

REFORM OF VETERINARY SERVICES: A POLICY FRAMEWORK

Animal Production and Health Division
FAO, Rome, Italy
June 2001

THE NEED FOR REFORMS

Over the past century, developed countries have progressively improved the animal health situation of their national herds through advances in veterinary science and the establishment of a sophisticated veterinary service infrastructure with the capacity to translate research findings into practical application and to implement area-wide disease control and herd health programmes. Consequently, major epidemic diseases have been eradicated and measures to safeguard against their introduction are in place, endemic diseases of initially secondary importance are under control or even targeted for eradication, livestock keepers have access to veterinary services and inputs, and institutions for research and extension foster continuous improvement of the livestock industries.

The situation in developing countries is varied and the economic and institutional framework of the livestock industry is often quite different in several respects to that encountered in the developed world. Improvements in the health status of livestock populations were being made until about some 25 to 30 years ago, often on the basis of internationally funded and co-ordinated, area-wide, disease eradication programmes. Since then, however, the situation has stagnated or even deteriorated in many developing countries, notably in sub-Saharan Africa. Attempts to reverse this trend through institutional reform, often designed to closely follow the institutional models of developed countries, have had only moderate success, and examples can easily be found where poorer segments of society have been left completely exposed to the risks posed by livestock diseases. The subsistence nature of the livestock industry in developing countries, market failure problems, trans-humance production systems, the permanent threat of serious outbreaks of contagious diseases, strong fiscal constraints, and generalized institutional weakness are problems that need to be confronted in designing reforms of veterinary services.

Although there clearly is scope for the deconcentration and/or delegation of a number of functions from central government, the pace of reforms needs to recognize the need to carefully manage the transition and to allow time for the development of private veterinary service components. The purpose of this paper is to examine the particular features of veterinary services that need to be considered in deciding what forms of, and approaches to reform may be appropriate.

THE NATURE OF VETERINARY SERVICES

Different veterinary services fall into various categories of economic goods:

- Clinical services (treatment of diseased animals and control of production limiting disorders)
- Preventive services (avoiding the outbreak of diseases)
- Provision of drugs, vaccines and other products (such as artificial insemination)
- Human health protection (inspection of marketed animal products).

Veterinary services are an area where the economic classification of various components differs and is open to different interpretations. Clinical health services and the provision of veterinary drugs are the closest to being pure private goods. However, there can be positive externalities in treatment, particularly in the case of infectious diseases, that may justify some form of government intervention. It can be argued that preventative health services also justify either public provision, or at least financing by the totality of affected livestock owners, because of the externalities involved and the 'free rider' implications of charging individual farmers for services that others will benefit from. There are also moral hazard problems in the market for veterinary services, especially in the area of drug provision and hygiene inspection. These require the government to maintain a role in the provision of these types of services.

THE DEMAND FOR AND SUPPLY OF VETERINARY SERVICES

The economic and institutional framework of the livestock industry is quite different in several respects in developing and developed countries. It is worth discussing the extent to which these differences may affect the demand and supply of veterinary services and of the options for decentralization in different types of countries.

The livestock sector in developed countries

In developed countries, livestock production is a strictly commercial business based on cash transactions. It is conducted in highly competitive markets in which prices reward quality. Technological innovations are promoted by research outfits often associated with input and service suppliers who are profit motivated. Farmers' own consumption accounts for very little of the output. Livestock is not a form of savings, not even for those urban or sub-urban dwellers who grow animals as a secondary activity that is often cross-subsidized by returns of other activities. Integrated livestock companies, involving feed production, contracting outgrowers, processing and marketing are common in the poultry and pig sectors. Large-scale dairy processing industries and milk producers' cooperatives are also a common feature. All these enterprises have a specific interest in animal productivity and provide veterinary services, drugs, vaccines and extension advice to outgrowers or to cooperative members, accounting for its cost under the products' (inputs and output) supply/procurement contractual arrangements.

