Rev. Sci. Tech. Off. Int. Epiz., 2017, **36** (1), 67-76

Using institutional and behavioural economics to examine animal health systems

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Summary

Economics provides a framework for understanding management decisions and their policy implications for the animal health system. While the neoclassical economic model is useful for framing animal health decisions on the farm, some of its assumptions and prescriptive results may be unrealistic. Institutional and behavioural economics address some of these potential shortcomings by considering the role of information, psychology and social factors in decisions. Framing such decisions under contract theory allows us to consider asymmetric information between policy-makers and farmers. Perverse incentives may exist in the area of preventing and reporting disease. Behavioural economics examines the role of internal and external psychological and social factors. Biases, heuristics, habit, social norms and other such aspects can result in farm decision-makers arriving at what might be considered irrational or otherwise sub-optimal decisions. Framing choices and providing relevant information and examples can alleviate these behavioural issues. The implications of this approach for disease policy and an applied research and outreach programme to respond to animal diseases are discussed.

Keywords

Adverse selection – Animal health – Behavioural economics – Biases – Framing – Institutional economics – Moral hazard – Norms.

Introduction

Economics is the study of the allocation of scarce resources, including money but also time, effort and other resources. Thus, economics frames decisions by firms, consumers and policy-makers. Economic models of consumers and firms have been shown to be useful in understanding decisions made at both the micro and macro level (1).

Animal diseases cause significant economic losses which would be even greater if not for management efforts by farmers, veterinarians, and other food industry and government actors. Farm-level incentives to manage disease are strong and include reducing animal suffering and preventing wealth loss. On the farm, managers take precautions against diseases that are not present and mitigate the effects of diseases that are. In doing so, managers weigh the private costs of illness, prevention and control. Livestock disease can have repercussions up and down the livestock supply chain for supporting industries. The role of government in animal disease management may take the form of supporting private activity, providing information and underlying infrastructure, or filling in where private efforts may be insufficient. Livestock disease control policy is a combination of education and information programmes, border controls, farm and processor inspections and tests, and indemnity and slaughter programmes. In addition, publicly funded research and education programmes assist in minimising treatment and control costs.

Neoclassical economics conceptualises consumers and firms as optimisers who are led to more efficient outcomes under a set of available resources and prices and/or values for those resources. The resulting equilibrium is considered optimal in that any other allocation of goods and services would leave someone worse off. The value of neoclassical economics can be assessed by the understanding of human behaviour that it offers us, as well as the consequences to which this behaviour leads. Farmers are generally assumed to maximise profits, which is a reasonable expectation for a business enterprise. The private benefits of livestock disease

doi: 10.20506/rst.36.1.2610

prevention and control include higher production as morbidity is lowered, lower mortality or less early culling, the avoidance of future control costs, and potentially greater access to attractive markets.

With respect to prevention, farmers can allocate operating resources or investments to biosecurity programmes. These programmes often involve limiting livestock contacts, as well as preventing other potential vectors from entering farms. In addition, biosecurity may involve such practices as testing livestock and feed before purchase, strict sanitation of people and vehicles entering the farm, and protecting feed supplies from wildlife. Farmers control disease by monitoring and testing their own herd or flock and reporting relevant infections to the authorities. Treating disease is possible in some cases and may involve vaccines or antibiotics, as well as veterinary visits. In situations where recovery from the disease is impossible or the expense of treatment is economically prohibitive, culling animals may be the only recourse. In the majority of the world, this produces a carcass with salvage meat, offal and hide. Early involuntary culling has long-term implications for livestock (the farmer's capital stock) and significant costs for animal replacement.

Neoclassical economics assumes that people act with full information available to them, that profits (for firms) and utility (for people) are maximised as the goal, and that people behave rationally and consistently (2). The assumptions required to arrive at analytical solutions in neoclassical economics are often restrictive and may not reflect reality. Economists often debate and test the validity of assumptions used to derive analytical solutions. These arguments have led to new directions in economic models which challenge, relax or change basic neoclassical economic assumptions. Two important directions in economics that may assist in analysing animal health systems are new institutional economics and behavioural economics.

