

# Development of organisation and planning in animal breeding: I. A review on breeding organisation

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## Abstract

Organisation is an important factor in animal breeding. The present study gives first approaches for the use of new institutional economic theory as a tool for investigation of organisational structures in animal breeding. First, the concept of breeding organisation is defined. On the basis of two examples - increase of the competitiveness of breeders' associations and conservation of animal genetic resources - it is shown how organisation theory and appropriate investigation methods can be used to develop different possible solutions. The study shows that organisation not just happens but is an intrinsic component of the system »animal breeding'. This component combines interests of the private and public sector. Organisation research helps to discover optimum combination of these interests. A following study deals with breeding planning as an important challenge in animal breeding with regard to the development of breeding organisation.

**Keywords:** animal breeding, organisational theoretic approaches

## Introduction

As in most industry sectors, organisation is an important factor of livestock breeding. The development of new technologies like artificial insemination or nowadays genomic selection increased the radius of breeding: from regional to global breeding systems. Breeding enterprises are trapped between market demands and national interests. On the one hand, they have their own economic aims and have to adapt their specific environment and the organisational system to continuous challenges. On the other hand, the breeding environment and the outcome of breeding is of national concern, e.g. in relation to animal rights discussion or provision of good quality foods to the public. Hence, organisational studies have to be regarded as an important branch within animal breeding science.

This study demonstrates theory-founded approaches for analysing the possible development of breeding organisation, starting with the previous development in the economic-oriented organisation sciences. Theoretical approaches from organisational science are reflected in animal breeding science literature. First of all, the term and scope of breeding organisation are defined. Then, previous layout of breeding organisation is sketched. Finally, the study demonstrates and discusses approaches to solutions on current problems in breeding organisation.

### Term and scope of breeding organisation

Organisation is generally connected to an increase of order. A distinction is made between a process-orientated, an instrumental and an institutional definition of the term »organisation« (for example, Bea & Göbel 2006, Schreyögg 2008). These definitions sourced from management science can be applied to the field of animal breeding. The process-orientated term »organisation« is understood as the formation of order. Organisation is an activity. Examples are the organisation of performance testing or breeding planning. The instrumental term »organisation« implies that organisation is a deliberately created instrument for achieving a company's objectives: The (breeding) enterprise has an organisation. With that, organisation is perceived as a permanent system of rules, which, among others, determine the specialisation (distribution of tasks), co-ordination (harmonisation of partial tasks), delegation (assignment of decision authorities) and hierarchy (super- and subordination). Often the system of rules is considered to also include the grown culture of the organisation and its informal rules. The instrumental term »organisation« refers exclusively to the internal structure of the respective enterprise. Contrary to that, the institutional term »organisation« refers to the whole (breeding) enterprise, which is understood as an organisation or, respectively, an institution. According to Picot *et al.* (2008), the institutional term »organisation« covers a whole system of institutions, not only rules within a particular company. It extends, for example, to markets, agreements, business networks, public authorities and legal regulations, which interact with the set of rules of individual companies. Figure 1 points to institutions and the reach of the breeding organisation. The overview relates to the expanded institutional term »organisation«.

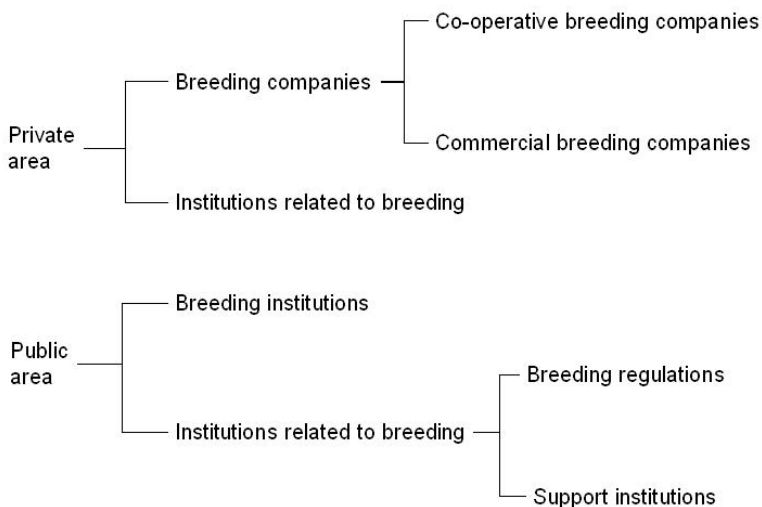


Figure 1  
Institutions in animal  
breeding

Figure 1 shows the private and public shares in animal breeding. Also, a conscious distinction has been made between co-operative and commercial breeding companies under »Private area«. The underlying idea of co-operative breeding companies is the self-catering with high quality breeding animals and to achieve joint genetic gain. Any profit from the sale of

