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The Influence of the Educational Level of State Farm Managers upon Results of Farming

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In this investigation only one condition—a basic and decisive one—has been taken into account. Thus, only those managers were included who had managed the same farms for at least 8 years *. Subject to this condition, the group investigated showed much higher indices of working period in agriculture, age and work at the same enterprise, than the groups investigated by others (e.g. by T. Orkisz). The present investigation comprised all the managers of agricultural enterprises in the Warsaw Union of State Farms. The total number of managers was 123, including 38 who had held their positions at the same farms for the last 8 years. These last constituted the group investigated.

As this number was rather small, we could only separate out subgroups from the view-point of the education of the farm managers. Finally, three educational levels were considered viz.: primary education with andditional agricultural training, secondary (vocational) agricultural education, and academic agricultural education. Apart from the criterion of education, other features characterizing the managers investigated, such as age, period of work in agriculture and at the same farm in the position of manager, were similar. Also the level of macroeconomic conditions of the farms were approximately the same. For that reason, we can state that the factor differentiating the manager's influence upon the results of the farm managed by him was primarily his educational level. At the same time we have not neglected some additional explanatory data, such as the number of staff members and size of farm (Table 1). It follows from the data that the higher the manager's educational level, the larger was the

* The 8-year limit was taken for the following reasons: The Warsaw Union of State Farms had the data for only the 8-year period. Within this period no significant organizational changes took place concerning unificaton or division of particular production units. In our opinion, the 8-year period was quite sufficient for the manager to get fully acquainted with the unit managed by him.

size of the farm he managed and the greater the number of staff members.

The results obtained by the farms are measured by three indices, namely: by value of market production per ha. of agricultural land, determining farm productivity level; by value of market production per worker, determining labour productivity; and by profitability index *, deter-

Table 1. Qualifications of Managers of Particular Farms in the Warsaw Union of State Farms Holding Their Positions at the Same Farms for 8 Years or More

Educational level	Primary education and additional agricultural training	Secondary agricultural education	Academic agricultural education	$\bar{X}$ of population
Number of managers	7	23	8	38
Per cent of managers	18.0	60.0	22.0	100.0
Mean age	56.5	56.2	50.5	55.2
Mean period of work in agriculture	27.5	28.2	22.5	27.0
Period of work on a given farm in manager's position	11.0	13.4	8.7	12.2
Mean farm size, ha.	163	315	579	342
Mean number of staff members	28	58	128	66
Macroeconomic conditions:				
better	66	64	71	66
worse	34	35	29	34
100%	100	100	100	100

mining in its turn the economics of production in a given enterprise. These three indices constitute a numerical criterion of the objectives of the state agricultural enterprises in Poland. This criterion may be formulated in such a way that the objective of a state farm may be said to consist of attaining as high a production level as possible of adequate quality and of the right kind and at the highest possible labour productivity.

The data characterizing the value of production per hectare are presented in Table 2. At all the educational levels there was an increasing tendency for the higher education levels to be ssociated with lower percentage increases in production. In our opinion this shows the well-known phenomenon according to which the higher the initial level, the more difficult it is to increase production without radical changes in the techniques and technology of production and in the organization of the production process.

* Profitability index $= \frac{\text{income from production}}{\text{production costs}} \times 100$. It is a relation between the value and the costs of the production obtained.

Within the 8-year period nothing of the kind happened, so the trend should be regarded as normal.

However, on the farms where the managers' education was highest, there was no decline, and even in the year 1962-1963, with very unfavourable weather conditions, the decline in production was insignificant

Table 2. Market Production per ha. of Agricultural Land
(in hundred zlotys)

Educational level	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67
Primary education and additional agricultural training	57	68	68	89	87	131	105
Secondary agricultural education	71	89	72	106	120	120	127
Academic agricultural education	96	107	101	107	111	131	133
$\bar{X}$ of population	77	93	81	105	114	124	128
Warsaw Union of State Farms	82	95	81	103	115	125	127
	Indices in % (1960/61 = 100)						
Primary education and additional agricultural training	100	119	119	156	153	229	184
Secondary agricultural education	100	125	101	154	169	169	179
Academic agricultural education	100	111	103	111	115	137	139
$\bar{X}$ of population	100	116	105	136	148	161	166
Warsaw Union of State Farms	100	116	99	126	140	152	155

in spite of the higher initial level. On other farms, however, the fluctuation rate was much greater.

