.

First, the production and distribution of vaccines should be governed by sound business practices in which production and distribution decisions respond more to actual demand. Although the complete privatization of the Nong Teng laboratory is neither feasible nor desirable, given the lack of investor interest in weak rural markets in Lao and the government's targeting objectives, the Nong Teng laboratory could be put on an autonomous footing in which the day-to-day management of the lab is independent of political pressure. The most important effect would be that customers, including the provincial and district DLFs, donors, and private vendors, would be expected to pay for vaccines upon delivery. This would mean that the performance of the lab management would be evaluated in terms of their own ability to achieve more efficient production procedures as well as higher payback rates. Despite these measures, planners must be realistic that under the conditions of contemporary Laos, the government would have to continue subsidizing production, perhaps through contractual grants with the Nong Teng laboratory, in order to ensure that poorer farmers can obtain vaccines upon demand.

Second, the government can increase vaccine supply by allowing more vaccines to be privately imported from nearby Thailand or surrounding countries. Even though the price of such vaccines would be higher, at least initially, the most likely market would be in areas along the border with Thailand where there are better cold-storage facilities and lower transport costs. This would allow the market to assume more of the burden for distributing vaccines to entrepreneurial vaccinators and special agents in areas with a greater concentration of farmers who rely on animal traction to expand and diversify agricultural production. Such a measure would also require the DLF to focus more efforts on monitoring the quality of imported vaccines as well as vaccines produced at DLF to ensure that high standards of quality are maintained.

The DLF would, of course, continue to rely on donors to help train and equip VVWs as well as ultimately regulate the quality of their training. The planning and preparation for such training should take into account the fact that the motivation and incentives of VVWs may vary according to circumstances. For example, by paying attention to the motivation and incentives formula, efforts could then be targeted to support areas suitable to citizen vaccinators with better organization. This would include the introduction of the model village concept where appropriate and including community leaders in training to help encourage better turn outs. Ultimately, however, the government must also develop standards for regulating the training and certification of all VVWs throughout the country.

2.8. Conclusion

The recent focus on flexible contracting that enables front-line workers to tailor services individually to the needs of specific clients assumes that service providers are uniformly motivated by cash incentives. The evidence from Laos suggests flexible contracting is indeed feasible in situations where entrepreneurial service providers are primarily motivated by cash incentives *and* where cash is the primary medium of exchange. Of equal importance is the fact that entrepreneurs, as well as certain special agents, are able to plan and organize services with some degree of confidence in client demand. When these conditions are met, service providers are more willing and able to finance the purchase and transport of services from distant suppliers. In this sense, flexible contracting may be compatible with user-fee schemes that could enable

resource-poor governments, such as Laos, to provide rural development services in places where markets fear to tread.

The evidence also suggests, however, that flexible contracting may not always be feasible when service providers are primarily motivated by a spirit of public service in areas where the exchange of goods and services is often governed by in-kind or barter arrangements. Also, flexible contracting is neither feasible nor desirable in situations where government service providers, such as the warrior vaccinators found in Laos, are politically motivated to serve the interests of the State contrary to the preferences and practices of local communities. In areas characterized by subsistence production where the demand for services is ambiguous and supply is unpredictable, citizen vaccinators are reluctant to assume sole responsibility for the costs of purchasing and transporting vaccines to their respective communities. This being said, citizen vaccinators could possibly thrive in areas where community-contracting schemes require that villagers assume collective responsibility for the costs of purchasing and transporting vaccines, or other services for that matter. This, in turn, may make demand more predictable for such services. A similar case in support of community contracting probably cannot be justified for warrior vaccinators given the resistance they face from communities who distrust the government's motives and objectives.

Neither flexible contracting nor community contracting is financially viable, however, when the production and distribution of rural development services is routinely subject to political patronage and personal friendships. Rather, such measures can only work when the production and distribution of services; in this case, animal vaccines, respond to actual demand from clients who are willing and able to pay for such services. In countries such as Laos, the government may wish to continue subsidizing a certain portion of the services targeted primarily at areas where citizen vaccinators work, while allowing the markets to distribute services in other areas where barefoot entrepreneurs and special agents tend to work. In any event, innovations at the local level in terms of devising a better match between motivation and incentives will only go so far without comprehensive administrative and managerial reform at higher levels of the government.

Certainly, I need to conduct more research to test the theory that links motivation and incentives for front-line service providers to specific modes of agricultural production. Such research would be especially relevant when conducted in countries such as Laos where rural communities are engaged in swift and dynamic changes in their primary modes of production. This research should also include services other than animal vaccination services. For example, in some areas of Cambodia, community health workers are provided incentives from the sale of condom and birth-control pill to provide HIV/AIDS and birth-space counseling to women. Are these community health workers uniformly motivated by cash incentives? If not, what are the public finance implications for the long-term supply of such services? As with the Laos VVW research, any research concerning rural development services must also take into account the wider context of public administration and inter-governmental relationships.

Chapter 3

Farm-level Bureaucrats in Action:

The Patrimonial Distribution of Veterinary Services in Cambodia

3.1. Introduction

Farm-level bureaucracies are organizational arrangements composed of front-line service providers who interact directly with farmer clients and the managers who supervise them. Farm-level bureaucrats (FLBs) in developing countries are routinely confronted with conflicting policy objectives, inadequate resources, and ambiguous client demand. In order to cope with such constraints, front-line workers and their supervisors regulate the type and quality of services that reach farm households. As a result, the distribution of scarce development resources is frequently characterized by variability in the amount and quality of services provided to potential clients across different locales and over time. In the course of determining which farmers receive how much service, and when, farm-level bureaucrats, in effect, act as informal and autonomous policy makers (Lipsky, 1980; Goetz, 1997).

Farm-level bureaucrats are routinely criticized for behaviors that divert organizational outcomes away from their intended objectives. The main criticism leveled at FLBs is that the personalized styles of selective service delivery by front-line workers, and the lax -- and often distant -- supervision that makes such exchanges with clients possible, distorts incentives governing contractual relationships in ways that benefit wealthier farmers and the FLB, while neglecting the needs of other farmers. Under certain circumstances, however, farm-level bureaucracies may be an effective instrument for policy implementation. During periods of political turmoil and/or rapid socio-economic change, FLBs may serve as an important source of stability and entrepreneurial energy that enables the government to deliver services it might not otherwise be able to provide. Particularly in situations characterized by a lack of financial resources, the inherent adaptability of FLBs provides front-line workers with the necessary flexibility to respond to new situations and opportunities as they appear while at the same time providing the

necessary discipline and control required to maintain front-line workers orientation and commitment to the objectives of the organization.

The distribution of veterinary vaccination services to farmers by the Cambodian Department of Animal Health and Production (DAHP) during the early-mid 1990s is a good example of a farm-level bureaucracy in action. The government's long-standing policy of providing vaccinations for cattle and buffalo free of charge to farmers was amended by front-line technicians who had to cover the costs of supplying vaccines, while providing themselves with a source of income. As a result, technicians directed their efforts to areas where farmers were willing to vaccinate their animals *and* pay a modest fee for the service. The tacit commercialization of such services through the introduction of informal user fees represented a significant policy shift that was implemented by farm-level bureaucrats working at the local level. This shift helped pave the way for private-sector, community-based village livestock agents eventually to play a significant role in the delivery of veterinary services by legitimizing the payment of service fees.

In this paper, I analyze how farm-level bureaucrats within the DAHP were able to continue distributing vaccines to farmers during a time of acute social and political stress when few financial resources were formally available for doing so. I argue that the distribution of services was governed according to the ethics and logic of patron-client hierarchies that have traditionally characterized social relationships in Cambodia (Thion, 1993; Ledgerwood and Vijghen, 2000) and other countries in Southeast Asia (Hanks, 1972; Scott, 1972). At the farm level, I show how a system of informal incentives, what Weber (1964) referred to as *prebends*, enabled government technicians to cover the costs of providing vaccines, while also providing income for themselves. I also show how the transfer of vaccines from one level of the administration to another was facilitated by a system of gift exchange similar to that of *guanxi* in China as described by Yang (1986, 1989). Both sets of exchanges are interrelated functions of patrimonial management that helped promote organizational cohesion within the DAHP through a complex web of personal loyalties and reciprocal obligations.

The farm-level bureaucrats within the Cambodian DAHP displayed remarkable entrepreneurial skills and capacity for innovation, traits that many planners believe are essential for good

management. In situations characterized by social and political stress, the interests of the farm-level bureaucrats and the objectives of their organization coincided for a critical period of time. As a result, farm-level bureaucrats were motivated to use their entrepreneurial talents to provide services to as many clients as possible. However, their interests began to diverge from those of the organization once a degree of stability was achieved. Planners need to be able to identify the factors and circumstances that encourage such changes so they can plan accordingly. In the case of the Cambodian DAHP, indicators of such changes included shifts in donor priorities and changes in the nature of client demand.

3.1.1. Methodology

Originally I set out to explain observed variations in the number and percentage of large animals that were vaccinated over time and across different administrative jurisdictions. I developed an understanding of how the distribution of vaccines from one administrative level to another was organized by conducting fieldwork in two districts in each of five provinces during the summer of 1996.¹⁰ I selected the districts primarily on the basis of animal population and the level of reported vaccination activity. Security also played a significant role in site selection, as banditry and armed conflict were ongoing concerns in certain areas. I interviewed DAHP officials and technicians at the provincial and district levels about their role in vaccine distribution, as well as farmers and local vaccinators in various randomly selected villages about their perceptions of vaccination services.¹¹

In Section 2, I introduce the concept of patrimonial administration as an analytic framework that was developed for explaining how the distribution of vaccines was organized within the DAHP. Section 3 then traces the evolution of incentives within the DAHP in the context of the socio-economic and political changes that occurred in Cambodia during the period in question. Section 4 discusses vaccinator's prebends in the context of the emerging markets for veterinary services during the early to mid-1990s. Section 5 explains how vaccines were distributed from one level of the administration to another through a complex system of gift exchange. Section 6 discusses the management of prebends and gift exchange and identifies several constraints that eventually

¹⁰ The provinces included Svay Rieng, Kompong Thom, Kompong Chhnang, Pursat, and Battambang.

¹¹ Much of the information concerning vaccination work in Cambodia prior to the mid-1990s is based on the author's work in Cambodia during that time.

paved the way for reform. Section 7 concludes by making several observations concerning the role of farm-level bureaucracies in reform processes.

3.2. Patrimonial Administration as an Analytic Framework

I developed an analytical framework for this study focusing on the relationships that governed administrative exchange within the farm-level bureaucracy in the DAHP. Such relationships were affected by the socio-economic and political environment of the organization that influences the values, interests, and preferences of individuals. By using this "open-ended" approach to analyzing bureaucratic behavior, I view organizational outcomes as a function of the dynamic interactions between (a) formal structure and informal relationships within the organization, and (b) factors and circumstances exogenous to the organization. In contrast, analysts using "close-ended" approaches with classical theories of rational bureaucracy view outcomes primarily in terms of the internal structure of the organization consisting of explicitly defined rules and roles oriented to achieving specific goals (Britan and Cohen, 1980).

An open-ended, anthropological approach to studying administrative exchange is especially relevant to Cambodia where social relationships are governed according to status defined in terms of age, education, gender, official position, family standing, wealth, or power (Martin, 1994; Ovensen, Trankell, and Ojendal, 1996). Such relationships are reinforced by the basic tenets of Buddhism in which each person in the social order views others as either higher or lower according to the degree of merit they have accumulated through virtuous living or generous acts. Buddhist doctrine stipulates that superiors increase their own merit, thereby raising their standing in the social hierarchy, by helping those below them (Hanks, 1975; Thion, 1993). The moral dimensions of hierarchy serve as the foundation for the practical everyday realities of patronage relationships that permeate the private and public spheres of life in both rural and urban settings.

As in other countries in Southeast Asia, the political administration in Cambodia is a function of traditional bureaucratic authority in which relationships between patrons (managers) and clients (technicians) are governed according to the logic and ethics of reciprocity, mutual obligation, and personal loyalty (Scott, 1972). Scott's observation that patron-client relationships are

accepted as legitimate in the absence of impersonal guarantees from formal (e.g., the State) or informal (e.g., kinship) institutions is relevant to both Cambodia past and Cambodia present (Ledgerwood and Vijghen, 2002). Marston (1997) has also observed that such relationships are often negotiated according to relative rank and social standing, and Vijghen (2000) has described a kind of “Khmer fairness ideology” in which it is fair to favor only one’s own clientele, including family and friends.

The relationships between patrons and clients have been described by observers from different disciplines. According to Weber (1947:343), the patron, as a person exercising authority, is not so much a superior as a personal chief. As a result, the staff in a patrimonial administration are more like personal retainers than officials. Ovesen et al. (1996: 66), commenting on contemporary social organization in rural Cambodia, have suggested that the role of the Cambodian patron is to “offer physical protection as well as economic assistance and moral support in times of need.” In return, clients are expected to be loyal and provide obedient service to or on behalf of their patrons. Jacobs (1971) also observed that both patrons and clients benefit from these relationships, albeit differently, and focused his analysis of the Thai civil service on the interests of the individuals who are involved in such relationships.

The incentives and rewards employed within bureaucracies to motivate staff can take either of two forms. Formal incentives are more easily recognized as the official salaries and opportunities for training and advancement according to clearly articulated criteria. Informal incentives, however, are based on subjective assessments and personal relationships. Analysts refer to the informal incentives that are the focus of this study as *prebends*, which Weber has defined as personal favors or payments from one’s chief, such as use rights of land in return for services, or the “appropriation of property income, fees, or taxes” (1947:351). Jacobs refers to such transfers as “prebendary grants” (1971:81), the proceeds of which are “prebendary benefits“. These analysts emphasize the nature of prebends as both rights and opportunities inherently associated with a particular position as a form of remuneration that distinguishes patrimonialism from other types of administration.

Prebends also serve another practical role by providing functionaries with the resources required to perform their assigned tasks. As an implicit condition for accepting prebendary grants, officials – including the DAHP technicians in their role as front-line service providers in the early and mid-1990s – were expected to cover the costs of supplying services from the fees they charge. The rules concerning how much may be charged for a particular service, as well as how much may be reasonably retained as income, are informally governed by custom and tradition. This decentralized aspect of patrimonialism provided farm-level bureaucrats with an important degree of flexibility in coping with a chronic shortage of public funds for salaries and operating expenses in Cambodia during this time.¹²

3.3. The Evolution of Veterinary Vaccination Service, 1979 – 1996

The DAHP demonstrated a remarkable degree of flexibility that enabled the government to continue providing services in the context of dramatically changing circumstances. I argue that this flexibility was grounded in a system of prebendary rewards that efficiently connected provider incentives to available resources. In this section, I outline the links between changes in the socio-economic and political environment and the corresponding changes in the nature of incentives and prebends affecting the government’s farm-level bureaucrats during the 1980s and up to the mid-1990s (See Table 3.1 below).

3.3.1. Vaccination Services, 1979 – 1989

Following the collapse of the Khmer Rouge government in early 1979, the fledgling socialist government of the People’s Republic of Kampuchea (PRK) was confronted with severe food shortages, the complete collapse of most civil institutions, and civil war. In the face of an international embargo that precluded development assistance from much of the non-communist world, the new Cambodian government adopted a two-pronged emergency strategy for promoting self-sufficiency in agricultural production. First, individual farm households were organized into solidarity groups (*krom samaki*) in order to pool resources critical production inputs, including large animals used for draft power, natural fertilizer, and transport (Boua, 1982). Second, the technical arms of the new government, especially irrigation, agronomy, and animal health services received priority attention in terms of material and financial resources for

¹² Gottesman (2004) also refers to similar methods in other sectors, including the security sector.

rebuilding infrastructure and training new personnel from Soviet, Vietnamese, and East European allies and a handful of small Western NGOs (Mysliwiec, 1988).

As cattle and buffalo were the most important inputs after land and human labor for agricultural production in Cambodia, an important element of the government's strategy for stimulating economic revival in the rural sector centered around rebuilding and maintaining healthy animal herds.¹³ The government focused on (1) a long-term objective of rehabilitating the animal health administration in order to improve its ability to provide a broad range of veterinary services, and (2) more immediate objectives of conducting mass vaccination campaigns in order to reduce mortality and morbidity rates among cattle and buffalo. The government was most concerned about preventing the spread of the four most prevalent epizootic diseases: *hemorrhagic septicemia* (HS), foot-and-mouth disease (FMD), black-leg, and anthrax (Gootjes et al., 1993).

Vietnamese and Soviet advisors, as well as several NGOs, helped rebuild educational facilities in Phnom Penh and provided resources to train new personnel. Students in the agricultural university at Cham Car Daung were trained in veterinary sciences and assigned to management positions in the national and provincial DAHP bureaus. Students at Preah Leap technical college were trained and assigned to work at provincial and district bureaus as veterinary technicians. The most prestigious training opportunities, however, were scholarships to study veterinary sciences in the Soviet Union, East Europe, or Vietnam. Donors also helped train local commune (*khum*) volunteers to identify major diseases, perform vaccinations, and collect livestock statistics. Although differentiated by education, tasks, and location, these groups together formed a new administration of managers and front-line workers assigned to implement the government's policy to provide vaccination services to the country's farmers free of charge.

