A strategy for Veterinary Services
to meet the requirements of a changing world

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Summary: Certain management techniques could improve the operation of an official Veterinary Service. These include a strategic approach to administrative innovation in order to bring about improved services.

A Veterinary Service needs to look beyond its immediate tasks to the environment in which it operates and to be able to respond, in particular, to the changing demands of the animal industry. Three strategic areas and methods for accomplishing such a change in outlook are presented.

Communication with other sectors and training in management are important parts of an improvement program. A syllabus for a managerial training course is provided.

KEYWORDS: Administration - Animal industry - Improvement - Management - Public services - Veterinary services.

INTRODUCTION

In recent years, delegates to the OIE have voiced concern about the situation of many Official Veterinary Services (OVS). They emphasized the need to make these services responsive to present and future requirements of the animal industry, both in developed countries (with either market or planned economies) and in developing countries. There is broad agreement on the obsolescence of many OVS in regard to the demands of the animal industry. In this paper, the term “animal industry” is used in its broadest sense, denoting all sectors in the production, processing and marketing of economically valuable animals, animal products and by-products, and industries producing inputs for these sectors.

Innovation, administrative reforms and improved management processes are necessary, but are not sufficient. The design and application of a strategy which favors innovation is also needed.

The first part of this paper offers a general statement of various relevant issues, while omitting reference to specific prescriptions which would apply only to certain countries.

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The second part aims to identify the basic problems which arise from changes in the production and consumption of foods of animal origin. Finally, a strategy for their solution is presented, along with the outline of a process for implementing the desired measures.

INNOVATION AND DEVELOPMENT OF MANAGEMENT PROCESSES IN OFFICIAL VETERINARY SERVICES

Firstly, though terms such as "administration" and "management" may have very different connotations, depending on one's conceptual and ideological position, they are used as synonyms in this paper. It is assumed that a "management process" takes place when identifiable decision-making authorities participate in the definition of objectives and the handling and control of resources. These authorities set up standards (both implicit and explicit) which, supported by varying degrees of consensus, implement and regulate the use of resources. The management process results in concrete activities which are organized and controlled by means of standards and functions referred to as "administrative routines".

By extension, an administrator, manager or executive is any individual who participates and has responsibility in the allocation, use and control of resources. The terms "administrator" and "manager" imply more than just a specialist in the techniques and processes used to conduct and supervise administrative routines (personnel administration, control of supplies, etc.).

After some remarks on "administrative innovations", we will review a number of basic conditions for the application of a "strategic administration" approach to public agencies in general and to OVS in particular.

This double perspective was chosen for the following reasons:

- Innovation in OVS management processes is now recognized as an urgent necessity. It is the basic (if not the only) component of most proposals for helping services meet the demands of the animal industry.

- A strategic approach to OVS administration is warranted because of the uncertainty and complexity of the setting in which both OVS and the animal industry have to function. The theory of strategic administration was developed in response to rapid changes affecting the operation of both public and private organizations. Given the public sector's frequent recourse to concepts, approaches and instruments used in business, it is necessary to examine the possibilities and limitations of such procedures and to consider their application to Veterinary Services.

REFERENCE FRAMEWORK FOR INTRODUCING CHANGES IN ADMINISTRATION

There can be no doubt that, if OVS are to meet the requirements imposed on them by the animal industry, they must redesign their organization, and alter their style in planning, administration and relations with the environment. The efforts made
to meet these requirements often reveal a contradiction between the purpose of a service and its capacity for management and operation. The result is sometimes a critical situation which can be resolved only by adopting a different style of administration. A strategy is thus needed to ensure that changes can actually be implemented within the current administrative style of public institutions. This calls for a review of procedures and definition of substrategies.

Useful information can be derived from the many attempts in recent decades to reform public administrations in Latin America. Experience clearly shows that any proposal for change in management processes must be thoroughly responsive to the requirements of the animal industry, as well as to the external environment in which that industry and the OVS function. It is necessary to go beyond traditional "administrative reform" as undertaken in various countries. Such attempts have concentrated on the readjustment and change of supporting functions, e.g. vaccination. Being essentially process-minded, this approach views existing procedures as satisfactory – regardless of reality or the goals to be accomplished by reform. But if change is to be made feasible, administrative reform must be replaced by a continuous process of administrative innovation which is monitored, evaluated and systematically adjusted. First, however, it is imperative to devise an administrative style geared to the requirements of the animal industry and to the setting in which it operates, and to analyze the implications of that style. A strategy and a procedure for innovation can then be planned to suit the particular conditions of each OVS and its country at a given time.

Administrative innovation must be approached in terms of objectives rather than processes. It must start from a strategic understanding of the relations of the OVS with the animal industry, human health, protection of the environment, and everything affecting national policies for economic and social development. This reference framework must precede the procedural analysis or proposals which obviously form part of any administrative change.

It is important that the OVS have some means of constantly monitoring their external environment (the political, social, economic and cultural milieux) so as to detect changes in the guidelines of national development and generate flows of information which will illuminate the scope and importance of those changes. In this way, services can better adjust their administrative practices to development policies.