The trend of the labour productivity index is illustrated by the figures in Table 3. Here the three subgroups were more level but, as with the previous index, the steadiest relative rise occurred in the subgroup of managers with the high educational level. This did not appear in the other subgroups.

A relatively high increase of this index in the subgroup of managers with primary education may be explained by their very low initial level and also by their having few staff members. These would be more easily managed than four times as many in the subgroup of managers with aca-

demic education, while the qualifications of the foremen were still insufficient.

The profitability index is shown in Table 4. These figures are the best testimony to the fact that academic education is the most favourable.

The profitability induces computed as averages for the farms with ma-

Table 3. Market Production per Worker
(in thousand zlotys)

Educational level	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67
Primary education and additional agricultural training	35	42	42	52	52	71	56
Secondary agricultural education	48	53	42	54	60	63	66
Academic agricultural education	45	49	49	48	51	57	58
$\bar{X}$ of population	43	51	44	52	57	62	63
Warsaw Union of State Farms	42	49	41	53	58	61	61
Indices in % (1960/61 = 100)							
Primary education and additional agricultural training	100	117	117	149	149	202	155
Secondary agricultural education	100	111	88	106	125	132	138
Academic agricultural education	100	104	104	103	107	127	129
$\bar{X}$ of population	100	119	101	121	133	144	147
Warsaw Union of State Farms	100	117	98	126	138	145	145

nagers with different levels of education were in reverse order in 1966-1967 compared with 1960-1961. Namely, in the first year 1960-1961 the profitability index fell while the level of education increased. Thus the managers with lower educational levels ran the more profitable farms. The sequence of the profitability index ran 115, 113, 106. In the last year the differences were not great, and the sequence was rather reversed, viz: 105, 107, 107. Only on the farms having managers with higher education were the profits improved. If the indices for the first year are taken at 100, their values in the last year were 91, 95, 102.

The differences in levels of profitability the farms favoured the managers who had had academic agricultural education, but there were no

great fluctuations of the indices from year to year, though they showed a distinct and systematic increase (except in the catastrophic year 1962-1963 when the regularity was slightly disturbed).

This evidence of the profitability index proves that managers with academic agricultural education can better adapt themselves to existing farming conditions, are able to forecast better, can produce better quality commodities and make more favourable production contracts.

So far as the last item is concerned, it can be proved that the yields per hectare expressed in physical terms deviate less than those expressed in terms of value: these managers get higher returns per unit of product.

The results of the investigation lead to the following conclusions:

(1) Comparing the results obtained by farm managers having primary education and additional agricultural training and those having secondary agricultural education no significant differences were found in the population investigated so far as the value of three indices showed at the first and last education levels. However, it must be stressed that the absolute value of the indices for the farms of the second sub-group was higher, and

Table 4. Profitability Indices of Farms Investigated

(Weighted averages for particular years and for groups of education level of farm managers)

Educational level	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67
Primary education and additional agricultural training	115	103	91	111	107	107	105
Secondary agricultural education	113	114	97	109	110	109	107
Academic agricultural education	106	104	103	107	107	108	107
$\bar{X}$ of population	110	110	99	109	109	108	107
Warsaw Union of State Farms	107	105	94	102	104	107	105
Indices in % (1960/61 = 100)							
Primary education and additional agricultural training	100	89	79	96	92	93	91
Secondary agricultural education	100	101	85	97	98	96	95
Academic agricultural education	100	98	98	101	102	102	102
$\bar{X}$ of population	100	99	89	99	99	98	97
Warsaw Union of State Farms	100	98	88	96	98	100	98

that the managers of that sub-group ran farms twice as large with twice as many staff members.

(2) The better results obtained by the managers with higher educational levels were noted. These managers secured higher profits, without great fluctuations in the value of particular indices, and with a steady tendency to increase. The success of these managers can be explained, primarily, by their skill in producing more valuable commodities and in using production methods which were financially more favourable.

The success of the third group can be ascribed to their skill in overcoming greater difficulties in management, and in running particular enterprises. These managers ran farms four times larger than those in the first sub-group and twice as large as those in the second sub-group. There were similar differences in the numbers of subordinate staff.