The government's efforts to rebuild its capacity to deliver veterinary services also received support from international donors, including several small NGOs. For example, the American Friends Service Committee (AFSC) helped set up and maintain a small laboratory to produce HS vaccines while Church World Service (CWS) helped set up a diagnostic laboratory for

¹³ Some reports suggest that as many as two-thirds of Cambodia livestock population were lost during the Khmer Rouge years and the immediate aftermath (Gottesman, 2004).

identifying diseases.¹⁴ These and other organizations also helped import additional vaccines for HS, FMD, black-leg, and anthrax. Despite such efforts, the amount of vaccines provided with donor assistance was never sufficient to meet the country's entire needs. International donors also helped the DAHP re-establish a cold-chain system for vaccine distribution in provinces surrounding the capital by providing small kerosene refrigerators and transport for vaccinators as well as other materials such as needles and syringes.

The mass vaccination campaigns were organized in villages where access by government technicians was feasible during the ongoing civil war. The organization of the villages along the lines of the *krom samaki* and the mobilization of village militia for protection against insurgent forces facilitated the government's ability to enforce compliance with its animal vaccination policies in the face of farmer's traditional reluctance to vaccinate their large animals. However, because of the ongoing civil war and the deplorable state of communications infrastructure throughout much of the country, the distribution of limited vaccines supplies and other services were generally confined to safe areas in the provinces around Phnom Penh and the eastern part of the country. In some provinces, such as Kompong Chhnang and Kompong Cham, vaccine distribution was, in turn, often confined to more secure areas in districts near provincial centers.

The vaccines were allocated by national and provincial DAHP officials according to the number of cattle and buffalo in a particular area, as well as recent morbidity and mortality rates. Priority, however, was given to areas reporting recent outbreaks of diseases. As a result, the DAHP attached considerable importance to obtaining information about animal populations, disease outbreaks, and the number of vaccinations performed. By the end of the 1980s, the DAHP had evolved into a bureaucratic system in which information in the form of regular statistical reports traveled up from the farm to the national level, while vaccines made the reverse journey back down the administrative ladder.

¹⁴ These two American NGOs, along with several other American NGOs, were able to work in Cambodia during the 1980s with a special license obtained from the US government under the Trading-With-The-Enemies Act.

3.3.1.1. The Nature of Prebends, 1979 – 1989

The incentives associated with one's position in the government or party¹⁵ were governed by the socio-economic and political circumstances affecting Cambodia during this period. Official remuneration for government services was modest, yet the guaranteed allotments of rice and access to highly valued goods, such as fuel and cooking oil, afforded a reasonably secure livelihood in the context of extreme poverty and uncertainty that characterized the reconstruction period of the 1980s. Moreover, front-line technicians and DAHP officials had positions that carried a great degree of prestige and status consistent with traditional attitudes toward government service. Government employment also precluded serving in the army, although it also meant that one was subject to being targeted by resistance forces operating throughout the country.

The material incentives available to technicians working in the rural areas were constrained by the lack of cash and consumer goods circulating in the countryside during this period. One of the most sought after benefits was a training assignment that afforded opportunities to travel and receive per diem cash expenses, as well as eventual advancement. Control over such assignments represented a significant source of power that enabled patron-managers within the government and party to reward staff. This power also included opportunities to decide which individuals to accept for training as *khum* volunteers, positions valued because of their social status, perks such as bicycles, and prebend opportunities. Control over such appointments provided patron-managers, particularly at the district level, with opportunities to extend their influence as they could accrue favors with village and commune chiefs, who often nominated perspective volunteers from among their own friends and family.

Incentives, therefore, initially took the form of in-kind remuneration and various rewards or favors available only from within the administration itself and controlled by the managers. The allocation of rewards among technicians and the distribution of services in the form of treatment and vaccinations were more or less separate functions

¹⁵ People often joined the Khmer People's Revolutionary Party in the belief that membership would enhance their ability to obtain government positions, provide job security, and opportunities for advancement.

throughout most of the 1980s. In this sense, one's ability to benefit from their position neither depended on nor affected the distribution of vaccines. The allocation of vaccines was subject primarily to information about disease outbreaks, while the actual distribution was confined to areas that were safe and otherwise accessible. The incentives for technicians depended more on their loyalty to specific managers within the administration and/or party.

Table 3.1: Technician Incentives and Context Summary

| Period | Income/ Livelihoods | Non-financial rewards | Situation/ Context | Donors | Policy Orientation |
|-----------|--|--|---|--|---|
| 1979-1989 | In-kind (rice), access government stores | Status, training ops., special privileges/perks | Post- genocide, isolation, civil war | Soviet Union, East Bloc, Vietnam, few NGOs (west) | Emergency, reconstruction, State plan, modest reform |
| 1989-1996 | Small cash salary, service fees (prebends), moonlighting | Status, training opportunities change, some perks | Elections, ongoing war, international recognition, emerging markets and civil society | UN, World Bank, ADB, bi-lateral, NGOs (local, international) | Development, liberalized politics, free market |

3.3.2. Vaccination Services, 1989-1996

The withdrawal of Vietnamese forces in 1989, the collapse of the Soviet Union and other socialist regimes in East Europe, the Paris Peace Accords in 1991, and the UN-sponsored elections in May 1993 all contributed to changes in the environment that made the emergence of a farm-level bureaucracy within the DAHP both possible and necessary. First, the nature of international assistance for the DAHP dramatically changed. The termination or curtailment of East Bloc assistance was followed by the advent of large-scale Western assistance during the UNTAC period.¹⁶ During this period, the DAHP and other government agencies faced increasing criticism for inefficiency, incompetence, and corruption with concomitant calls for administrative reform. One example of donor dissatisfaction with DAHP was a decision to

¹⁶ The United Nations Transition Authority in Cambodia, formally convened by UN resolution in February 1992, was charged with overseeing the implementation of the Paris Peace Accords signed in October 1991. This included repatriating Cambodian refugees from Thailand, disarming the armies of the various political groups, reconstructing communications and transportation infrastructure, and coordinating the election of a new national government in May 1993. UNTAC officially completed its mission in early 1994.

terminate support for vaccine purchases in 1992 after a large number of expired FMD vaccines were discovered in the central storeroom.

The peace settlement also allowed international development organizations a wider range of action. Organizations that once provided assistance directly to and through the government began shifting their attention away from the DAHP in order to work directly at the community level, while also helping Cambodians establish local NGOs through which to provide a variety of services. New organizations arriving to work in the country routinely by-passed the DAHP and began setting up parallel systems of veterinary services in various locations. Meanwhile, organizations such as the World Bank and International Fund for Agricultural Development (IFAD) began considering ways to privatize vaccine production and the distribution of veterinary services.

Second, the relaxation of control over internal travel and the increasing expansion of the market economy throughout rural areas resulted in increased levels of livestock movement. Farmers, facing the need for cash with which to buy newly available farm inputs and consumer goods, began taking more animals to market, including cattle and buffalo. At the same time, increased demand for livestock in neighboring Vietnam and Thailand included a dramatic expansion in smuggling.¹⁷ The increased domestic and international mobility of livestock, however, also resulted in increased mobility of contagious diseases. For example, DAHP personnel in Kompong Tralach (Kompong Chhnang) attributed increasing morbidity and mortality among local cattle and buffalo to the fact that the local slaughterhouse facilities were attracting livestock from around the entire district.

Third, in the new environment of expanded economic and political freedoms, some farmers began to re-assert their traditional reluctance to vaccinate their animals. A constant refrain heard during the farmer interviews was that in the aftermath of the 1993 election their prerogative to *not* vaccinate their animals was a matter of human rights. District and provincial DAHP personnel also frequently observed that providing services was much easier during the 1980s

¹⁷ The Deputy Director of DAHP observed at the time that, "If we legally exported them [cattle] we could get more income for the national budget." (Quoted in the Cambodia Daily, 30 May 1996.)

because they could more easily control what villagers did. Officials often bemoaned the fact that farmers “no longer do what they are told,” and that “they [farmers] do not listen to us anymore.”

One important factor affecting the distribution of vaccination services that did not change concerned the fact that the peace agreement and the subsequent election in 1993 failed to generate security and stability in many parts of the country. The continuation of civil war involving remnants of the Khmer Rouge and a breakdown in law-and-order from bandits and demobilized soldiers continued to preclude safe travel in many areas of the Cambodian countryside. As a result, many areas remained inaccessible for government services, including veterinary services, well into the mid to late 1990s.

3.3.2.1. The Changing Nature of Incentives, 1989 – 1996

The many changes in the socio-economic and political environment during this period dramatically altered the nature of the incentives available to the front-line workers within the DAHP. The transition from incentives such as training opportunities to a system of informal prebends that were dependent on the exchange of services for fees was a spontaneous response to specific factors affecting the interests of government workers. One important change was that the departure of former East Bloc allies dramatically reduced the opportunities of foreign technical training. New training opportunities were emerging then were increasingly controlled by the donor agencies, not necessarily by the government or party as before.

A second important change was the termination of the system of rice allotments and other in-kind payments, as well as access to state stores, for government workers. Workers were assigned modest monthly salaries, the value of which eroded in the face of inflation and the government’s inability to pay regularly. Some government employees left the public service sector to take positions with business or development organizations that paid more, paid regularly, and provided job and language training. Other government workers began taking second jobs in the expanding private sector economy as a way to supplement their official incomes. Many workers who continued to work for the government, including DAHP technicians, also began to augment their meager stipends by providing services in exchange for private fees.

The transition to a system of prebendary cash incentives for government technicians in the rural areas was facilitated by the concomitant expansion in cash transactions and the increasing availability of consumer goods. Technicians at first primarily relied on cash income from treatment services for large animals to supplement their government stipends. The fact that they were initially the only providers available, except for traditional faith healers (*kru khmer*), assured the technicians a steady stream of demand for their services. At the same time, veterinary medicines supplied by donors and the flood of human pharmaceuticals in the rural and urban markets provided technicians with treatment resources. Treatment services, therefore, spearheaded the transition in the nature of prebend opportunities for rural front-line workers during the late 1980s and early 1990s.

As a reliable source of income, treatment services attracted increasing competition from a variety of sources. One source of competition came from the traditional healers. A second source came from the private pharmaceutical suppliers who sometimes did treatments in addition to selling medicines. A third source of competition came from the *khum* volunteers who had been trained over the years by Vietnamese advisors and various NGOs. Although they lacked extensive training, they were from the same area as their clients and knew many of them as neighbors. The government technician's most formidable source of competition for treatment income, however, was to come eventually from the Village Livestock Agents (VLAs) whose support from international NGOs included better training and access to equipment and supplies. As a result of growing competition and the withdrawal of donor support for veterinary medicines, then, the provincial and district technician's prebend revenue from treatment services began steadily to decline during the early to mid-1990s.

As income from treatment services declined, vaccination services provided an increasing share of household income for many technicians. Vaccination services were similar to treatment services in that prebend income was a function of commercial transactions between technicians and farmers. As technicians began to depend more and more on their income from vaccination work, the distribution of vaccinations was increasingly directed to areas where farmers were willing to vaccinate their animals *and* pay for the services. In this sense, the commercialization

of the state-managed distribution of vaccination services can be traced directly to the incentive structures in a farm-level bureaucracy governed according to patron-client relationships.

3.4. Vaccinator Prebends as a Function of Commercial Exchange

During the early stages of the commercialization of vaccine distribution, the transactions between front-line technicians and farmers involved significant costs associated with their respective efforts to acquire information about one another (Akerloff, 1970). Farmers sought information about the efficacy of vaccinating their animals, while vaccinators searched for farmers who were willing to vaccinate their animals and pay. The interests of both ultimately coincided with the advent of disease outbreaks that (a) induced farmers to vaccinate their animals, and (b) signaled vaccinators about potentially favorable vaccination sites where farmers were more inclined to vaccinate their animals in exchange for a modest fee. In this section, I consider the cost-benefit calculations of both farmers and vaccinators and discuss their respective strategies for gaining reliable information about one another.

3.4.1. Farmer Perspectives: Ephemeral Demand

In 1996, treatment for sick animals could cost as much as 25-50,000 riels per animal, while the value of an animal often ranged between 150,000-350,000 riels.¹⁸ The reluctance of farmers to vaccinate large animals was therefore puzzling when one considers that vaccinators generally accepted 500 riels for vaccinating an animal. One approach for resolving the puzzle is to consider the complex cost-benefit calculations of farmers for whom the long-term benefits of vaccination were practically invisible.

3.4.1.1. Benefits

The benefits of vaccination depend on the degree to which the probability of contracting the disease is reduced compared to the probability of contracting the disease without protection. This, in turn, depends on the nature and prevalence of the particular disease in a given locale, which is not uniformly distributed in Cambodia (Gootjes et al., 1993). The benefits of vaccination are also a function of treatment costs foregone and the commercial value of the animal in the local market. The rapid increase in the demand for small-animal vaccines in some

¹⁸ The exchange rate in June 1996 was 2,600 riels/US\$.

areas with active livestock markets suggests that farmers will increase vaccination activity when commercial benefits are clearly visible.

Belief in the potential benefits of vaccination requires one to assume: (a) the vaccine is viable; (b) the animal has not already contracted the disease for which it is vaccinated; and, (c) the animal is well-nourished, not exhausted from work, and not ill from some other disease. When so much is unknown, belief in the efficacy of vaccines is more an article of faith. This contrasts with the perspectives of government officials and donors for whom belief in vaccination is more a matter of science.

3.4.1.2. Real and Imaginary Costs

Some of the costs associated with obtaining the actual vaccination are clearly visible to farm households. For example, the vaccination fees usually range between 100-500 riels, while the opportunity costs of taking animals to the vaccination site can be significant, depending on the time of year and day and the nature of tasks at hand. Other costs are, however, more ambiguous. For example, farmers are often concerned about lumps under their animal's skin resulting from an injection. While there does not appear to be any real cause for concern, a lump constitutes a specific discrepancy with how farmers' believe the animal should look. They also referred to a loss of appetite and fatigue following the vaccination. The costs associated with these effects are related to lost time in the production cycle and the rental costs of substitutes.

The most significant costs associated with vaccinations were various illnesses, including paralysis of the forelegs, and even death. Whether the animal gets sick or dies as a result of the vaccination or some other disease, or already had the disease for which it was vaccinated, may not be known, although farmers frequently would ascribe any negative results to the vaccination. In other instances, paralysis of the forelegs may indeed be linked to a poor vaccination technique. Such events, as isolated as they may be, enter the local folklore as further evidence that farmers ought to exercise caution when considering vaccinating their animals.

3.4.1.3. Information

Farmers are therefore confused about the costs and benefits of vaccinating their animals by a lack of information concerning the quality and efficacy of vaccines and the vaccination process. As a result, farmers often relied on the vernacular of local norms and beliefs to assess the risks of trusting modern preventive interventions. In this sense, rumor, gossip, and superstition are assessed through the farmer's education, experience, and social expectations to determine the best course of action. Although DAHP officials and donor personnel sometimes make disparaging remarks about such methods, farmers often have no other way to develop reliable explanations with which to manage the uncertainty associated with vaccinating their animals.

Farmers also closely observed the technicians for clues about the reliability of the vaccinations. For example, technicians might inspire confidence among farmers when they set up well-organized vaccination campaigns and manage the animals with ease. Farmer confidence is undermined, however, when restraining corrals are poorly constructed or when a nervous technician induces jumpiness in the animals. Farmers also considered vaccinators more reliable when they adhered to the established procedures. In this sense, sterilizing needles has certain ritualistic qualities, and technicians who deviated from the norms established by a trusted predecessor were considered less reliable.

In addition, farmers inspected the vaccinator's tools of trade with close attention for signs of reliability. A shiny new syringe would command more confidence than one that was held together with string. When donors provide trainees with new syringes, they provide vaccinators with both the tools of their trade *and* important symbols of status and quality. Farmers also relied on the reputation of the technician to assess the efficacy of the vaccination process. People tended to trust the services of technicians who were from the same area. When technicians were outsiders, people used their training credentials as clues concerning the potential quality of service. Even in areas far away from Phnom Penh, farmers often attributed varying skills among different technicians to where they were trained.

Finally, the repertoire of interventions available to the technicians also affected farmer's faith in the animal health system. The best example of this concerned a case in which government

technicians were unable to respond to the FMD epidemic that struck several areas of the country throughout 1995. Because donor support for FMD vaccine purchases had been terminated earlier, government vaccinators could only advise farmers to use traditional remedies. The inability to respond effectively to such problems eventually contributed to an increasing lack of confidence in government services on the part of farmers as well as lower morale on the part of DAHP staff.

3.4.1.4. Disease Outbreaks

The farmers' reservations associated with the uncertainty and risk of vaccinating their animals were, however, often swept aside -- at least momentarily -- in the case of disease outbreaks. Farmers consistently reported they were more motivated to vaccinate their animals by the appearance of debilitating or fatal diseases among animals in their immediate vicinity. Moreover, farmers who had lost animals to HS within the previous year also appeared more prone to vaccinate than those with no experience with the disease.

The demand for vaccination services for large animals remained uncertain, however, as the reality of the disease receded over time only to be replaced by the more immediate concerns associated with the risks of vaccination. For example, one well-to-do farmer in Kompong Ro (Svay Rieng), who had been vaccinating his animals over the past several years, indicated he would no longer vaccinate his animals. He explained that neighbors were not vaccinating their animals and nothing had happened, so he was reluctant to continue incurring *the risk of vaccinating*. Like a mirage in the desert, farmers' demand for vaccines would appear only for a brief interlude before disappearing and then reappearing in another location or time.