Institutions are well developed. Veterinarians' associations, livestock producers' associations and consumers' associations play a role in the political arena and contribute directly and indirectly to the formulation of government policy. The rules

under which livestock products can be produced, processed, and marketed are well established, controls are effective and non-compliance with the rules can be very costly. As a result, all producers, large- and small-scale, have an interest in the good health of their animals. This is not only because it is good business for themselves, but also because cases of non-compliance can be traced through strict controls at processing centres and even at retail marketing outlets.

In most developed countries, where private veterinary practitioners provide by far the largest share of services to livestock owners, governments retain special services connected with the:

- Control of epidemic diseases
- Control of the import and the certification of export of animals
- Certification of the quality and of true labelling of drugs and vaccines
- Inspection of meat and other livestock products
- Operation of an adequate laboratory capacity
- Supervision of breeding centres and quarantine premises.

The implementation of some of these functions may be delegated to gazetted private veterinarians under contract. Box 1 examines which functions are retained by government, and which of these functions are paid for by the service users in one of the countries where the liberal school model is applied in an advanced way, namely, New Zealand.

The livestock sector in developing countries

The livestock economy in developing countries is typically quite different from that of developed countries. Naturally, situations vary enormously depending on the country. Generalization is not very meaningful, and country specific diagnosis is always a mandatory starting point. The livestock sectors in countries such as Brazil, or China, are also extremely diversified on a regional basis. The sectors in Eastern Europe, Asia, Latin America or Africa all differ markedly from each other and among themselves as well. The effectiveness of public services also varies. Some countries have managed to retain a minimum of efficiency despite shrinking financial resources.

In countries at the opposite end of the scale of the livestock development to New Zealand, the role of the cash economy in the livestock sector is marginal. Markets do not recognize quality, sometimes not even weight, as a factor of price formation. Subsistence consumption is a prominent objective of keeping livestock and ruminant herd numbers are more important for family savings and household survival insurance strategies than monetary income. A significant share of the ruminant population (large and small ruminants) is still managed by transhumance rather than settled farming.

Box 1. The New Zealand livestock industry and veterinary services¹

New Zealand's livestock industry is highly developed, very competitive, and heavily export-oriented. The sector includes large- and medium-sized commercial ranching operations for sheep and deer often mixed with some beef ranching, industrial scale beef feedlots, high value racehorse breeding, large- and medium-sized dairy farms, commercial intensive production of eggs, broilers, other bird products and fish farming. The livestock owners have a good average standard of education and income. Farmers' and veterinarians' associations are well developed. Historically, the government established the Livestock Department and the Veterinary College at the specific request of livestock owners. New Zealand's isolation and a vigilant public veterinary service means that there are fewer animal disease problems than most other countries.

New Zealand's veterinary services policy distinguishes 'contestable' activity, that includes services that are not provided by government and 'non-contestable' activity. The latter include the regulatory function and a number of other public services (listed below) that the government provides on different cost-recovery conditions. It may be noted that technical advice (extension), clinical and preventive veterinary services, provision of drugs, vaccines and artificial insemination, are 'contestable' services and are not provided by government. In the past, New Zealand undertook several large-scale and long-lasting disease eradication programmes (tuberculosis and brucellosis in cattle, scrapie in sheep, hydatidosis in dogs) that established mandatory disease control practices for private livestock owners with the government services carrying out strict and controls of herds and products.

Only services with significant externalities are retained under direct government responsibility e.g. the control and certification of quality standards for animals and products. Full cost recovery is applied to services of direct benefit to livestock owners (services that increase the commercial value of animals or products whose owner is identifiable). The government funds those services that protect the general interest of producers and consumers, and where the benefits cannot be directly associated with an individual livestock owner. To implement this policy the government employs about 150 veterinarians (field, laboratory and meat inspection), as against over 2,000 private practitioners. Staff salaries only account for 40% of the Veterinary Department recurrent budget, providing adequate resources for other operating expenses and efficient implementation of tasks. Beneficiaries' assessments show that clients of the government veterinary services are quite satisfied with the services they receive.

