

CIA/RR 87
(ORR Project 20.827)

~~SECRET~~

THE NEW LANDS PROGRAM IN THE USSR*

Summary

The "new lands" program in the USSR involves great amounts of capital investment and manpower and a vast area of land. In less than 2 years, 30 million hectares,** an area 25 percent larger than the acreage sown to wheat in the US in 1955, have been brought into cultivation, and eventually 40 million hectares may be reclaimed. The new lands program has been developed without major dislocations in the Soviet economy. A large part of the necessary total investment has been made, and in the future the program will impose no major strains on the economy.

On the basis of soil and climate, the major area of the new lands program may be divided into three zones.*** The Northern Zone includes the territory between the Ural and the Altay Mountains extending from the boundary of Kazakh SSR to the bogs and forests north of the Trans-Siberian Railroad. This zone is the northern part of the Asiatic spring wheat belt. The Southern Zone, the southern part of the Asiatic spring wheat belt, extends from the northern boundary of Kazakh SSR southward into the arid steppe. The Western Zone, the northeastern part of the Asiatic spring wheat belt, is largely in the European USSR and includes the southern Ural region, the northwest Kazakh SSR, and a part of the middle Volga region. The new lands program is also operative in several other relatively small areas of virgin and long-fallow land, chiefly in the southern regions of the European USSR, East Siberia, and southern Kazakh SSR.

The soils in much of the area covered by the three major zones are suitable for the production of grain. From north to south the soils are similar to those in the prairie provinces of Canada, one of the world's greatest wheat producing regions. In the new lands area of the USSR, gray-brown soils in the north merge with black soils to the south. Farther to the south are dark chestnut soils, merging with light chestnut soils in the extreme south.

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 November 1956.

** One hectare equals 2.471 acres; 30 million hectares, therefore, equal about 74 million acres.

*** See Figure 1, following p. 2, below.

~~SECRET~~

~~SECRET~~

Virtually all of the more suitable soils in the new lands probably were under cultivation in 1953. There had been unsuccessful attempts at farming, and large acreages were abandoned because of excessive salinity and alkalinity. Much of the land reclaimed in 1955, when 30 million hectares were plowed for planting in 1956, was very poor.

More important than the poor quality of much of the soil in the new lands are the hazards of climate, particularly in the Southern Zone, where a major part of the reclamation is taking place. Rainfall is the most critical factor. In the Northern Zone, average rainfall is about the same as that in the Canadian spring wheat belt. Annual rainfall in the Southern Zone averages less than 12 inches, a minimum below which the cultivation of crops is hazardous. The absence of mountain barriers between the three major zones and the Central Asian deserts to the south and the Arctic to the north exposes the new lands to the drying desert winds, which may cause severe droughts, and to the Arctic winds, which may bring snow as early as August.