3.4.2 Vaccinator Perspectives: The Calculus of Prebends

The ephemeral nature of farmers' demand for vaccines was the single most important factor influencing how technicians calculated the costs and benefits of providing vaccination services. They compared the probable costs of delivering vaccines with potential revenues from farmers willing to vaccinate, while also trying to ascertain the ability of the village leader to mobilize villagers for the vaccination effort. The decline in treatment revenue cited above meant that

technicians had to be extremely discerning in their vaccination site selection as they had to bear all the risks associated with delivering vaccines.

3.4.2.1. Costs of Supply

According to the logic of a decentralized patrimonial administration, the technicians had to bear all the costs of supplying vaccines at the local level. Whenever possible, they would initially respond to requests for vaccinations by making a special trip to the area to ascertain the viability of the request and negotiate with the village leader when the vaccination effort might take place. As the costs associated with exploratory visits also had to be covered by the technician, they were more likely to visit and assess areas closer to their home base of operation.

The costs associated with delivering vaccines included fuel or other means of transportation, ice for vaccine storage, food and meal preparation for the technicians and others who assisted with the organization of the vaccination effort, and a gift fee for local leadership. Any remaining funds were then shared among the attending technicians, including those from the province or district, as well as *khum* volunteers. The technicians also had to purchase new syringes and needles from the market or the district or provincial DAHP. The motorcycles or bicycles they used were either the private property of the technician or belonged to the department through donor assistance. Other equipment, such as iceboxes, was usually provided to the district or provincial office by donors.

3.4.2.2. Prebend Revenues

The technicians received about 500 riels per vaccination from those who could pay, despite the government's official policy stipulating that vaccines should be given free of charge. There was some variation, though, as technicians sometimes waived the fees for certain individuals, such as widows, or gave discounts to households with a certain number of animals. Many villagers expressed a willingness to pay even more, though the maximum range was in the realm of 700-1,000 riels. Once the hypothetical fee went beyond this level, farmers indicated they would prefer to wait and see what their neighbors would do.

In addition to the fee itself, the amount of prebend revenue technicians could generate over time depended on location and the efficiency with which a particular vaccination event was organized. Several factors contributed to the efficiency of specific vaccination events. First, it was more efficient to collect animals in one place than going house-to-house as more animals can be vaccinated in a given period of time. Second, the timing of the specific vaccination effort with respect to the time of year and day was critical. For example, efforts to vaccinate animals during planting season were often not feasible as animals were used for plowing.

Third, the way information about the vaccination event was disseminated within the village determined who knew about the upcoming event. Although the village leader originally had the responsibility to inform farmers about the location and time of the event, an increasing number of them could no longer be counted on to play this role effectively. Some leaders forgot to tell people because they were “too busy making money,” while others were “busy with politics.” Vaccinators sometimes arrived in villages after making arrangements beforehand only to discover nobody knew about the event and finding village leaders away “on business.”

3.4.2.3. Identifying Customers

Vaccinators and their patron-chiefs had to predict accurately where farmers would be willing to vaccinate and pay the modest fee. They first tried to screen out areas with high supply costs and low levels of potential revenue. Areas considered unsafe because of banditry and Khmer Rouge activity, or that are very far over difficult terrain, were easily eliminated. For example, in Maung Russey (Battambang), 20 villages out of 90 were considered so unsafe that district technicians were unable to go to those areas. In Boribo (Kompong Chhnang) and Kravanh (Pursat), *khum* volunteers, who were better known locally, were the only vaccinators who could go to areas otherwise considered unsafe for government agents from outside the area.

Security problems, therefore, had the ironic “efficiency” effect of confining scarce vaccine resources to more densely inhabited areas closer to home where delivery costs are lower and potential revenues are greater. Areas affected by security problems were often further away and more difficult to reach because of poor travel conditions. These areas also tended to have smaller human and animal population densities and were often characterized by especially harsh

conditions of poverty. A good illustration of this phenomenon occurred in Svay Rieng province, where vaccine distribution gravitated away from the bandit-infested forests of Romeas Hek in the north toward the southeastern part of the province where access was easier, herd densities were greater, and farmers were considered more willing to vaccinate.

Technicians and their patron-managers also tried to screen out certain areas that had acquired a reputation for lack of cooperation. This usually meant that some village leaders did not reliably spread information about vaccination campaigns or villagers were unwilling to bring animals to the vaccination site. Sometimes an entire community could acquire a poor reputation as a result of individual actions. For example, a farmer in Kompong Svay (Kompong Thom) allegedly fed his buffalo insecticide for deworming, killing the animal in the process. The entire community was then condemned for not understanding modern veterinary medicine, which served as a reason why vaccinations were not performed there.

On some occasions, though, technicians felt obligated to respond to requests by highly placed political personalities for vaccination services even when there was no sound technical basis for doing so. For example, in Santok (Kompong Thom), where vaccination services were requested by local leaders, villagers expressed not only reluctance to vaccinate but dismay that such a request had been made in the first place. In Romeas Hek (Svay Rieng), a routine veterinary problem had been exaggerated through repeated telling until it reached a high national government official from that area. By the time provincial technicians arrived, the small bushfire, reported as a major conflagration, had burned itself out. Such diversions of scarce resources caused by political intervention limited the technician's ability to vaccinate in areas with greatest revenue potential. Although farm-level bureaucrats within the DAHP tried to avoid expending their resources this way, they also understood that failures to respond could expose them to unwelcome attention and criticism.

3.4.2.4. Disease Outbreaks

The most important sources of demand were actual outbreaks of debilitating or fatal diseases that motivated farmers to reassess their risk calculations concerning the costs and benefits of vaccinating their animals. Disease outbreaks also signaled vaccinators where farmers were most

likely to have their animals vaccinated and pay for the service. Information about the time and location of disease outbreaks, therefore, was the single most important factor influencing the direction of vaccine distribution.

At first glance, this seems to be a case, then, of the more things change, the more they stay the same. After all, we first saw how vaccine distribution during the 1980s was targeted at outbreak areas through a centralized planning process using objective technical criteria. We now see that farm-level bureaucrats within the DAHP also directed vaccination efforts to areas where disease outbreaks occurred during the early to mid-1990s, albeit for different reasons. The important difference concerns the role that incentives play in the distribution of vaccination services. In the 1980s, the actual location of vaccine distribution was largely divorced from the nature of technician incentives, while in the early-mid 1990s, vaccine distribution was a direct consequence of the way informal incentives were structured and managed within the DAHP. This general pattern of vaccine distribution closely resembled the distribution of veterinary services that can be hypothetically achieved by private-sector providers (Umali et al., 1992).

3.5. The Procurement and Distribution of Vaccines through Gift Exchange

The system of prebend incentives and the market for vaccination services discussed above primarily describes the exchange relationships between farm-level bureaucrats and farmers at the local level. Despite the government's formal policy of providing vaccines free of charge to farmers, district and provincial managers allowed their front-line technicians to provide vaccines to farmers for a modest fee as long as they covered the costs of supply *and* fulfilled their obligations as loyal clients when called upon to do so. These obligations included providing occasional gifts and favors as well as cash payments for the vaccines they received. Such obligations and patterns of reciprocity also governed a complex system of gift exchange that enabled the DAHP to distribute vaccines among different administrative jurisdictions at the provincial and district level without relying on formal resources. This system of gift exchange also played a key role in enabling the DAHP to maintain some degree of organizational cohesion and focus on the objective of vaccinating animals during a time of rapid socio-economic change and political transition.

The concept of gift exchange as a mechanism for distributing scarce resources and sustaining social cohesion through an ethics of mutual obligation and reciprocity has a long lineage in the socio-anthropological literature (e.g. Malinowski, 1950; Mauss, 1990; Levi-Strauss, 1965; Sahlins, 1974; Bourdieu, 1977). More recently, Yang (1986, 1989) has used the concept of gift exchange to explain how scarce public resources and services are allocated in the face of overwhelming demand in China. Yang identified three distinct modes of exchange in China: the State redistributive economy, a resurgent petty-commodity system, and the gift economy (*guanxi*). In contrast to the other two modes of formal exchange, *guanxi* entails an alternative set of relational ethics and values, including obligation, reciprocity, mutual aid, and the responsibilities of friendship and kinship. In many respects, the logic of Yang's gift economy closely resembles that of patron-client networks in Southeast Asia, including Cambodia, that have been described by Scott and others referred to above.

Yang identified several different forms of value that people use in their strategic calculations in China's gift economy. *Gift capital* refers to the actual expenditure and/or the time and effort devoted to the purchase of a particular gift or the execution of a favor. *Symbolic capital* refers to the sense of indebtedness, gratitude, or obligation on the part of the gift's recipient, or the moral advantage and higher status on the part of the donor. *Office capital* is the power of authority that comes from occupying positions of official rank that provide access to and control over desirable products, services, and opportunities (e.g., prebends). *Political capital* is the assets or benefits a person enjoys by being a party member, a person of high status or family background, or government official. In keeping with the logic and ethics of a patrimonial administration, the calculation of values and the exchange of gifts and favors for goods and services are entirely contextual and subjective. There are no formal rules, although the principles governing these exchanges are generally understood by everyone. In this sense, each exchange involves complex negotiations, recalling Marston's (2000) observation about the dynamics of patron-client relationships in Cambodia.

In Cambodia's DAHP, one source of gift capital was a share of the prebend income that provincial and district managers allowed their front-line staff to collect in the form of service fees. Although there was neither a precise formula nor a regular schedule for such transfers,

front-line staff understood they were obligated to make occasional contributions. There were additional sources of informal, or shadow, revenue that could also be used to finance gift capital. First, fees were collected from farmers and traders who butchered livestock at either state or privately managed slaughterhouse facilities. Many districts had slaughterhouses, and all provincial centers had at least one such facility. Second, control fees were collected from farmers and traders who were required to have papers authorizing them to transport livestock across provincial or district borders, or even village borders, as well as verifying that the animal had been vaccinated.¹⁹ Third, processing fees were collected for routine administrative work within the DAHP. For example, the release of donor-provided equipment, such as refrigeration units, required payment, or a gift, to the central office by the designated recipient province. If such equipment were intended for a certain district, then that district would also be expected to pay a similar service fee to the provincial office.

In keeping with the logic and ethics of patrimonial management, each specific revenue source was managed autonomously by farm-level bureaucrats whose superiors provided informal authorization with the expectation that whoever controlled revenue sources would bear the costs of providing the associated services. The net income was then available to the manager for both public use and private remuneration. Some revenue sources were, of course, more productive than others, and therefore received more attention. For example, control over a slaughterhouse, especially in an area with an active market, entailed potentially substantial revenues while involving few collection costs. Prospective revenues from control fees were also potentially significant, but required considerable time and effort to collect, and, in less secure areas, the collection of them could be dangerous as well.

As the front-line technicians incurred various expenses to transport vaccines to farmers, provincial and district managers also incurred a variety of expenses in order to obtain vaccines. For provincial managers, the costs associated with traveling to Phnom Penh to obtain vaccines included bus or taxi fare, accommodations, meals, and entertainment. In less-secure areas, travel also entailed passage fees at roadblocks setup by various militias. Another cost included time

¹⁹ Traders also had to purchase passage rights through certain areas controlled by bandits or various factions engaged in the fighting. Passage rights were usually managed by police or various military units, especially in less secure areas. Smugglers, of course, were particularly subject to this kind of tax.

away from home, especially if the official lost revenue from another occupation. District managers incurred a similar set of expenses, albeit on a more modest scale, whenever they went to the provincial center to obtain vaccines. These expenses of course had to be covered out of pocket using shadow revenues from various sources.

The costs to obtain gift capital used for maintaining good relationships with one's superiors, however, were even more significant, as the ability of lower-level managers to demonstrate respect for and loyalty to their superiors was essential for securing rewards and advancing in the system. Respect and loyalty could be demonstrated in a variety of ways, including providing warm hospitality and lively entertainment when superiors visited a particular area. For example, officials in one province complained about how expensive it was to arrange dinners, find the preferred brand of alcohol, and – on some occasions - provide female escorts for their male superiors whenever they visited. Though such occasions provided a good opportunity for provincial authorities to demonstrate goodwill and respect for their superiors, they were often hard pressed to collect sufficient funds from their own sources of shadow revenue to cover such expenses.

Farm-level bureaucrats also showed respect for their superiors through gift giving. Much of the time, particularly for exchanges between lower levels of the administration, a gift might involve small amounts of gift capital for things such as cigarettes, drinks, and meals. It was also routine practice for people to provide various favors for one another when asked. Even within certain offices it was not unheard of for one staff member to pay another for performing a particular task as a token of appreciation. On some occasions, particularly when officials with a high level of office capital were involved, the gifts could be lavish and exotic. For example, it was well known that an official with some degree of political capital at the central office enjoyed meat from a forest animal indigenous to a particular area in Cambodia. The use of this meat as a gift gave this area a competitive advantage over other districts in the province, while, at the same time, providing the province with similar advantages over other provinces. The fact that farm-level bureaucrats in that area were so diligent in providing such a gift helps explain why such a remote district with few animals seemed to enjoy routine access to vaccine supplies.

In such a competitive environment, farm-level bureaucrats at all levels were motivated to develop alternative sources of shadow revenue that they could use to supplement their salaries and perform their official duties, as well as respond to requests for favors or provide gifts. In terms of Yang's gift economy, gift capital was derived from the prebend income or resources available to those managers who controlled them. In this sense, the extent of the resource base would largely determine the possible sources of gift capital available to managers. For example, those districts, with larger animal populations, more densely populated human settlements, and located along main roads enjoyed an advantage over districts with smaller animal populations and more sparsely populated human settlements in remote areas. Larger communities and towns suggested larger markets for meat and other animal products, which, in turn, suggested busier slaughterhouses that generated more shadow revenue that could be used for gift capital. In the case of the visiting delegation cited above, the provincial manager's primary sources of gift capital were the various slaughterhouses located in the area.

The expenditure of gift capital represented an investment to build up reserves of symbolic capital that could be used to obtain vaccines or other favors at a later date. The provincial managers cited above were willing to expend relatively large sums of gift capital on their visitors from Phnom Penh as they expected this would help create a sense of obligation for future favors in return, including vaccines. However, these managers also understood that other provinces would also be making similar arrangements, and in this way the various provinces were, in effect, competing with one another to accumulate more symbolic capital with central level officials than their competitor. A similar process occurred at the district level where managers competed with one another to accumulate symbolic capital with provincial managers.

This process also worked in the reverse direction. For example, when a provincial manager provided a district level client with a certain number of vaccines, he may have been influenced by an obligation from a gift or favor performed earlier. However, in the course of providing the vaccines, the earlier gift or favor was paid off with interest in the sense that symbolic capital had now been created in favor of the provincial manager. Following such an exchange, the district manager was now indebted to the provincial manager. Although the exchange of vaccines between the province and district enabled the district manager to provide prebend opportunities

to his front-line staff, it also further bound the district manager to the provincial manager through a transfer of symbolic capital.

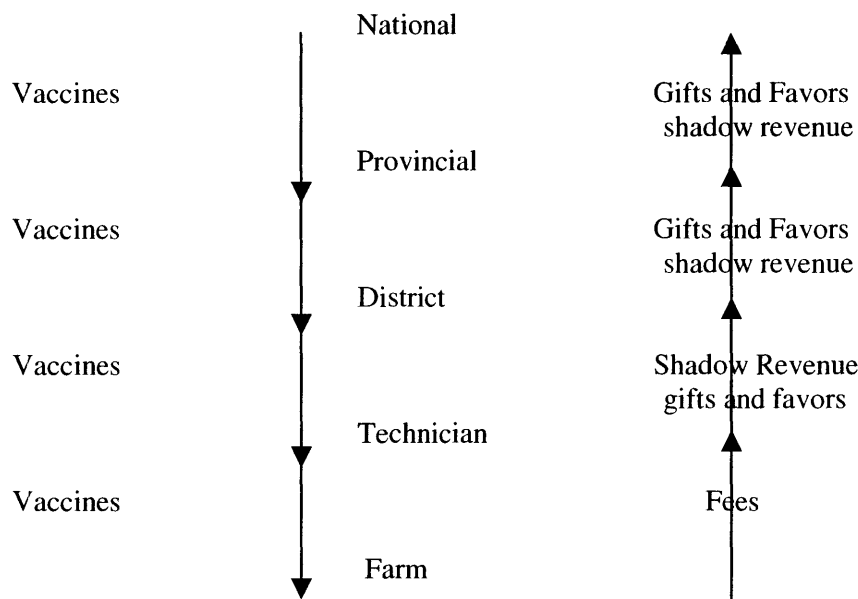
Provincial managers could generate symbolic capital by providing vaccines to a district manager because they had a larger store of office capital that gave them access to and control over a wide range of resources, including vaccines. In order to generate office capital, though, the provincial manager had to obtain vaccines from the central office, which required access to shadow revenues with which to cover supply costs, including some degree of gift capital. The amount of potential office capital available to provincial manager therefore depended in part on the resource base in various districts *and* the degree to which provincial managers could gain access to and control over these resources. Generally speaking, districts with larger animal populations and more densely populated human settlements generated far more gift and office capital than did districts with sparse animal and human populations.