Institutional economics focuses on understanding the role of institutions such as organisations, laws and contracts in influencing economic decisions. Behavioural economics combines psychology, sociology and economics to examine the effects of biases, habits, norms and perceptions on decision-making. This paper examines animal health programmes, specifically livestock disease prevention and control, through the lens of institutional and behavioural economics. The goal is to further an understanding of decisions at the farm level and pursue their implications for animal health policy. It begins with a brief overview of the contribution of institutional economics with a focus on incentives. The assistance offered by behavioural economics in understanding psychological aspects of animal health decisions is then examined. The paper concludes with a discussion of the implications for animal health policy suggested by insights from institutional and behavioural economics.

Institutional economics

North (1990) defined institutions as the 'rules of the game' that govern behaviour and structure interactions (3). All economic activity takes place within a framework of institutions, including both formal laws and contracts, and informal norms and conventions. Institutions are the relationships that structure opportunities via constraints and enablement (e.g. individuals, firms, states, social norms) (4). Institutional economics began with Commons, Coase and other contemporaries, who introduced the term 'institutional economics' and analysed transaction costs, property rights and externalities – all concepts that have important implications for the economics of animal health.

In recent years, developments in the economic theory of organisations, information, property rights and transaction costs have integrated institutionalism into mainstream economics, under the title 'new institutional economics' (5). Where neoclassical economics is a theory of choice by consumers and firms, new institutional economics can be viewed as a theory of contracts (4). Institutional economic analyses consider organisational arrangements, enforcement mechanisms, asymmetric information, adverse selection, moral hazard, bargaining and incentives. Whereas neoclassical economics generalises behavioural tendencies, institutional economics examines relationships in more depth and in a less stylised manner. Institutional economics applied to animal health can assess the actors' incentives, which lead to management and policy implications. The analysis of public goods and externalities has direct ties to institutional economics, as well as ramifications for animal health that have been discussed elsewhere (6). Areas considered here that are covered by institutional economics include transaction costs, property rights and contracts.

Transaction costs refer to those costs involved in participating in an economic activity. Three broad categories of transaction costs include: search and information costs, bargaining costs, and policing and enforcement costs. Search and information costs can refer to finding a product or service, its price and other information. Information costs would include, for example, gaining information about animal disease status for either private sale or public programmes. Bargaining costs refer to those costs related to coming to an agreement, such as drawing up a contract. Policing and enforcement costs refer to any cost or effort to ensure that all parties are living up to the agreement or contract and, if not, enforcing the contract (6). Monitoring costs are important costs for public disease programmes.

While it may not be an explicit contract, in many countries there is a relationship between governments and farmers or livestock industries to prevent and control animal disease. For example, governments control borders,

negotiate trade agreements, and establish eradication and surveillance programmes. Meanwhile, farmers are responsible for the health management of their own herd and should report diseased (or suspect) animals as part of their role in society and within the remit of specific disease control and eradication programmes. For many contagious diseases, particularly those with human health or trade implications, the government will purchase diseased animals with an indemnity. Sometimes compensation also involves further assistance to clean and disinfect premises and even payments for business interruption (or subsidised business-interruption insurance). The relationship between farmers and the government, then, may be thought of in terms of a contract. The farmer will make a reasonable effort to prevent disease from entering his or her farm (bio-exclusion) or – failing that – report the presence of disease, while the government will make efforts to prevent the introduction of the disease into the wider country's territory, provide surveillance within the country, and pay for diseased animals in order to remove pathogens and limit the spread of disease (biocontainment). Together, farmers and the government play a joint role in biosecurity.

Further reflection on this relationship reveals that there are many places where the farmer might have relevant information about disease in their herd, as well as information about their efforts to prevent disease (or lower the likelihood of disease) that are unknown to the government.

The efforts and actions taken by farmers and others in the livestock, poultry and aquaculture food systems to control disease are costly and/or impossible to monitor. Nor do farmers necessarily have perfect information about whether their animals are diseased, the likelihood of disease, or which practices are best to prevent or control disease. In some instances, government policies have sought to prevent and control infectious disease by implementing testing, quarantine and slaughter. Sometimes, slaughter of the infected animal or even the entire herd is mandatory and the farmer is reimbursed for the animal's value with an indemnity payment. In other cases, farmers may have a choice about the course of disease control. When the farmer has a choice, the financial consequences associated with biosecurity and disease reporting are crucially important, and there will be different incentives for bio-exclusion and biocontainment activities at this farm level.