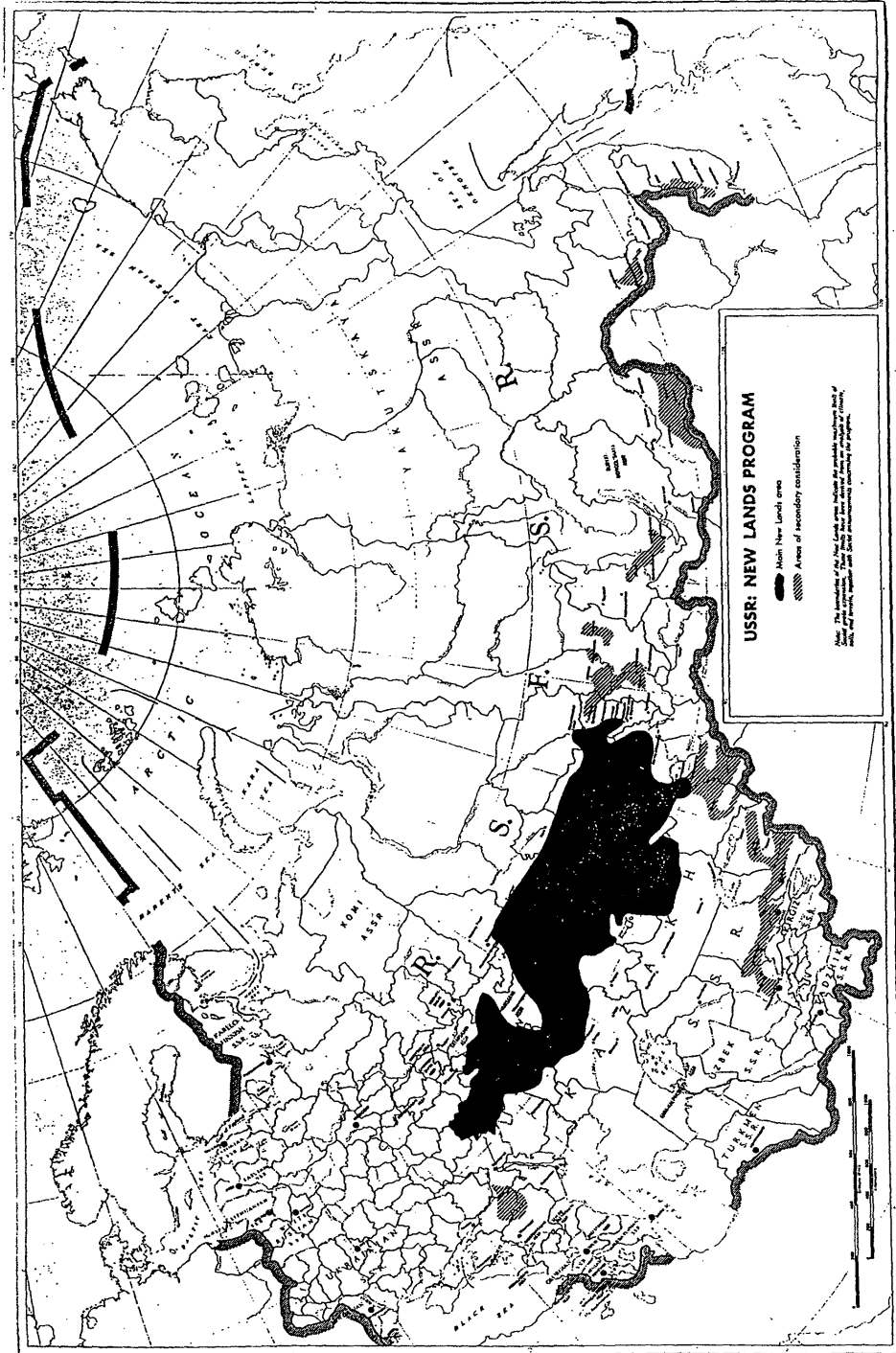
The new lands area of the USSR is a spring crop region in which grain -- mainly wheat -- is the major crop. Available data do not permit an estimate of the acreages and yields of specific grain crops in the new lands, but it may be assumed that yields of wheat are indicative, within a reasonable margin of error, of the yields of all grain crops.

On the basis of a 16-year series of yield data for wheat grown in the areas now affected by the new lands program, a long-term average yield, weighted by the distribution of acreages in the new lands in 1954, has been estimated. The estimate indicates that with an average distribution similar to that of 1954 an average yield of 6.6 centners* per hectare may be expected in the new lands. On the basis of the 1955 distribution of acreage, however, the long-term average yield which may be expected in the new lands is slightly lower, 6.2 centners per hectare; a larger percentage of the new lands brought into cultivation in 1955 was in the Southern and Western Zones, which have poorer soils and climate.

* One centner equals 220.46 pounds. A yield of 6.6 centners per hectare is equal to a yield of about 588 pounds -- 9.8 bushels -- per acre.

- 2 -

~~SECRET~~



~~S-E-C-R-E-T~~

Wide annual variability in yields is to be expected in the new lands, particularly in the Southern and Western Zones, because of the extreme fluctuation from year to year in the amount and distribution of rainfall. This variability in yields is well illustrated by the yields obtained during the first 2 years of the program.