»excess« products of breeding is subordinate to this objective. The basis of a co-operative breeding company – in the case of smaller enterprises most often realised within the frame of breeders' associations – are animal owners who wish to mate their preferred animals. The form of a breeders' association is characterised by the feature that animal owners as members and/or breeders jointly perform breeding activities. The identity principle applies here as a rule: The members are not only the supporters of the association, but also the users of the breeding products generated within the association. Co-operative breeding companies can be seen as the original form of organisation in livestock breeding. Altogether, co-operative breeding companies try to maximise the welfare of their members, which is a long-term goal. In contrast thereto, commercial breeding companies focus purely on the production and the sale of the breeding products. Their aim is to maximise profits. Private investors who are not animal breeders themselves usually finance them. Their interest is to utilise their invested capital for making profits. These companies have mainly short time, profit oriented goals. With that, the breeding products generated are meant to cover third party demand from the outset. Accordingly, for these breeding companies, the marketing of the breeding products is the urgent objective. Commercial breeding companies increasingly take the form of multinational institutions with companies in different countries.

Institutions related to breeding have a special technical connection with private breeding companies and state-owned breeding institutions. They are active in the private as well as in the public area. In the private area, they include institutions, which trade breeding products or render services to the breeding work. Such services are, for example, artificial insemination as well as performance and quality testing. Further, higher levels in the value chain are included. These are, in the first place, animal keepers who buy the breeding products and their associations as well as producer groups. Also included are institutions that market, trade and utilise the animals and animal products. These comprise dairy factories, butcheries, grocery wholesalers and retailers, and stretch down to the consumer households and their associations. Finally, also scientific and other interest groups in the field of animal breeding can be counted to the private institutions related to breeding.

The category »Public area« (Figure 1) includes institutions as e.g. performance testing stations or centrally controlled breeding systems. Also in the public area, there are institutions related to breeding. These include breeding regulations established in the national and international area in the form of laws, directives and guidelines. Regulations for animal breeding exist in the form of special animal breeding law, but also in the law sectors dealing with animal protection, genetic engineering as well as patent and trademark protection. The public support institutions include, in particular, breeding administration and veterinary administration offices, institutions for breeding research and development, as well as education and training.

#### *Previous layout of breeding organisation*

In particular for animals that were used as riding or pack animals for military purposes, organised reproduction respectively breeding developed already early in the history of domestication. Generally, it can be assumed that breeding organisation was historically mainly implemented on an empirical basis. Testimonies thereof are detailed descriptions of actual states of organisation tried and tested in practice, which have emerged in increasing numbers

in Germany since the last decades of the 19th century. They are found in textbooks and can be understood as empirically founded guidance notes for breeding organisation practice. Existing institutions worth copying, such as teasing and mating localities, mating registers, institutes for the breeding of domestic animals, exhibitions, public awarding of prizes to breeding animals, etc. are described (e.g. Rueff 1878). A more recent overview on development of cattle breeding strategies in Europe and actual aspects of cattle and horse breeding programmes and their organisation is for example given by Kalm (2002) and Swalve (2002).

At about the mid of the last century, breeding programmes based on population genetics, artificial insemination and hybrid breeding have been developed. In consequence, the grown organisational structures and the new breeding programmes had to be co-ordinated. In this situation, it was attempted for the first time to support the layout of breeding organisation with scientific works. Examples are, among others, the studies by Momm (1972) and Schweer (1979). Within these studies, the ideal organisational structure of animal breeding was identified, following approaches of organisational theory common at those times. In the further development of this field of research, all areas shown in Figure 1 were included in the design of breeding organisation. Examples are shown in Table 1.

Table 1  
Overview on selected publications on breeding organisation

Author(s)	Year	Topic
Rae	1976	The development of co-operative breeding schemes in New Zealand
McArthur	1982	Economic considerations in adopting technological advances in breeding
Parker & Rae	1982	Underlying principles of co-operative group breeding schemes
King	1985	Financing improvement plans
Lesser	1989	Animal patents
Schmitt & Momm	1994	Organization of competitive cattle-breeding associations in the European Union
Narrod & Fugli	2000	Private investment in livestock breeding with implication for public research policy
Neeteson-van Nieuwenhoven <i>et al.</i>	2006	Sustainable and transparent animal breeding and reproduction

### *Theory-based approaches to solutions for current problems of breeding organisation*

The following notes in terms of organisational theory are based on the currently popular new institutional economy approaches – the property rights approach, the transaction cost approach, and the principal-agent approach, identified as suitable for the analysis of organisational features of animal breeding. Further information on the theories themselves can be found in Bea & Göbel (2006) and Picot *et al.* (2008). Below, two central problems of today's breeding organisation are presented using institutional economy approaches.

