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DISTRIBUTION SYSTEM OF AGRICULTURAL PRODUCTION MEANS AND SERVICES IN POLAND

1. RESEARCH TARGET AND SOURCES

Production and trade services for agriculture represent a key element of the agrobusiness complex in Poland. Weakness of this sphere is usually attributed to inadequate investment outlays and insufficient supply of agricultural production means and services. Simultaneously there pass unnoticed other equally important circumstances. We should point here, first of all, some drawbacks of the distribution system, being revealed among others in excessively long route of products flow from the producer to the end-user (which increases social costs of functioning of the system), incoordinated activities of institutions responsible for product supply, lack of adjustment of agricultural marketing to spatially differentiated conditions of agriculture.

This paper aims at assessment of organization of distribution in the field of agricultural production means and services. Each organizational solution in the marketing sphere should be adapted to objective market conditions. Accordingly, we shall try to point out specific characteristics of the analyzed market. Against this background, there should be underlined disproportions between the present organization of the market and distribution system on one hand and characteristics of the market on the other hand. This should allow to determine possibilities and improvement directions of the agricultural distribution system.

Main research effort was focussed on the market of spare parts for agricultural machines. Selection of this branch was not accidental as the situation in trade in spare parts is highly unsatisfactory. Their di-

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tribution system has many weaknesses and its socio-economic effectiveness continues to be much lower than it would be desirable.

The analysis was based on information coming both from primary and secondary sources. Information of primary type was collected on the way of empirical researches carried out in companies representing all levels of trade in spare parts for agricultural equipment (industrial sales, wholesale, and retailing). This was, for the most part, qualitative analysis. Interviews conducted by us were to pave the way for identification of the present distribution system and determination of its basic shortcomings. Our interviews encompassed also 27 farmers, whom we met in stores selling spare parts for agricultural machines¹.

2. METHODOLOGICAL PROBLEMS OF RESEARCHES ON THE DISTRIBUTION SYSTEM IN THE MARKET FOR AGRICULTURAL PRODUCTION MEANS AND SERVICES

Distribution channels of agricultural production means and services operate within the framework of the agrobusiness complex. They form a system being determined by numerous internal and external conditions. These conditions can be evaluated from different angles: of the end user, microeconomic, macroeconomic and social.

Any decision concerning changes in the distribution system must take into account all points of view. Nonetheless, the end-user's point of view is of utmost importance, as it is through the end-user that all indirect effects of organizational solutions are achieved. It should be added here that the end-user's point of view is differentiated, and thus e.g. there are differences between detailed preferences of the agricultural farm, and the institution purchasing spare parts to provide repair services of the agricultural equipment. As a rule, the end-user's point of view corresponds to the social viewpoint. In the longer run, the producer of production means and further distribution links not only must increase their adaptability to the market situation but they must also stimulate preferences of end-users in this market. This statement produces two practical consequences.

¹ Research, findings were presented in: J. Dietl, B. Gregor, *Wybrane problemy obrotu częściami zamiennymi do ciągników i maszyn rolniczych w świetle badań empirycznych — raport* (Selected Problems of Trade in Spare Parts for Tractors and Agricultural Machines in the Light of Empirical Researches — a report on 14 pages of typescript); J. Dietl, B. Gregor, *Ekspertyza odnosząca się do projektów systemu dystrybucji części zamiennych do maszyn i urządzeń rolniczych* (Expertise Concerning Projects of the Distribution System for Spare Parts for Agricultural Machinery and Equipment) 36 pages of typescript.

Firstly, needs and preferences of end-users must be treated as superior in relation to preferences of producers and distributors. And accordingly, they should constitute a starting point in construction of each solution pertaining to distribution channels. It can be added at this point, that there exists a high substitution between production and distribution (marketing) costs and social costs being a result of a freeze of production means (inventories). Apart from that there takes place a substitution between costs incurred by particular distribution links as well as interbranch substitution within the agrobusiness complex. Therefore, a narrowly understood profitability account of any organizational solution is of secondary and not primary character.