One of the single most important strategic assets and sources of office capital, however, was the small refrigerators provided by donors. Because the animal vaccines had to be stored in cool temperatures in order to remain viable, a properly functioning cold chain, consisting of cold-storage facilities at provincial and district centers, had to be maintained. Many of the most accessible provinces received a small kerosene-powered refrigerator during this period. These refrigerators enabled the provinces to store vaccines over longer periods of time, which greatly enhanced their capacity autonomously to plan and implement vaccine campaigns, as well as flexibly respond to disease outbreaks. Refrigeration capacity also strengthened their competitive edge over provinces that did not possess refrigeration, as officials in Phnom Penh were reluctant to send vaccines where there was no refrigeration. Moreover, the refrigerators enabled the provincial managers to regulate and manage the vaccines distribution among the competing districts.

The office capital of the provincial managers was also greatly enhanced because they influenced the decisions about which districts would receive refrigerators from donors. Just as each province recognized that control over a refrigerator could help increase shadow revenues associated with vaccine distribution, so did the district managers understand that cold-storage facilities greatly

improved the potential revenue from sources under their own control. In this sense, a refrigerator enabled them to strengthen their own office capital by providing greater and more flexible prebend opportunities for their front-line technicians. Just as district managers often competed with one another for vaccines by providing provincial managers with gifts, favors, and shadow revenues, so they competed for refrigeration units in a similar fashion. Donors often unwittingly contributed to this kind of competition by providing too few refrigerators for each province.

Table 3.2: Patrimonial Gift Exchange Model



3.6. The Management of Prebends and Gifts

The management of this complex system of prebends and interpretive gift exchange required considerable skill and entrepreneurial capacity for innovation on the part of the farm-level bureaucrats at all levels of the DAHP. One of the most important aspects of managing prebends and gift capital involved maximizing shadow revenues by assigning the more skilled and experienced technicians to such areas. Managers also occasionally assigned junior technicians to good areas in order to maintain morale and provide experience. A tactic used by some managers to provide their technicians with equal access to good vaccination sites was to rotate them among the better places to vaccinate. Such decisions on the part of managers were therefore strategic in nature as he or she tried to optimize shadow revenue and technician benefits over time by matching technicians with appropriate vaccination sites.

District managers also tried to provide their technicians with access to good vaccination sites within the district. In this sense, a type of competition sometimes emerged between the provincial and district level technicians over access to and control over better vaccination sites. Generally speaking, the provincial and district technicians usually worked out ways among themselves tried to avoid such problems, which would result in dissipated prebend income for all parties concerned, while generating potential resentments over the responsibilities for the costs of providing vaccines.

Patron-managers at both the provincial and district levels also tried to maintain networks that enabled information about good vaccination sites (e.g., disease outbreaks) to flow directly from the farm or village to them. The flow of information, however, was often impeded by a variety of social or structural reasons. Social impediments involved traditional attitudes on the part of villagers regarding government and public services. Structural impediments entailed both organizational and technological factors.

3.6.1. Social Constraints

Some of the most significant obstacles impeding the flow of information about service demand were rooted in the complex social and political relationships between villagers and local leaders in rural Cambodia. For example, farmers who expressed an interest in vaccinating their animals often reacted with alarm when asked about how they could communicate their interests to the district or provincial DAHP. Farmers consistently said it was not their business to demand services from the government, and they felt it would be inappropriate to press such demands on their village leaders. The general attitude seemed to be that they might accept services, if vaccinators came to the village, but that it was the responsibility of the village leader to make such requests. The only reasons for them to risk the ire of local government officials seemed to be sudden disease outbreaks.

One reason for their reluctance to demand vaccination services was that they often perceived the vaccination as a type of gift from the government in exchange for which they would be expected

to perform certain tasks or favors in the future. In this sense, they viewed the service fee merely as a way for vaccinators to cover the costs of delivering the government's gifts. Some villagers felt obligated to accept the vaccine-gift in order to demonstrate their loyalty to the government, despite their reluctance to vaccinate their animals for reasons already discussed above. Others, though, believed that the political freedoms associated with the peace agreement meant they were free to reject such gifts. Such debates illustrated how the new economic and political realities were beginning to change the nature of the relationships between people and their governing institutions.

3.6.2. Structural Constraints

The flow of information between the farm and DAHP was also impeded by organizational and technological factors. Ideally, farmer requests for services were first communicated either to the village leader or *khum* volunteer. As village leaders became more occupied with personal affairs, they were increasingly unreliable in terms of communicating information about vaccination events. A good example of the divergent interests between the DAHP and local political leaders concerned a village in Battambang where people withheld information about a severe outbreak of HS in order to continue selling diseased meat in other villages. The village and *khum* leaders both engaged in the conspiracy as they too were selling meat and feared DAHP intervention would result in restrictions on the movement of diseased meat.

Khum volunteers played an important role linking farmers to the district DAHP and represented a potentially important alternative to village leaders in terms of communication. However, *khum* volunteers were inconsistently distributed across different locales as the DAHP depended on donor support to help train and equip them. Ongoing support also depended on donors and, when such support would be withdrawn, the DAHP was not able to continue support in the absence of chronic operating resources. The absence of financial support contributed to a high attrition rate among the *khum* volunteers. Another reason that *khum* volunteers stopped working is that they found regular employment elsewhere. As the rural economy expanded and opportunities for employment grew, more *khum* volunteers migrated to the private economy.

In terms of accountability, the village leaders were accountable to the district political administration, while *khum* volunteers were responsible to the technical arm of the DAHP. According to the logic of patrimonial administration, each set of relationships were vertically structured according to different chains of inter-locking relationships and interests. The degree of overlap and cross-over among the different chains would depend on the nature and management of prebendary resources. During the 1980s, when incentives were administratively constructed and available only with the joint consent of technical and political (often the same) officials, there was a high degree of overlap between the political and technical dimensions of patrimony. However, as prebends became increasingly commercialized during the 1990s, the two dimensions of patrimony tended to separate and became increasingly competitive. Technicians began to see that their prebendary benefits depended more on their personal relationship with their managers in the DAHP, than on officials on the political side of the administration.

3.6.3. Technological Constraints

The structural impediments to information flows were often confounded by technological factors associated with control over cold-storage facilities at the provincial and district levels. For example, district officials who controlled their own cold-storage facilities were able to maintain a greater degree of autonomy over vaccine distribution once they acquired vaccines. With their own vaccines in hand, district managers did not necessarily need to share information about specific vaccination sites with the provincial level. One reason cold-storage technology was so highly valued by district managers, therefore, was that it enabled them to provide their technicians with a greater share of prebendary benefits than those managers who had none, some of which also accrued back to them as shadow revenue that they could use for gift capital and personal income.

Districts that did not have cold-storage facilities, on the other hand, were not able to protect the prebend opportunities for their vaccinator-clients, as they were subject to direct intervention by the provincial managers and their technicians. For example, because districts had to obtain vaccines from the province on or close to the day of a planned vaccination event, the provincial entourage was automatically alerted to the fact. In the event provincial technicians decided to

participate in the event, the prebend benefits had to be shared between the district and provincial technicians, thus diminishing the income for district technicians.

Donors had invested considerable resources in developing cold-chain technology based on the belief that such technology would improve performance outcomes measured in terms of the number of and percentage of buffalo and cattle vaccinated in a particular area over time. Indeed, when such units were first introduced, the vaccination rates often increased and then maintained a consistent edge over those districts without such technology for several years. However, when refrigerators broke down managers almost always required outside support for most repairs. In some cases, a manger would then use his shadow revenue to obtain spare parts if they were available. In other cases, though, managers actually sold spare parts that came with the refrigerators as a new source of shadow revenue. Although managers were skilled in the art of gift exchange and personnel management, they were unable to maintain the refrigeration technology as donors began to redirect their support away from the DAHP.

Such social, structural, and technical constraints eventually affected the ability of managers to provide predatory opportunities for their staff, and contributed to a decline in morale and performance by public sector service providers. The most significant change at this time, however, was the steady withdrawal of donor support from the DAHP for key inputs and an increased focus on training and equipping a new cadre of community-based animal health workers. As more vaccination work was directed to areas where community based VLAs worked under NGO sponsorship, government technicians had to share an increasing percentage of potential prebend income with local providers. As a result, the incentive for farm-level bureaucrats to maintain the cold-chain system and distribute vaccine began to wane, along with the foundation of prebends used for shadow revenue with which to acquire gift capital. Managers and technicians of course still required gift capital, and they began to focus on other sources of gift capital, such as slaughterhouse revenues and transport permit fees, to maintain their informal revenue base.

3.7. Conclusion

I originally set out to answer questions concerning how the DAHP was able to continue distributing vaccines during a period of ongoing social and political unrest and economic change that characterized Cambodia during the mid-1990s. The answer to this question begins with the observation that a farm-level bureaucracy structured according to the logic and ethics of patron-client hierarchies enabled the DAHP to continue providing certain rural development services under extreme socio-economic and political circumstances. The farm-level bureaucrats within the DAHP were able to mobilize sufficient shadow revenue to finance a system of gift exchange that enabled them to continue procuring vaccines for distribution to farmers who were willing to pay a modest fee for the service. In this sense, the farm-level bureaucrats introduced the practice of service fees, or user charges, that now characterize so much of the discourse concerning the reform of rural development services.

The managers and technicians within the farm-level bureaucracy displayed remarkable entrepreneurial skills and capacity for innovation, traits that many planners believe are essential for successful reform. These farm-level bureaucrats were largely motivated by a strong sense of self-interest in which their own income was directly dependent on providing as many vaccines as possible to farmers who were willing to pay for the service. In this sense, the self-interests of the FLBs coincided with the overall objective of providing as many farmers as possible with vaccination services. Seen in this light, the policy shift that they informally implemented was successful as long as this close relationship between organizational and individual interests could be maintained. It seems, then, that FLBs may represent an effective short-term response to specific problems in a particular context.

Over time, however, the innovative capacity of the FLBs was overwhelmed by ongoing changes in the institutional environment. Foreign donors began to redirect their support for animal health services away from the government in favor of new community-based development initiatives. At the same time, some farmers began to voice their rights to reject services provided as gifts, while others demanded better quality services to which they felt entitled as citizens. As a result, the important role that vaccination services once played as a source of *prebend* income for front-line workers and a source of gift capital for managers started to wane. Farm-level bureaucrats

within the DAHP began to devote less attention to vaccination services, as their self-interest was no longer served by providing this service.

The evolution of DAHP's role in providing vaccination services illustrates several factors concerning the pace and sequence of reform for strengthening rural development services in countries such as Cambodia. First, under certain circumstances, the most effective short-term modes for service delivery may be those that build upon the inherent logic of the prevailing modes of social and economic exchange rather than cutting too sharply across the grain of traditional exchange. In situations characterized by social and political stress, the interests of the farm-level bureaucrats and the organization may coincide for a critical period of time to continue service provision. However, such interests may take divergence paths once some degree of stability is achieved. Planners need to be able to identify the factors and circumstances so they can anticipate such shifts and plan accordingly. Some indicators include the development of private markets for such services, shifts in donor priorities, and changes in the nature of client demand.

Second, such innovations often entail an unusual set of skills and talents on the part of managers. However, these innovations often represent unplanned inventions in response to changing circumstances. The degree to which such skills and talents can be employed in the service of planned reform in more stable times depends in part on how they might be included in the actual reform process. Part of the answer to this question requires a clear understanding of the comparative advantages that the public and private sectors each bring to the table. Ways must be devised to enhance the degree of complementarity between the two sectors. For example, while NGOs focus on training village livestock agents (VLAs) and educating farmers, the government can focus on regulating the quality of vaccines and the licensing of trained village workers according to standardized criteria. Ultimately though, the degree of complementarity that is possible will depend on structuring the incentives in ways that encourage individuals from both sectors to collaborate.

In this sense, long-term reform measures must focus on promoting incentive structures that objectively provide equitable access to rural development services for all farm households. The

farm-level bureaucrats in the DAHP were able to distribute vaccination services in ways that resembled market efficiency as vaccines were directed to areas where farmers were willing to vaccinate their animals and pay a modest fee. However, competition over services was circumscribed by security problems and a lack of information about the true costs and benefits of vaccinations on the part of farmers. In a stable market environment in which farmers are knowledgeable about the cost and benefits of vaccines, service providers will need to be closely attuned to and responsive to client demand.

Chapter 4

Village Livestock Agents in Northwest Cambodia:

Service Contracts and Institutional Support in the Private Sector

4.1. Introduction

Poor performance outcomes by public sector veterinary service providers in developing countries have prompted a wide range of reform initiatives designed to improve the quality, quantity, and distribution of services. The most common approach advocated by researchers and international donors has been to shift service delivery to the private sector while re-orienting government toward playing a more active regulatory role. In Cambodia, however, as in other countries where rural markets for veterinary services do not attract qualified technicians from outside, service providers must be created at the village level using local people. This kind of community-based approach to the privatization of veterinary services involves externally initiated projects that identify, train, and equip an entirely new class of service provider.

Private-sector, community-based animal healthcare models have had considerable appeal among donors promoting community solidarity and empowerment as ways to overcome ineffective government services and the negative consequences of self-interested market behavior (Catley et al., 2002).²⁰ According to this model, animal health services can be most effectively provided when people in the community cooperate with one another to achieve common objectives. For example, collective approaches to preventive care can enable poor farmers to pool resources for treatment services that otherwise might not be affordable. In such models, VLAs are often elected by their fellow villagers and are seen as agents serving the interests of the entire community.

²⁰ Boua (2002a) has even suggested the delivery of veterinary services can be used as tool to promote social cohesion in post-conflict Cambodia.

Such projects now represent a significant investment of resources by donors, governments, and non-governmental organizations (NGOs) worldwide. In Cambodia, for example, some 4,200 community-based Village Livestock Agents (VLAs) have been trained over the past decade. At least 15-20 NGOs and other institutions have been involved in training VLAs at costs that range from \$100 to \$250 per individual. But how sustainable are the services provided by these VLAs? After all, the track record in Cambodia and many other countries is replete with examples of VLAs who stop working after project sponsors complete their project cycles and withdraw support. Such efforts often fail for many of the same reasons that public-sector service reform has stalled, including a lack of financial and human resources, as well as incentive arrangements that leave VLAs unresponsive to the needs of clients.

In this chapter, I analyze the potential sustainability of this approach to the privatization of veterinary services in Cambodia by examining how 172 VLAs in the northwest part of the country have fared on their own for almost five years after their sponsoring NGO withdrew support in favor of other programming. I found that 29 VLAs (16.7 percent) are “very active,” while another 45 VLAs (26 percent) are “active”. Of the remaining 98 VLAs, 36 (21 percent) are “less active” and 62 (36 percent) have stopped providing services for various reasons (See Table 4.1 below). Why have some VLAs been able to continue providing services on their own for so long, while others have stopped for one reason or another?

My research objective is to identify the individual, institutional, and contextual factors and circumstances that either promote or inhibit sustainable service delivery over time by this new class of private-sector service providers. I hypothesize that the sustainability of service depends on the capacity of the VLAs to manage the transaction costs associated with negotiating, implementing, and enforcing informal service contracts. Such costs entail both economic and social components that benefit neither party as they make the exchange “more difficult and less attractive” (Leonard, 2000). My analysis is situational in the sense that Cambodia’s recent history of genocide and civil conflict, as well as extensive rural poverty, permeate social relationships and exchange at the local level.

I argue that the most successful VLAs include two types of entrepreneurs who have been able to devise effective strategies for managing the social and economic transaction costs of providing services on credit and discount. Benevolent/charismatic VLAs tend to be more concerned with the social dimensions of exchange, while career professionals are more concerned with the economic aspects of exchange. I conclude that both types of entrepreneurs can play complementary roles that promote sustainable service delivery at the local level. The career VLAs' sense of professional identity and business acumen provides a strong foundation for sustainability. This foundation can be strengthened with institutional support from professional associations acting in collaboration with government agencies and donors to provide low-cost credit and ongoing technical training for VLA members. The political and organizational skills of the benevolent/charismatic VLAs may enable them to play an important role in managing such associations effectively.

4.1.1. Literature

Researchers in this field have tended to focus on the dynamics of contractual exchange between private service providers interacting individually with their farmer clients. The standard approach to private contracting assumes that (1) the sustainability of private services depends on the profitability to the service provider, and (2) service providers are primarily motivated by cash or material incentives. For example, (Umali et al, 1992) have argued that the profitability of sustainability of any private practice depends on the "break-even point" where a service provider's revenue from all sources meets the costs associated with providing those service in a given area. The idea of a break-even point is useful as it focuses attention on efficiency and productive factors, including the average cost of services per animal, the density of animals in a given area, location, and infrastructure.

Such contracting, however, involves transaction costs that can distort the incentives governing exchange, thereby affecting the quality, quantity, and distribution of services. One of the most significant components of such transaction costs concerns the moral hazards associated with asymmetries of information. Leonard (1993) has argued that private veterinary agents are motivated to provide better quality services when their clients have sufficient information to assess treatment outcomes. In the absence of sufficient knowledge and confidence in quality and

accountability, farmers are willing to pay only the lowest available price, or forego services altogether. In this sense, then service providers may be motivated to join forces collectively to assure clients about the quality of their services. Arrow (1985), for example, has analyzed the creation of self-regulating professional associations using standardized certification and membership criteria for members.

In Laos, I have suggested in Chapter 1 that the assumptions supporting community-based models may be valid only under certain modes of agricultural production. I argue that VLA incentives are structured according to the prevailing mode of agricultural production in any given area as farming systems (a) determine the role that livestock play in the household economy, and (b) influence the dynamics of social and economic exchange. The wide variation in farming systems and the corresponding social organization of production produces a “crazy-quilt mosaic” of incentive arrangements and performance variations across different agro-ecological systems. Some CBAH models may be more feasible in areas characterized by extensive modes of communal production, where *citizen vaccinators* are motivated by community service. Private-provider models, however, are more feasible in areas with more intensive modes of competitive production, where *barefoot entrepreneurs* respond to cash incentives.