### *Example 1 – increase of the competitiveness of breeders' associations*

Among co-operative breeding organisations, the breeders' associations in Germany have a long history. They have been widely propagated and have paramount significance. Although their appreciation in politics has decreased, their influence is still strong enough to be particularly considered in the German legislation related to animal breeding laws: Breeders'

associations enjoy privileges under certain conditions. An example for such conditions is the public acknowledgement of the breeding programmes and the persons in charge of the breeding work; another example is that explicitly the breeding associations are allowed to produce breeding products, and to offer and sell them as such (TierZG 2006). Only in the last few decades, the existence of the breeders' associations has become severely endangered. As main reason, the emergence of commercial breeding companies can be assumed. Due to increasing globalisation and oligopolistic tendencies, these companies prevail increasingly. This development is particularly obvious in poultry breeding, followed by pig breeding (Gura 2007). Narrod & Fuglie (2000) believe that the main reason for this competitive process is the different approach to investments in private economy with regard to the breeding of various livestock species. The extension of commercial breeding companies was connected with cutbacks of government support measures for breeders' associations.

The below discussions regarding the increase of the competitiveness of breeders' associations follows Göbel (2002). Looking into history, the breeders' associations first tried to increase their competitiveness by means such as horizontal integration and centralisation. Horizontal integration has always been happening in breeders' associations from their very beginnings, as illustrated in works on the history of animal breeding. The originally independent small units (local associations) were replaced by bigger ones. Kötteritzsch (2001) has illustrated this process for Simmental breeding in Baden-Württemberg: In the year 1887, the first breeding associations on town or district level were founded. After several steps of merging local associations to bigger units, one central breeders' association for Baden-Württemberg was founded in the year 2000. It looks after all cattle breeds kept in Baden-Württemberg and runs breeding programmes for them. It also integrated all cattle insemination organisations of Baden-Württemberg and merged them to one remaining station. Horizontal integration must not be restricted to the breeding-related administration and guidance of several breeds within a breeders' association, but can also combine different species of livestock, for example sheep and goats. Another approach to horizontal integration can be observed in the pig breeders' associations. There, the breeders' associations of Baden-Württemberg and Rhineland have formed a union under the label »German Genetics«. The objective of this union is to significantly increase breeding efficiency with standardised performance testing and breeding value estimation, as well as to implement a joint breeding programme. Important incentives for horizontal integration are economic advantages related to size (economies of scale) and higher success in breeding thanks to larger breeding populations, compound advantages through the breeding processing of several breeds and species, as well as the offer of their breeding products (economies of scope).

In the course of the development of horizontal integration, the breeders' associations have undergone increasing centralisation. Centralisation means the shifting of tasks related to breeding and to marketing of the breeding products from the breeders (members) to the managing boards of the breeders' association. Such a shifting process becomes obvious, for example, when breeding objectives are stipulated, in selection decisions (particularly for sires of sires), the stud book register, auctions of breeding animals and the advertising of breeding products.

In breeders' associations, the property rights are generally reserved to the breeders. According to the principal-agent approach, the breeders are considered to be the principals

and the managing board is the agent. From this point of view, the increasing horizontal integration and centralisation imposes the problem that the number and heterogeneity of the transactions within the organisation increases, which causes more co-ordination and motivation problems and raises the transaction costs or so-called hierarchy costs. The leaders of the managing board can then make less efficient use of their own competences in order to manage the various areas of the company, i.e. the information asymmetry between the top management (agent) and the breeders (principals) increases. In order to counteract this problem often additional hierarchical levels and committees are established (consisting of breeders in a voluntary capacity). This results in increased personnel costs and extended and more complex principal-agent relationships. A decentralisation, i.e. delegation of tasks back to the principals, obviously cannot help to increase the competitiveness. In this situation, it is recommended to reduce the information asymmetry, for example, by means of ongoing reporting from the side of the managing board about their breeding-related decisions, and to calculate thoroughly whether the assumed benefits of the horizontal extension of the association are not overcompensated by the hierarchy costs. In addition, it must be observed that a change of the internal structure of the breeders' association can also lower the internal transaction costs. Finally, if transaction costs (transaction cost approach) or information asymmetries (principal-agent approach) within a breeders' association increase to an amount that they exceed possible benefits of a centralised organisation, a spinning off or closing down parts of the organisation may become beneficial or even imperative.