Secondly, each proposition of changes in organization of distribution channels and each economic calculus, providing a basis for this proposition, must include an element of risk connected with deficit of discussed products at a given place or time. Hence e.g. unquestionable benefits resulting from reduced inventories of most production means may be eliminated by the above mentioned risk. We might even form here a thesis that „*ceteris paribus*” there exists a mutual correlation between inventories of production means and the extent to which the product flow is determined by the information, and — to some degree — negotiation flows. Accordingly, if appropriate information is not secured and appropriate conditions, in which this information will provide a basis for decisions concerning the flow of products (sales, deliveries), are not created then reduction of inventories and their spatial concentration may produce such a big risk that it will undermine all benefits resulting from reduction of these inventories.

If we want to take into account different points of view we must apply different criteria of evaluation.

In the case of the macroeconomic point of view this criterion will be maximization of utilization of economic resources. Practically it encompasses three more detailed criteria. Firstly, creation of conditions for market equilibrium at a given place and time. This implies in practice, that from the macroeconomic viewpoint a desirable distribution system is such which, with other conditions unchanged, ensures continuity of sales and full range of products for all end-users (and not only e.g. the assortment receiving preference of a given branch). Secondly, manipulation of growth, intensity, and specialization of agricultural production. The third detailed criterion being most closely connected with the microeconomic point of view represented by a given branch is the capital frozen in inventories of production means and measured by the index of average inventories for trade.

The end-user's point of view is expressed by availability of pro-

duction means and services as regards their quantity and assortment. A general preference formulated in such a way is compatible with the macroeconomic point of view. One more point remains, however, and that is the so-called utility of purchase. This utility due to the character of the purchase corresponds in most cases to the social point of view. Its quantification is, nonetheless, difficult due to subjective and objective variables composing an evaluation expressed by the end-user. It can, furthermore, be added that in as much as e.g. punctuality of delivery or repair, frequency of deliveries, their form etc. are a result of distribution channels organization, other product characteristics effecting the evaluation of the end-user e.g. quality and price are loosely connected with organization of distribution.

Profitability of a given organizational solution provides a decisive criterion when we take into account the microeconomic point of view, both fragmentary (of a given distribution link) and overall (of the whole branch). The cost accounting should constitute a basis for its estimation. It is not easy in practice and that not only due to lack of information, but also due to the need of application of concept of hypothetical costs, and thus costs which will be incurred or will spring up at the time $t_1, t_2, \dots t_n$ as a result of organizational changes introduced in the period t_0 . The problem would be quite simple if changes in size and structure of costs could be analyzed only in the sphere of newly formed organizational structures and flows within distribution channels. In practice, however, each change in the distribution system produces:

- changes in relations and remuneration of production factors (capital, labour) within the framework of particular links of the distribution system and between these links;
- considerable degree of substitution in relation to organizational changes between costs incurred by particular distribution links (including also the producer and the end-user) and trade links;
- between the distribution system treated as a means of strategy and tactics of a company and other activities (e.g. promotion, prices) there exist substitutional and complementary ties. Hence, changes in the distribution system may be reflected in changes of prices or promotion. It is difficult to make provisions for it in the cost accounting.

Besides the above discussed profitability account an additional criterion, in a way qualitative one, will be provided by capacity or effectiveness of implementation of tasks imposed upon a given distribution link. Accepting the principle of management through objectives (these objectives are outlined in the company plans by the central plan) we should ask a question whether the company's capacity for implementa-

tion of these objectives will be increased or decreased as a result of introduced organizational changes. Only this combined with the profitability calculation allows to perform an evaluation from the micro-economic viewpoint.

3. FACTORS DETERMINING DISTRIBUTION OF AGRICULTURAL PRODUCTION MEANS AND SERVICES

Organization of the distribution system is determined by many factors. Still basic importance should be attributed to three factors:

- a) product,
- b) characteristics of demand and preferences of end-users,
- c) market situation.