4.1.2. Methodology

In order to test my hypothesis concerning the sustainability of privatized CBAH services, I selected an area where VLAs trained according to CBAH practices were working under active market conditions involving more homogenous farming systems than those found in neighboring Laos. In Northwest Cambodia, farming primarily entails wet-season rice with some dry-season production. Draft animals, cattle and buffalo, play a significant role in rice production, though in certain areas increased mechanization and irrigation are making double cropping more feasible. Pigs and fowl also play a significant role in the household cash economy. There is also increasing trade between rural and urban areas, including significant smuggling of livestock to Thailand. These characteristics resembled areas in Laos that were more favorable to barefoot entrepreneurs, than to citizen vaccinators.

This group of VLAs had received training from a project the World Bank had funded through the Department of Animal Health and Production (DAHP) to develop a new cadre of private sector VLAs in response to perceived failures of the public sector to make good quality services accessible to local farmers. The project's implementing agent in the northwest was Church World Service (CWS), an American-based NGO with considerable experience in Cambodia's animal health sector. From 1995-1998, CWS trained and equipped 198 VLAs and supported the formation of 14 VLA associations in Battambang and Banteay Mean Chey provinces.

Following standard CBAH practices to promote public accountability, each village elected its own VLA, who ostensibly worked under a village development committee (VDCs) that was also organized by CWS at the time. Each VLA received six months of training, including supervised practice in the field. The VLAs were instructed on "pro-poor" pricing so that services would be affordable for most people in the villages. These prices were intended to cover the costs of pharmaceutical supplies and transport, as well as provide a modest monetary incentive for the VLAs. CWS also helped organize the VLAs into commune level associations. The associations were designed to serve as a collective pharmacy when such material was not yet available in the private markets that were then just re-emerging in the area. The associations also provided a venue for monthly meetings where VLAs could meet government and NGO technicians for technical support and ongoing training.

In 1998, the project was delegated to DAHP, though CWS continued to facilitate monthly and annual meetings, as well as provide occasional training. CWS eventually terminated its involvement in the program in 2000 in favor of other programming. Since then, the VLAs have been more or less on their own as support from DAHP has lapsed for many of the same reasons that prompted the shift to community-based VLAs in the first place. In this sense, my research represents a kind of *ex-poste* experiment to analyze how VLAs trained according to basic CBAH principles perform in a rapidly changing social and economic market context. This experiment has also provided an opportunity to analyze the degree to which the VLA associations played a supporting role in promoting the sustainability of veterinary services.

For my research, I include 172 (87 percent) of the 198 VLAs who were trained and equipped by CWS in 12 of the 14 communes in the two project areas. I conducted 34 in-depth interviews with association leaders and other VLAs. I discussed with them (1) the services they provided for clients and how they decided prices, (2) their involvement with the VLA association and other VLAs, and (3) their relationship with the local government officials. Based on these interviews, I scored each VLA according to his or her current level of activity. The A category (3 points) includes the very active VLAs who serve clients from other villages as well as their own village. A significant share of their household income comes from VLA work. The B category (2 points) includes active VLAs who provide services primarily in their own village. The income from their VLA work complements other sources of household income. The C category (1 point) includes less active VLAs who only provide occasional services for their own animals, or those of friends and relatives. The D category (0 points) includes VLAs who have stopped providing services altogether.

The following section reviews the survey data and discusses several factors that help explain the current level of activity found in the survey group. Section 3 then analyzes how these and other factors inhibit or promote the ability of VLAs to manage transaction costs associated with credit and discounts. Section 4 examines the brief history of the professional Associations and the role they have played in providing institutional support for the VLAs. I conclude in Section 5 with a summary of main points along with policy observations.

4.2. Survey Population

Of the total survey population of 172 VLAs, 33 are women and 139 are men (Table 4.1 below). The population is fairly evenly spread across the two provinces, with 90 in Banteay Mean Chey and 82 in Battambang. The average current activity level of all VLAs is 1.17. The average current activity score among women is 0.85, which is lower than the average of 1.25 for male VLAs. In this sense, the attrition rate among women VLAs is significant. Eighteen of the 33 (54.5 percent) have stopped providing services, while another 3 only provide occasional services to family members or friends. The attrition rate among women is particularly high in Banteay Mean Chey province where 10 of 15 (67 percent) are now inactive. Of all the female VLAs, 3

are very active and 7 others are working at an active level, making 30.3 percent who are still actively working as VLAs.

Table 4.1: VLA Activity Scores by Gender, Province (average current activity score)

| Activity Level | Battambang | | Banteay Mean Chey | | Total | | |
|----------------|------------|-----------|-------------------|-----------|------------|-----------|-----|
| | Male | Female | Male | Female | M | F | All |
| Very Active | 10 | 1 | 15 | 2 | 25 | 3 | 28 |
| Active | 19 | 5 | 13 | 2 | 32 | 7 | 39 |
| Less Active | 17 | 4 | 18 | 1 | 35 | 5 | 40 |
| Inactive | 18 | 8 | 29 | 10 | 47 | 18 | 65 |
| M and F | 64 (1.32) | 18 (0.94) | 75 (1.19) | 15 (0.73) | 139 (1.25) | 33 (0.85) | 172 |
| Province | 82 (1.24) | | 90 (1.11) | | 172 (1.17) | | |

Source: Author's Survey (June, August-October 2004)

The picture is different among the male VLAs, of whom 57 (41 percent) are currently working at a very active or active level. In Battambang, 29 (45.3 percent) of the male VLAs are now working at a very active or active level, while in Banteay Mean Chey 28 (37.3 percent) VLAS are working at similar levels. At the same time, 47 of all the male VLAs, (33.8 percent), have stopped providing services. As with women, the provincial attrition rate among male VLAs is higher in Banteay Mean Chey, where 29 (38.7 percent) have stopped providing services, than in Battambang where 18 (28.1 percent) have stopped working.

One clue about the variation in activity levels among female and male VLAs concerns their average age at the time of training. The average age of the very-active women at the time of their training is 33.5 years. For the active women the average age then decreases to 28.2, which is then followed by the less-active women whose average age is 24.2. The average age of those women with an A or A/B score is 40, while the average age of women with a D rating is 23.72. This pattern is consistent in both provinces, and suggests that age is an important indicator concerning the eventual activity level of female VLAs.

The reasons for this pattern are both social and economic in nature. Ten of the least-active women reduced or stopped their VLA work following marriage (8) and/or the birth of a child (2). As in many traditional rural societies, women in Cambodia tend to marry at a relatively young age and are expected to care for the household and raise children once married. Ironically, there

is at the same time considerable social space open to older women, especially those with independent sources of income. This helps explain why the most active female VLAs were also the oldest. Of the nine other women who stopped providing services, five women worked as laborers or started up their own business, including three young women who were single and left their village. Four other women lacked sufficient resources with which to purchase medicines.

In terms of gender, Woods (2000) identified social distance as a particular type of transaction cost to help analyze problems that female veterinary technicians face in rural Zimbabwe. Even though they were generally as effective as their male counterparts, the demand for their services was biased according to gender, as male farmers were less likely to request the services of female technicians. It is, however, perhaps too easy to attribute the high attrition rates among the female VLAs in Cambodia solely to “gender” roles that are governed by social expectations. In reality, such problems are at root closely associated with the social and economic dynamics of poverty that also affect men, though perhaps manifested differently.

For example, the pattern linking age and activity level is similar among male and female VLAs in Battambang. In Banteay Mean Chey, however, the most-active male VLAs are only slightly older than less-active male VLAs. One reason for this concerns the higher attrition rate among male VLAs due to economic factors that have prompted them to migrate to nearby Thailand or to the border area to sell labor (11), take up other employment in or near their village (7), or devote more attention to their own farming (2). It seems that men and women of all ages are subject to similar pressures to provide for their families, and as they get older, there is even more pressure for them to seek better incomes by abandoning agriculture and/or selling labor. In this sense, the economic factors that prompt many young women to stop working as VLAs are similar to those that affect many male VLAs at all ages.

The survey data concerning location also suggest that the mode of agricultural production plays a significant role in terms of the demand for VLA services in certain areas. For example, in Mongkol Borei district in Banteay Mean Chey, where three associations with high VLA attrition rates are located, rice production is undergoing a rapid transition characterized by the increasing use of hand tractors imported from nearby Thailand, irrigation, and the use of wage labor. People

finance the purchase of hand tractors by selling large animals once used for draft power. In some villages, the cattle population has virtually disappeared. This change has not been accompanied by a corresponding increase in the demand for services for small animals. In other areas, agriculture has remained at a subsistence level, in part because of several years of drought. As observed above, several VLAs, along with many of their neighbors, have switched out of farming in favor of selling labor elsewhere.²¹

At first glance then, economic factors seem especially relevant for poor VLAs from households characterized by low levels of rice production and few alternative income sources. On one hand, many have had to abandon veterinary work because they were not able to generate sufficient cash flow to support their families, sustain the slow, and sometimes low, rate of credit payments, *and* provide discounts as sometimes expected. Others have tried to continue providing services by borrowing money from friends and relatives to purchase medicines and other supplies from pharmacies that will only sell to them on a cash basis. The inability to maintain a ready supply of medicines and equipment on hand is particularly problematic for the poor VLAs as people often lack confidence in those who cannot maintain any inventory and will seek out other providers for treatment.

On the other hand, very-active and active VLAs have sufficient resources with which to finance ongoing expenditures for medicines and supplies despite the amount of outstanding credit they may be carrying. The higher volume of demand for services from the very-active VLAs, whose major share of household income comes from VLA work, provides sufficient cash flow with which to maintain an inventory of medicines with corresponding effects on people's perceptions of service quality. In the case of many active VLAs, the household has multiple sources of income with which to sustain a dynamic cash-flow cycle. In all these cases, the VLAs can afford to wait until clients have money with which to pay them.

I have so far argued that the amount of financial resources available to VLAs affects their capacity to provide services focuses attention on the economic components of contractual

²¹ VLAs who migrate elsewhere may or may not continue providing services. There is some anecdotal evidence to suggest that at least some do, thereby contributing to the cost-effectiveness of the training over time.

exchange. However, informal exchange at the local level in traditional societies, such as Cambodia, also entails a significant social dimension. In this sense, the ways that VLAs manage informal service contracts must also be considered in the context of the complex web of reciprocity and mutual exchange that characterize both social and economic transactions at the village level. I assert that some of the most successful VLAs are, in fact, village elites who can efficiently manage informal service contracts because they are better endowed with social or political capital, in addition to their financial resources. The less-active VLAs, on the other hand, are less endowed than the others with such resources and, as a result, are less able to manage effectively the various facets of the contracting process, including credit and discounts. In the following section, I show how the economic and social dimensions of exchange affect informal service contracting between VLAs and their clients, and in turn conditions which VLAs are able to remain active for longer periods of times.

4.3. Informal Service Contracts

The negotiation, implementation, and enforcement of informal service contracts entail economic and social transaction costs that can reduce the supply of services and distort their distribution. At the local level, informal institutions, such as norms and culturally defined codes of expected behavior, can be an efficient means of reducing transaction costs when contractual exchange is highly personalized and subjective (North, 1991). In small communities, patterns of trust can evolve over time into an important source of social capital upon which people build institutional arrangements governing exchange (Ostrom, 1990; Landa, 1994).

In rural Cambodia, however, economic and social relationships are often distorted by distrust after years of genocide and civil strife in a context of profound poverty. In such situations where government has not been able to provide security and protection for its citizens, society has been divided into two classes: those who seek protection and those who provide protection (Boua, 2002b).²² For my analysis of informal service contracts in such circumstances, therefore, I cannot

²² This follows Scott's (1972) classic definition of patron-client relationships who describes politics in Southeast Asia, including Cambodia, even before the years of civil strife and genocide. Ledgerwood and Vijghen (2002) argue that patron-client remains a relevant analytic concept in post-conflict Cambodia, although the static nature of Scott's original formulation must be relaxed to allow for a more dynamic evolution in how such networks work. For example, they suggest that kinship networks must be included within the framework of patron-client networks.

assume informal institutions always work efficiently, and as a result, I must consider socio-cultural and political factors that govern transactions at the local level.

The inefficiencies associated with distrust are exacerbated by imbalances in information about product or service quality between buyers and sellers. Akerloff (1973) has described how such imbalances can reduce the price of used cars, thus creating a market for lemons. The emergence of similar lemon markets in the area of veterinary services has also been observed in rural Africa (Ly, 2000). As noted above, farmers either pay the lowest available price regardless of quality, or forego service altogether, in the absence of sufficient guarantees of quality and accountability for service, or because they do not believe such services help. This occurs in the case of collective goods such as vaccination services in which the results are not readily visible. For example, farmers in Cambodia have been known to hide their cattle during vaccination campaigns even when the service is free of charge. Such problems also affect curative care when the observation of treatment outcomes requires time.

The transaction costs associated with providing veterinary services on credit and discount provides a good starting point for discussing how the social and economic dimensions of poverty and mistrust can affect the way both male and female VLAs provide services. Credit and discount requests are certainly not new to veterinary services. In Senegal, for example, Ly (2000) observed that taking services on credit represents an informal solution to insurance problems when clients require more time to observe treatment outcomes before paying. Over time, the client's refusal to pay for ineffective services provides incentives for VLAs to deliver better-quality services to the client. Under certain circumstances, then, services on credit can play a constructive role in correcting distortions associated with information imbalances.

In northwest Cambodia, credit also plays a vital role in helping rural households manage seasonal and life cash-flow cycles, and it is normal for farmers to take a variety of goods on credit and then pay back when they can. For example, farmers may take fertilizer on credit and then pay it back, with interest, when they sell some of the harvest. In terms of discounts,

Marston (1997) has also observed that such relationships are often negotiated according to relative rank and social standing.

traditional notions of fairness may sometimes entail expectations that the poorest members of society should receive at least some discount for services. Vijghen (Ledgerwood and Vighen, 2002) also describes a kind of “Khmer fairness ideology” in which it is fair to only favor one’s own clientele, including family and friends. In any event, services on credit and discount, for reasons of insurance, a lack of cash, or patronage, also caused some VLAs to stop providing services or curtail their services to a small network of family and friends.

4.3.1. Negotiation

The informal contracts worked out between the VLA and their clients tend to be ambiguous as they routinely avoid specific references to costs and payment, or outcomes and accountability.²³ For example, most VLAs do not explain their diagnosis to clients and only inform them of the price upon completing treatment. Important matters, therefore, are often negotiated after the fact. In many respects, both parties benefit from a lack of clarity that provides each with a considerable degree of flexibility in their interpretation of the contract. It is not surprising, then, that many farmers ask to pay later, or ask for a discount, especially when they are unsure of the treatment outcome or when the quoted price is higher than expected. As with other informal contracts, both parties rely on shared knowledge of local norms and customs as well as personal reputations and mutual perceptions of status and rank to make reasonable predictions about the expected behavior of the other.

Some of the most successful VLAs, however, discuss the diagnosis and proposed course of treatment including duration, cost, and terms of payment, and then let the farmer decide whether or not to proceed with treatment. This approach reduces the ambiguity of the contract in favor of both parties. The clients benefit because they participate in the decision and know the expected costs from the outset. The providers benefit because the price and means of payment are clarified beforehand. Such clarifications help the VLA and farmer to manage potential insurance problems when it appears that treatment may not cure a particularly sick animal.

²³ The concept of the ambiguous contract has been used by Hong (1996) to describe land contracting in Hong Kong. Elsewhere, Polenske (2000) argues that property rights or other institutions do not have to be well-defined for competition to occur.

In terms of diagnosis, the VLAs enjoyed an early advantage over farmers after their training when they had more knowledge about medicines and treatment. They also enjoyed an early monopoly over access to medicines as their respective associations initially obtained medicines directly from CWS, and then from the private pharmacies that began springing up in provincial centers around 1998. As long as these information advantages were maintained by the VLAs, farmers had to rely on various clues regarding service quality by observing VLA behavior and reputation, the amount of medicines they kept in stock, and the appearance of equipment, such as syringes and the means of storage.

As for pricing, the VLAs were initially advised by CWS staff to charge only for the cost of medicine along with a modest mark up for service and operational costs, such as fuel for transportation. Following standard CBAH principles, the pro-poor intentions of CWS, as reflected in the effort to provide services at the lowest cost possible, required that this new cadre of VLAs would be motivated more by a sense of community service than by cash incentives. In terms of the above discussion concerning the Lao VLAs, this kind of pro-poor approach required citizen vaccinators, rather than the barefoot entrepreneurs, in order to work.

In support of pro-poor pricing, the VLA associations were introduced in 1998 to provide a collective store for pharmaceutical supplies and to pool resources so that costs for medicine could be reduced and the savings passed on the clients. As a result, VLA profit margins were at the outset generally very low despite their early advantages over information and supplies. Of the 34 VLAs interviewed, 3 have continued charging the same amount ever since their training, even while the costs of living and medicines have steadily increased. The remaining 31 VLAs have made some allowances for increases in the cost of medicines and fuel, although many have maintained the same service charge. Given the rate of inflation over the past five years, the relative income from each unit of service has been declining.