Generally, it is important for breeders' associations to critically examine technical progress in order to reduce the costs of, or optimise breeding processes. Currently discussed topics are, in particular, the inclusion of genomic selection in the breeding programmes (e.g. Schaeffer 2006, König *et al.* 2009, Karras *et al.* 2011), the reduction of the cost of performance testing by utilising individual slaughter information (e.g. Eriksson *et al.* 2003) or the testing in test or contract herds in a few larger farms (e.g. Schaeffer 2006, Kanitz *et al.* 2008, König *et al.* 2008). However, it is possible that conflicts may arise between the objectives of the various measures, which can be far-reaching enough to endanger the identification of all the members with the breeders' association. This could, for example, happen if the breed spectrum is reduced for cost reasons, or if the concept of test herds should be enforced. Both measures can contribute to an increase of information asymmetries, which, in the end, could damage the identification or the solidarity of breeders within the breeders' association.

Beside the horizontal integration and centralisation, also vertical integration and outsourcing can play an important role for the competitiveness of breeders' associations. Vertical integration means the part of the value chain, which the breeders' association accounts for and assumes the responsibility for. In the extreme case, the value chain can reach from the breeding all the way to the sale of the animal products to the end consumers. Vertical integration can be organised in two ways: either the breeders' association assumes an upstream step in the value chain (vertical backward integration) or the breeders' association takes control of downstream steps in the value chain (vertical forward integration). Herold *et al.* (2010) for example develop a concept for a smallholder based breeding program combined with a short food supply chain to ensure a backflow of income to the farmers. Outsourcing is so-to-say the opposite of vertical integration. Something that could basically be produced or managed within the own breeders' association is outsourced to third parties,

and the products or services are purchased from outside the association. Outsourcing is, for example, practiced when breeders' associations hand over the maintenance of the herd register, their originally classic task, to special institutions for breeding value estimation.

Vertical integration as well as outsourcing are fields of the transaction costs approach. Looking at the competitiveness of breeders' associations, the decrease of transaction costs is possible in case of vertical integration, because there are no more costs for sourcing and searching, adjustments can be made easier and better in case of changes of the environment if instruction can be given instead of restarting contract negotiations with independent partners. Also, the integrated partners have a common. On the other hand, outsourcing can be beneficial for increasing the competitiveness, particularly in case of high internal transaction costs. As there is no optimum overall solution, the transaction cost approach as described by Williamson (2008) can help to evaluate the situation of the addressed institution and to identify an optimum for the development in this special case.

### *Example 2 – conservation of animal genetic resources*

The public area traditionally plays a significant role in the layout of the organisation of animal breeding. Classic discussion points are regulation versus deregulation, as well as nationalisation versus privatisation. At present, the conservation of genetic resources (genetic diversity) is globally considered a grave problem. Generally, losses of genetic resources can trigger negative external effects, which justify state intervention and make it necessary to absorb the incurred welfare losses. Breeding companies can become a source of loss of genetic diversity: Under the pressure of intensifying breeding the breed spectrum is restricted and more effective measures for achieving genetic homogeneity within their breeds are increased. This pressure can be traced back to the increasing competitive pressure and costs, the availability of more effective breeding methods, an increased demand for standardised breeding and end products, and a higher mobility of breeding products. Taberlet *et al.* (2008) show the increased pressure on genetic diversity for cattle, sheep and goats since the development of systematic breeding in the late 19th century. They underline the dramatic loss in genetic variability since the implementation of artificial insemination, especially in cattle. This loss in genetic variability was already pointed out by Brascamp *et al.* (2000). According to Mark & Sandøe (2010), genomic selection in cattle could further enhance the trend of genetic diversity loss. Following the property-rights approach, it can be assumed that genetic resources, which need to be conserved, are distributed globally among many millions of owners or players. The majority of them are farmers who breed animals mainly in traditional manner and, in most cases, are hardly aware of the value of their animals as genetic resources. In addition, the conservation of genetic resources in the private as well as in the public area is represented by different organisations. These are co-operative and commercial breeding companies, artificial-insemination stations, state-owned breeding institutions, pet breeders' associations, wildlife parks, gene banks and research facilities.