Almost all of the 4.3 million hectares of new land sown in 1954 was sown to wheat. Growing conditions were unusually favorable in 1954, and there was a very good grain crop. The yield is estimated at 10.5 centners per hectare, 60 percent above the long-term average yield of 6.6 centners per hectare and about 35 percent above the estimated 1954 average yield per hectare in the USSR as a whole. The average yield of 10.5 centners per hectare, when applied to the 4.3 million hectares sown to grain in the new lands in 1954, indicates gross production of about 4.5 million metric tons,* about 5 percent of the estimated total Soviet production in 1954.

During the 1955 crop year, most of the new lands suffered from a drought, and the estimated yield of 4.3 centners per hectare was less than one-half of the yield obtained in the extraordinarily good year of 1954. The yield in 1955 is about 70 percent of the long-term average yield of 6.2 centners per hectare and is about 55 percent of the estimated 1955 average yield per hectare in the USSR as a whole.

When applied to the 18.5 million hectares sown to grain in the new lands in 1955, the average yield of 4.3 centners per hectare indicates an estimated gross production of almost 8 million tons, about 8 percent of the estimated total Soviet production in 1955. Because of the much larger area sown in 1955, production of grain in the new lands in that year -- in spite of unfavorable weather -- was substantially greater than in 1954.

Soviet planners know that continued productivity of the new lands depends on a system of crop rotation, including fallow. Present plans call for the introduction of rotation systems after an initial period of 2 to 6 years of continuous cultivation. In the majority of these systems, grain crops in any one year will occupy three-fourths of the land in rotation, and fallow and perennial grasses will occupy the remaining one-fourth.

* Tonnages throughout this report are given in metric tons.

- 3 -

~~S-E-C-R-E-T~~

~~SECRET~~

The proposed Soviet systems of crop rotation appear to include an exceptionally high proportion of land sown to grain. In Canadian practice, only one-third to one-half of the land in rotation is sown to grain, and the remainder is fallow or sown to perennial grasses. Canadian experience indicates that the Soviet systems may deplete the soil of the new lands if abnormally heavy cropping to grain is continued for many years. It is possible, however, that Soviet agricultural planners may not press exploitation of the soil to the point of depletion before they modify the proposed systems of rotation; there is evidence that the systems of rotation to be used have not been determined finally.

Official Soviet statements about expected successes in the new lands seem to be unrealistically optimistic. The statements about expected production, for example, imply an average yield over a period of years of 10 to 11 centners per hectare, a yield which is about one-third higher than the estimated 1950-55 average yield for the USSR as a whole. On the basis of the historical yield series for the area, 6 centners per hectare would be a more reasonable estimate of the long-term average yield that can be expected in the new lands.

Khrushchev has stated that he expects the annual average production of the new lands to be not less than 33 million tons (implying a yield of 11 centners per hectare on an area of 30 million hectares). Canadian experience in crop rotation indicates that to have 30 million hectares continuously sown to grain requires that there be 60 million to 90 million hectares in the rotation system, but no program of acreage expansion of this magnitude has been implied by Soviet officials. At the end of 1955, only about 30 million hectares had been reclaimed.

Recent Soviet statements provide a basis for a more realistic estimate of potential production in the new lands. These statements indicate that the current intention is to reclaim about 40 million hectares. Experience in Canada shows that of these 40 million hectares, 13 million to 20 million could be sown to grain. With a yield of 6 centners per hectare, an average production from the new lands of 8 million to 12 million tons could be expected. This production would represent about 10 to 15 percent of the estimated average production in the USSR for the period for 1950 through 1953, the 4-year period before the inauguration of the new lands program. A gross production of 8 million to 12 million tons of grain -- after deduction for seed and waste -- indicates a net availability for direct human consumption of 6 million to 9 million tons. This quantity would supply the grain requirements of 30 million to 40 million people.

- 4 -

~~SECRET~~

~~S-E-C-R-E-T~~

A part of the new lands program is the development of the livestock industry. The Soviet government plans to use the large areas of pasture and the increased production of straw, chaff, hay, and corn as food for great flocks and herds on each of the newly established state grain farms and state livestock farms and on the expanded collective farms. Each new state grain farm is to have between 2,500 and 5,000 head of cattle, up to 15,000 head of sheep, and 1,000 head of swine. As of 1 October 1955 the new state farms of Kazakh SSR, almost entirely within the Southern Zone of the new lands, had 89,500 head of cattle, 243,500 head of sheep, and "many pigs." These figures represent an average of about 265 head of cattle and 722 head of sheep per new state farm. Although the stocking of state grain farms has been progressing, as of 1 October 1955 livestock numbers were far short of ultimate goals.

