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## Strategic Management And Zootechnical Control In Pig-Breeding Enterprises: Development Of Its Information Base.

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### ABSTRACT

Pig breeding in the livestock industry is one of the main areas in our country. The development of pig breeding will provide an opportunity to increase the productivity of pigs and increase the production of pork in a short period. Issues of managerial and zootechnical control over the costs of the production of pig products require significant increased attention. Strategic management and zootechnical control of pig-breeding enterprises through development and its information base is of great theoretical and practical importance. Strategic management and zootechnical control is aimed at studying the work of managers and labor collectives of an agricultural organization, at determining the costs of producing pig products. Optimal measures were identified to control the cost of pig production in this work.

**Keywords:** strategic management and zootechnical control, costs, financial results, pig breeding.

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## **INTRODUCTION**

The development of new approaches to the management of all resources is one of the conditions for the successful functioning of pig-breeding enterprises, as well as their reformation in modern economic conditions [1, 2].

In this regard, management and zootechnical control are the most important management functions in the pig industry [7].

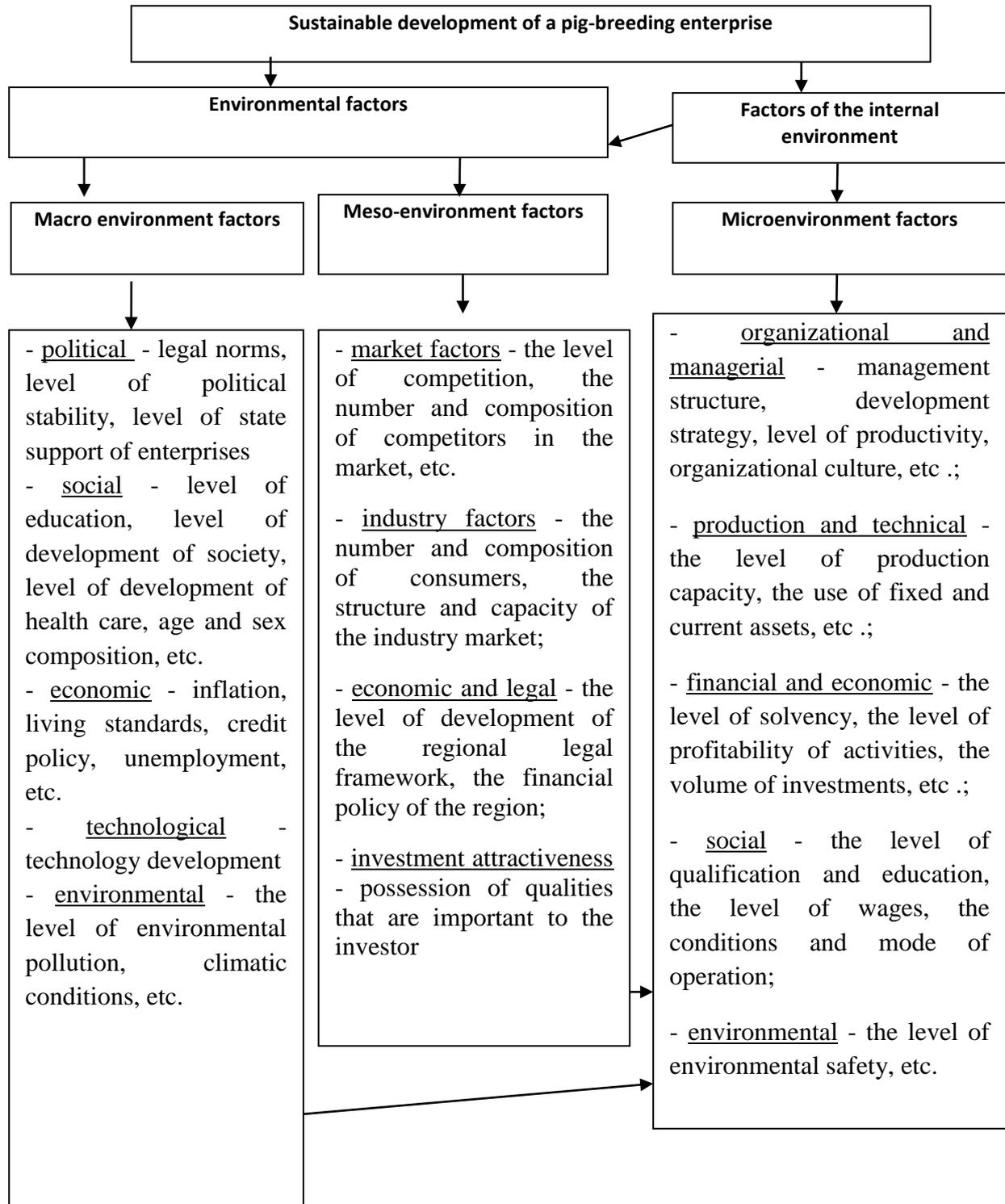
The process of production of pig-breeding products is the fundamental process of economic activity of pig-breeding enterprises. The financial result of the company's business (profit or loss) is directly dependent on this process. Therefore, it is necessary to manage the production process, on which the volume of production of pig-breeding products, their quality and competitiveness of the enterprise depend [3].