These changes must necessarily be approached through "controlled trial and explained error" and a broad range of experience. This necessitates a careful statement of the aims and scope of the innovation process, its timing and strategic control, in order to allow for occasional readjustments. While the execution of the process must be gradual, its conception must be comprehensive and systemic, as it would otherwise be very difficult to maintain internal coherence while introducing changes. A central task is to appraise the kind of impulse needed to generate innovation in the OVS, to evaluate the possibilities for change, and identify officials who are capable of implementing it.

THE STRATEGIC APPROACH TO INNOVATION OF MANAGEMENT PROCESSES

The strategic approach is really geared to the private firm and the decentralized public enterprise, but it is adequately responsive to the generic characteristics and
problems of OVS. One important feature of institutions like the OVS is their dependence: they must negotiate both for objectives and ways of attaining them and also for the appropriation and reallocation of resources required. This dependence (along with other characteristics of public agencies) affects the speed and intensity of response to specific situations as they arise, and indeed the capacity of a service to respond at all to unforeseen factors. Public institutions are subject to the values and priorities implied in a style of development and administration, and their options are limited by the situation of the public sector as a whole and by the use which government makes of them as instruments of its economic and social policies. It must be remembered that, whereas private firms are an object of government economic policies, public institutions are the subject of those policies.

The salient differences between public and private enterprises have been described by P.R. Motta (31). It is also useful to distinguish between public enterprises that are centralized or decentralized (or autonomous), and in regard to their final product – the type of goods or service provided, and also the scale, complexity and socio-economic significance of their output in relation to their purposes, functions and type of external environment. These differences must be taken into account in the analysis of, and decisions on, how public agencies may be organized and administered.

The question arises as to whether it is possible in a mixed economy to reconcile the social purpose of a public agency with the criterion of individual economic efficiency, or whether the criteria of social efficiency and social result should retain their priority for public enterprises. There are cases in which the main purpose of a public enterprise is to subsidize the private sector directly or indirectly, or to perform tasks which, though unprofitable, are economically and socially necessary. Hence, it is important for a public enterprise to establish clearly (and in advance) the criteria for assessing its social effectiveness, in order to portray its functions to the public.

This does not diminish the need for greater efficiency in public institutions. The aim is to improve productivity (or efficiency) and to accomplish a social purpose or mission (effectiveness).

Such a management style requires a complex, dynamic environment, an area for the organization’s product which is not inherently unprofitable, and a degree of independence from the subsidy provided (and rules imposed) by government. A change of style comes about when the organization perceives its survival to be threatened, and effective leadership emerges as a response.

The differences between public enterprise and private firms raise the question of whether the strategic management approach, which appears fully suited to the general environment and to the animal industry, can also provide a proper response to the organizational and administrative problems of the OVS as public institutions in need of adaptation to the requirements of industry and environment. The answer to that question may seem obvious, but it is hard to act upon.

One way to bring attention to a “threat to the survival” of a service (and to the veterinarians who work with it) would be to create a situation in which fulfilment of a “purpose” or “mission” with social effectiveness and economic efficiency is made a pre-requisite for the organization’s survival. Under present conditions, this stimulus can be generated only by government and by society at large. Change requires the mobilization of new values to replace deep-seated ideas and administrative procedures. Considerable effort is needed to inculcate strategic-management principles
into a service which is simultaneously undergoing training and developing a capacity to keep pace with (and even take the lead in) change.

It must not be assumed that a service which is rigorously performing its normal duties (e.g. complying with rules and regulations, and attaining objectives formulated in the past) is being socially effective, or that care in its use of public funds (by minimizing costs) necessarily makes it economically efficient. Even good performance can compromise survival if it does not conform to present economic and social guidelines. Note that OVS were originally set up for technical and administrative purposes (which they still carry out) rather than to further national economic and social development. The result has been organizational stagnation caused not only by lack of training, but also by a structural problem of public administration affecting at least the agricultural area.

According to Motta (30), despite the limitations imposed by the nature of public organizations, there are many theoretical components of strategic management which can meet their practical needs. He suggests that public organizations also face uncertainties, compete for resources, and have to be innovative; they must develop new ways of providing products and services, and continually adjust to external change. Procedures and theoretical elements thus have to be transferred, adapted and applied in practice, along with essential considerations concerning the social mission of these institutions, organizational scales and sizes, and the availability of personnel skilled in these theoretical matters. Through management, institutions must be adapted to their environment in order to survive. Motta concluded that there would have to be acceptance of the following:

- Some degree of irrationality in decision-making. It may be desirable to accentuate the difficulty of obtaining results and thus to emphasize the need for negotiation in formulating policies and also in the appropriation and reallocation of resources. Negotiation should prevail over "rational" analysis. Planning and strategic management can help make decision-making a more complete process and thus ensure better guidance for the organization.

- Limitations on the managerial authority of those in charge. Interference is strong in public agencies owing to the regulatory and financial pressures of the public sector. Both the institution's own purposes and the dominant position of government control make it essential to include political and social aspects in the organization of a service.