A product — according to J. Dietl — is any object of sale or purchase. This may be a physical object or service². In the market for agricultural production means and services we can distinguish three kinds of products: physical objects (e.g. tractor or fodder concentrate), services (e.g. ploughing, sowing, threshing), and a physical object combined with a service (e.g. plant protection means and their spreading). Assortment of products is extremely wide. Particular products differ between themselves both as regards their physical and chemical properties, frequency of purchases and time in which they are used. From the supply point of view, of great importance is division of products into investment goods (e.g. agricultural machinery) and those for running production (e.g. mineral fertilizers). The former are purchased more seldom and their unit price is higher. This justifies a rational concentration of trade in these products. Size of products satisfying production needs of agriculture and their specific characteristics call for considerable individualization of organizational solutions in the distribution system within the framework of each branch.

As it has already been mentioned, a starting point in construction of every distribution system should be the end user and his needs. In Table 1 there are presented characteristics of demand for the analyzed products and their significance for organization and management of the agricultural marketing.

Features which essentially differentiate demand for agricultural production means and services from demand for other products include: its close correlation with agricultural production conditions, type of consumers and/or end-users representing numerous differentiated and

² J. Dietl, *Marketing. Wybrane zagadnienia* (Marketing. Selected Problems), Warszawa 1977, p. 126.

Table 1

Characteristic features of demand for agricultural production means and services and their bearing on programming, organization and management of the production sphere of agricultural marketing

Characteristics of demand	Consequences for marketing sphere
1. Basic, direct and growing in time demand	Rational deconcentration (services) and concentration of marketing (selected production means)
2. Spatial differentiation of demand	Elimination of indirect links between seller and buyer of services (provision of services directly to a farm and shortening of flow routes for production means between industry and end user)
3. Differentiation of volume and structure of demand between individual farms	Maintenance of properly big service potential and storage base for trade in production means, able to satisfy demand in periods of its special intensification.
4. Strong concentration of demand for definite products in time (seasonality of demand)	Deconcentration of management in the sphere of agricultural production marketing
5. Time correspondence between needs, demand, and purchase (satisfaction of needs) — absence of phenomenon of delayed demand for most production means and services	Adaptation of organization and forms of marketing, volume and structure of demand to spatially differentiated needs and preferences of end users
6. Direct relationship between demand, agricultural production process and socio-economic situation of village	Co-ordination of activities of institutions dealing with agricultural marketing in horizontal system
7. Complementarity and substitutability of demand for production means and services	Basing of programming of development of marketing sphere on knowledge of real demand for agricultural production means and services
8. Differentiated elasticity of demand in relation to product type or end user	Active pricing and subsidizing policy in steering marketing sphere — its relationship with price policy in agricultural market

territorially scattered economic units, and extremely big seasonality of demand. Almost 3.5 million farms are buyers of agricultural production means and services. There can be distinguished two macrosegments of the market: socialized and individual farming units with the latter amounting to over 3 million. Socialized farms — due to a large scale of production and its capital intensive character — declare a relatively high demand for production means and services. This allows to apply direct deliveries from wholesale or even industrial companies. It would, however, be wrong if we treated both macrosegments as homogeneous systems. They are highly differentiated which is reflected by the volume and structure of demand.

Programming of development and organization of agricultural marketing must take into account the existing relationships between pro-

duction means and services for agriculture. Complementary character of demand for certain production means and services is of special significance for organization of supply. In some cases we can even speak about a joint demand. This refers especially to plant protection means and provision of services connected with their sowing. It would thus be justified if we combined a commercial offer (sale of plant protection means) with an offer for services.

Solutions adopted in the field of distribution are also determined by the market situation. Lack of equilibrium in the market for production means and services causes, that the capital factor in agriculture is at its minimum level and it is this factor which really determines economic effectiveness of the agrobusiness complex. Accordingly, it is quite important who is receiving these means and how they are utilized.