All factors affecting the sustainable development of a pig-breeding enterprise can be divided into two large groups: factors of the external and internal environment (Figure 1).

The factors of the internal environment (microenvironment) determine the possibilities for the effective development of pig breeding. They depend on the economic entity itself, whereby it can change specific performance indicators. In addition, it affects internal factors and management.

Environmental factors are subdivided into factors of the meso-environment (near environment) and macroenvironment (far environment) factors. The immediate environment affects the pig production organization, and the organization, depending on the direction of impact, can be transformed or actively counteract the influence of external factors. These factors, for example, include the level of competition, the number and composition of consumers.

Environmental factors have a significant impact on the enterprise, while the pig-breeding enterprise itself does not have a reverse impact. The factors of macroenvironment include the following: political, economic, social, environmental and technological.



**Figure 1: The set of factors of sustainable development of a pig-breeding enterprise**

It should be noted that environmental factors, unlike internal ones, have a high degree of uncertainty, which is associated with their diversity, with complex interrelations between elements of one or several factors and with the dynamism of their development and change [4, 5].

Strategic management and zootechnical control is the procedure for creating a development, implementing strategic decisions. The basis of this control is a strategic decision on costs (cost objects can be:



main herd; pigs from two to four months; young pigs older than four months; adult pigs for fattening) based on comparing the personal resource potential of the company with the probabilities and hazards of the external environment [6].