- No matter how clearly they are defined, the purposes of a service will always be somewhat ambiguous, arbitrary and changeable. The speed of change and the need to reduce uncertainty while accommodating the largest possible number of political, community and economic interests, force the adoption of goals which are sometimes loosely formulated and lacking in definition.

- Planning and strategic management imply a process of identification of purposes which serves as a vehicle of learning and understanding within the organization. Even if planning proves ineffectual in regard to particular goals, it will clarify the situation resulting from lack of information, extreme pressures, and the internal incapacity to respond. Such a result, in itself, would be adequate justification for using this approach.

But strategic management is only a partial response to the organizational and administrative problems of public institutions. Political and social aspects are inherent
in the nature, structure and function of public institutions, and determine their purpose or social mission. Adaptation of strategic management must therefore be complemented by knowledge of the concepts and practices of public policy formulation. In this area there have been developments which could be adapted in the management of OVS.

Adaptation is far from easy, however. It raises problems such as how to carry over (without adversely affecting) methodological and operational elements appropriate for a Veterinary Service, maintaining their usefulness not only in refining decisions, negotiation, planning and control, but also (and primarily) as catalysts of knowledge, unity and commitment among personnel.

To conclude, innovation in management processes is necessary but insufficient for bringing OVS up to the requirements of the animal industry and making them as useful as possible. Innovation must be part of a larger effort to revitalize the services and develop creative mastery in specific areas of activity. This requires, in addition to administrative improvement, full use of their technical excellence, which entails the training of personnel and development of technical resources. The feasibility and relevance of proposed changes must be carefully examined, and their implementation creatively programmed and systematically monitored. Otherwise, any attempt at innovation will be a useless formal exercise.

THE REQUIREMENTS OF THE ANIMAL INDUSTRY, AND STRATEGIC METHODS FOR MEETING THEM

Here are some elements of the problem:

- Industrialization of the production and marketing of animals for human consumption is underway in developed countries. In developing countries, this rapid, intense and variable process is occurring in a few establishments, while most other producers in the animal sector are experiencing a deterioration in efficiency and productivity.

- There are trends towards the standardization and encouragement of consumption, with the development of a mass phenomenon involving new expectations and demands from consumers.

- Advances are being made in controlling the major epizootics, and in understanding animal physiology, pathology and genetics.

- Social problems associated with lack of development in the animal industry (migration to urban centers, disparities between the conditions of urban and rural populations, shortfalls in the production and supply of foods of animal origin, etc.) persist and are even worsening.

- It is necessary to recognize the complex risks inherent in current large-scale production practices, and to approach prevention, control and treatment from a comprehensive, interdisciplinary point of view.

- Examination of these elements shows that the OVS are falling seriously behind in the concept of their mission in society, functions, organization and resources,
operating technology, capacity to administer the necessary knowledge, and management processes. This obsolescence severely limits their usefulness and casts doubts on their continued existence.

At another level, inadequacy may also be revealed in the attitude and concepts, methods and procedures of the veterinarian — the professional who is responsible for animal hygiene and health in a setting in which “industrial logic” reigns supreme.

The problem is complex (involving a large number of variables), contingent (mostly beyond the control of the OVS), and poorly defined (there is little or no understanding of relations among the known variables, and others have yet to be identified). The difficulty is compounded by the variety of socio-economic conditions to be found in numerous countries, each of which has its own history and present complexity. As a result, the problem requires approaches, methods and instruments tailored to specific conditions.

OUTLINE OF A SOLUTION

The sociologist and philosopher Chester Barnard (10) stated that, however complex an administrative problem may be, a few strategic variables can always be found that determine the essential form of its solution. Three strategic areas and three strategic methods are identifiable.

a) Key strategic areas:

1) To design and develop innovative OVS management processes, the special mission of the service must be reappraised along with its relationship to the present and foreseeable environment in which it acts and reacts; the capacity of OVS to anticipate, respond and negotiate must also be developed.

2) Another key area involves the framing of concepts and the design of a comprehensive interdisciplinary approach to animal health risks, which covers the production, marketing and consumer aspects. Capabilities for gathering epidemiological data, prediction and surveillance must also be increased.

3) The third key area is development and innovation in relations between OVS and animal production establishments, supporting industries, marketing and financing systems, consumer groups, public opinion, etc. Ways of raising capital must also be considered.

Progress in these three areas is regarded as necessary though not sufficient for the effectiveness of any strategy. Implementation restricts the choices among activities regarded as worth developing into well-defined projects, organized to have the greatest possible economic, social and political impact, as well as speed of preparation and feasibility.

b) Principal strategic methods:

1) Administration of knowledge.

2) Communication and cooperation with animal production establishments, industrial enterprises, support and ancillary systems, consumers, public opinion, etc.

3) Training of various personnel and participants from the different spheres.
These three methods are neither interchangeable, nor specific to one of the proposed areas. It is crucial to understand that their effectiveness stems from their mutual interdependence and their interrelations with the three strategic areas.