Farmer benefits of disease prevention and control include avoiding losses and expenses which may be difficult to quantify. Thus, a farmer's motivations to prevent and control disease include: the avoidance of livestock mortality and related replacement expenses, reductions in livestock morbidity and related production losses, the avoidance of increased veterinary and medicine expenses, and of potential business interruption losses when government programmes mandate slaughtering the entire herd or flock. Farmer costs of disease prevention and control are much more transparent and 'up front'. Thus, farmer motivations to shirk disease control include: time, labour, management and capital constraints; the increased cost of replacement animals; and the fact that in many cases only the value of the animal is reimbursed by most governmental disease indemnity programmes.

'Moral hazard' exists in this situation, i.e. the potential for hidden action by the agent (farmer), while 'adverse selection' can be defined as the potential for hidden information. Moral hazard may include, for example, managers shirking their responsibility to prevent or report disease. Similarly, adverse selection may involve farmers hiding the presence of disease when selling animals in a market or livestock products to consumers. The solution for both these information problems lies in sharing the risks and costs to align incentives for behaviour.

Applications of moral hazard and adverse selection to animal disease are performed in a contracting or game theoretical framework. Game theory includes mathematical models of conflict and cooperation between decision-makers. The principal–agent model is concerned with structuring the contractual relationship so that the agent is motivated to act in the principal's best interests. In the case of livestock disease, the government agency charged with preventing, controlling and eradicating disease is the principal, acting on behalf of the common good, while the livestock farmers are the agents (6). Incentive problems may arise when the principal delegates tasks to agents. Farm managers have information that is relevant to the transaction – such as how much effort is exerted for biosecurity to prevent disease spread – which the government (principal) cannot perfectly monitor. Biosecurity includes both preventing disease from entering the farm, bio-exclusion, and preventing the disease from moving to other operations, biocontainment. The principal is interested in both dimensions but farmers are more likely to focus exclusively on bio-exclusion from their operation.

When disease is not currently present, potential outbreaks are probabilistic. For example, neither the government nor farmers know with certainty whether a disease will occur. If they knew, then the appropriate response would be obvious; for example, if it was known with certainty that a disease would not occur, prevention efforts could be ignored. However, disease may occur, even if farmers correctly perform all the required management activities, or it may fail to occur, even if all farmers shirk these responsibilities. Thus, the expected costs and benefits of disease prevention, control and reporting must be considered.

To model this in a principal–agent framework, the government's (principal's) objective is assumed to be

to minimise the expected total disease cost, including consumer, producer and taxpayer implications. The total cost includes the costs of detecting and eradicating the disease (producer, industry and taxpayer costs), as well as possible lost consumer and producer surpluses due to trade restrictions and other market-related implications. The standard assumption is that the government is risk neutral and therefore seeks to minimise the expected costs. Farmers (agents) are assumed to be risk averse.

Farmers are assumed to maximise the utility derived from farm wealth, income and satisfaction in maintaining healthy animals. In cases where the farmers can choose to participate in the contract, the contract must incentivise participation. The choice of whether to participate or not (participation constraint) requires that an agent's expected utility from taking part in the contract must be at least as great as the expected utility from not taking part. However, in the case of mandatory disease control and eradication programmes, this constraint may not be relevant (7).

Information problems can be resolved by aligning incentives and encouraging the desired or appropriate agent behaviour. We must therefore be concerned about whether the solution satisfies the farmer's incentive compatibility constraint. This constraint requires the farmer's expected utility from putting in the appropriate disease biosecurity or reporting effort and costs to be at least as great, under the terms of the contract, as if he or she put in a lesser amount of effort at a lower cost.

To formally solve a principal–agent problem for an optimal contract, the farmer's utility function (measure of satisfaction), which meets certain conditions and includes, as a decision variable, terms related to the contract, is specified. This utility function is used along with the reservation utility (minimum level of utility that must be guaranteed by a contract to make it acceptable to an agent) to determine the participation constraint. The incentive compatibility constraint ensures that the agent puts in the desired effort by making sure that the agent utility gained under great effort is at least as great as the agent utility gained under little effort. The principal's objective function is optimised, subject to agent participation and incentive constraints.