In many countries, the players who own animal genetic resources have been incorporated into a broad framework of public and private regulations and assistance measures, which are present at the international as well as national and subordinated levels. An important general treaty, which is particularly important for the livestock industry, is the Convention on



Biological Diversity (CBD) of 1993, which has been signed by about 190 contract partners in 168 countries. The objective of this convention is, beside the conservation of genetic diversity, the sustainable utilisation of genetic resources as well as the balanced and fair distribution of the benefits resulting from such utilisation. The Nagoya Protocol now complements the CBD. The objective of the protocol is to give guidelines for access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation (CBD 2012). When the protocol was closed for signature in February 2012, 92 countries had signed it. Now, these countries have to transfer the guidelines into applicable law. In view of the objectives of the CBD and the Nagoya Protocol, also the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), 1994, within the frame of the World Trade Organisation (WTO) is important. It is an agreement, which imposes minimal requirements to national legal systems to ensure that the measures and procedures for the enforcement of intellectual property rights do not restrict rightful actions. A new field of research has opened up, and much work has been done in this field in the last few years – for example Hoffmann (2005), Fimland & Oldenbroek (2007) and Tvedt & Fauchland (2011). What is urgently needed is the design of a regulatory system from the start. Weaknesses of CBD and Nagoya Protocol are that they have to be set into national law by countries whereas the animal genetic resources are utilised by private or public institutions. Rosendal & Schei (2012) conclude that conservation of biodiversity has to be included into national economy. Otherwise its interests will not withstand against economical and industrial interests in land use change. The transaction cost approach is a good tool to develop a conceptual framework for analysing such complex problems. For examples see Birner & Wittmer (2004) for the case of decentralisation and devolution in natural resource management and Birner & Linacre (2008) for analysis of regional biotechnical regulations. Also, dealing with genetic resources, it has to be considered that owner groups and parties interested in the resources are usually quite large. Therefore, the incurring transaction costs are relatively high. In order to lower the transaction costs, the state is supposed to intervene in the negotiations with regulations, which, however, restricts the private property rights. The transaction costs generated by the state are relatively low, because the state administration is centralised and bundled, contrary to the many offerers and users of the resources. The negotiation processes are meant to find the optimum trade-off between welfare losses by external effects and the transaction costs.

## Discussion

Several organisation-theoretical approaches for further development of breeding organisation are available. There is no generally accepted organisation theory. Important differences exist with regard to the process-oriented, the instrumental and institutional definition of the term »organisation«, and the assessment of objectivity, human behaviour and its rationality, as well as the preferred methods. These unavoidably determine particular advantages and disadvantages for each approach. With the help of the approaches of organisational theory, reality can be observed selectively and from different points of view. Each one of the theories can always illuminate only a part of the organisation. However, organisation-theoretical approaches facilitate the better understanding of real organisation structures and shed light on possible optimisations (Vahs 2009). In any analysis, it must be



considered that the chosen theoretical approach is suitable for the problem at hand. In some cases it makes sense to combine different approaches, in order to examine the problem from different perspectives.

The new institutional economic approach is currently applied to organisation structures, to considerations regarding the setup of corporate governance, to the determination of the boundaries of an enterprise and the layout of co-ops, for considerations about the advantages and disadvantages of (de-) centralisation, as well as for motivating the members of an organisation (Ostrom 2009a). For the further development of animal breeding organisation, the new institutional economic approach contributes to viewing the organisation in its entire extent (Figure 1) and in a larger context. The three presented approaches within the new institutional economic theory allow for thorough examining of the complexity of organisation structures in animal breeding.

The traditional organisational studies trace back mainly to the theory that Bea & Göbel (2006) have described as the structurally-technical approach, a theory which is also known as micro-economic organisation theory. In this theory, the human being is only seen as an abstract bearer of tasks. Hence, in traditional analyses, the behaviour of the people involved in the organisation remains largely unaccounted for. Given this previous neglectance and the increasing demand for behavioural scientific information (also in breeding organisation), this issue has special significance in further development. It is assumed that particularly co-operative breeding companies will have a need for a well functioning co-operation between members (breeders) and the managing board, which will play a decisive role with increasing competition. Ostrom (2009b) has developed a general framework for analysing sustainability of socio-ecological systems. So-called second level variables have been identified to investigate social, economic and political settings in a specific situation. Such a framework could also help to understand animal breeding institutions and specific questions of breeding organisation.