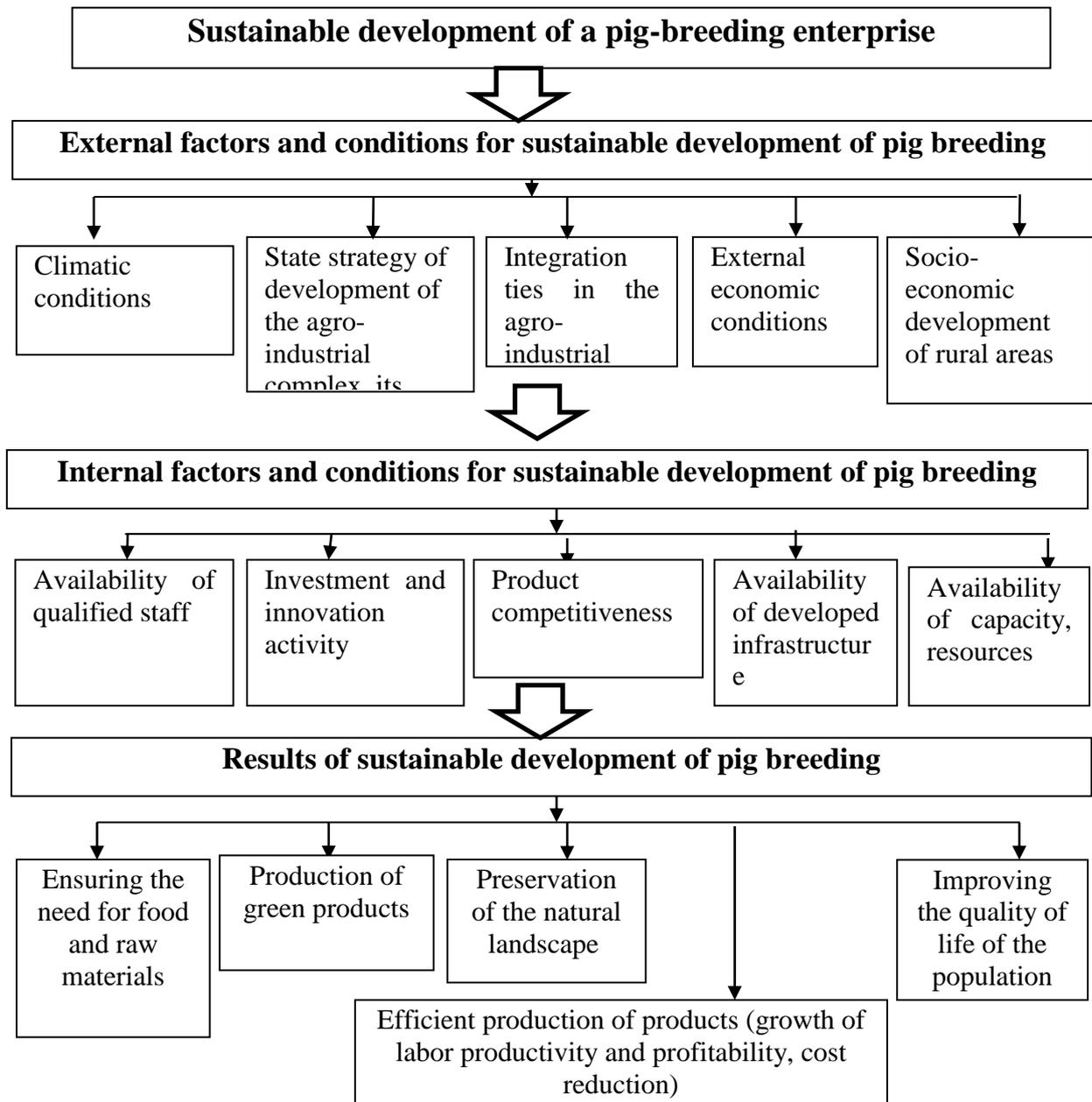
The core of strategic management and zootechnical control is a system of strategies, which includes a number of specific interrelated strategies (entrepreneurial, organizational, labor, biological, technological).

Strategy in management and zootechnical control is an advance-planned response of the pig-breeding organization to changes in the external environment, the direction of its behavior, chosen to achieve the desired result.

Strategic management and zootechnical control in pig production includes a combination of many functions, including development management. The development of a pig enterprise cannot be considered without an understanding of its future, goals, objectives, mechanisms and actions.

Within the framework of the concept of sustainable development, the relationship with the external environment is important for any pig-breeding enterprise; it receives resources from the external environment and directs the products to the external environment.

Factors (methods) of sustainable development of pig breeding are dependent on the overall macroeconomic strategy of the country (the external environment).



**Figure 2: The influence of external and internal factors on the results of sustainable development of pig-breeding enterprises**

Political factors play a decisive role in sustainability for pig-breeding enterprises. The use of legislative regulation of enterprises is due to the need to protect enterprises from each other, to protect consumers and the interests of society.

