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SIX-YEAR PLAN CALLS FOR
 55,000 TRACTORS IN 1955

It is stated in the guiding principles of the Six-Year Economic Plan that "agricultural production will increase but the increase will be slower than that of industrial production; however, the variation in the tempo of increase should not be too great or the very foundations of industrial development will be threatened." With 20 million hectares of agricultural land, of which 16,500,000 hectares is arable land, at its disposal, Poland must not only feed the increasing population, now numbering 24 million and expected to reach 26 million in 1955, but must also increase the per capita consumption of agricultural products, meat, and fats and produce surpluses for domestic reserves and for export. This necessitates the modernization of farming and improved organization in the villages.

Scientific use of fertilizer, crop rotation, agrological research, land reclamation, soil conservation, mechanization and electrification of agriculture, and mass production of agricultural products will assure a profitable increase in crop yield.

In its present stage of development one of the most important problems in Poland is the transition to mechanized farming.

For a while during the postwar period the mistaken idea was held that farm tractors were necessary only to offset the catastrophic loss of farm horses during the war and occupation and that, as the supply of work animals increased, the importance of the tractor would decrease.

For the actual requirements of agriculture the number of farm tractors in Poland is very small. Many are in bad condition with no spare parts, and this causes a reduction in the hours of annual use.

Great difficulties also arise from the fact that among the small number of tractors there is a great variety of types and models. This diversity makes it difficult to secure spare parts and to train operators.

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As of 1 January 1949 there were 14,500 tractors. Estimates of annual production of tractors will reach 55,000 in 1955 and that agriculture will be supplied with from 50,000 to 60,000 tractors within the 6-year period, 1950 - 1955.

Table No 1 shows the proposed scheme to increase the number of tractors to 55,000 in 1955, assuming that the annual production of tractors will reach 12,000 in the last year of the plan. It purports to show the loss through wear and tear and the acquisition of new tractors in each year of the Six-Year Plan.

Regarding farm tractor production as outlined in the Six-Year Plan, the following three points should be considered: type of tractor and tractor power most suitable for Poland; the number of each type making up the total of farm tractors at the end of the Six-Year Plan; the most suitable type of engine, in other words, type of fuels to be used by most of the farm tractors.

Since the problem of farm tractors is new to Poland it should avail itself of the experience of countries leading in this field.

The Soviet Union with its expense of mechanized farms is an especially valuable source of information and practical hints on solving the problem of the mechanization of farming. The study of Soviet scientific writings would help decide the three points mentioned previously.

The following solution is suggested:

There should be two basic types of farm tractors: one with a drawbar horsepower of from 28 to 32 and another from 17 to 20, the larger tractor to be the caterpillar type and the smaller the wheel type. As a model caterpillar-type tractor, next to the Lanz - Bulldog 45 now being produced on the assembly line of the Ursus Plant, the Soviet Kirovlec-D 36 tractor is suggested. The Czech Zetor tractor with a 25-horsepower engine or the Swedish Bollinger tractor with an engine of the same horsepower are suggested as possible models for the lighter-wheel-type tractor.

A supplementary tractor for special cultivation or for work requiring powerful machines could be chosen from the newest standard Soviet models of the caterpillar type with drawbar horsepower of 6, 12, 24, 36, 48 or 60.

Another supplementary tractor which might help popularize the use of tractors for cultivation and for gardening might be a small garden tractor with a 6 - 7 horsepower engine selected from existing models on the world markets, provided that it could be manufactured in this country.

The number of tractors of each type which will comprise the tractor park can be determined only after a careful consideration of the deciding factors, cultivation and types of plants to be cultivated. However, there is no doubt that the total number of large caterpillar tractors will not exceed 700 as provided for in the Six-Year Plan and the small garden tractors will number from 3,500 to 4,000 units.

Obviously, the best type of fuel for farm tractors in Poland is one which can be most cheaply produced at home. Assuming that the average annual consumption of motor fuel for one tractor is 5.5 - 6 tons, calculated in terms of petroleum products, and that only 85 percent (46,750 units) of the total number of 55,000 tractors are working we find that fuel consumed annually by farm tractors alone amounts to from 257,125 to 280,500 tons or, in round numbers, about 300,000 tons. In providing for the type of farm tractor engine in the Six-Year Plan, only one which economizes on fuel and which can use inexpensive fuel can be considered.

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Since Poland is a petroleum-importing nation, kerosene is used as a basic fuel in mechanized farming. On the other hand, kerosene is not exported such as brown coal, peat, sawdust, and alcohol. There are a variety of rich domestic sources of fuel for farm tractors. Tractors equipped with gas or steam generators are of great use in Poland.

With a specially built engine, alcohol might also become a suitable fuel for power farming. This, however, requires technological and economic experimentation.

At present, the Lenz and Bulldog 45 tractors are being produced at the Ursus Plant, and Diesel engine tractors which use gas oil as fuel are being imported.

A program for mechanizing farming could be carried out within the period of the Six-Year Plan along the following lines:

1. Classification and standardization of farm tractors and total liquidation of existing stock of tractors.
2. Development of domestic production of all basic types of farm tractors, garden tractors, and spare parts.
3. Setting up training centers for tractor operators, mechanics, and instructors, and establishing technological research centers.
4. Adaptation of gas generators in farm-tractor engines, provided they can be of domestic production.
5. Review of economic problems involved in use of steam tractors. More intensive use of steam tractors already constructed where feasible.
6. Detailed scientific research into possibility of adapting distillery raw materials as a source of motive power for farm tractors, along the lines of Soviet, Swedish, and French experience in that field.
7. Increased efficiency of tractor park.

There are only 6 months in which to discuss and complete the proposed scheme in order to be able to start the 6-year period, 1950 - 1955, with an approved plan of action.

Table 1 *

<u>Year</u>	<u>Status at Beginning of Yr</u>	<u>Tractors Retired During Yr</u>	<u>New Tractors Added During Yr</u>
1949	11,950 <u>2,550</u> 14,500	2,330	5,450
1950	9,620 <u>8,000</u> 17,620	2,330	6,000
1951	7,290 <u>14,000</u> 21,290	2,330	7,000

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Table 1 * (Continued)

<u>Year</u>	<u>Status at Beginning of Yr</u>	<u>Tractors Retired During Yr</u>	
1952	4,960 <u>21,000</u> 25,960	2,330	
1953	2,630 <u>31,000</u> 33,630	2,330	12,000
1954	300 <u>43,000</u> 43,300	300	12,000
1955	55,000		

* The table was prepared on the following basis: as of 1 January 1949 there were 11,650 tractors, 300 Zetors acquired in 1947 and 2,550 new tractors acquired in 1948, a total of 14,500. The 11,650 old tractors will be retired at the rate of 2,330 or 1/5 of the total each year, all to be scrapped by 1954. New tractors will be depreciated over a 7-year period so that the 300 tractors acquired in 1947 will have been written off in 1954.

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