Service	Financing		
	Full govt funding	Partial cost recovery	Full cost recovery
Monitoring evolving attitudes and legislation wrt animal welfare, environment, animal rights etc.	x		
Endemic disease control and eradication			x
Export certification, live animal, product quality			x
Export certification, semen and embryo			x
Endemic disease surveillance	x		
Exotic disease preparedness and investigations	x		
Post border inspections and treatment			x
Supervision of animal breeding centres			x
Supervision of quarantine premises			x
Laboratory diagnostic service for sick animals		x	
Meat inspection			x

With a few exceptions in large countries, intensive production of eggs, broilers, pigs, and beef is a relatively recent development by peri-urban, mostly small-scale producers. Production and market regulations are either non-existent or practically not enforceable. The level of education of the great majority of livestock owners is very low. Large ruminants are male herders' activities, while small ruminants and poultry are women's responsibility among the settled population. Many livestock owners are poor people in terms of income and cash revenue, although they may not be poor in terms of wealth.

At the national level, the animal health situation is seldom under control. The danger of epidemic outbreaks is often very real, and this involves diseases that may be transmitted to people, as well as diseases that may cause irreparable damage to the overall national herds. A further complication is that some contagious animal diseases may have relatively minor effects on the productivity of traditional herds, but are very dangerous for improved or exotic breeds. The willingness to pay for certain disease eradication services by traditional livestock owners may not be strong, since those diseases seriously affect only a minority of progressive farmers.

Under these circumstances, the institutional development of the livestock sector is very limited. With very few exceptions, livestock owners' associations do not exist. In some countries government-imposed cooperatives do exist, but are generally dominated by politically appointed bureaucrats, ridden with corruption and in financial difficulties. Veterinarians' associations are in their infancy and dominated by government employees. Para-veterinary technicians are hardly recognized as a professional category and are not organized. Consumers' associations rarely exist. The legacy of the past dominant role of government services is a power configuration very skewed in favour of public sector veterinarians.

ELEMENTS OF REFORM

Division of responsibilities between the public and the private sector

A FAO Technical Consultation deliberated on the respective responsibilities of the public and private sector for supplying veterinary services (FAO, 1997a). Box 2 summarizes the consensus of its findings. An important function which is implied but not specifically spelled out in the box, is the monitoring system for the activities retained by the public service, and the evaluation of the impact of such activities, including beneficiaries'/clients' assessment.

Deconcentration

Effective implementation of government legitimate functions requires adequate deconcentration of the public services, whereby front line operation managers are given full responsibility for operational decision making. Veterinary service providers are typical craft organizations where, although the output of some important tasks (for example the number of vaccinations) is easily measurable, that of most other tasks is not readily observable. Veterinary services are highly professional specialized services where professional norms and peer expectations play an important role in staff behaviour. This facilitates a style of management based on creating a sense of purpose and delegation of responsibilities.

Box 2. Responsibility for providing veterinary services

Services under public sector responsibility but not necessarily provided by the public administration

- Formulation of national livestock policies (creation of an enabling environment for private sector activities)
- Elaboration of regulations governing animal production, processing and marketing activities and the activities of the private veterinary and para-veterinary professions
- Ensuring the health of the national herds (surveillance, compliance monitoring, quarantine, quality control of drugs and vaccines, emergency planning, reporting to international agencies and neighbouring countries)
- Inspection and control of livestock products for food safety purposes
- Import and export certification
- Accreditation and monitoring of private suppliers of services animal health services

Services under shared public and private responsibility

- Disease diagnosis and reporting
- Compulsory testing
- Tick and tse-tse control
- Food hygiene and inspection
- Continuous education and training
- Notifiable disease control
- Disease emergency response
- Research
- Animal management advice and extension

Services under the responsibility of the private sector

- Clinical diagnosis and treatment
- Production and distribution of drugs and vaccines
- Artificial insemination
- Management of herd health and production programmes
- Marketing of livestock products

Source: FAO (1997a).