They are complex and of high tactical sensitivity. They must be organized and handled in such a way that participants in various quarters and at different levels can produce useful results within the time felt to be available. A great deal of inventiveness is thus required for their adaptation to specific situations.

In addition, their dual significance as "methods for change" in OVS and as "substantive functions" heightens their strategic potential. Programming and application thus assume special importance, as does systematic, timely and thoughtful monitoring at every stage of the process.

These comments may be usefully complemented with a few considerations on each method.

Regarding the administration of knowledge, the principal objects are the problems and possible solutions relating to the animal industry or to the interaction between OVS in society and the public setting. Lines of inquiry include both scientific and conceptual spheres, and deal with methods as well as means. It is well to point out that "information" is also a means to knowledge.

Among the responsibilities of OVS are the identification of problems and solutions in particular historical, economic, social and political settings; compilation, analysis, evaluation and classification of pertinent data; identification of sources, producers and users; adaptation and organization of communication; and monitoring application of solutions.

The role of the OVS in this process spans a wide range of functions from catalyst, communicator, guide and coordinator to that of a producer of knowledge. The production and administration of knowledge draws upon the objective description of concrete reality, which determines and is determined by the specific situations in which the OVS act, and upon the technical excellence required both for the diagnosis of concrete problems and for implementing solutions. This means that the OVS must develop practical competence in all relevant aspects of an area of knowledge; a capacity to identify the origins and sources of that knowledge, and to assess its potential for the solution of the problems identified; refinement of current approaches, ideas and practices, and development of new proposals for coherent administration; also an ability to broaden, improve and transmit that knowledge in the different national socio-economic situations in which the service and its agents function. In addition, the practice of technical excellence demands adoption of the right attitude, behavior and commitment. In all, it may be asserted that the administration of knowledge is the essence of technical cooperation, in that it permeates all the strategic areas identified and potentiates the other methods selected.

Three problems are of particular importance in this context: (a) characterization of the environment, (b) assessment of information-processing possibilities, and (c) determination of the risks to animal health (and production).

Characterization of the environment is a precondition for the proper administration of knowledge. Given the traditional technocratic attitude whereby the practice of veterinary medicine is a means to an end, the OVS have had virtually no part in defining the social, economic and political setting in which they function. A service
must apply the right methods for evaluating the real problems of its country and region, in relation to overall economic and social development; it must identify with the general purposes and goals of the government, and formulate the role of the animal industry in attaining them. To do so, the OVS must combine their management resources with the knowledge generated by economists, sociologists and politicians. They must then communicate with various leadership groups in the public and private sectors, in order to stimulate the solutions needed in their specific field.

Information processing has penetrated extensively into the animal industry. Apart from its value for all public services as a master tool of administrative rationalization, this irreversible and spreading technology has radically transformed practice throughout the industry. A potential consequence is that in many cases, the OVS may have fallen out of step with the animal production establishments, and may be unable to provide the technical support they require. It is clearly urgent for services again to become viable partners of production establishments through an understanding of information problems. This does not mean that the OVS must emulate or supplant the skills of information-processing specialists and organizations, but the services should be given the capacity to evaluate advantages and disadvantages among possible options, so as to refine their technical cooperation with producers. In practice, the pace at which information processing is developing, and therefore the rapidity with which its technological products become obsolete (also the extreme avidity of the information market) can generate confusion about the significance of information, and cause it to become an end in itself instead of providing access to knowledge. When information processing is thus cut off from knowledge, it is cut off from its substantive content. In any case, those who function best in a given situation are those who make the best use of what information they have. It is here that the OVS can assist production establishments to assess the various options available in information processing, once their needs have been analyzed and ranked in order of priority.

From the standpoint of the OVS, once the urgency of adopting information techniques in the performance of their functions has been recognized, the same considerations apply, with one important provision which is generally overlooked: when results are measured in terms of money, as they are in the animal industry, the supply of information-processing technology and similar hardware may be too costly. This may not be the case in the OVS, however, where results are measured by quite different standards. Hence the imperative of carefully evaluating the purposes, features, sizes and rhythm — and the priorities — of an information system for the OVS before selecting equipment and programs.

With regard to the third problem, which information processing is uniquely suited to deal with, we must draw attention to the complexity of the determinants of risks to animal health and production.

The diversity of animal production and the changes now underway in the animal industry call for the design of epidemiological concepts and surveillance techniques suited to the differing economic risk and impact of different systems, and of the specific preventive and therapeutic solutions required by each, in the context of the general measures proposed in each country.

A prime responsibility of veterinary science, this undertaking faces a formidable epistemological barrier: traditional epidemiology is inadequate in dealing with compound causes and effects, and the complex interrelationships of effects and impacts.
In epistemological terms, the traditional view of multicausality arose when the variables “agent, host and environment” were given equal weight as determinants of epidemiological risks. This view must give way to organizational categories of the forms of animal production as the ultimate determinants of specific health and production profiles. The point is that the diagnosis and treatment of a disease or pathology should not be viewed in isolation. The OVS must have the capacity to select programs and actions which can enable production in a given animal population to meet the established goals.