Even if they had been so inclined, many VLAs have been unable to charge more for services as farmers quickly learned the going rates for medicine and service. In this sense, price competition can be extremely fierce at the local level, and cash-strapped clients are increasingly sensitive to

even the slightest price fluctuation. Should a VLA in one village try to raise his or her prices, farmers might easily engage another VLA from a nearby village, or other self-taught private providers who are willing to provide services at even lower rates using cheaper medicines. Another source of competition comes from VLAs who have been trained and equipped by other organizations, sometimes in the same village. As more private veterinary pharmacies open at the district and commune level, some farmers have begun obtaining medicines and doing treatment on their own after observing the VLA several times.

These multiple sources of competition, combined with farmer awareness about prices, have acted as an effective check on price increases. Without a corresponding improvement in knowledge about quality, veterinary lemon markets have emerged in some areas. For example, farmers may continue to base treatment decisions almost exclusively on price in areas where animal production contributes only a small share of household income. The ensuing low profit margins and the twin burden of credit and discounts have contributed to high VLA attrition rates in such areas. As the number of VLAs declines in a particular area, the more mobile VLAs may step in to fill the void. These very active VLAs at first benefited from a higher volume of activity rather than from increasing their service fees. However, in areas where household income from livestock is increasing, farmers begin to focus more on service quality than on price. When this threshold is reached, the more entrepreneurial VLAs are then able to charge more. Their discussion of diagnosis, treatment, and costs during the negotiation phase has helped facilitate the shift in focus from price to quality service.

4.3.2. Implementation

Extension services in rural areas of developing countries are characterized by conflicting objectives, inadequate resources, and weak or non-existent supervision and support. As a result, service providers must often devise their own rules for allocating scarce resources. In the case of the northwest VLAs, the economic and social transactions costs associated with credit and price discounts play an important role in determining who is served and where.

Farmers are more likely to request credit from VLAs they know from the same village. Many VLAs feel obliged to accept such credit requests out of sympathy for fellow villages or from a

sense of duty as elected service providers. Thus, these VLAs perceive their role in terms more closely resembling the citizen vaccinator than as an entrepreneurial professional. According to the day-to-day calculations associated with getting along with one's neighbors, they also often agree to credit requests for fear of being criticized or otherwise talked about. This aspect of social exchange recalls one of Scott's (1985) weapons of the weak in which people gossiped off stage about village elites. In village society where reciprocity is important, VLAs also know they may need someone else's help sometime. Providing services on credit is one way to accumulate obligations for future favors.

In terms of discounts, farmers may also feel that their elected VLAs should provide services for free, or, at least, at cost. Such perceptions may be fueled by the belief that earlier donor contributions of medicine and equipment were made free of charge to the Association and therefore should be free to people in the village. Moreover, 18 of the 34 VLAs interviewed provide services to at least some family and friends either at cost with no service charge, or for free. The demands and expectations of discounted services almost always exist within families, but in Cambodia they are especially acute in a situation where public services are practically non-existent and trust of others outside the family and close friends is fragile. Just as one shows a bond or solidity with their community, one is expected to demonstrate even stronger bonds and solidarity with family and close circle of friends.

Twelve of the interviewed VLAs also charge reduced prices for families that are especially poor out of sympathy or a sense of obligation. Four VLAs also mentioned providing services to poor families for free, especially to those who were considered to be hard workers with bad luck. In fact, VLAs – or anybody else for that matter – gain some degree of merit and see their reputations enhanced by generous acts toward the poor. For those VLAs with fewer resources, however, such practices may only add to their financial burdens by further reducing their returns from investments in medicine and supplies.

For the very active or active VLAs, such practices are economically feasible as well as socially laudable. We can refer to many of these VLAs as benevolent entrepreneurs, as opposed to citizen vaccinators. In this sense, we can also look at the role that such services play in the context of a

social system built on a foundation of patron-client relationships in which one's status and place in society is largely determined by social rank and/or political power. The benevolent entrepreneurs may, in fact, provide VLA services to the poor in his or her role as local patron, while others may provide discounted services to a benefactor to pay off a favor or create an obligation of future help. At this level of exchange, the allocation of veterinary services begins to resemble a gift economy in which credit and discounts form key components of the economic and social bonds that knit the community together.

This does not necessarily mean, however, that all VLAs are unwitting tools of social obligation and public opinion. Indeed, the entrepreneurial VLAs have devised ways to avoid credit requests or get around discounts. For example, VLAs on occasion may avoid serving certain farmers who have acquired a reputation for delinquent payment by saying they are too busy or sick. In other cases, the VLA will make a diagnosis and offer to do the treatment, while suggesting that the farmers buy the medicine themselves. This strategy is also sometimes employed by VLAs with cash-flow problems that affect their capacity to obtain medicines.

The social dynamics of exchange within the village begin to change when VLAs serve clients in other villages, as farmers tend to request fewer services on credit or expect discounts from VLAs who come from another village. The VLAs are also reluctant to accept credit or discount arrangements with clients in other villages, as service expenses and the costs associated with collecting credit payments are higher. In these situations, the VLAs and the farmer understand the transaction more in terms of an objective commercial exchange devoid of the intense social subjectivity that is often prevalent when the two parties are from the same village. On one hand, the more mobile VLAs are not elected by people in other villages, and are not encumbered by the same expectations that exist in their own village. On the other hand, their clients also have less social leverage over the VLA. In this sense, the nature of the transaction as an exchange of service for cash is more clearly visible to both parties.

VLAs also provide services to relatives in other villages. As in their own village, the dynamics of personal subjective exchange in such situations generally dominate over the dynamics of objective exchange. There is, however, one important benefit in that the entrepreneurial VLAs

use such opportunities to identify new clients. In fact, it has often been through these service arrangements with family that the entrepreneurs were able to first establish a good reputation in another village and eventually extend their network of clients. In this sense, the services provided to relatives in other villages at cost, or for free, often represent a good investment in terms of expanding one's network of clients.

In addition to location, the type of service also influences the dynamics of exchange. For example, several male VLAs are proficient at castration of cattle or pigs, while female VLAs with previous mid-wifery training specialize in providing birthing assistance for pigs. Such activities often take VLAs outside their village where people are willing to pay for specialized service without asking for credit. Such transactions, however, also take place in the specialist's own village. Unlike other services, many clients are more willing to pay promptly for specialized services even when the VLA is from the same village. One reason for this is that specialized activities usually involve services with readily visible results. This conforms to principal/agent theories that predict insurance problems are less likely when services outcomes are easily observed, and therefore less ambiguous.

4.3.3. Enforcement

In a rural society, such as Cambodia, where the state or local government plays virtually no role in providing third-party enforcement of contracts, the VLAs and their clients must enforce their own contracts. As with other components of ambiguous informal contracts, the enforcement of service contracts in terms of collecting credit payments and accountability for service outcomes are often a function of one's social or political standing within the community. As a result, enforcement can be a particularly costly aspect of the transaction in terms of both financial and social exchange.

In this sense, I add the social costs associated with collecting debt from clients to Woods' concept of social transaction costs. In rural Cambodia, where it is not polite to remind people of their debts, most VLAs prefer to wait for people to pay them rather than approach them directly for payment. Asking for repayment might suggest that the VLA is "looking down" on the client, especially if the client is poor. In fact, only 4 of the 34 interviewed VLAs reported that they had

asked people for payment. This aspect of the enforcement problem is further complicated by the fact that 12 of the interviewed VLAs continue providing services to people who owe them money. The main reasons were sympathy for the poor who cannot pay them and a desire to avoid conflict. In some situations, an outright refusal to provide further services in lieu of payment for previous services might suggest a lack of respect and provoke anger or invite some form of retribution in the future.

The difficulties concerning collection problems are best illustrated by cases in which local elites do not pay for treatment. In such situations, the VLA's reluctance to request payment closely corresponds to their relative differences in social standing. For example, it may be especially difficult for young female VLAs to collect payment from male clients of higher standing, while VLAs from poor households may feel intimidated by wealthier elites in the political-economic domain of the village and will wait for payment. At the same time, though, VLAs can accumulate gift capital in the form of favors that can be called upon in the future by providing services on credit or discount. Although this may not be the outward motivation for providing services to wealthy or powerful people in the first place, it may be an important factor determining how a VLA manages a particular collection problem in the future.

Another aspect of enforcement concerns the VLA's accountability for treatment outcomes. As we have seen, services on credit can help manage insurance problems. The visibility of service outcomes also helps clarify accountability, which, in turn, is an important component of trust. For example, there is considerable anecdotal evidence that farmers believe VLAs are more accessible and directly accountable for their services than government technicians, who are often perceived as distant and unwilling to accept responsibility for their services. This is especially important in rural Cambodia where farmers are notoriously reluctant to vaccinate their large animals, and often refuse such services even when they are provided at low subsidized costs by government technicians (See Chapter 3). They are, however, more willing to vaccinate when the work is overseen by NGOs and performed by VLAs. This is probably more a factor of trust and perceptions of accountability rather than actual differences in quality, as the government is often the source of the vaccines regardless of who administers them.

When an animal dies following treatment, the VLA's technical reputation and personal character are put to the test of both the client's expectations and public opinion. All VLAs observed that in such situations they would not try to collect payment, or that they would return prior payment. Though this would not necessarily signal responsibility for the outcome, it would show sympathy for the client and perhaps help avoid harmful gossip. Decisions about compensation are also influenced by the court of public opinion according to local perceptions of fairness, which may depend on one's financial resources and social standing relative to the aggrieved client. VLAs with few financial resources may not be able to pay much, if any, compensation, though they may feel obligated to perform favors in the future. They might also expect a general decline in business. On the other hand, wealthier VLAs, or those with social standing, may be expected to pay more compensation, especially to those with fewer resources. Any refusal to do so may call into question their sincerity or good spirit, and would invite people to impugn their reputations. In many respects, sabotaging a VLA's character and reputation because of poor outcomes would be much worse than withdrawing business from them.

4.4. Entrepreneurial VLAs

So far, I have discussed key attributes of the most successful VLAs who have exhibited a considerable degree of entrepreneurial talent and skill in continuing to provide services on their own since program support from CWS was discontinued in 1998. These entrepreneurial VLAs can be divided into two groups, the benevolent/charismatic and the career/professional entrepreneurs. In this section, I discuss in more detail these two types of VLAs and compare how each type manages the economic and social components of informal service contracting. This discussion helps inform my subsequent analysis of the VLA associations, as it turns out each VLA types has an important role to play in terms of promoting the institutional sustainability of these organizational innovations.

As the most active and successful VLAs often, though not always, occupy positions of influence and authority in village society, such comparisons can be facilitated by understanding their economic, political and social standing in local affairs. Ledgerwood and Vijghen (2002) have identified the following five domains of influence involving various local patrons and power brokers in Cambodia. (1) The administrative domain includes village leaders and security

officials who exercise legal authority. (2) The religious domain includes Buddhist lay officiates and monks who promote religious and traditional values. (3) The knowledge domain includes skilled professionals, such as health care workers (e.g., traditional birth attendants) and teachers. (4) The economic-political domain consists of village elites who distribute loans or provide work and thereby exercise political power. (5) The development assistance domain, as in many development countries, has been recently introduced by Western development agencies and consists of local people who have been put in charge of development assistance. In reality, the boundaries between these various domains are rather porous, and – as we shall see among the entrepreneurial VLAs -- there is considerable overlap among domains as people move from one to another, and occupy several domains at the same time.

4.4.1. Benevolent/Charismatic VLAs

Three VLAs who were elected to the Commune Council in February 2002 are good examples of benevolent/charismatic service providers. One VLA served as a lay leader of a local pagoda committee prior to his election as a VLA. His prestige in the area was such that people implicitly trusted him to provide good quality services, which helped ensure that demand for his services was initially high. Demand for his services has also increased as other VLAs were discontinuing services in the same area. He was also well off financially and could afford to provide services on discount as well as wait patiently for credit payments, which further enhanced his prestige and reputation in the area.

A second VLA who was elected to the Commune Council also serves as the chief of his commune's VLA association. This man's strong leadership skills and political position help reassure clients of the quality of his services. He does not possess much material wealth and has occasionally relied on the VLA association to provide credit with which to obtain medicines and supplies. A third council member is an older woman who had previous mid-wifery training and as a VLA developed technical proficiency in assisting animal births. As her family enjoyed steady income from rice production and animal raising, she was able routinely to provide both mid-wifery and veterinary services on credit or discount for poorer members of nearby communities, and developed a reputation for providing quality services.

The benevolent/charismatic VLAs demonstrate considerable mobility across the various domains of village leadership and decision-making described by Ledgerwood and Vijgen (2002). For example, in the case of the pagoda committee member, the VLA initially occupied positions in the religious and economic-political domains before occupying positions within the knowledge and development assistance domains. The second VLA moved somewhat in the other direction from positions within the knowledge and development assistance domains to an additional position in the administrative domain. The third VLA, the older woman, initially occupied positions within the knowledge and the economic-political domains before assuming additional roles within the development assistance and administrative domains.

In these and other cases, the benevolent/charismatic VLAs have been able to manage the financial aspects of providing services by relying on their own resources and VLA income, as well as support from their association. More importantly, though, these VLAs also possess considerable social capital in the form of good reputations and character, and in the three cases above, they were able to parlay their social capital, derived from either the positions within the religious or knowledge domains, into local political positions within the administrative domain. Their good reputations also enabled them to manage the economic components of service exchange, as they were sometimes able to obtain supplies on credit from pharmacies when other VLAs were not.

As with other entrepreneurial VLAs, a significant proportion of their household income comes from their VLA work. Unlike other entrepreneurial VLAs, however, they tend to think of their work more in terms of a public service, and voice pride in the fact that they provide services to the poor on discount and credit, while foregoing payment altogether in certain cases. In a Buddhist society, such good deeds are eventually rewarded one way or another, either in this life or the next.

4.4.2 Career/Professional VLAs

One good example of a professional VLA is an older female VLA who also manages a pharmacy that sells both human and animal health-care products, while her husband raises animals commercially. This family does not own agricultural land and is completely dependent on their

income from veterinary service, animal raising, and the pharmacy. This woman speaks of the need to maintain people's trust in the quality of her services and described an incident in which an animal she had treated died. Though she did not believe the treatment and death were related, she still provided compensation because she was concerned about her professional and personal reputation in the area. A second career VLA who also raised pigs for commercial sale spoke of the importance of maintaining good contact with other VLAs and government technicians with whom to consult about various diseases. He bemoaned the demise of the association in his area and wished there were other avenues available for further training and support.

More so than the benevolent/charismatic entrepreneurs, these entrepreneurs think of themselves as VLAs in a professional capacity, and often referred to their work in terms of a career. These VLAs appreciate the important role that good quality services play in maintaining and expanding their base of clients. Some travel elsewhere to promote their services, while others may expand into other business activities associated with livestock, including animal raising and pharmacies. The career VLAs routinely speak of the importance of keeping a good stock of medicines on hand while maintaining good relationships with DAHP technicians and agency staff with whom they can consult. They speak of the need for more training and sometimes seek out help or advice on their own when they encounter difficult cases. In this sense, they see themselves as part of a larger network of veterinary service providers. Some pharmacies are also willing to provide them with medicines and supplies on credit because of their business-like approach toward veterinary work.

Generally speaking, the career professionals have used their new positions in the knowledge and development assistance domains to build up their VLA businesses. Many of these career professionals already had significant resources either from farming, animal raising, or other sources, but did not necessarily occupy positions in the economic-political elite. Some occupied peripheral positions within the knowledge domain based on their higher levels of education. Like many other VLAs, their contacts with government technicians provide some exposure to the administrative domain, but they have not moved directly into such positions.

One important difference between these two types of entrepreneurial VLAs concerns the nature of the relationship with their clients. The interactions between benevolent/charismatic VLAs and their clients tend to be personal and subjective, and, in some cases, it resembles a type of patron-client relationship. This is especially so in the case of services provided to the poor on credit or discount. Even though the medium of exchange is cash, one senses that favors and obligations are also accumulated over time in exchange for services. The career/professional VLAs tend to rely more on impersonal and objective relationships with their clients. These VLAs tend to avoid unreliable clients who do not pay regularly in order to maintain steady cash flow from their VLA business. Even though they also provide services on credit and discount to the poor, they do so more because it is good business rather than because it is good politics. Although both kinds of entrepreneurs work for cash, the benevolent/charismatic VLA would measure their performance in terms of merit earned and votes garnered, while the career VLA would measure their performance in terms of clients served and revenue.

4.5. VLA Associations

Professional service providers, whether they are plumbers, doctors, or veterinarians, may be motivated by self-interest to join together to promote their profession collectively and ensure better quality services. One approach involves the creation of self-regulating professional associations using standardized certification and membership criteria for members (Arrow, 1985; Pratt and Zeckhauser, 1985). In Africa, similar efforts have involved professionally trained veterinarians who are licensed by the State (Ly, 2000b). In order to be effective, such institutions require a system of enforceable rules to guide and regulate the activities of members, as well as independent sources of financing. Above all, such institutions must provide services that are relevant to the circumstances of the members and support their needs.

These kinds of institutional arrangements generally assume that individual members have a shared sense of professional identity and possess some degree of organizational capital in terms of experience and skill. For example, members may have experience in other organizations and/or, experience cooperating with other groups outside their family networks, while leaders may have some skill in managing meetings and mediating compromises among members as required. In Cambodia, however, the level of organizational capital at the local level is generally low. For many, their organizational experience comes from participation in informal

arrangements, such as labor exchange groups, or fulfilling a role within the government, party, military, or business. For many VLAs then, membership in the VLA association represented their first independent formal organizational experience.