Cost-effectiveness and contestable services

Whereas deconcentration improves efficiency if sufficient recurrent budget funds are transferred to the operating units, it does not by itself guarantee that cost-effectiveness (an optimal use of public money) is automatically achieved. In fact professional norms and peer expectations may induce staff to search for the technical optimum rather than cost effectiveness. A sophisticated way to ensure cost-effectiveness has been recently introduced in New Zealand. Most services for which the public veterinary administration is responsible have been declared 'contestable', which means that private enterprise or other public service units including municipalities can bid to perform any such service or part of it in a given location. The public administration is required to bid, like any other interested supplier. The regulatory veterinary authority awards a contract to perform the service, funded under the ministry's budget allocation, to the lowest-cost bidder with the necessary technical capacity.

The need to update legislation

Government veterinary authorities are empowered by law to control movements of animals, to inspect production, processing and marketing of animals and livestock products, to destroy dangerous animals and/or products and to enforce the application of animal health protection practices. In the interest of service users and of consumers of livestock products, legislation is also required to regulate the exercise of private enterprise in the delivery of veterinary services and in the supply of veterinary materials. Legislation needs updating from time to time to conform with the development of the livestock sector, technological progress, the requirements of international agreements, and the need to encourage private professionals in the veterinary and para-veterinary professions.

Updating legislation involves drafting new laws for approval by parliament and formulating the administrative regulations and implementation procedures associated with the approved laws. Conventionally these functions have been centralized in the Department of Livestock of the central government Ministry of Agriculture or in a separate Ministry of Livestock. In more advanced systems, a Veterinary Board is established with regulatory functions, with representatives of different categories of service users and consumers' organizations as members of such Boards.

Stakeholders' participation in setting new rules

Drafting proposals for new legislation and elaborating the regulations governing the application of the laws approved by parliament is a natural function of the central government. Reform raises the issue of the degree of participation of voluntary sector organizations in the process of formulating the proposals that are submitted to parliament for approval. With respect to veterinary services, the organizations that could play a role include the national veterinarians' associations, the associations of para-veterinary technicians and of village level agents and livestock owners' associations, including those of smallholders. Associations of para-veterinary technicians, and of smallholder livestock owners exist in very few countries. Government thus has a role to play in promoting an enabling environment to develop such associations with a view to better representation of the diverse interests of people.

A special role for the veterinarians' associations of is often claimed to be important, but the voice of other stakeholders is important as well. Some, it must be recalled at this point, are actually competitors for the same market. While a degree of protection for private veterinarians may be justified on infant industry grounds this should in no way entrench monopolistic positions. There other ways to help private veterinarians to establish their practice, without suffocating a healthy competition from less qualified professionals, provided these act within the limits of their competence. In some countries, the veterinarians' associations have sufficient lobbying power to limit the scope of activity allowed by para-veterinary agents much beyond that required on technical grounds to prevent dangers from the potential misuse of the agents' access to veterinary materials. This is a typical rent-seeking action which government must have the strength and determination, and the right political allies, to keep under control.

Impact evaluation and beneficiary assessment

Clients' assessment and views about service suppliers are also an essential feature of realistic and equitable policy, strategy and rule formulation and of effective

management. Good governance requires that consensus is achieved with adequate opportunity given to all interested parties to express their views. Ideally, the function of government in the field of veterinary services will eventually be the supervision and monitoring of activities carried out by a well-diversified private sector. With this perspective in mind, reform policies need to improve the monitoring and evaluation (M&E) units of the livestock departments and include beneficiaries' assessment surveys as an integral part of routine M&E activities.