This approach to epidemiology requires the design and use of procedures for characterizing the overall production, health problems and causal interactions which are important in determining the diagnostic situation. The OVS must select the operational resources that will have the greatest impact at the lowest financial and social cost.

The second strategic method, communication with other agents, is complex because of the number and kind of interrelationships among the participants: government in general, the public agencies, the private sector (which includes livestock producers, supporting industries, marketing and financial systems), and the external sector, which includes multinational corporations, bilateral and multilateral technical and financial support organizations (Table I). The principal sources of conflict in the environment

<table>
<thead>
<tr>
<th>Targets of articulation</th>
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<tr>
<td>Commitment, participation, induction, communication, cooperation, training, regulation</td>
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<table>
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<tr>
<th>Spheres, levels, participants</th>
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</thead>
<tbody>
<tr>
<td>General government: Executive &amp; legislative branches</td>
</tr>
<tr>
<td>Public Institutions: Centralized &amp; decentralized</td>
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<tr>
<td>Central &amp; regional planning agencies</td>
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<tr>
<td>Official Veterinary Services</td>
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<tr>
<td>Universities</td>
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<tr>
<td>Research centers</td>
</tr>
<tr>
<td>Private farmers: Individuals; farmers’ organizations; enterprises</td>
</tr>
<tr>
<td>Supporting industries: Drugs and biologicals, foods; construction, machinery, equipment; information processing; diagnostic and quality control laboratories</td>
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<tr>
<td>Marketing systems</td>
</tr>
<tr>
<td>Financing systems</td>
</tr>
<tr>
<td>Consumers: Individuals, organizations</td>
</tr>
<tr>
<td>Public opinion: General; trade unions; political parties; mass media; other organized groups</td>
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</tbody>
</table>
are, on the one hand, overlapping areas of competence and cross-purposes; conflicting “missions” and criteria of effectiveness, efficiency and survival; as well as private and generally clashing objectives of the different groups. On the other hand, it is necessary to consider the intensity of technological change and the revolution in expectations and aspirations of consumers. These two perspectives make for a complex situation of conflict and uncertainty and, in the case of the OVS, of pronounced dependence. The OVS must therefore develop a capacity for strategic analysis, so as to identify which constituents of the environment are vital to the attainment of objectives or the fulfilment of their mission. It is necessary to analyze the motivation of these constituents and the criteria which guide and animate actions; to make explicit and reassess the purposes of the service, and to identify areas of present and potential conflict and harmony. Armed with this knowledge, OVS can establish strategies for negotiation with selected constituents, either for the demarcation and clarification of territorial boundaries (to minimize conflict) or to create conditions for complementarity and coordination in specific situations or for some longer term (Fig. 1). In this way, a basis can be established which will be both concrete and flexible, regularly renegotiated and suitable for cooperation between services and their environment.

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**POWER SYSTEM**

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**GENERAL GOVERNMENT**

**PUBLIC INSTITUTIONS**

**VETERINARY SERVICES**

**PRIVATE SECTOR:**
- production establishments
- supporting industries
- marketing

**EXTERNAL SECTOR**
- Bilateral agencies
- Multilateral agencies

**FIG. 1**

*Sphere of action of the OVS*

*Areas of conflict and complementarity (shaded areas)*

To achieve this new kind of articulation, new methods of prospection and analysis must be accompanied by new managerial attitudes in internal and external issues, indeed by innovation in the knowledge, skill, attitude and dedication of agents at all levels and in the relations among them.
Lastly, there are procedures that OVS may use, with some assurance of success, to generate and maintain communication and articulation within their environment. These procedures may be grouped into those used within the OVS and those directed at the external setting. The former are:

a) Evaluation (ex-ante and ex-post, to select means and ends) of the extent to which scheduled activities have been carried out and goals attained.

b) Strategic monitoring of the sequence information-action-evaluation-information, as applied to actual animal industry enterprises, and as used to gauge the political, technical and administrative effectiveness of projects and operations, their programming and supervision and the development of capabilities for proposals, response and negotiation.

As for the external environment, the procedures may be summed up as the capability to communicate and administer knowledge, to provide technical cooperation, and to elicit, coordinate, regulate and monitor action.

In the final analysis, the capacity of a service to articulate and coordinate is a matter of power. The power needed for the development of a service may be expressed as a greater or lesser capacity to alter its own environment. To be able to change, OVS must foster a recognition of their concrete usefulness among the constituents of the environment (for example, producers and their organizations, and public opinion) which are of key importance in the self-improvement strategy. These participants are mentioned because, despite the need for reserve or caution in offering general strategic prescriptions for institutions with diverse problems and environments, it seems legitimate to assume that, in most cases, public opinion in general and producers in particular would command priority attention.

To summarize, this method centers on the strategic and functional articulation of the OVS with key components of their environment (Chart 1). To do this it must utilize every means for furthering anticipation and response, the administration of knowledge, and specific technical cooperation. It must also reassess the meaning and character of that cooperation. Such reassessment is illustrated by the observation of J.P. Tillon (43) that "... in the past the veterinarian acted upon the animal and thereby met the interest and concern of the farmer. The conditions of present-day animal industry make it necessary that the veterinarian act upon the farmer as a technical adviser and source of reliable and effective information".