The main purpose of managerial and zootechnical control of pig-breeding business is to achieve rational functioning of production units through top management through the creation of adaptive information systems, a comprehensive set of optimization models and quantitative methods that can quickly detect and offer the possibility of eliminating any deviations at any stage of the agricultural production and marketing cycle.

The goals that make up the essence of any pig-breeding organization in the field of management and zootechnical control by the agricultural business determine the approach to setting goals, developing strategies and tactics for solving them.

When making management (key) decisions on the choice of production goals, first of all, the priority of goals is determined by taking into account the main goal, and measures are being developed to optimize the proposed solutions. At the same time, as a rule, it is impossible to optimize solutions for all purposes due to their contradictory nature. Therefore, choosing the optimal managerial (key) solution for the main goal, the limitations are taken into account in relation to the other goals.

The situation arising when choosing a management decision consists of the following elements:

- business process accounting strategy or plan for business;
- the state of the existing prevailing accounting conditions;
- the result of the adopted management and zootechnical strategy for a certain state of objective conditions;
- management forecast, which assesses the probabilities of each of the possible states of objective prevailing conditions;
- the criterion for the selection of a management decision on which the methods of using information depend on the choice of a plan variant to be implemented.

If there is no choice between the ways of achieving the goal, there is no problem of making a management (key) decision. The development of different options for achieving the goal and the selection of the best ones require consideration of specific costs.

The implementation of a management decision is an ongoing function related to the operational regulation of agricultural business. The current regulation allows to assess how the implementation of the decision ensures the achievement of the goal. The pig – breeding business strategy is a consistent, integrated decision-making scheme.

The purpose of management and zootechnical control is the formation of such a system that would allow effectively managing financial results, expenses, incomes, as well as making effective management decisions through the accumulated information in the accounting process. Thus, based on the goal of managerial and zootechnical control in the pig – breeding industry, it is necessary to solve the following tasks: to generate complete, reliable information about all the processes occurring in the pig – breeding industry; to form and clarify the cost items reflected in the pig – breeding industry; to plan and study specific performance indicators for pig production; to calculate the total and reduced cost; to form responsibility centers based on the technological features of the industry; to generate internal management reporting for responsibility centers; to make effective management decisions that maximize profits.

The objectives of the study is to master the knowledge of the implementation of strategic management and zootechnical control of agricultural business in terms of cost accounting and financial results in the pig industry [7,8].

In pig-breeding, features of the formation of bone, muscular and fatty tissues in animals are taken into account.

The formation of bone tissue lasts from the day of the birth of a pig and up to 7-8 months of age.

The formation of muscle tissue continues from 7-8 months to 12-14 months of age.

The formation of adipose tissue continues from 12-14 months of age to slaughter pigs.

The main condition for the full and effective management of pig breeding is proper balanced feeding of animals, as a result of which the planned production is obtained at a reasonable cost per unit of pig production, regardless of the breed of pigs.

Feeding pigs involves taking into account the physiological characteristics (digestive organs and biological processes of digestion of nutrient feed in pigs).

Therefore, the main task is to improve the management and zootechnical cost control in the pig industry, through the development and implementation of certain organizational, methodological, practical recommendations and provisions that allow to form an effective and adaptive system [10].

The ultimate goal of rational consumption of resources in the production process is to maximize profits through the qualitative improvement of the characteristics of products. Therefore, there is an objective need to highlight the cost of product quality to account for losses and control their reduction, as well as the assessment of reserves.

Quality costs represent the difference between the actual cost of a product or service and its possible (reduced) cost.

Taking into account the current level of development of zootechnics and methods for predicting the quality of pork during the life of a pig, it is possible to effectively manage under the condition of competent management and zootechnical cost control and costing in pig production.

For the purposes of production and bioresources management in pig production, the veterinarian during the appraisal should ensure a timely assessment of health and the constitution, then exclude unwanted pigs from the breeding stock by these parameters.