If a government pays indemnities to farmers for diseased livestock, the government is the principal who wishes to minimise the expected disease cost, subject to the farmer's willingness to invest the appropriate amount of effort into disease prevention and control. The government cost-minimisation problem, subject to at least the incentive compatibility constraint, yields an indemnity schedule that aligns incentives in the best way possible, in view of the constraint(s) faced.

Examples from the literature illustrate the application of these concepts and concerns to disease indemnities. Kuchler and Hamm (2000) examined farmer reporting of sheep infected with scrapie, a prion disease, in the United States (8). The US government had an indemnity eradication programme from 1952 to 1992, when it was replaced with a voluntary certification programme. Kuchler and Hamm recognised the potential for moral hazard, as farmers could effectively infect animals if doing so was profitable. Although the market price for sheep moved in response to market forces, the indemnity payment was fixed. When the fixed indemnity was higher than the market price for sheep, farmers found more diseased animals. Similarly, when the indemnity was lower relative to market price, fewer animals were turned in for indemnity.

Kuchler and Hamm discovered that the supply of diseased animals was elastic in regard to price, so that the percentage increase in diseased animals was greater than the relative increase in indemnity price. The indemnity programme was providing perverse incentives to which farm managers responded.

Gramig, Horan and Wolf (2009) considered a situation with both moral hazard and adverse selection (9). Farmer biosecurity investment was modelled as an *ex ante* moral hazard problem. Farm reporting of disease took place after the disease either occurred or did not (in which case, reporting was unnecessary), and was modelled as *ex post* adverse selection. In this case, a simple indemnity payment could not deal with both problems. Instead, the authors showed that two policy mechanisms were necessary. Indemnities were used to achieve the desired levels of biosecurity, while fines (or a differential indemnity schedule based on reporting disease) were used to induce the disclosure of disease status. By using two policy instruments – each designed to deal with a single information problem – it was possible to incentivise farmers to behave in a manner consistent with government objectives.

Comparing these results to a simple indemnity revealed an important difference. Although standard indemnities increase with disease prevalence among a herd (i.e. the farmer is paid for each diseased animal), the solution here was to have an indemnity schedule that decreased with increasing on-farm disease prevalence. High farm disease prevalence suggests a farm has been diseased for some time prior to reporting. The herd disease prevalence effectively signals the effort put into disease prevention and monitoring, and allows segmentation of the market to pay lesser indemnities to neglectful farmers.

Sheriff and Osgood (2010) addressed the reporting of diseased animals by considering the disclosure of Rift Valley fever in an East African livestock market (10). In

this case, the problem involved repeated interactions between farmers and buyers in a market. Shepherds had information regarding the animals' health that the buyers did not possess without prohibitively costly testing. For a shepherd to disclose disease, this must be an incentive-compatible action. If the buyer believes that there are too many diseased animals, the market collapses. By revealing disease exposure, sellers signal a higher chance of future exposure and infection. If sellers believe that the buyer will use this information against them, those with unhealthy animals must be compensated for future income loss in order to truthfully reveal disease today (i.e. the incentive compatibility constraint is more restrictive in the multi-period model than in a single-period model). However, the additional compensation cannot be so high that owners of healthy flocks incorrectly claim that their animals are diseased.

While these examples illustrate the potential for the application of an institutional economic model to livestock disease policy, further empirical and experimental application is required to understand and make full use of the value of institutional economics when applied to animal health systems. Collaboration between economists, veterinarians, epidemiologists and interested policy-makers may effectively employ these tools to understand incentives and barriers to desired actions.

Behavioural economics

Behavioural economics considers the effects of psychological, social, cognitive and emotional factors on the economic decisions of individuals and institutions. Behavioural economics examines actions which violate basic assumptions or results from traditional, neoclassical economic models. It seeks to utilise insights from psychology and behavioural science to explain these actions. Behavioural economics is not a substitute for neoclassical economic models; rather it can complement the results from such models, providing a richer set of insights. The intention is to infuse psychological realism into theories of economic behaviour, as opposed to the standard economic model in which actors are fully rational, with perfect control, and consistently act in their own self-interest (11). Behavioural economics attempts to find the patterns of how people act irrationally and design systems that can prevent common failures (12). If behaviour deviates in predictable ways, policy-makers can design policies to take into account these irrationalities.