The immediate source of livestock for stocking new state farms is apparently the privately owned livestock of collective farm households and the herds of existing livestock farms. As private ownership in animal husbandry decreases, state farms may replace collective farms as the centers of animal husbandry in the new lands. The completion of this transition, however, will depend on great improvement in the food base and heavy investment in water supplies and in shelter -- requirements which it will take many years to complete.

The new lands program is being implemented with the participation of about 10,660 collective farms, 1,740 machine tractor stations (MTS's), and an undetermined number of state farms, including 425 new state farms organized during 1954-55. In the initial phase of the new lands program the larger share of the reclamation tasks fell to existing MTS's and collective farms, which could most easily exploit the readily accessible land near them. These farm units have been relatively more important in the RSFSR, where 1,457 MTS's and about 8,960 collective farms are engaged in the program.

In establishing the 425 new state farms for the exploitation of virgin and long-fallow land in the remote areas of the new lands the Soviet authorities not only have been influenced by the suitability of the land for large-scale grain farming and by the inadequate labor resources in the region but also have been motivated by the desire to expand the state sector of agriculture. Their success in approaching

- 5 -

~~S-E-C-R-E-T~~

~~SECRET~~

this goal is indicated by the doubling of the grain acreages of state farms in the USSR between 1954 and 1956 as a result of the disproportionately large role assigned to state farms in the new lands program. The creation of new state farms in the isolated areas of the new lands also assured the channeling of a larger share of agricultural products through the state distribution system.

Agriculture in the new lands is to be highly mechanized. Initial requirements for machinery have been met by heavy allocations of agricultural machinery to the new lands at the expense of deliveries to established agricultural areas and by loans of machinery from those areas. Loans of equipment were particularly important in facilitating the harvesting and delivery of grain to points of concentration.

The high priority assigned to the new lands is shown by the fact that deliveries of tractors to the established agricultural areas in 1954 dropped to one-half of the annual average delivery in the 3 preceding years. In 1955, however, deliveries of tractors to the established areas increased to 85 percent of this 3-year average in spite of the continuing priority accorded the new lands. Present plans call for the delivery to state farms in Kazakh SSR during 1956 of more than two-thirds as many tractors and combines as were delivered to them during 1954 and 1955.

The major effect of deliveries of agricultural machinery to the new lands probably has been a delay in the reequipment of agriculture in the established areas, particularly the grain areas, and therefore to impose temporarily a greater workload on the existing machinery park in those areas. After 1956 the mechanization problem of the new lands program will be largely one of replacement.

The tractors, combines, trucks, and other farm machinery operating in the new lands require large quantities of diesel fuel, gasoline, and lubricants. The percentage of the total Soviet production of petroleum products required for the exploitation of the new lands in 1955 is estimated to have been as follows: diesel fuel, 4.8 percent; gasoline, 4.8 percent; and lubricants, 1.9 percent. Although these quantities of petroleum products are large, they do not impose a serious strain on the resources of the USSR.

- 6 -

~~SECRET~~

~~S-E-C-R-E-T~~

The agricultural manpower requirements of the new lands program are estimated to be 1.33 million workers, about 2.4 percent of the total agricultural labor force in the USSR. In addition, about 400,000 workers are required for the construction and maintenance of ancillary service facilities associated with the program. The manpower requirements of the new lands, therefore, are relatively small. In fulfilling these requirements, however, some specialists and skilled workers have been recruited from industry, a reversal of the usual procedure in the USSR.

Barring major changes in the new lands acreage goals the program will not be a continuing drain on the national supply of manpower, and once the initial requirements for manpower are met, maintenance of the labor force should not be a major problem.

Announced and estimated requirements for carrying out the new lands program include housing and communal facilities for about 2.8 million persons; almost 2,300 kilometers of rail line (to be completed in 1957); more than 6,000 kilometers of motor roads; granary capacity of more than 773,000 tons; and nonresidential farm buildings for 425 new state farms, new and expanded MTS's, and expanded collective farms.