In the context of global and regional challenges to the organisation of animal breeding, first, the spreading of commercial breeding companies must be observed. They appear, in particular, in the form of globally acting multinational breeding corporations, especially in poultry and pig breeding, but also in cattle breeding (Gura 2007). By now, they have developed predominantly in industrialised countries and have mostly kept their headquarters in the country of foundation, although they have shifted parts of their business abroad. These companies act frequently internationally and globally under oligopolistic conditions. On the other side, in industrialised countries there still are - predominantly in cattle, sheep and goat breeding - the co-operative breeding companies with the traditional characteristics such as management run by honorary volunteers, natural mating and mainly introverted marketing, and rather regional orientation. Some of those co-operative breeding companies are expanding, having the characteristics of commercial breeding companies such as professional management and the utilisation of advanced technologies such as the utilisation of methods of bio- and genetic technology, and perform geographically broadly expanded, extroverted marketing activities. These co-operative breeding companies also include the forms of breeding organisations, as they are common in developing countries, reaching from the simple breeding co-operation between farmers, sometimes supported by non-governmental organisations, to individual peasant breeders. In this respect, it is worth

mentioning that about  $\frac{3}{4}$  of all livestock are kept in developing countries (FAO 2007). From the point of view of a development-orientated approach towards the competitiveness of breeding organisations, balance must be achieved in particular between the organisational structures of breeding in developing and industrialised countries. Efficient counterweight has to be created from the side of developing countries towards breeding corporations run by oligopolistic principles. This will require finding competent partners in developing countries, who are able and willing to unite to sustainable alliances for the promotion of animal breeding.

Valle Zárate (2008) shows the global gene flows on the example of various animal species and breeds. From this study, it can be deduced that, with regard to breeding organisation in community breeding programmes, emphasis must be placed on the direct assignment of property rights for their genetic resources to the farmers. Due to the limitations of the regions, the number of players remains limited, i.e. the property rights are bundled, in order that transaction costs can be kept low. Through the identification of farmers with their livestock resources and with specific breeding objectives of breeding programmes, as well as through direct sharing of profits, sustainability of breeding programmes can be significantly supported. The concept of community breeding programmes can also be an alternative concept for underestimated species like sheep and goats or regionally distributed breeds in developed countries (Herold *et al.*, unpublished data).

However, large effort will be still required in implementing community breeding programmes in developing countries with regard to the marketing of breeding products, particularly because in contrast to Europe, breeding and marketing have not developed synergetically. A well-organised breeding programme with breeding objectives defined by the users alone is not enough to ensure the marketing of the breeding products, i.e. to generate sufficient profit to keep the motivation of the breeders up in a sustainable manner. Roessler *et al.* (2009) and Herold *et al.* (2010) show on the example of the pig production in smallholder production systems in Northern Vietnam how the combination of a participatory breeding programme with the marketing of the products via a small food supply chain can support the development of rural areas and open up perspectives for smallholder farmers. Generally, it will be important for further developments in breeding organisation to build upon the specific culturally and socially grown forms of organisation.

In animal breeding societal aims and business interests are admixed. It is a constant challenge to identify an optimum of governmental regulations and interventions. Combined political and breeding planning supports the optimisation of topics like regulation vs. deregulation as well as nationalisation vs. privatisation. This question will be dealt with in a following publication. Further, the global intertwining of animal breeding requires increasing supranational regulations or agreements between players. Beside the addressed conservation of genetic resources, the supranational need for regulations concerns also industrial property protection. It should cover patent possibilities for bio- and gene-technological inventions, and ensure effective protection for the results of traditional breeding efforts in developing as well as industrial countries. Hence, regulations are required which prescribe a fair compensation for breeding products, which cannot be patented and have been generated in traditional ways, in case that genes or breeding products are brought to extended profitable utilisation by third parties. Current insights into parts of the complex patenting problem in

animal breeding are provided, for example, by Rothschild & Newman (2002), Ogden & Weigel (2007) and Tvedt (2007). Other important issues that require supranational regulation and execution of existent laws are the prevention of breeding which results in the development of extreme characteristics detrimental to animal health and welfare (»Qualzucht«), the orderly execution of bio- and gene-technological procedures, as well as issues regarding breeding value estimation and trade of breeding stock.

The present study shows that organisation in animal breeding does not simply happen but is an intrinsic component of animal breeding that has to be developed continuously. Therefore, more attention has to be put on investigation of organisational settings. This study gives an overall framework on how this could be done. In a following publication, the aspects of breeding planning in association with development of breeding organisation will be discussed.

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