Servicing pastoral areas and poor livestock owners

The issue of how to supply effective services in pastoral areas and to poor livestock owners is not simply related to the poverty of the clients. Economies of scale, the size of the individual herds, and a transhumance production system are also very important features. Private returns on effective treatment are very high and livestock owners are often well aware of its advantages. Nevertheless, in the case of poor people with few animals, the cost of mobilizing a private intervention may be disproportionately high with respect to the cost of the treatment itself. Reports from the experience in Kenya suggest that while clients are willing to pay for the products and service rendered, they do not recognize the transport and time costs incurred by the specialist in reaching their premises.

Logistical problems

In the case of mass vaccinations of transhumance animals, the real issue is neither willingness nor capacity to pay. The major problem is the logistic arrangements required by such large-scale operations. These involve thousands of animals that must be concentrated around moving vaccination points located at strategic sites at specific points in time. Such arrangements require means of communication and authority for mass mobilization of people that are well beyond the capacity of a private veterinarian. Private practitioners (whether degree or diploma holders) can be mobilized to perform the actual technical work of vaccinating, to supply the vaccines and to recover the cost of the service from the livestock owners. However the mobilization of the herds is a public function and the cost of this would be difficult to recover.

Delegating functions

Contracting the procurement and sale of vaccines, along with the performance of the vaccination operation, to private specialists is a form of delegation. It provides an incentive to private veterinarians, through offering them a guaranteed market in terms of remuneration for the technical work done and of profit from the sale of materials. It eliminates the burden on the administration to operate a revolving drugs and vaccines fund, which developing countries' governments often find difficult to properly account for. Furthermore, it reduces the need to recruit and pay veterinarians on a long-term basis.

There are other forms of delegation that can be usefully applied to different types of agents in order to shape a strategy designed to establish an enabling environment for the development of private services. One of these is the delegation of responsibilities to voluntary sector organizations. In less developed countries, formal and informal common interest groups of livestock owners have been set up spontaneously to obtain a variety of veterinary services. In some cases these groups employ animal health assistants (AHAs) or, more often, lower level para-veterinary agents who are members

of the groups. They provide group members with primary services such as remedies against easily diagnosable diseases, non-prescription drugs and vaccines. In some cases such service providers have been mobilized to help with mandatory animal health control schemes, under contract with the public administration (vaccinations against contagious diseases in many countries, control of tse-tse isolation corridors in Cameroon, etc.). The impact and usefulness of these groups, which can become increasingly effective instruments for providing services in pastoral areas and to poor livestock holders, depends to a large extent on five factors:

- The extent and effectiveness of training of para-veterinary technicians at all levels
- A clear definition of the legitimate fields of competence of these technicians
- The availability of veterinary materials from accessible sources
- The liberalization of the trade in veterinary materials
- An effective technical monitoring of their performance.

The pace of reform

Can the liberal model of reform applied in developed countries be successfully introduced in developing countries? Should government in both cases retain the same functions? Should the same policy of cost recovery of the services retained by government be enforced? And, if so, how can this be done? And which retained functions should be centrally controlled and managed, and which ones should be eventually decentralized? Which forms of decentralization should be used in the latter cases? Which preoccupations of public service managers would influence reform implementation? Which politically influential forces support or oppose which aspect of the reform? How should the division of responsibility suggested above be embodied in a reform plan? What would be the critical considerations in a local context?

The first consideration is, of course, that the answers depend on the:

- General health conditions of the national herds
- Technical and economic development of the livestock sector
- Level of general education of livestock owners
- Incidence of poverty among them
- Degree of institutional and organization development of livestock owners, private veterinarians, and technicians.

The answers in countries such as Brazil or Argentina would obviously be quite different than in Central African Republic, or in India. Since situations evolve with the growth of the economy and the adoption of technological innovations, the question is rather “How should the ‘transition period’ and stages of reform be designed”?¹

¹ For the success of any reform, sound planning and management of the transition period is the critical factor. FAO has recently produced a publication entitled ‘Restructuring Veterinary Services in Countries Undertaking Reforms - a Guide to Managing the Process’, which amplifies the issues discussed in FAO (1997). Readers interested in more details and in the approach and specific recommendations on the subject are referred to that text.