The third method for upgrading OVS, training, can now be considered.

**DESIGNING THE STRATEGY**

*Training of the agents involved* is the main process which permeates strategic areas and contributes to the feasibility of the actions required for development. It underlies all the concepts, methods and procedures mentioned. This makes it highly useful as a springboard for the launching of change in most situations. Any examination and characterization of training must consider the setting in which it is carried out, the aims pursued, the personnel at whom it is directed, the time required for its effects to be felt, and its probable impact.
### Chart 1

Elements which affect the design and development of an official Veterinary Service

<table>
<thead>
<tr>
<th>Characteristics of the social process</th>
<th>History, complexity, uncertainty, fragmentation, dependence, conflict</th>
</tr>
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<tbody>
<tr>
<td>- Private sector:</td>
<td>- National style of development</td>
</tr>
<tr>
<td>(animal industry)</td>
<td>- Conception of government</td>
</tr>
<tr>
<td>- Production</td>
<td>- The public sector</td>
</tr>
<tr>
<td>- Share in GDP</td>
<td>- The social objectives</td>
</tr>
<tr>
<td>- Structure</td>
<td>- Openness to outside world</td>
</tr>
<tr>
<td>- Technology</td>
<td>- Participation scheme</td>
</tr>
<tr>
<td>- Productivity</td>
<td>- Power structure and its dynamics</td>
</tr>
<tr>
<td>- Appropriation and use of surplus</td>
<td>- Public opinion</td>
</tr>
<tr>
<td>- Relationship with external sector</td>
<td>- Training</td>
</tr>
<tr>
<td>- Location and dynamics in power structure</td>
<td>- Structure</td>
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<tr>
<td>- Supporting industries</td>
<td>- Capacity for impact</td>
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<tr>
<td>- Marketing and financing systems</td>
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<tr>
<td>- The external sector:</td>
<td></td>
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<tr>
<td>. Center-periphery</td>
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<td>. Periphery-periphery</td>
<td></td>
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<tr>
<td>- Social mission</td>
<td>- Rationality</td>
</tr>
<tr>
<td>- Product</td>
<td>- Type and magnitude of financing</td>
</tr>
<tr>
<td>- Scale</td>
<td>- Capacity for anticipation and response</td>
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<tr>
<td>- Islamic</td>
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<td>- Rationality</td>
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<td>- Type and magnitude of financing</td>
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<tr>
<td>- Criteria of: effectiveness-efficiency; survival</td>
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<tr>
<td>- History and management culture</td>
<td></td>
</tr>
<tr>
<td>- Characteristics of public institutions</td>
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</tbody>
</table>

### External Environment of OVS

Scenarios: present, probable, desirable, demographic, economic, political, social, animal production, epidemiological
Change and upgrading of OVS occurs through **competence-building participation in a process of supervised trials and explained errors**. This approach affects not just the forms and arrangements of training but its content. The primary participants will be the OVS, veterinarians and producers.

The OVS are complex organizations which may feel their social justification to be jeopardized by a lack of responsiveness to the requirements of the animal industry. One obstacle for OVS in the technical management of the livestock sector may be their inability to analyze and understand fully the present state of development of the animal industry, its role in the current and potential development of the country, and the ways in which it could add to the national income and contribute to a wider income distribution, the food supply, the earning of foreign exchange, the increase of government revenue, etc.

If OVS are to contribute to the economic and social development of their countries, they must be able to diagnose the situation in the animal industry and the rural population. The traditional diagnosis of health, genetic, nutritional and technological factors which limit animal production is only part of the problem. Hence, training as a basic strategy for renovating OVS must start by covering disciplines in the economic and social sciences.

**Management function** is crucial to guide any organization towards its established objectives and enable it to meet the unremitting challenges of innovation. Hence, training programs for the development of management processes should give priority to problems of how to formulate, monitor and evaluate policies and strategies. Training for public administration demands attention and dedication to social and political phenomena. It is obvious that training should not be limited to the learning of administrative processes and technologies. The aim is not that executives do their jobs better than their predecessors, but that they know how to identify and solve the present problems of the animal industry. New undertakings and approaches are essential if OVS are to develop into relevant institutions.

Specialists in administrative techniques are important, and nowadays are not too hard to find. Managerial ability is rarer, requiring abilities which demand more complex training: a capacity to analyze, prudent and strict judgement, an aptitude for decision-making, the assumption of leadership and the ability to face up to risks and uncertainties.

Moreover, the environment in which OVS function requires a great capacity for negotiation among many interest groups, and the integration of a wide range of participants to arrive at unified, coherent action. This managerial capacity can be acquired by **ongoing interdisciplinary training**. Training must not just turn out a personnel product, but open the mind to new values, knowledge, skills and alternatives.