Zootechnical control of pigs is carried out by productivity, live weight, length of the body, exterior and constitution according to the requirements of the special instructions for the assessment of pigs.

A certain class is elite, class I and class II are assigned on every basis, a note about this is made in the books of zootechnical accounting.

For example, it is necessary to know when monitoring records of zootechnical records of multiple sows:

- 11 and more piglets correspond to the elite class,
- from 10 pigs - I class,
- from 9 pigs - II class.
- less than 9 piglets - not class.

The numerical amount of piglets obtained from sows depends not only on the management and control system but also on genetics (breed) and feeding.

Pigs are marked by numbers and nicknames. Breeding sows for individual registration affix personal identification numbers or tags on the ears. Mark them in standard ways:

- tattooed numbers,
- plucking,
- plastic tags with the numbers.

In the pig-breeding organization, it is necessary to conduct zootechnical control of all breeds of pigs. For this, special forms of registration books, individual animal cards, statements should be checked.

Each breeding male pig and each breeding pig female are marked on the zootechnical registration card of pigs, which reflects all information about the biotransformation, origin, use and productivity.

In the register of cases, record the time of mating of each female pig, as well as her inseminator. Piglets are recorded in the act of offspring and the piglet counting book, and the growth of breeding pigs and boars is recorded in the book of registration and rearing of young stock, processing and analysis of the results of grading are recorded in the consolidated statement of pigs' assesment, etc.

For the purposes of managerial and zootechnical control, it is necessary to assess the use of biological assets of pig breeding and biotransformation processes.

3). For this, we propose to use indicators characterizing the qualitative state of the herd of pigs (Figure