It is estimated that the total cost of state construction required for the new lands program in 1954-56 is about 13 billion rubles. In addition, the cost of construction of collective farms is estimated to be 5 billion to 15 billion rubles and the cost of construction of private housing to be about 5 billion rubles.

Although expenditures for construction have been large in the new lands, they do not appear to have had a serious impact on construction in other sectors of the Soviet economy. There have been many lags in agricultural construction, and a shortage of storage facilities and elevators caused some losses of grain after the harvest of 1954. It does not appear, however, that the underfulfillment of construction plans has seriously hindered the new lands program.

At the beginning of the new lands program in 1954 the new lands, particularly the Southern Zone, had very few railroads, and most motor roads were not suited to year-round use. It was inevitable that there would be serious transport problems until the transportation system was expanded and improved. In 1954 a high volume of construction materials, fuel, and machines congested the rail system, and in September

- 7 -

~~S-E-C-R-E-T~~

~~S-E-C-R-E-T~~

and October, outbound traffic was snarled by the increased load resulting from the very large grain crop. During 1955 the transportation problems were not so severe, because of the opening for temporary service of several new rail lines in the new lands.

The present program of transportation construction appears to be adequate to meet the eventual needs of the new lands program. Although there were confusion and delays during the harvest season of 1956, the transportation system probably will be adequate in the future.

The new lands program has increased allocations from the Soviet state budget to the agricultural sector of the economy, but there have been no consequent reductions in the allocations to other major sectors. In relation to total allocations to agriculture and to total state investment the budget expenditures on the new lands appear to be large but not excessive. The most costly year of the new lands program probably was 1955, when the planned allocations to the new lands were approximately 20 percent of total planned allocations to agriculture. In the same year, investment in the new lands probably was less than 5 percent of total planned state investment (in terms of fixed capital) in the national economy and less than 40 percent of the 1955 total state investment in agriculture.

The development of the new lands program exemplifies some of the major strengths and weaknesses of the Soviet system. Strength is indicated by the speed with which resources were marshalled and the initial objectives attained. An important weakness of the new lands program is that it appears to have been initiated and developed without a sound preliminary analysis of the best ways to proceed and without a realistic estimate of the production of grain that could be expected. Suitable systems of crop rotation and the total area that is to be reclaimed apparently have not yet been determined.

Khrushchev's expectation of obtaining 33 million tons of grain annually cannot be realized. Over a long period the new lands probably will not yield much more than one-third of this amount. The evidence indicates that an annual yield of only 8 million to 12 million tons, 10 to 15 percent of the annual average production of grain in the USSR in 1950-53, can be expected.

- 8 -

~~S-E-C-R-E-T~~

~~SECRET~~

Speed was apparently of great importance to the USSR in the development of the new lands. The program was initiated and implemented very rapidly. Although the USSR will need more grain in the future to feed an expanded population and although an increase in agricultural production is necessary if levels of living are to rise substantially, there was no immediate food crisis in 1954, and the haste of the program cannot be explained on economic grounds. The new lands program was dramatic and, with the probability of initial success, was well designed to win popular approval. The decision to embark on the program may have been influenced greatly by the uneasy internal Soviet political situation in 1954. 121

The production of grain in the new lands is dependent on the weather and other natural factors, and it may fluctuate widely. In any one year, production may be considerably above or below average. In order to maintain yields, the USSR will have to develop systems of crop rotation more suitable than those that have been discussed publicly. If the stated intention to sow three-fourths of the area to grain each year is put into practice, declining yields and large-scale wind erosion may eventually result.

Although the new lands can produce, on a long-term basis, only about one-third of the target quantity mentioned by Khrushchev, it is likely that the program will not be abandoned unless production falls to a very low level.

I. Introduction.

A. General.

In spite of the continual, optimistic claims of the USSR that socialized agriculture is the most advanced type of agriculture in the world, the Soviet government, since the inception of collectivization in 1928, has been unable to provide a satisfactory diet for an increasing population. At times, especially in the early years of collectivization and during World War II, the USSR has even been plagued by severe shortages of food.

- 9 -

~~SECRET~~