Two solutions can be adopted here, and namely control of product sales and free sale of products at prices ensuring the market equilibrium. Both forms of distribution have their merits and shortcomings. Sales control is aimed at purposeful activity. There are accepted then in advance some priorities which can be represented by definite branches of agricultural production or groups of farms. It is a selective procedure as from a market for a definite product there is automatically excluded a certain group of farms not fulfilling definite criteria. The farmer, moreover, faces restricted selection of sources and especially size of purchases of production means, which reduces adaptability of production to changes in price relations. In order to pursue the sales control it becomes necessary to possess a perfect knowledge of needs of farms and their economic effectiveness. Unfamiliarity with these needs often leads to waste of a number of agricultural production articles being in short supply.

Free sale of products — in the situation of market disequilibrium — is usually accompanied by increase of prices to a level ensuring some degree of balancing of demand and supply. This type of activity is much less complicated than it is the case with controlled sales. It also partly eliminates informal ties between supplier and buyer. The only selection criterion of farms in the market is a relatively high price representing an instrument forcing farms to utilize effectively the purchased products. The problem, however, is that in case of some farms we will encounter an income barrier. Rise of prices for production means will, moreover, increase production costs and simultaneously decrease competitiveness of these products in relation to other production factors.

The above analysis obviously does not encompass all the variables

which must be taken into account while organizing distribution. Each system is linked with other elements of the economy and operates within a given system of economic management and control. All this forms an environment of a definite fragment of reality.

A basic question arises here: is the distribution system of agricultural production means and services in Poland adapted to market requirements, and — accordingly — does it perform its functions? It is difficult to provide an explicit answer to this question as the situation may differ between different branches. There are, however, important prerequisites justifying a negative estimation of the present distribution system. I will indicate here only some of them:

a) trade in agricultural production means is, to a large extent, subject to various forms of control. Priority is given here to farms belonging to the socialized sector. There are employed tied sales (possibility of purchasing production means for contracted deliveries). Sale of production means carried out along such principles is a derivative of the mechanism of aggregated rights to their purchase and not of real needs of agriculture and particular farms. Trade control largely reduces the economic role played by the market mechanism, paralysing one of its most important functions — the allocation function. As a result, production means do not reach, in optimal proportions, these farms in which they could ensure the most favourable final effectiveness of increments and thus promote the highest production and incomes effect.

b) The distribution system is too developed in the vertical system. Routes of product flows are, as a result, very long which raises the costs of functioning of the whole system.

c) The system is characterized with expanded network of storage facilities at all levels of trade. This is due to a conviction that only maintenance of definite stocks can ensure proper (with respect to their volume and time) deliveries of agricultural production means. That leads, however, to splitting up of supply, which accompanied by lack of knowledge about needs of farms and mechanical distribution of means among particular regions produced a situation that there was very often appearing a surplus of definite products in some areas and their considerable deficit in others.

d) There is a far reaching unification of organization solutions in supply of agriculture with production means, which hampers its adaptation to needs and preferences of particular market segments.

4. EVALUATION AND DIRECTIONS OF IMPROVEMENTS IN DISTRIBUTION SYSTEM OF SPARE PARTS FOR AGRICULTURAL MACHINERY

The distribution system of spare parts for agricultural machinery shows most shortcomings:

a) This system is excessively expanded (see Fig. 1). We are meeting here all levels of trade: industrial sales, wholesale, and retail trade. This extends the route of flow of spare parts from the producer to the end user. In most countries (especially those highly developed) this system is very simple with the producer of spare parts being separated from the end-user by one trade link at the most.

b) There exist several organizational vertical systems dealing with supply of agriculture with spare parts. Besides, these vertical systems sometimes perform mutually overlapping functions. Such solution accompanied by shortcomings in coordination (mainly in the horizontal system) and ineffective information flow can be hardly considered satisfactory.

c) Excessive expansion of distribution channels and spreading of trade organization between several organizational systems lead to dispersion of supply, which consequently leads to a freeze of spare parts in the form of inventories (it is estimated that inventories of spare parts amount to 30 billion zloties at present, which is equivalent to the volume of their sales over a two-year period).