There are many aspects of behavioural economics that have been explored empirically, often based on experiments, and there is no unifying theory beyond prospect theory (a behavioural economic theory that describes the way that people choose between probabilistic alternatives that involve risk). While many factors apply to the animal health system, it is useful to categorise drivers that relate to behavioural change, in accordance with work carried out by the Social Market Foundation and the Organisation for Economic Co-operation and Development (13, 14), as being external, internal or social. External factors include monetary and effort costs that are the focus of traditional, market-based policy interventions (14). The effects of taxes, subsidies, credits and other financial and effort costs are the subject of neoclassical and institutional economics. This section focuses on internal and social factors, providing an overview and examples, with reference to the animal health system.

When policy-makers are designing policies for information disclosures or a default setting, behavioural economics provides important insights that may improve their effectiveness. Psychological and socio-economic factors simultaneously influence farmer decisions. Although traditional market-based tools, including taxes, subsidies and regulations, work well as external factors, they are sometimes insufficient. There are many different aspects that might be relevant to animal health economics from the perspective of the farm decision-maker and, thus, also for policy-makers. Internal factors that seem pertinent to animal health economic policy include framing, biases, heuristics and habits.

Framing refers to how choices are presented. Research has shown that the way in which information is presented can heavily influence the choices made. One reason that this occurs is loss aversion, which means that people have a tendency to focus on losses much more than on gains. Thus, if a problem is framed in terms of potential expenses and costs, it will often elicit a different response from the same situation framed in terms of potential gains. Another framing effect can originate with sunk costs which, despite the assertions of economists that these should not influence decisions, often influence decisions. People become psychologically invested when they have already expended ('sunk') money and effort on a project, regardless of the current costs and benefits. Another framing effect is termed the reference effect, where people tend to judge potential outcomes and actions in relation to a previous experience or to what they have already witnessed, even when the current situation has little or no relevance to the previous circumstances. A final framing effect is the endowment effect, which occurs when ownership tends to make people overvalue resources because of an emotional attachment to them. The result of the endowment effect is that people's 'willingness to pay' for something is much less than their 'willingness to accept' the same item (15). The implication of the endowment effect is that policy-makers should use 'willingness to accept' values if possible. Using framing means that problems may be presented in terms of loss, rather than gain, to trigger a response.

Biases are pervasive in decision-making. Several examples illustrate the potential for biases to play a role in animal disease responses at the farm level. The planning fallacy occurs when managers overestimate their ability to perform future tasks, such as managing a disease outbreak. Optimistic biases may occur when managers assume that, for example, the possibility of a disease occurring is of below-average risk. A bias towards the present or an intertemporal choice takes place when decision-makers give disproportionate weight to their current concerns rather than to future concerns, such as failing to invest to prevent future disease threats. Finally, the status quo bias and default options result in people sticking to their current default options (since this is less trouble than switching). Therefore, making a programme an opt-out choice, rather than an opt-in, can have a considerable effect on participation.

When people do something out of habit, little or no cognitive effort is used. For policy-makers this means that when they are aiming to change behaviour, they should also consider the role played by habit. Heuristics, also often called rules of thumb, are mental short-cuts to help make decisions. Because of fatigue and over-commitment, or sheer complexity, not all choices can be analysed in detail to arrive at an optimal solution. Therefore, short-cuts are often employed, which may be adequate in many situations but, overall, can lead to poor decisions as a result of a lack of information and false beliefs.

Social factors that influence behaviour include norms, customs, cooperation and collective action. Norms are expectations from ourselves and others. Social norms are how others tend to act in a given situation (16). Social norms have been shown to have a great effect on decisions. People's self-expectations influence how they behave, and they do not like to feel that their actions are 'out of sync' with the expectations, values and attitudes of their family or community. Policy-makers should consider whether it is practical to get people to make commitments and how to make those commitments as strong as possible. Research suggests that signing an honour code can make individuals aware of standards of honesty and curb subsequent dishonesty (17). When people are influenced by authority, the effects are less likely to last than when they are influenced by someone whom they like or admire (17). If policy can change a social norm to favour beneficial behaviour, then less enforcement of policies such as those related to disease will be required. Another way in which norms are important is that people are motivated by them to 'do the right thing'. That is, people have intrinsic motivators when the activity is its own reward. One important influence is the way in which someone's behaviour will be perceived by others. Policy-makers should consider how people perceive the behaviour that they are trying to change. Thus, if a given behaviour is normally considered shameful, it might be counter-productive to introduce fines. On the other hand, if the behaviour in question is normally considered the right thing to do, it might be counter-productive to introduce financial benefits (17).