The OVS pursue coordinated activities in a setting of conflict and uncertainty. There **the executive** is the most strategic and dynamic agent, for he serves as a channel of communication among the subsystems within the organization and among external systems; he directs the acquisition of operational resources, and gives concrete expression to its aims and purposes. **Training executive (middle and upper management) personnel becomes the keystone of a strategy for the innovation and improvement of the service.**

Ultimately, however, it is the rank-and-file professional who must act along with the executive to carry the change through. This can be done by persons who understand the institutional objectives, regard them as consistent with the purpose of their organization and with their own interests, and feel capable of acting in accordance with them. It is
thus necessary to train both the executives and the professionals of the services. The objectives, modes and content of the training of these agents must be directed to bringing about changes not only in knowledge and specific skills, but also in attitudes and behavior. Problems deriving from the unresponsiveness of the OVS (and from the very practice of veterinary science) to the demands made on them by the animal industry must be systematically analyzed, along with the present and prospective, positive and negative implications of that industry's practices, in order to improve the relationship between economic efficiency and product quality, and protection of human health and the environment.

**TRAINING**

It is vital to keep in mind the conceptual and functional relations among strategic monitoring and evaluation, evaluative research and agent training. Monitoring and strategic evaluation help to identify the problems that arise, and the findings generally require evaluative research before yielding acceptable and useful explanations. Obviously, both explanations and identified but insufficiently resolved problems constitute valuable teaching material, since real-life practice is one of the chief sources of knowledge and a proving-ground for hypotheses, assumptions and theories. The main advantage of this approach is in the link which it establishes between training and concrete practice.

The concept of "critical mass" is a crucial strategic element. This is defined as a group of participants sufficient in number, distribution and quality to set change in motion. A critical mass is built up from a core group of agents who are trained and strategically deployed. The idea is to reach, in a programmed succession of spreading waves, and within an appropriate period of time, all agents and all levels perceived as critical or strategic. This multiplying process obviously requires monitoring to ensure both that it is proceeding in the right direction, and that the experience can be fed back into the training process for correction and improvement. By combining the "critical mass" approach with the idea of change proceeding by successive approximations through supervised trial and explained error, a core group is built up which determines the choice of procedures and training program.

The veterinarian fills the gap between the demands of the animal industry and the present capacity of the OVS to satisfy them, and is the key person at whom the training effort should be directed. Another essential agent in the training strategy is the producer, whose objective circumstances and strategic potential deserve separate consideration, but to whom the same basic elements may be applied. It is useful to construct a map of participants which identifies and classifies them by their strategic potential, in relation to features of greatest relevance to training. This makes it easier to build a strategy for action which goes beyond the limits of the training method and binds it closely to the other two strategic procedures selected: articulation of the OVS with the animal industry, and the administration of knowledge.

The training strategy is one of the most efficient and effective means for innovation in OVS, emphasizing management processes and their reinforcement over time. The approach described here draws on various known training processes, conventional and unconventional, formal and informal, direct and indirect, and does not rule out devices traditionally reserved for propaganda and other means of swaying the masses. *Every participant is potentially both an instrument and a recipient of training.*
Participants who have a strategic role in innovation in a Veterinary Service are:

The veterinarian
- In service
  . The veterinary service
    at decision-making level
    at intermediate and basic technical level
  . In university
    training, research
- In training
  . as university undergraduate
  . as graduate student

The stock farmer
  . individuals
  . stockfarmers’ organizations

The consumer
  . consumer organizations

The public
  . in the consumer area
- Regarding the image of the OVS (public opinion).

TRAINING PROPOSAL

Experience has shown that designing a training program for executives and administrators of public institutions is a complex matter. This kind of training exposes the participant to new group environments, new demands and experiences. Only some of these aspects can be programmed in advance. Many will have to be dealt with as the process advances, and adjusted and completed as they are applied. A program for management training depends on finding satisfactory answers to the questions: what is good management? what knowledge, skills, abilities and attitudes must a manager have to perform effectively and efficiently? who are the managers?

There follows a summary of the broad subjects which training could cover, and a tentative proposal for treating each subject:

1. Identification and analysis of the situation created by the present gap between OVS and the animal industry:
   - Characterization and historical/prospective study of the OVS and the animal industry.
   - Identification, systematization and discussion of the most effective and efficient variables to organize the situation.
   - Presentation, discussion, practical application, and evaluation of approaches and methods suited for analyses of this kind.

2. Identification, construction and evaluation of possible alternative solutions to structure the situation:
   - Elaboration, analysis and discussion of alternative solutions.
- Presentation, analysis, discussion and practical application of approaches and methods available for the exploration and future treatment, and for the construction and analysis, of purposes, goals and alternatives.

- Definition of criteria and methods for ex-ante evaluation of the impact, feasibility, side effects, costs and technical and political benefits of alternatives.