This would go hand in hand with the evolution of the economics of the sub-sector and of the income, culture and standard of education of the people involved.

The second consideration is that an abrupt and strict application of the reform principles may have serious negative effects on the health conditions and on the size of the national livestock herd in countries at the lowest level of the sector development. In these countries, the full cost of veterinary services to scattered transhumance herders, and to settled smallholder livestock producers is considerable. As mentioned earlier, complex logistical problems must be tackled and heavy transport costs and long travelling times are involved compared to the cost of the products distributed. The incidence of poverty among livestock owners is high in those countries, particularly among smallholders and women animal owners. These may not have the cash resources to pay for the full cost of veterinary services. Even if they pay for the cost of the drugs they actually contribute a very small share of the full cost of the service. Paradoxically, these countries are also those where the need to cut public expenditure is the most acute.

Inadequate vaccination against contagious animal diseases, for example, may cause irreparable damages in the short to medium term, until an effective network of private practitioners has developed. There is a strong case for resisting a doctrinaire application of principles such as 'willingness to pay' that may not take into account the problems connected with **ability** to pay. Non-awareness of the danger of disease outbreak, or psychological and financial inability to face catastrophic losses endangering the survival of the household, may seriously increase the risk of economic and human damage due to negative externalities in animal health. These preoccupations have often led to lukewarm application of veterinary service reforms.

The results of attempts at rapid reform in several African countries under structural reform policies are summarized in Box 3. There are indications, however, of farmers' willingness to pay for veterinary services of demonstrated effectiveness, and of the role that private sector suppliers can play, suggesting that a more determined and coherent reform effort might have produced better results in many countries. The experience of the FAO-implemented East Coast Fever Vaccination Project in Tanzania is summarized in Box 4.

Box 3. The impact of structural adjustment on the delivery of veterinary services in Africa

The SAP imposed drastic reforms aimed at restructuring the public veterinary service and at privatization. In few of the surveyed countries, however, has the process been approached in a systematic way. In general, a top-down and at times erratic approach, in which livestock producers and private service providers have participated very little, if at all, has been adopted by the governments concerned. Government veterinarians, who have a vested interest in maintaining certain privileges, have largely monopolized the process. No attempts have been made to find appropriate solutions for the diversity of production systems, for example

pastoral/communal areas, in the countries concerned.

The Central African Republic is an exception to the general rule. Here the reform was driven by the powerful cattle breeders' association, which relies on the constant availability of trypanocides for the control of trypanosomiasis. As a result, the animal health service was restructured to cater essentially for the need of the cattle breeders; little attention was paid to other type of producers.

Accompanying measures to stimulate the privatization process (soft loans, training programmes, contracting out of services formerly carried out by public veterinarians) and incentives to leave the government services (early retirement schemes, pension plans, severance payments) have generally not been put in place.

Reform of legislation and introduction of new rules concerning private practice, the role of private practitioners, the importation and distribution of drugs, the role of para-veterinary personnel, have been slow, occasionally inconsistent, and often not enforced. Illegal importation of drugs and vaccines runs as high as official importation. NGOs and internationally funded projects have been involved in free distribution of drugs and vaccines, undermining efforts of privatization and cost recovery.

In most countries, the public sector is still involved in all areas of veterinary activities. Even in areas where private veterinarians are active, government veterinarians compete with private practitioners as part of their formal duties, and they often do so also 'on the side', to supplement their salaries. Such instances are cases of unfair competition, since government is subsidizing the public service.