One concept from behavioural economics is the idea of 'nudge' from Thaler and Sunstein (18). Nudge is the concept that formal regulations are not required because a small push can get people to change their behaviour. Thaler and Sunstein argue that, if behavioural economics teaches us that we do not always act in our own best interests, then policy-makers must rethink the tools of regulatory command to change behaviour and better align our immediate choices with our deeper, truer preferences. To accomplish this, Thaler and Sunstein urge policy-makers to design policies that improve people's well-being through gentle nudges, rather than coercive measures.

Many aspects of behavioural economics do not lend themselves to the generalisable, rigorous, analytical models claimed by neoclassical economics. Instead, an approach is assessed by using experimental economics and other empirical methods. By exploring the possible structuring of choices, including smart defaults and feedback systems, policy-makers can serve as the architects of choice, supporting, but not mandating, those choices that are optimal or, at the very least, providing user friendliness or transparency for farmers, veterinarians and other decision-makers in the animal health system.

By using the results of behavioural economics research, administrative agencies can provide better, more useful information for decision- and policy-makers. The implications are that policy-makers must account for cognitive biases and make positive use of framing effects. Punishments and rewards should be relevant to farmers. Immediate losses and costs are stronger incentives than long-term implications, and default options should be set to promote the desired actions.

To incorporate behavioural economics into policy for improved or optimal animal health decisions in the food system, the first step is to understand what behaviour is occurring (and from whom). This may result in a determination that such behaviour is in line with the desired goals or out of bounds, and can help to identify segments or subpopulations that can be targeted. The second step is to understand why undesirable behaviours are occurring. Are they due to a lack of information? To biases or heuristics related to decision-making? To social or cultural norms? This information can be used in the third step, which is to design and implement 'tools' to nudge, anchor or otherwise positively reinforce preferred actions. Such policy tools may include information and education programmes, framing the desired action in terms of avoiding losses, providing professional or expert information on the

risks and frequencies of disease occurrence, or resetting default actions.

Animal health policy implications

Neoclassical economics recognises that, under market failures, such as imperfect information, government intervention, including regulation, may be appropriate. Institutional and behavioural economics focus on relationships and contexts that greatly expand the arena of market failure. The relevant policy question then becomes whether these institutions, perceptions, biases, norms and habits are open to corrective measures and, if so, how. Institutional and behavioural economics can complement and enhance economic analysis and do not require the abandonment of neoclassical economics (19).

Behavioural economics may provide important insights that can improve the effectiveness of policy design for information disclosures or default settings. It is difficult to find socio-economic variables that explain farmer behaviour. Psychological and socio-economic factors can simultaneously influence farmers' decisions. Although traditional market-based tools, including taxes, subsidies and regulations, work well as external factors, they are sometimes insufficient.

Institutional economics concepts, such as public or private goods, externalities, transaction costs and asymmetric information, are useful for understanding decisions taken in the animal health system, as are cost and benefit incidence analyses. We must assume that the policy-maker's goal is principally to understand farmers' decisions and behaviour, and to influence it through incentives, regulations and other policy triggers that encourage preferred actions. When looking through this lens, there are many general implications from institutional and behavioural economics. First, a thorough understanding of the financial and monetary consequences is required to assess farmer behaviour. In many instances, policies have financial consequences that were not properly considered. Putting the issues in an agency framework can reveal incentives and risk-sharing.

Secondly, another way in which contract theory can assist policy-makers to align incentives is by classifying farms based on motivations, resources and constraints. For example, hobby or part-time farmers may behave in a systematically different manner from the way that full-time, commercial farm managers act.

Third, one important method to encourage the desired behaviour is to frame problems in such a way as to highlight potential losses and avoid cognitive biases. By setting the default behaviour, policy-makers can be sure that inertia and other such aspects will assist them to achieve their preferred behavioural outcomes.

Fourth, they should consider appropriate modes of communication, the relevant context and the amount of information provided. Fifth, making use of norms and cooperation can promote appropriate decision-making. Through the use of 'choice architecture' and context, policy-makers can nudge farmers towards behaviours such as investing in biosecurity and reporting suspect animals.