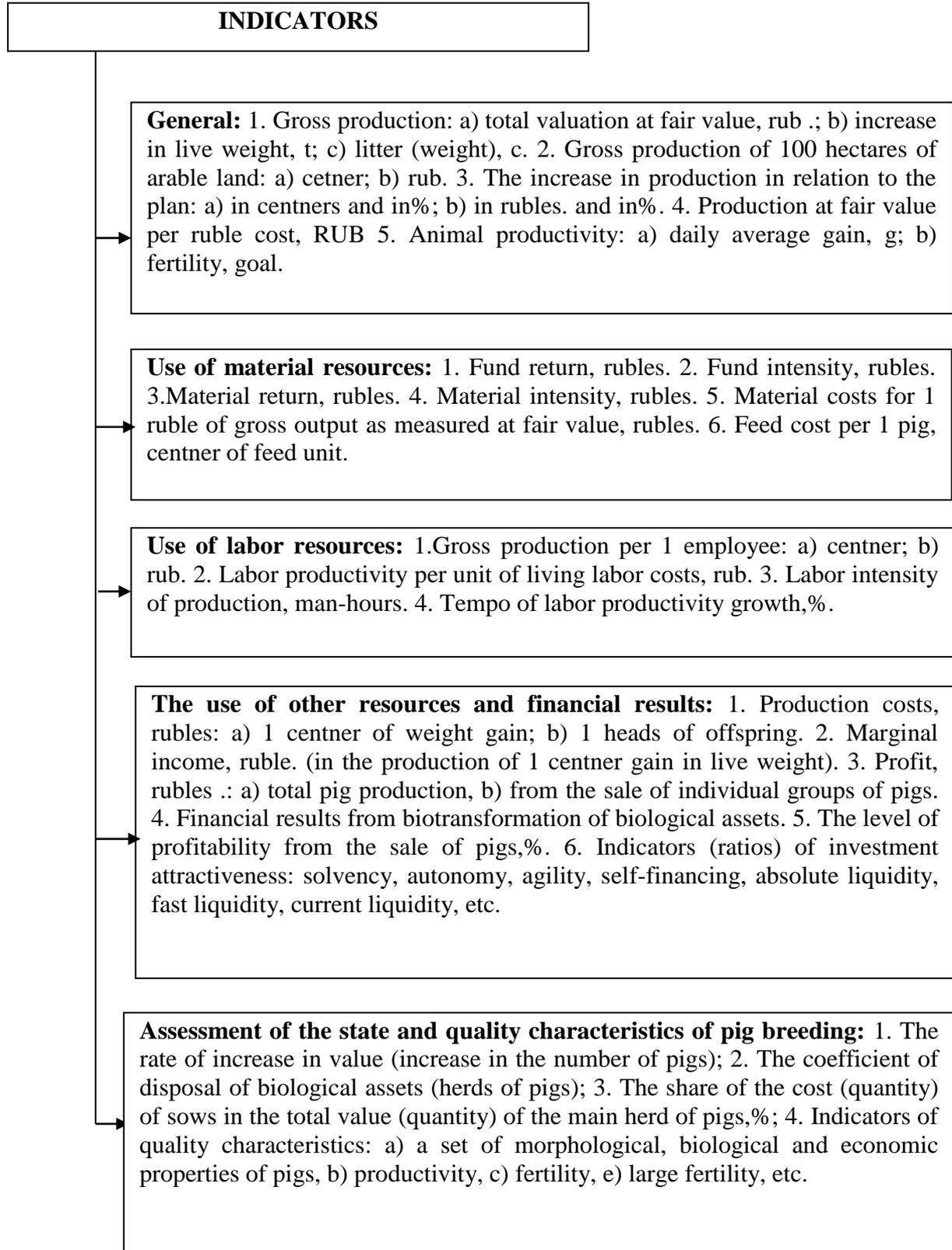


Figure 3: Indicators of the quality of the herd of pigs

The accuracy of determining the cost of live weight of animals largely depends on the applied methods of management and zootechnical control.

An example of the control calculation of the cost of live weight of weaners in the pig-breeding organization by block (team) of pig-breeders (table 1).

**Table 1: Data on brigades (blocks) of pig-breeders of an agricultural organization**

No	The data for the control calculation of the cost					
Primary brigade accounting data						
1	Block (brigade)	The beginning of the year	The number of pigs	Amount in rubles	Weight in centners	Note
1.1	Brigade number 1	2017 year	215	1485000	33	piglets up to two months of age, body weight
1.2	Expenses of the reporting period = 16726000 rubles					
Current brigade accounting data						
2	Block (brigade)	During a year	The number of pigs	Amount in rubles	Weight in centners	Note
2.1	Brigade number 1	2017 year	2100	836000	22	Pig litter
2.2	Growth = 378 centners for a total amount = 14364000 rub., Manure = 135000 rub.					
Brigade Accounting Reporting Data						
3	Block (brigade)	During the reporting period	The number of pigs	Amount in rubles	Weight in centners	Note
3.1	Brigade number 1	2017 year	2050	15390000	405	Transferred piglets from one gender and age group to another (in the older group)
3.2	Death case = 32 head (4 centners), for the amount = 148,000					
3.3	Loss attributed to guilty persons = 14 goals (3 centners), amounting to 111,000					

**Control calculation:**

1. The cost of maintaining the main herd of pigs with piglets = 16726000 - by-products = 135000 is 16591000 rubles.
2. To calculate the cost of increase in live weight of pigs up to two months of age, take the resulting amount of 16591000 rubles and divide by centners (22 + 378), as a result we get 41477.5 (rubles / centner).
3. In determining the actual costs of litter and increment:
  - we take for the offspring the resulting amount of 41477.5 and multiply by mass 22 centners, while the sum of the actual costs = 912505 (RUB);
  - we take the obtained amounts of 41477.5 for the increase in live weight and multiply by 378 centners, while the sum of the actual costs = 156 78495 (RUB).
4. The calculation of the cost of increase in live weight of pigs up to two months of age (Table 2).