Source: Cheneau (1999)

The privatization of veterinary services

A comparison of the situation in Kenya and New Zealand is interesting, since some common features, which may have application to other countries, do emerge despite the huge structural and cultural differences. The main factors of the historical development of the private profession in Kenya and New Zealand are worth recalling. The New Zealand experience started in the 1930s, and originated from associations of private livestock owners, which recruited foreign veterinarians initially when no university level training in veterinary science was available in the country. Later, they lobbied first to obtain government support for training national veterinarians abroad (essentially public scholarships to attend courses in Australia), and then to start a veterinary science department at Massey University. The Kenya experiment is very recent, starting in 1988, and was prompted by the government flatly refusing to hire more graduates of the national veterinary college and actually retrenching some from the public establishment. These people had no choice but to go private if they wished to exercise the profession in which they were trained.

Box 4 Willingness to pay for East Coast Fever immunization

General conclusions that can be drawn from the project are that, once ECF immunization has proven its efficacy, livestock owners are willing to pay what can be regarded as substantial sums to protect their animals from the disease. Some veterinarians immunize up to 300 animals in two or three days and many of them also provide artificial insemination. Private veterinarians and small farmers have shown a much better record regarding payments than government veterinarians and state or parastatal farms. Initial subsidization of vaccinations may be counterproductive if full cost recovery is the long term objective. Farmers are reluctant to accept rising costs for a particular product. Requests by livestock owners have proven their value and do provide an incentive and a solid basis for the establishment of private veterinary practice in rural areas.

The profession in New Zealand is structured around partnerships of several senior veterinarians or small companies employing up to a dozen university degree holders and several lower level technicians. Most practices in Kenya are single veterinarians. In a few cases there are two-people partnerships and some employ one or two AHAs, who are diploma holders. Neither historically nor in terms of the structure of the profession are the two experiences similar.

Nevertheless, there are two common features which are of interest, namely that in both countries:

- Private practice is concentrated in areas where market-oriented, relatively large-scale livestock producers are concentrated. In New Zealand, these are the areas with easy access from the main towns, mostly in the Northern Island. In Kenya, the locations are the dairy farm area in the Kikuyu highlands, and the peri-urban areas of major towns where intensive poultry production - eggs and broilers - is concentrated. Few private veterinarians operate in the rangeland of the Southern Island in New Zealand, and none set out to serve the transhumance herds of the arid and semi-arid areas in Kenya, or smallholders far from major towns
- The main source of revenue for the private practitioners is profit on the sale of drugs and vaccines.

In New Zealand, government veterinarians are forbidden to engage in private practice. They may, if so requested, address livestock owners to a list of qualified private practitioners operating in their neighbourhood. Hence, the question of competition between public and private veterinarians does not arise. In Kenya, public sector veterinarians do engage in private practice, within the limits of the time and of the resources available under the department's work programme and often also in their spare time. However, unfair competition by government officers is not perceived as a serious threat to establishing private practices. On the other hand, Kenyan private veterinarians perceive lower level technicians, particularly AHA diploma-holders, as more serious competitors.

In the areas of New Zealand where few private veterinarian operate, the livestock owners themselves perform a number of para-veterinary functions. They are themselves trained, or hire helpers trained in para-veterinary skills. These may be diploma holders or lower certificate holders. A similar scenario is beginning to

develop in Kenya. This suggests that in the privatization process of developing countries, an important role can also be played by para-veterinary technicians. In Kenya, the Animal Health Training Institute (AHTI) turns out diploma holders, and other schools offer training at lower levels. In addition, several donor funded projects help the government to train local livestock owners, selected by the communities as meritorious and trustworthy people, in performing para-veterinary functions, essentially vaccinations and simple treatment of easily diagnosed diseases. This development is also taking place in several other countries. Para-veterinary technicians could also trade in permitted drugs and vaccines, if allowed to by the law, and the abuse of such permission could be effectively monitored. This would be very helpful in pastoral areas where the demand for drugs (deworming, anti-tripanosomiasis, remedies against contagious skin diseases, etc., as well as vaccines) is a very high percentage of the total demand for services². Para-veterinary technicians at all levels provide a healthy element of competition in the market for veterinary services in areas where private practices have been established, in addition to serving areas where it is not profitable for a university graduate to work.