Finally, and perhaps most importantly, institutional and behavioural economics provide a framework that may be used when studying or considering a particular animal health situation. For example, consider the scenario of a potential, contagious, zoonotic disease, and a government that wants farmers to assist in avoiding an expensive outbreak. Institutional economics suggests that the government should examine the current set of indemnities, insurance and other financial incentives for prevention, control and reporting of the disease. Formal or informal incentive models may assist in setting the appropriate compensation for animal value and indirect losses (if applicable).

Behavioural economics suggests that information about the disease, including its likelihood and consequences, should be framed in such a way as to alleviate or overcome biases. It also suggests that establishing a culture of habits and preferred behaviour may strongly influence farmers. The government may wish to use surveys, focus groups and other means of communicating with stakeholders to assess the relevant biases, habits and norms. These actions may have both short- and long-term implications for farmer behaviour.

Le recours à l'économie institutionnelle et comportementale pour étudier les systèmes de santé animale

C.A. Wolf

Résumé
L'économie fournit un cadre permettant de comprendre les décisions managériales et leurs conséquences sur les politiques à mener en matière de santé animale. Le modèle économique néoclassique permet, certes, d'encadrer utilement les décisions de santé animale à l'échelle de l'exploitation, mais certaines de ses hypothèses et des préconisations qui en résultent paraissent irréalistes. Ces carences potentielles sont en partie traitées par l'économie institutionnelle et comportementale, qui prend en considération le rôle joué par l'information, par la psychologie et par les facteurs sociaux dans le processus de prise de décision. La formulation de ces décisions dans les termes de la théorie des contrats nous permet de prendre en compte l'asymétrie de l'information entre les décideurs politiques et les éleveurs. Des incitations à effets pervers peuvent exister dans le domaine de la prévention et de la notification des maladies. L'économie comportementale examine le rôle de facteurs internes et externes de nature psychologique et sociale. Les biais, les raisonnements heuristiques, le poids de l'habitude, les normes sociales et d'autres influences similaires peuvent donner lieu à des décisions que l'on peut considérer comme irrationnelles ou médiocres. La formulation des choix effectués et la diffusion d'informations pertinentes et d'exemples sont des moyens d'atténuer ces déterminations comportementales. Les auteurs examinent les conséquences de cette approche dans l'élaboration des politiques sanitaires et présentent un programme de recherche appliquée et d'information sur le terrain pour faire face aux maladies animales.

Mots-clés
Biais – Cadre de référence – Économie comportementale – Économie institutionnelle – Normes – Risque moral – Santé animale – Sélection adverse.

Utilización de la economía institucional y conductual para examinar los sistemas zoosanitarios

C.A. Wolf

Resumen
La economía ofrece un marco de referencia para entender las decisiones de gestión y sus consecuencias normativas para todo sistema zoosanitario. Mientras que el modelo económico neoclásico resulta útil para inscribir las decisiones de sanidad animal en el contexto de la explotación, a veces algunos de sus postulados y resultados prescriptivos no son realistas. La economía institucional y conductual da respuesta a varias de esas posibles insuficiencias porque tiene en cuenta el papel que cumplen la información, la psicología y los factores sociales a la hora de adoptar decisiones. El hecho de encuadrar tales decisiones en la teoría de los contratos nos permite tener en cuenta la asimetría de la información que manejan los planificadores de políticas y los productores agropecuarios. También puede haber incentivos perversos en cuanto a la

prevención y notificación de enfermedades. La economía conductual examina la función de factores de orden social y psicológico, tanto internos como externos. Los prejuicios, la heurística, los hábitos, las normas sociales y otros aspectos de parecida índole pueden llevar a los responsables de una explotación a adoptar decisiones que cabría considerar irracionales, o en cualquier caso no idóneas. El hecho de inscribir en un marco de referencia las opciones existentes y de facilitar información y ejemplos pertinentes puede reducir el peso de estos problemas de conducta. El autor examina lo que estos métodos pueden aportar a las políticas sanitarias y los programas de divulgación e investigación aplicada para la lucha contra las enfermedades animales.

Palabras clave
Economía conductual – Economía institucional – Marco de referencia – Normas – Prejuicios – Riesgo moral – Sanidad animal – Selección adversa.

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