**Table 2: Calculation of the cost of live weight of weaned piglets**

Indicator	The number of pigs	Live weight, centner	Actual cost, rub.	Standard cost, rub.	Deviation, rub.
Balance at the beginning of the year	215	33	12 37500	-	-
Received for the reporting period: litter: growth:	2 100 -	22 378	9 12500 156 78500	8 36000 143 64000	76500 13 14500
Total arrival with the remainder:	2 315	433	178 28500	-	-
Transferred to the senior group:	2 050	405	166 91400	149 85000	17 06400
Pigs died	46	7	2 71600	2 59000	12600
Including: in production costs: on perpetrators:	32 14	4 3	1 48000 1 23600	1 48000 1 11000	- 12600
Balance at the end of the year	219	21	8 65500	-	
Total consumption with the remainder:	2 315	433	178 28500	-	-

5. *The calculation of the cost of live weight of weaned piglets:*

$(17828500 - 148000) / (433 - 4) = 41213$  (rubles / centner).

6. *Piglets transferred to the older group and dead piglets due to persons are considered (the case is included in production costs at actual cost and is not taken into account in the actual cost, it remains in the regulatory and forecast cost price) and unborn piglets at the end of the year:*

$41213 \times 405 = 166\,91265$  (rubles);

$41213 \times 3 = 1\,23639$  (rubles);

$41213 \times 21 = 8\,65473$  (rubles).

7. *Calculating the cost of one head of weaned piglets:*

$166\,91400 / 2050 = 8142$  (rubles/number of pigs).

Carrying out managerial and zootechnical control of production costs in pig-breeding organizations, it is necessary to make sure that the wording, indicators and numerical values in the studied documents are interrelated.

It is also necessary to make arithmetic control of the data, which are reflected in the primary accounting documents.

Check the correct consumption of feed, animal protection and chemical and biological additives of the pig-breeding organization are presented in table 3.

**Table 3: Checking the correct consumption of feed, animal protection and chemical and biological additives**

No	According to accounting data	According to check	Deviation
1	Feed consumption in all blocks - 4071578 rubles	4 071 578 rubles	not found
1.1	Feed consumption - Block-3 - 56 217 rubles	56 217 rubles	not found
1.2	Feed consumption– Block-4– 678 596 rubles	678 596 rubles	not found
1.3	Feed consumption - Block-5– 2 035 789. rubles	2 035 789 rubles	not found
1.4	Feed consumption - Block-2 – 1 300 976 rubles	1 300 976 rubles	not found
2	The expenditure of animal protection - 563 298 rubles	563 298 rubles	not found
3	The expenditure of all chemical and biological additives - 844,335 rubles	844 335 rubles	not found
3.1	The expenditure of protein supplements - 317 201 rubles	317 201 rubles	not found
3.2	The expenditure of mineral supplements - 210 004 rubles	210 004 rubles	not found
3.3	The expenditure of vitamin supplements - 317,130 rubles	317 130 rubles	not found

No violations were detected using the proposed approach to controlling the cost-effectiveness [9] of feed, animal protection and chemical and biological additives in the pig-breeding organization.

Information obtained as evidence is systematized in the course of managerial and zootechnical control of the costs of producing pig products.

In addition, for the purpose of improving the management and zootechnical control of biological assets of pig breeding, we offer the following control scheme (Figure 4).