As noted above, the VLA associations in Battambang and Banteay Mean Chey were originally designed to serve as a cooperative venture among the VLAs to support their purchase of veterinary supplies and facilitate relationships with government authorities. The fact that nearly all the original VLAs contributed membership fees for start up capital for their respective associations suggests they were initially enthusiastic about this initiative and committed to their new occupations as veterinary service providers. It also suggests that at the outset the VLAs shared some degree of common identity among themselves as veterinary service providers.

The earliest associations pre-dated the advent of private pharmacies for veterinary supplies in the area, and as a result CWS initially purchased medicines elsewhere and sold them to the associations at cost. By 1998, the associations could buy medicines and supplies directly from pharmacies that were then emerging in provincial centers. The financial capital originally provided by membership contributions was eventually complemented with CWS contributions of medicines and supplies when they discontinued support.

The associations also provided a structure that initially helped facilitate relationships between local DAHP technicians, NGO staff, and the VLAs. As noted above, the most successful career professionals routinely indicated that the regular monthly meetings helped maintain frequent contacts with other VLAs in their areas as well as with the NGO and DAHP officials. These contacts helped them solve technical problems in the field that were beyond the scope of their initial training and also provided a venue for periodic consultation. These meetings also played an important role in sustaining a sense of shared professional identity and common purpose among their groups. In many important respects, these groupings represented clusters of energy that constituted the nucleus of a nascent professional community in the rural Northwest.

These emerging communities received an important boost in the form of government support and recognition. Even though relationships between the government and civil society organizations

have often been tenuous in Cambodia, the DAHP technicians were initially prepared to cooperate with these relatively autonomous arrangements for a variety of reasons. First, as an NGO project, the associations had an institutional home that was officially recognized by the government. Second, the project was supported with World Bank funding that was administered by the government. This provided some degree of ownership over the project on the part of local officials. Third, the project included funds for contracting government technicians to provide training services. In this sense, there was a degree of built-in self-interest on the part of DAHP staff. Finally, conflicts between government technicians and VLAs over service domains did not emerge. In fact, it appears many government technicians viewed this as an opportunity to provide more people with veterinary services.

Despite such early advantages of shared identify and common purpose on the part of the VLAs, as well as NGO support and government recognition, the associations ultimately did not have sufficient time and resources to develop the organizational capacity to sustain themselves. First, most of the associations eventually could not compete with the growing number of veterinary pharmacies that began appearing at the district and commune level after their initial appearances in the provincial centers. Second, many associations also began to stumble under the accumulated weight of credit and discount that contributed to high attrition rates in certain areas. Third, they were also unable to recruit and train new VLAs on their own. Fourth, most associations were unable to enforce their own rules regulating service transactions. Finally, in three communes, such problems were exacerbated by mis-management of association funds that eroded trust among members. As a result, only 2 of the 14 original associations have remained active. They have done so by adjusting their activities to suit the needs and interests of their members by providing informal credit for them.

The brief history of the associations provides several clues concerning factors that either promote or inhibit the potential sustainability of these organizational innovations. One good indicator is the level of activity of individual members. For example, the two remaining active associations that continue to meet on a regular basis have two of the highest average member activity scores, while two of the four disbanded associations have the two lowest average activity scores. The eight other groups are dormant. They no longer meet on a regular basis, yet members sometimes

work together on government-supported vaccination campaigns. Their average activity scores generally lie between the active and disbanded groups.

Table 4.2: Association Summary and VLA Average Activity Score

| Association | Membership | | Average Score | Rating | Start Date |
|-------------------------------------|------------|-----------|---------------|---------|------------|
| | M | F | | | |
| BATTAMBANG | | | | | |
| Prek Khporb & Prek Luong | 12 | 3 | 1.60 | Dormant | Feb. 1998 |
| Wattamim | 9 | 2 | 1.09 | Dormant | Marc 1997 |
| Chheu Teal | 11 | 3 | 0.89 | Dormant | Feb. 1996 |
| Snoeung | 10 | 4 | 1.07 | Dormant | Feb. 1998 |
| Phnom Sampauv | 8 | 2 | 1.55 | Active | March 1996 |
| Roka | 7 | 2 | 1.22 | Dormant | March 1995 |
| Tapon | 7 | 2 | 1.27 | Dormant | Feb. 1995 |
| BTM Total | 64 | 18 | 1.237 | | |
| BANTEAY MEAN CHEY | | | | | |
| Cham Noam | 11 | 4 | 0.73 | Disband | Feb. 1998 |
| Rohat Tuk | 10 | 3 | 1.08 | Disband | July 1995 |
| Banteay Neang | 13 | 1 | 0.89 | Dormant | Jan. 1996 |
| Chhnur Mean Chey | 10 | 1 | 0.68 | Disband | Feb. 1997 |
| Preah Net Preah | 10 | 3 | 1.00 | Disband | Feb. 1997 |
| Bos Sbov | 12 | 1 | 1.92 | Active | Jan. 1998 |
| Taben & Slor Kram | 9 | 2 | 1.45 | Dormant | Jan. 1998 |
| BMC Total | 75 | 15 | 1.10 | | |
| Association Totals | 139 | 33 | 1.166 | | |

Source: Author's Survey (June, August-October 2004)

4.5.1. Active Associations

The two active associations have an average current activity score of 1.80 among members. These two groups have been able to adjust their support for their remaining members by transferring their capital funds into a small-scale savings and loan service. In Bos Sbov, where all the VLA members remain active to a certain degree, several VLAs have used their loans to purchase veterinary medicines and other supplies, which have enabled them to manage the transaction costs associated with credit and discounts more effectively than before such credit was available. This group has also used capital funds to start a pig-raising project from which each member has benefited. In Phnom Sampauv, the group provides loans to both active and non-active members for a variety of purposes, including animal raising. In this sense, both

groups have also been able to initiate investment and production cycles involving animal raising and veterinary services.

These credit arrangements have enabled the associations to continue providing other useful benefits as well, such as the monthly meetings that continue to provide a regular venue for discussing issues and problems associated with their veterinary practice. These meetings also help maintain a sense of professional identity, at least among the more active VLAs who consider this their primary occupation. The meetings also help sustain a network of VLAs that the government can call upon for assistance during periodic cattle-vaccination campaigns.

The ability of these two groups to devise innovative uses for their financial capital highlights the role that leadership and trust plays in promoting organizational sustainability in the context of a rural setting such as Northwest Cambodia. In Bos Sbov, the association has had one chief since its founding who also serves as the Commune Council chief. As one of the benevolent/charismatic entrepreneurs referred to above, this man represents a traditional pattern in Cambodian society in which leaders often tend to serve as long as members perceive that they are treated equally and with respect. The ability of this particular leader to adhere to the association's decision-making procedures helped maintain a high degree of trust in him as members devised new uses for their capital resources. Also, the fact that this man had a position within the administrative domain of local decision makers afforded him a status and rank that enabled him to interact directly with provincial and district DAHP officials.

In Phnom Sampuav, however, the group has had three different chiefs, all of whom have been career professionals. The responsibility for managing the capital resources in the savings and loan has shifted from one leader to another without difficulty. As much of the household income for these three individuals came from their VLA work, these VLAs recognized that their professional and personal reputations would be damaged by any hint of mismanagement. They also had a vested interest in ensuring that the association continued to function effectively, and they were motivated to work on behalf of the group.

In both cases, there is an apparent degree of trust among the members that allows them to manage capital resources effectively, albeit differently. In Bos Sbov, members place a high degree of trust in a benevolent/charismatic leader with a reputation for integrity. This suggests then that the organizational sustainability of the VLA associations may be significantly enhanced when benevolent/charismatic VLAs, who may also occupy positions in the administrative domain, lead a group of career VLAs who share a common sense of professional identity and commitment. In Phnom Sampauv, members have placed a high degree of trust in a series of career professionals who are motivated by self-interest to manage the association's affairs effectively. The common links between the two cases of active associations are good leadership and management and a shared sense of professional identity among a core group of members.

4.5.2. Dormant Associations

The eight dormant associations have an average membership activity score of 1.18. The dormant groups have all returned the original contributions to their members, plus interest in some cases. This suggests that there was effective financial management within the associations. As with the two active groups discussed above, these groups eventually stopped buying and selling medicine in part because local markets were able to provide both VLAs and villagers with medicines more efficiently. Some of these groups also became increasingly inactive as demand for services in their area declined and/or the attrition rate within the association grew.

Although these associations no longer meet on a regular basis, they have not completely disbanded as local authorities still call upon their leaders to organize remaining active members for help with government vaccination campaigns. In this sense, the members of these dormant groups continue to acknowledge one individual as the group leader, even though they may not have met formally for many months, or even years. In fact, in at least two of the dormant associations, members chose a new chief even after they had decided to return the capital funds to the members. One reason for this is that these leaders, all of whom are career professionals, still maintain contacts with district and/or provincial officials for technical consultation as well as coordinating occasional vaccination work. Some members also continue to consult with these leaders as they are often considered to be the most competent practitioners.

In many respects, the dormant federations resemble traditional village-level patterns of organization in which members informally come together to perform a specific task and then disperse until called upon to do so again at a later time. In the meantime, individuals still consider themselves members of the group. Even though there are no longer any regularly scheduled meetings, individuals may meet with one another informally or by accident. Such encounters seem to be sufficient for maintaining some semblance of shared group and professional identity among those who have continued working as VLAs.

4.5.3. Disbanded Associations

All four disbanded associations are located in Banteay Mean Chey and have an average membership activity score of 0.87. Two of them are located in Mongkol Borei district where farmers have largely abandoned the use of draft animals in favor of hand tractors imported from Thailand. These two groups, Rohat Tuk and Cham Noam, also have high attrition rates as reflected in their low average membership activity scores, 1.08 and 0.73 respectively. In a sense, these associations have simply melted away as VLAs faced a combination of low demand and many credit and discount requests from remaining clients. In Chhnur Mean Chey, with the lowest average member activity score of 0.68, the group practically disappeared into thin air as adverse agricultural conditions and low incomes caused 10 of 15 VLAs members to stop providing services, many of whom have migrated to the Thai border in search of wage labor.

Three of the disbanded groups also experienced mismanagement of capital resources on the part of federation chiefs. In one case, the chief used the money for personal purposes and only returned a portion of the money much later. In another, the chief took the entire capital fund out as a personal loan two years ago and has not yet repaid any of it. Such experiences have eroded the level of trust within the group, and, in each case, members have lost their initial capital contributions. While some of the better-endowed VLAs were able to absorb such losses, it has had an adverse impact on those who are less well off. For some, the loss of their membership fee may have been the final blow that compelled them to stop providing services altogether. Since then, members no longer meet and only participate in government vaccination campaigns as individuals.

As with contracts between service providers and farmers, there is no recourse to third-party enforcement in such cases. The only practical approach to solving such problems is for members to wait and hope that the money will be paid back. In three of these cases, the association members have even selected a new leader to follow up on the lost funds. Though this resembles some of the dormant groups, such action is focused solely on recovering membership contributions. For example, these leaders do not maintain regular contacts with government technicians, who may directly contact the remaining VLAs for work on government vaccination campaigns. Nor do the VLAs seem to seek out technical advice from the leader as in the dormant groups.

4.5.4. Regulatory Functions

In addition to serving as a cooperative store and a venue for professional contacts, the associations also attempted to support members by adopting various rules designed to regulate the market for veterinary services within their respective communes. Many of these practices broke down over time, however, as the associations lacked the capacity to enforce compliance by individual members. For example, one rule stipulated that VLAs should not show farmers how to treat or vaccinate animals. This rule proved ineffective as VLAs eventually showed friends and family how to treat their animals, or simply told farmers what to do, including what medicines to buy, in order to avoid credit or discount requests. A variation on this theme was a rule not to sell association medicines to farmers. This rule had some effect as long as the associations controlled the supply of medicines. When veterinary pharmacies started opening at the district and commune markets, however, farmers could easily buy their own medicines.

The association in Snoueng also adopted a rule prohibiting members from serving clients in the villages of other members. As a result, the VLAs were confined largely to practicing in their own village, suggesting that many were subject to a high number of credit requests as well as discount expectations as discussed above. As long as this rule was in force, it precluded any opportunities for very active VLAs to emerge. The low level of animal production in this area also affected the demand for services and exacerbated problems associated with credit and discounts. VLAs began to drop out over time, as credit piled up and demand for services remained weak. The association chief then began traveling more frequently to other villages to provide services where VLAs had

quit, and eventually developed into a career professional who is the association's only "very active" VLA.

Most importantly, all associations originally started out with rules that required members to purchase medicines from the co-operative store as well as pay for those medicines in cash upon purchase. This rule was subsequently relaxed as more and more VLAs faced cash-flow problems as a result of providing services on credit and discount. As the backlog of credit piled up, the associations could no longer purchase medicines from the pharmacies while their capital was tied up in credit with members. Meanwhile, many VLAs, like some farmers, began buying medicines directly from the pharmacies in order to avoid association price mark-ups. In this sense, market realities along with the inability to enforce compliance with their own rules contributed directly to the demise of several associations.

Despite such efforts at rule making, the associations made no apparent attempts to regulate service charges directly. As noted above, many VLAs have not even tried to increase service charges because of competition and the focus of farmers on price. Part of this pricing phenomenon may also be the residual effects of having been founded by an NGO with "pro-poor" objectives that encouraged VLAs to keep prices low. Another reason may be that many of the VLAs were not entrepreneurially inclined. After all, many of the more active VLAs have devised ways to increase their own service charges. But this was only feasible when such increases were accompanied by perceptions of good quality services in which clients were confident. If the associations were to try and support any kind of price increase, they would also need to take steps to promote and maintain certain standards of quality, which was something they were not capable of doing on their own given their lack of organizational capacity.

4.5.5. Organizational Sustainability

There are several additional factors that have adversely affected the sustainability of the organizations. In terms of skill development, the associations have not been able to sustain active roles in providing members with ongoing support and training opportunities following the withdrawal of CWS. One reason concerns their dependency on donor support, even though some associations had sufficient capital on hand with which to contract training services from DAHP technicians. Some DAHP technicians, however, may also have gradually lost interest since the

withdrawal of donor financial support. Others may have been reluctant to interact directly with such autonomous organizations that suddenly lacked clear official standing in the aftermath of the donor's withdrawal. In terms of rank and status, the VLAs themselves also may wish to avoid direct interaction with government authorities, and prefer that the association chiefs continue to mediate such relationships when necessary, as in the case of cattle vaccination campaigns. In this sense, the traditional socio-political tendencies toward rank and status and divisions between state and civil society may outweigh any sense of shared professional identity.

The associations have also not been able to solve problems associated with high attrition rates by recruiting and/or training new members. Part of the difficulty with training new members concerns the project cycles that govern available funding. Another reason is structural as association boundaries correspond to political jurisdictions. Although this makes sense because of the way the government is organized, it has precluded VLAs from other communes from joining. In some areas, other VLAs have been trained by different organizations. This also inhibits VLAs from joining other associations as a VLA is generally viewed as belonging to one NGO or another. In this sense, organizational and geographic affiliations also appear much stronger than professional affiliation.

Despite the apparent problems concerning professional affiliation, DAHP technicians have, in fact, continued to use VLAs in several communes for vaccination work since CWS withdrew formal support from the project. Such collaboration, albeit periodic, amounts to a de facto recognition of their role and status as veterinary service providers. As discussed above, this practice continues today even in areas where the associations have more or less disbanded, while remnants of the remaining VLAs still work together to perform the vaccinations. Though such cooperation is focused on a specific activity, and does not represent institutional support for the association, it does provide the basis for more active collaboration in the future should nurturing institutional mechanisms be somehow devised.

4.6. Conclusion

Poor performance outcomes in the veterinary sector have prompted government planners and donors to shift service delivery to the private sector while re-orienting government toward

playing a more active regulatory role. Community-based approaches to privatizing veterinary service delivery in rural areas has required externally initiated projects that identify, train, and equip a new class of service provider. In my research, I analyze the factors and circumstances that inhibit or promote the sustainability of services provided by these private-sector Village Livestock Agents (VLAs). I hypothesize that the sustainability of services depends on the capacity of the VLAs to manage the economic and social transaction costs associated with negotiating, implementing, and enforcing informal service contracts. I analyze how 172 VLAs in Northwest Cambodia have fared working on their own for three and a half to five years after the sponsoring NGO withdrew support in favor of other programming.

I found that a key problem all VLAs face is managing requests for credit and providing services on discount. VLAs lacking financial and/or social capital are often not able to sustain the burden of credit and afford to provide discounted services. Those VLAs who have financial resources and/or some degree of social standing, however, have been able to devise strategies to manage the economic and social transaction costs associated with credit requests and discounted services. In this sense, gender, age, social standing, and household income are key indicators predicting the potential capacity for individual VLAs to continue providing services over time.

These indicators are especially prescient in predicting that VLAs who are poor and/or otherwise lack social standing are most likely to stop providing services after a period of time. The high attrition rate among these VLAs, in turn, weakens the foundation of professional associations that were designed to support them. These observations will be troubling for government planners and donors who wish to establish sustainable animal health services, while at the same time providing employment opportunities for the poor, especially women. This dilemma also has implications for the type, scale, and duration of support that agencies provide, though many may lack resources for proving support for extended periods of time.