d) Excessive expansion of the distribution system causes that the marketing apparatus shows small elasticity. This is expressed among others in the mode of booking orders (a need of ordering spare parts a long time in advance). The economic calculus often forces companies to simplification of the mode of purchases and product flows (often contrary to binding regulations).

e) Shortages in supply of spare parts cause that orders submitted to producers of spare parts provide for much bigger quantities than are really needed. The trade is aware of the fact that it will obtain, anyway, only a part of the ordered goods. A similar situation is present in contacts between retail trade and wholesale (or industrial sales). It often happens also that the confirmed order does not correspond to actual possibilities of delivery. This is due to the fear of suppliers of eventual penalties for a failure to effect the contracted deliveries. Such activity undoubtedly leads to dislocations in the whole market.

f) Influence exerted in this branch on the industry by the trade is insignificant. In the situation of the market disequilibrium, the producer holds mostly a superior position in relation to the buyer. At pre-

sent the industry is not materially interested in production of spare parts. Their production is not competitive in relation to production of finished products (from the point of view of profitability of production).

It is thus an obvious matter that the present distribution system of spare parts does not fulfil properly its functions. Changes in the distribution system should, first of all, tend towards:

— shortening of the flow route of spare parts from the producer to the end-user and substantial acceleration of circulation of products. There exist feasible possibilities for elimination of the wholesale level with shifting the centre of gravity towards industrial sales points. This concept calls for development of transport base (substitution of storage facilities with transport facilities). In the case of parts for harvester combines and new types of tractors (e.g. Massey-Fergusson) we postulate introduction of the service system. The producer should take over maintenance services of these machines. It is the most modern and most commonly applied solution in highly developed countries. It ensures the highest integration of activities of all links in the distribution channel, with the producer being relieved of responsibility for the whole organization of a market for a given commodity. This solution promotes increased confidence of the end-user towards the producer and supplier. The producer may perform the role of the market leader in three forms. The first consists in direct provision of services. The second one encompasses opening of authorized stations. And finally the third form is represented by franchising. There should be promoted development of repair stations operating on principles of franchising, and run by agents being equipped by the producer with repair equipment, know-how, and spare parts.

— consolidation and development of the role played by the information flow, and that not only within the framework of a distribution channel but mainly between the channel and its environment. This concerns especially information referring to supply (production possibilities) and demand (information from the end-user) and ensuring motivation of the producer and end-user. The information flow should constitute a variable determining the product flow. This information must provide a basis for decision-making, and in some cases information transmitters should be of directive character. This calls for essential changes in the negotiation flow and, moreover, generally in the management systems. This view can be transferred in a statement that management of a company should be identified with management of the information flow.

— introduction of elastic solutions in distribution channels, and

between distribution channels and environment allowing to accelerate adaptability processes.

— assurance of a wide assortment offer for the end-user and such reduction of his risk of failing to receive spare parts which would release a psychological effect allowing to decrease the present distrust of institutions dealing with agricultural marketing.

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SYSTEM DYSTRYBUCJI ŚRODKÓW PRODUKCJI I USŁUG DLA ROLNICTWA W POLSCE

W opracowaniu podjęto próbę oceny organizacji dystrybucji środków produkcji i usług dla rolnictwa. Na tej podstawie wskazano na możliwości i kierunki jej usprawnienia. Duży nacisk położono na problemy metodologiczne badań nad systemem dystrybucji omawianych produktów. Każde rozwiązanie organizacyjne w sferze obrotu winno być dostosowane do istniejących obiektywnie warunków rynku. Stąd też zwrócono uwagę na odrębności rynku środków i usług produkcyjnych dla rolnictwa, stanowiące determinanty systemu dystrybucji. Na tym tle podkreślono dysproporcje między istniejącą organizacją rynku i systemem dystrybucji a cechami rynku od strony popytu i potrzeb. Szczegółowe studia przeprowadzono na przykładzie branży części zamiennych do maszyn rolniczych.