CONCLUSIONS

Veterinary services fall into four main categories: clinical services (treatment of diseased animals and control of production limiting disorders); preventive services (avoiding the outbreak of diseases); provision of drugs vaccines and other products (such as artificial insemination) and human health protection (inspection of marketed animal products). Clinical and preventive animal health care also provide private goods, inasmuch as the services increase the value of animals for their owners, and should be provided by the private or the voluntary sector. The same applies to pharmaceutical products and to other products such artificial insemination. Efficient allocation of resources requires the elimination of subsidies. The government's main responsibility is connected with evident public interests, such as: the monitoring of general animal health conditions; preventing outbreaks of contagious animal diseases; eradication of animal diseases dangerous for human health; controlling the quality of inputs and products sold on the market; certifying the effectiveness and true labelling of drugs and vaccines and; training veterinary personnel at all levels.

In most developing countries, the livestock sector is characterized by a large number of small producers who are not fully market oriented. There are many types of market failures and serious poverty in marginal areas where livestock rearing is a major source of livelihood. Transhumance production systems create problems for effective service delivery. Other problems include the threat of outbreaks of contagious diseases that are not easy to eradicate, the absence of influential livestock owners' associations, and a lack of experience in the private practice of the veterinary profession. These factors must be taken into account in designing reform measures.

As in the case of other services, the reform of veterinary services aims at improving the quality and coverage of the services provided to livestock owners, more effective control of animal diseases endangering human health, and a significant reduction of the public cost of achieving such general objectives. The decentralized model works

² In the intensive livestock areas of Kenya, demand for drugs and for other services are almost equally important.

very well in developed economies. In less developed countries there are several factors that suggest that it may work equally well, and other factors that suggest that the reform needs to be tailored to local conditions. Adequate measures to accompany the transition process must be introduced, and a more pro-active government role may be justified, on a temporary basis, depending on the stage of development of the sector.

The elaboration of reform policies and of the new rules has hardly been participatory in most countries where reforms have been undertaken. The absence of strong livestock owners' associations, and of influential private veterinary and para-veterinary technicians associations has left the power configuration of the organizations to be reformed dominated by government technicians. As a result, in many cases government has continued to crowd out private service providers, despite declared intentions to support private enterprise. Support to spontaneous social aggregations of alternative service providers and of users' groups is an important pre-requisite for effective implementation of reform policies.

Reforms require new rules adapted to a policy that envisages a much more important role for the private and the voluntary sectors. The effectiveness of new rules is greatly improved by formally associating with the rule formulation process, representatives of stakeholder groups such as livestock owners of different categories (rich and poor), public sector and private veterinarians, para-veterinary technicians and consumers of livestock products.

The development of private services has been slow in most developing countries with low per capita income and poor institutional development. This is despite ample evidence of the willingness of livestock owners from the poorest areas to pay for effective clinical and preventive veterinary services. The cost of providing veterinary services to poor livestock owners and to transhumance pastoralists is often disproportionately high because of the transport cost and time required reaching their locations. This provides justification for giving priority to the para-veterinary technicians to provide primary services in such areas, in terms of training, certification of their competence and legal access to marketing of certain veterinary products.

The comparison of the profile of the private veterinary profession in Kenya and New Zealand shows three striking similarities. In both countries, fully qualified private veterinarians are concentrated in areas around the main urban centres, and deal mostly with medium size commercial units. Far-away areas are served by lower level technicians, often directly employed by ranchers in New Zealand or emerging para-veterinary technicians belonging to informal farmers' groups in Kenya. In both countries the main source of income is from the sale of veterinary products.

REFERENCES

Cheneau, Y. (1999). The effect of structural adjustment programmes on the delivery of veterinary services in Africa. FAO-AGA website

FAO (1997) Principles for rational delivery of public and private veterinary services with reference to Africa