3. Construction of strategies for implementing solutions selected:
- Role of strategic options and their construction. Dynamics of projects in the strategic option.
- Selection, preparation and evaluation of ongoing projects.
- Construction and paths analysis; analysis of changes in cost-benefit ratios; and of relationships between technicians and policy-makers during the time required for the execution of the projects and the time available under current policy.
- The process of negotiation and adjustment of options: within the OVS and with the external environment. Making those options feasible.
- Evaluation (ex-ante and ex-post) and strategic monitoring.
- Presentation, discussion, evaluation and practical application of approaches and methods (conventional and unconventional) available for the design, evaluation and negotiations of strategies, options and projects.

4. The management process in the OVS:
- Genesis, trends, scope and limitations of the strategic approach to the management of institutions.
- OVS:
  - Analysis of their past and future, their purposes, organization, structure, functions and sphere, and administrative and functional placement in the larger organizational setting; operating procedures and resource allocation.
  - The management process:
    - Participation in the analysis and formulation of national policies and of strategies for their implementation; the development of organizations.
  - External relations:
    - Analysis and development of the capacity to establish relationships and to induce, negotiate and regulate.
    - Projection of the image of the service (social mission; criteria of effectiveness, efficiency and social benefits).
    - Negotiation of priorities. Generation, appropriation, allocation, use and control of resources.
  - Internal relations:
    - Analysis of implications of the requirements of the animal industry in particular and of the development process in general.
. Clarification of the social mission, and of the functions and criteria of effectiveness-
  efficiency and of survival.

. Strategic leadership, participation and communication systems; ability to explore,
  anticipate and respond.

. Development of ability to administer knowledge and technical excellence.

. Development of ability to evaluate and use information processing as an input to
  the management process.

. Manpower development: knowledge, skills, commitment and initiative. Communication
  and participation.

. Generation, acquisition, use and control of financial resources.

  ~ Conduct of the planning process: the strategic approach, the articulation of plans
  with practice, treatment of situations as they arise, parts played by the different
  participants and levels; strategic evaluation and monitoring, and the conduct and control
  of administrative routines. The part played by projects and their administration.

  ~ Design and implementation of strategies for administrative innovation and
  development.

  ~ Presentation, discussion, evaluation and analysis of approaches, methods and
  instruments available for improving and overseeing the management process.

5. The epidemiological method and epidemiological surveillance and reporting
  system. Characterization of modes of production and ecosystems as determinants of
  animal health and production profiles and of specific proposals for action.

6. Development of capacity for technical cooperation with the producers.

Finally, a word on a proposal for organizing the programming and the discussion
of each unit in the different forms taken by the training program. The aim is to present
the propositions, with working hypotheses, for discussion by the participants. If their
analyses prompt them to reject those propositions, they must modify their strategy or
construct a new one for fresh discussion. When a proposition has been accepted, they
will proceed to identify the methods and procedures for its manipulation, including
analysis of the paradigms and theories which inform or determine them. The advantages
of this approach are obvious, and its results in practice commend it particularly for the
training of adults with prior experience in the subjects presented. One particularly
important by-product is that it contributes to the identification and ordering of variant
concepts and procedures which frequently emerge during the consideration of problems
and proposals in an interdisciplinary group.

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POUR RÉPONDRE AUX IMPÉRATIFS MODERNES : UNE STRATÉGIE D'INNOVATION
DES SERVICES VÉTÉRINAIRES. – P.N. Acha.

Résumé : Le fonctionnement d'un Service vétérinaire officiel peut être amélioré
par l'utilisation de certaines techniques de gestion, et notamment par une approche
stratégique des innovations en matière d'administration pour une meilleure qualité
des services rendus.
Un Service vétérinaire doit voir plus loin que ses tâches immédiates et considérer l'environnement dans lequel il fonctionne, de manière à pouvoir satisfaire, en particulier, l'évolution de la demande du secteur des productions animales, couvrant outre la production, la transformation et la commercialisation des produits animaux. L'auteur présente trois domaines et trois méthodes stratégiques permettant d'aboutir à ce changement de perspective. Il propose un plan d'amélioration, dont la communication avec les autres secteurs et la formation à la gestion sont des éléments importants, et expose le programme d'un cours de formation à la gestion.

MOTS-CLÉS : Administration - Amélioration - Gestion - Productions animales - Service public - Services vétérinaires.

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ESTRATEGIA APLICADA A LOS SERVICIOS VETERINARIOS PARA RESPONDER A LOS REQUISITOS DEL MUNDO MODERNO. — P.N. Acha.

Resumen: El funcionamiento de un Servicio Veterinario oficial puede mejorarse mediante determinadas técnicas administrativas, entre las que se encuentra un enfoque estratégico de las innovaciones en el campo de la administración a fin de incrementar la calidad de los servicios prestados.

Un Servicio Veterinario debe considerar el ambiente en el que se desempeña con una perspectiva más amplia que sus tareas inmediatas para poder responder, principalmente, a la evolución de la demanda de la industria animal. En el presente artículo, se trazan las líneas generales de tres campos y métodos estratégicos que permiten cumplir con dicho requisito y se propone un programa de mejora en el que la comunicación con los otros sectores y el adiestramiento administrativo ocupan un importante lugar. Asimismo, se presenta el contenido de un curso de administración.


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REFERENCES