NGOs and others have employed a variety of interventions in Cambodia and elsewhere to support VLAs working at the local level. Most interventions entail ongoing inputs while the organization is still involved in a particular community. For example, many NGOs in Cambodia provide training and support for VLAs in the context of so-called integrated community

development projects. Although such efforts often produce positive short-term results, the track record suggests that in many cases such outcomes are likely to endure only as long as the agency maintains an active presence in the community. The question of financial and organizational sustainability really concerns what kinds of institutions and support are required and feasible when the NGO departs.

Under such circumstances, planners often recommend that subsidies should somehow be provided that enable VLAs to continue working as well as provide good quality services that are affordable for poor farmers. In many respects, that is precisely what NGOs set out to do when they initiate such projects by providing subsidized pharmaceutical supplies for primary treatment. In the past, the government has also tried to provide subsidized vaccines, but seems increasingly less able to manage such efforts in the absence of external support. Moreover, donors are extremely reluctant to support any such subsidy scheme operated by state agencies given the government's lack of administrative capacity and dismal track record with corruption.

In terms of providing low costs services, I observe that community expectations and local public opinion already play a very important role in keeping prices low, such as when VLA provide services for free or for discount for poorer members of the community. Such decisions may be, at least for the time being, best left in the hands of the service providers who can make on-the-spot judgments, while bearing in mind a local sense of fairness and justice.

One intervention, though, that seems feasible is to make low-cost credit available either directly to the VLAs or, preferably, through their associations. I observe that those VLAs who are better off financially are able to accommodate a greater number of credit requests over a longer period of time than can those VLAs who lack financial resources. I also observe that the two remaining active associations share a common feature in that they pooled their initial membership fees to create a source of capital with which to provide loans to members. VLAs have used some of these loans to finance the acquisition of medicines and supplies for their practices.

The experience of the Northwest VLAs and their professional associations also suggests that the sustainability of the CBAH models depends on an active, three-way collaboration between the

professional associations, supporting NGOs and donors, and government. The Cambodian government's DAHP is already working with NGOs to standardize training curriculums and issue official licenses for VLAs. The government can also provide a legal standing that legitimizes the association's role as professional organizations. Such standing could, among other benefits, enable the associations to acquire low-cost loans from formal-sector sources so they could provide low-cost credit services for members.

The legitimization of the individual VLAs and their professional organizations can be further enhanced through active collaboration between government and VLAs, including standardizing the practice of using VLAs to implement periodic vaccination campaigns. With the right amount of resources, the VLA associations can also directly contract with government technicians to provide ongoing training opportunities. This type of cooperation is already evident in some areas where NGOs contract with government technicians to provide training for the VLAs they have supported.

The NGOs and donors also have several important roles to play. For example, some NGOs now actively cooperate with government officials in implementing standardized training and licensing procedures. Second, NGOs should also provide ongoing technical and organizational support for the VLA associations for extended periods of time. Third, donors that fund local "civil society organizations" can similarly support VLA associations in the context of strengthening professional organizations, while also promoting the development of rural civil society. Fourth, NGOs and donors could provide the VLA associations with management training and financial support for creating and maintaining small-scale savings and loan services for members.

Finally, NGOs and government can work with the associations on appropriate ways to promote better quality services and regulate veterinary service markets. For example, government should focus on ensuring certain standards of pharmaceutical supplies and enforcing rules that allow only licensed VLAs or veterinarians to provide services. In terms of pricing policy, it appears that local customs and traditions, combined with farmer knowledge about prices, act as effective breaks on any significant price increases that could deprive some poor farmers of service.

I conclude that reform measures aimed at privatizing veterinary services, or other rural development services for that matter, are viable only to the degree to which they establish or strengthen supporting institutions that take into account local realities governing contractual exchange between service providers and clients. This observation is especially relevant in situations where current efforts are directed at “bottom-up reform.” In the case of the Cambodian VLAs, the primary sources of institutional support are legally-recognized professional associations that can provide credit resources and technical support for community-based animal healthcare providers.

Epilogue

The research and writing for the three studies included in this dissertation represents a long intellectual journey, one that I would do differently if I had the chance to do it again, but nevertheless one that I would gladly do again. I am, however, very aware that this study does not represent the final word on the subject. As with any research, my research points out several avenues for further research in at least three areas: community contracting, institutional support for private providers, and demand-side perspectives of farmer clients.

Community Contracting: My research has focused primarily on individual contracting between community-based animal healthcare service providers and their farmer clients. In the case of Laos, however, the notion of community contracting emerged as a potentially viable alternative to individual contracting, particularly in areas where citizen vaccinators are often expected to assume the risk for services, but do not receive adequate remuneration. In several areas, the government had introduced models villages that received targeted assistance for agricultural development. Part of this included rules regarding livestock, such as rules requiring that all animals be vaccinated. In Cambodia, several NGOs are training community-based animal healthcare providers in the context of integrated community development projects. In some cases, these VLAs act under the auspices of a Village Development Committee (VDC).

In both instances, the general idea of community contracting would be to have the community contract with the VVW or VLA to provide services (i.e., vaccinations, treatment, or both) to village members under terms that could be negotiated for a specific period of time, then amended and renegotiated as needed. The community leaders and VVWs, or VLAs, would of course need to work out arrangements for the purchase and storage of pharmaceutical supplies. The main point would be that VVW or VLAs would receive a proper -- perhaps guaranteed -- fee for their services, while the community would assume more of the risk. The community would also be in a better position to monitor quality control of the services provided. In Cambodia, it is possible to think that at some point in time the recently-elected Commune Councils could play a role in the process of community contracting in certain areas.

One of the primary objectives for further research would be to identify the factors and circumstances that are conducive to such forms of contracting. My hunch is that areas characterized by extensive farming methods would be more conducive to community contracting than areas featuring more intensive modes of cultivation where entrepreneurial service providers are more likely to thrive using individualized service contracts. Another important factor would of course concern village level organization and administration. The kinds of tasks that community contracting would involve would represent new responsibilities for village leaders who are used to traditional modes of governance. It is important to point out, however, that such traditional modes of local governance are being challenged in Cambodia by the introduction of the elected Commune Councils. In both countries, a good starting point for field research would be to look at the experience of several NGOs working with innovative animal healthcare arrangements at the community level.

A second area of promising research concerns the VLA professional associations in Cambodia. It is clear to me that privatization reforms can work in countries like Cambodia, but only when certain supporting institutions are in place. My research in northwest Cambodia shows that many community-based animal healthcare providers can not continue providing services on their own without access to some form of credit and ongoing technical support. It seems to me that the VLA associations represent a potential form of institutional support that could begin meeting some of these needs. At another level, these kinds of institutional arrangements could also represent a thickening of civil society in rural areas. These kinds of organizational arrangements, however, represent novel innovations and as such, are not well understood. More research needs to be done on several fronts in both countries, including developing a better understanding of how informal organizations work at the local level. Such research also needs to include a deeper examination of how other veterinary associations have worked in other countries, and compare those experiences to the track record in Cambodia. As with research on the community contracts, a major objective of such research would be to identify and analyze the factors and circumstances that either promote or inhibit the sustainability of such organizational innovation.

Finally, another area of research that would be both useful and very interesting concerns this idea of the clash (or collision to use Fadiman's (1997) terms) between the forces of tradition and modernization. Fusion, though, might be a more appropriate word. At one level there are anthropological interests along the lines of Geertz's (1973) thinking on the notion of "modernity". At another level there are technical interests concerning the efficacy of vaccines and treatment, which in turn concern the regulation and quality control monitoring of pharmaceutical supplies. At another level, there are organizational and institutional interests along the lines of the diffusion of new technology and information. My research has primarily focused on the supply-side perspective of the service provider. Although I have incorporated some observations on the demand-side perspective of the clients in my studies, I feel much more work needs to be done in this area if we are to get our policy prescriptions right.

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Appendix A: Notes on Field Interviews

The field work for all three papers involved interviews with key informants, including VVWs in Laos, VLAs in Cambodia, provincial and local government officials, and local villagers. When interviewing VVWs or VLAs, I employed semi-structured interview formats using a written questionnaire as a guide. In keeping with qualitative research methods, I designed my interviews to provide flexibility for discussing additional topics not necessarily covered in the questionnaire. I designed my field research methodology and interview questionnaires based on my previous work experience in both countries, as well as previous research experience. I also greatly benefited from a course I took on field research methodology with the late Professor Myron Weiner of MIT's Political Science department.

In Laos, my field research was carried out with the explicit knowledge and permission of the Department of Livestock and Fisheries (DLF), who provided an official visa for me in keeping with policies and procedures of the Laos government. I was accompanied in the field by a government staff person from the DLF in keeping with standard government policies guiding the work of expatriate development workers and, in my case, researchers. I was familiar with local customs and government policies regarding appropriate conduct and interaction with local people and government officials as a result of my previous work experience in Laos. In the field, I routinely met with provincial and district officials to inform them of my work and proposed itinerary for visiting villages in their jurisdiction. In the village, I routinely met with the village chief to inform them of our activities and interview them. At the request of the DLF, I made a presentation of my preliminary findings and observations to government officials and donors at a small seminar upon completion of my field work.

During my first round of research in Cambodia, my field research was also carried out with the explicit knowledge and permission of the Department of Animal Health and Production (DAHP). As in Laos, I was accompanied by a government staff person from the DAHP during the course of my field work. I also worked closely with the staff of an NGO working in the veterinary sector, Church World Service, who provided logistical support and assistance for obtaining an official visa. As in Laos, I was also familiar with local customs and government policies regarding appropriate conduct and interactions with local people and government officials as a result of my previous work experience in Cambodia. I also routinely met with provincial and district officials to inform them of my work and proposed itinerary for visiting villages in their jurisdiction. Given the security situation in the countryside at the time, we also sought their advice about security matters with respect to the safety of our work team and local people whom we might meet. I followed local government officials' guidance about where we were permitted to travel. In the village, we routinely met with the village chief or other village officials, when available, to inform them of our activities. Upon completion of our field work, I made a presentation of my preliminary findings and observations to a group of donors at a small seminar organized by an NGO working in the veterinary sector, the American Friends Service Committee (AFSC).

During my second round of field research, I also carried out my work with the explicit knowledge and permission of the DAHP. Since the first round of research in Cambodia, policies and practices had changed considerably, and it was no longer necessary or expected to meet with provincial and/or local officials prior to visiting villages. Nevertheless, I often met local village officials in the course of interviews and informed them about our work. During this phase of my research, the staff of a local NGO, Heifer Project International (HPI) and CWS provided logistical support and guidance. During the course of research and writing, I routinely met with an official of the DAHP to inform him about the progress of my work.

In all three cases, I began each interview with officials, VVWs, and VLAs, and farmers by identifying myself and stating the purpose of our work. As a matter of course, I asked if the interviewee was able and willing to talk with us, and on several occasions scheduled appointments to return at a more convenient time for them. In some cases, people declined to speak with me for various reasons. I assured people that their names would under no circumstances be used or otherwise disclosed in conjunction with the research. I also informed people about the approximate time for the interview, which was usually about one hour to one and a half hours. In cases where the interview went longer than planned, we asked people's permission to continue. On several occasions, interviewees were not able to continue because of other work or obligations. In keeping with local customs, other villagers often watched or listened to our interview, which protected interviewees from any subsequent questions about what they were discussing with the foreign visitor. On no occasion did I ask questions about political or otherwise sensitive matters (e.g., security, personal opinions about politics). When appropriate, I explained the purpose of the question, particularly when asking follow-up questions. In some cases, interviewees were not able to answer certain questions and I routinely went on to the next question.

When interviewing government officials, I asked questions concerning policy and administrative practices related to veterinary services. In Laos and Cambodia (first round), I routinely asked about livestock and veterinary statistics (e.g., population, vaccination services) as well as other background information about the village, including history and experience with animal diseases and local markets for livestock and livestock products. I also routinely asked government officials about problems they experienced in the course of providing veterinary services and how they tried to solve such problems.

When interviewing VVWs and VLAs, I generally asked about their background (e.g., family circumstances, education, employment). I also asked about their motivation for serving as a VVW or VLA, and how they were selected and trained. I asked about their activities regarding treatment and vaccination services. As with government officials, I also asked the service providers about problems they experienced in the course of providing services and how they tried to solve such problems. During the second phase of field work in Cambodia, I also asked about household assets and income from VLA services and other activities. As with other research in rural Cambodia, the responses to these and other questions were often general as people do not keep explicit track of household income and expenditures. During the second round of research, I also asked VLAs who were current or former association chiefs about their experience with the association and their assessment of the activity levels of other VLAs in their

commune. I also asked VLAs about their experience with the VLA association in their commune. (See sample interview guide below.)

I should add that in each and every interview situation, I was received with considerable kindness and hospitality. For this I am grateful. Many of the people at the village level were very poor, yet they received me with grace and dignity. And for this they have my deepest appreciation and respect.

Village Livestock Agent Questionnaire

Date_____

No._____

Name _____ Sex _____ Age _____ Education _____

Village_____ Commune_____ District_____

Marital Status: Single _____ Married _____ Widow _____ No. of Children _____

VLA Background

How long have you lived in this village?

What is (are) your main occupation(s)?

What is (are) your family’s main source(s) of income?

How many animals do you own? What do you do with the animals (why raise animals?)

| Animal | Number | Purpose/Use | | | | | Comment |
|---------|--------|-------------|---------|---------|------|-------|---------|
| | | Sell | Consume | Savings | Work | Other | |
| Cow | | | | | | | |
| Buffalo | | | | | | | |
| Pig | | | | | | | |
| Fowl | | | | | | | |

How much land do you own?

rice_____ Chamcar _____ Residential _____

Role as VLA

How long have you served as a VLA in this village?

What motivated you to be a VLA? (Why did you want to be a VLA?)

Why do you feel you were selected to be a VLA?

What is your principle role as a VLA?

What kind of training did you receive in order to perform this role?

Do you feel this training was adequate to help you perform this role?

If yes, why? If no, why not?

Had you received any kind of training before becoming a VLA?

Have you received any additional training since becoming a VLA?

If yes, who provided the training? If no, do you feel you need additional training? Why has it not been provided?

VLA Services

How many clients do you usually have each month?

Treatment_____

Vaccination_____

Other service_____

Where are they mostly from? (In this village, or from other villages as well?)

Which service do you provide most? Curative treatment, preventive vaccinations, other? And how much income from VLA services do you make on average each month?

| Service | # Client/mo. | Animal | | | | Inc/mo. | Comments |
|-------------|--------------|--------|------|-----|------|---------|----------|
| | | Cow | Buff | Pig | Fowl | | |
| Treatment | | | | | | | |
| | | | | | | | |
| Vaccination | | | | | | | |
| | | | | | | | |
| Other | | | | | | | |
| | | | | | | | |
| Total | | | | | | | |

Where do you get medicine for treatment from?

Is it always available?

How do you finance the purchase of medicines? Do you collect money in advance from clients? Do you pay for it yourself then collect from clients? Do you get it on credit and pay back later? If credit, do you ever have any problems with paying back? If so, what are they?

How much do you usually charge for treatment?

Is it the same for everybody? If not, why not?

How do you determine what price to charge farmers for the treatment?

Do you ever provide treatment service on credit? If yes, do people always pay back promptly, or are there any problems?

Do you always take money for the service, or do you accept other kinds of payment? If other forms of payment, what are they?

Where do you get the vaccines from?

Is it always available? If not, please explain?

How do you finance the purchase of vaccines? Do you collect money in advance from clients? Do you pay for it yourself then collect from clients? Do you get it on credit and pay back later? If credit, do you ever have any problems with paying back? If so, what are they?

How much do you usually charge for vaccinations?

Is it the same for everybody? If not, why not?

How do you finance the purchase of medicines? Do you collect money in advance from clients? Do you pay for it yourself then collect from clients? Do you get it on credit and pay back later? If credit, do you ever have any problems with paying back? If so, what are they?

How do you determine what price to charge for the vaccination?

Do you ever provide vaccination service on credit?

If yes, do people always pay back promptly, or are there any problems?

Do you always take money for the service, or do you accept other kinds of payment? If other forms of payment, what are they?

Are the villagers satisfied with the prices you charge? Why, or why not?

Could you charge more if you needed to, either for treatment of vaccinations? Please explain.

Do you follow up with your clients after providing services? If so, why, and how often?

Has there been any change in the [price of medicines or vaccinations since you started working?

How do you determine what price to charge for your services? (Do you ever negotiate?)

VLA Farmer Clients

Why do people raise animals in this area? (What do people do with their animals in this village?) How has the market price for livestock and/or animal products changed since you began working as a VLA?

Do you keep records of your activities and animal statistics? If yes, why?

Do you share the information with other people or organizations?

VLA Support Networks

What is your relationship to district and provincial animal health officials?

What kind of assistance or recognition do you feel you need from them?

What is your relationship to the NGO staff?

What is your relationship with other VLAs in the area?

What benefits do you get from being a member of the federation?

What are the most difficult kinds of problems you have had as a VLA?

How have you solved these problems? Who has helped you solve these problems?

VLA Sustainability

Are you satisfied with your role as VLA? If yes, why? If no, why not?

Has demand for your services increased, decreased, or stayed the same since you started working as a VLA?

Has your income from VLA services increased, decreased, stayed the same?

In the future, do you think demand for VLA services in this village/area will increase, decrease, stay the same?

In the future, will you continue to provide VLA services? Why, or why not?

If you plan to continue providing services, do you feel you will need continued support and assistance from others?

If yes, what kind of support, and from whom? If no, why not?