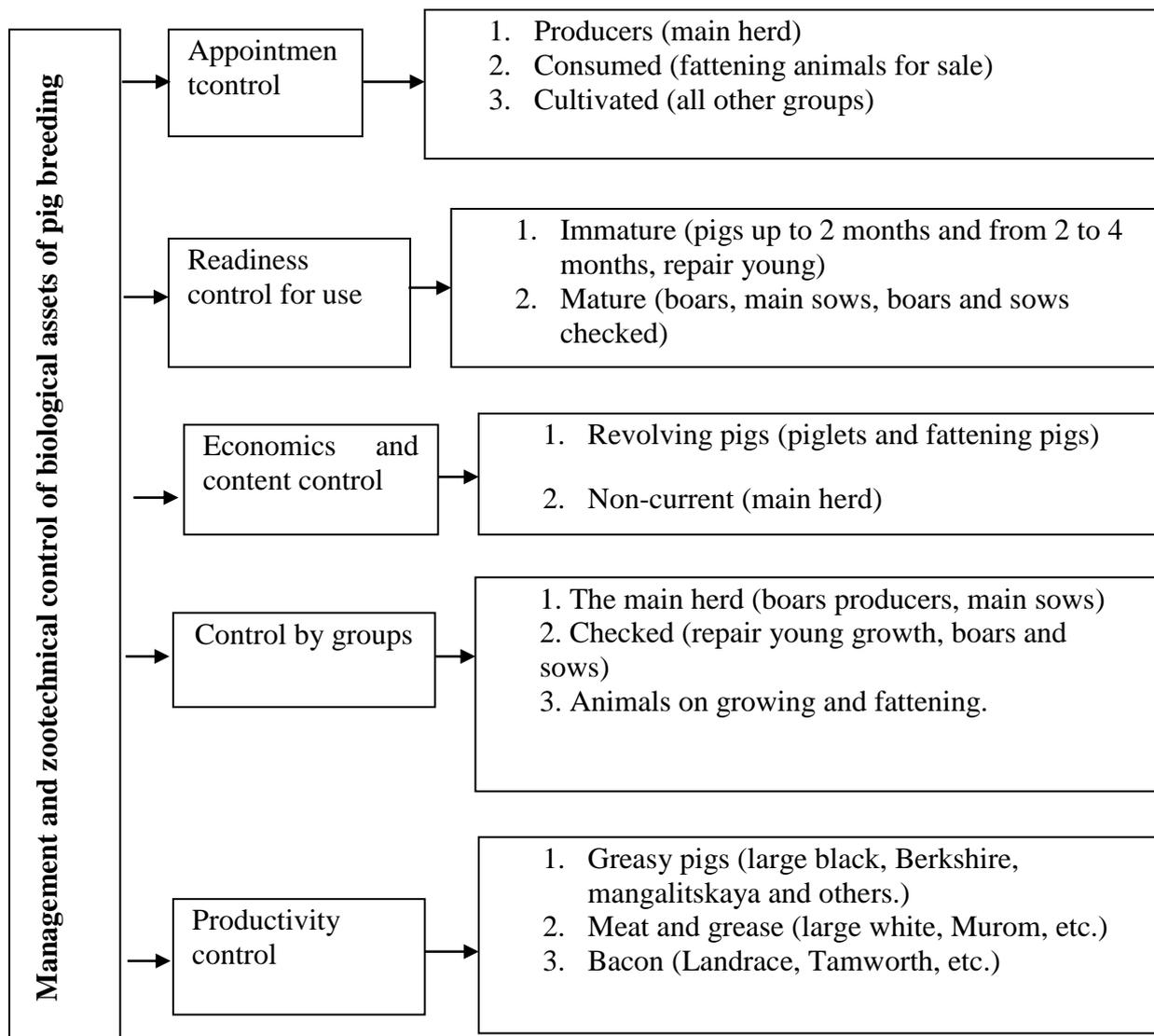


Figure 4: Management and zootechnical control of biological assets of pig breeding on certain grounds

The proposed model of managerial and zootechnical control of biological assets of pig breeding will allow competently assess their condition and give correct information on all the ongoing biotransformation and economic processes, which in turn contributes to competent management decisions in pig production.

At registration of results of check all violations found during check are estimated; the nature of these errors, the causes of occurrence are determined, their materiality is assessed and described in the conclusion. Based on the comments, a conclusion is formed on the verification of the costs of producing pig products.

Based on all the above, we can conclude that the considered model of managerial and zootechnical cost control is a system that allows to clearly (distinctly) carry out the process of managing costs.

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