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BEBEK, ISTANBUL

PAGE

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NOT TO BE TAKEN FROM THIS ROOM

MARKETING OF WHEAT OF POLATLI REGION
IN POLATLI WHEAT-MARKET

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CHAPTER I
INTRODUCTION

How and Why the Research Was Decided
about Polatlı

About 10 million tons¹ of wheat is annually produced and about all is consumed, not including the imports from the United States in bad harvest years. This year the cereal production will be close to 17 million tons, topping even the alltime high 1953 harvest. As a nation still called underdeveloped, every citizen ought to participate in the endeavour for the progress of this country. We can achieve the goal through industrialization paralleled by modernization of agriculture.

The assignment to Polatlı during the military service has brought me into contact with a typical agricultural setting where soil crops constitute the major source of income with some limited industrial activities.

The 1966 crop was sown and harvested during this year. The various methods employed in ploughing of the land, harvesting, problems arising from lack of fertilizers, improved seeds and marketing opportunities were all observed. The storing and transportation facilities had been studied. The credit sources and pre-harvest sale arrangements of the farmers were investigated. The problems facing farmers in marketing their produce were probed.

¹Cumhuriyet Gazetesi, 9 Ağustos 1966.

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Two typical villages were completely surveyed.¹ 83 houses² of the first village, Eski Karsak, and 43 houses of the second, İğciler, had been interviewed to validate the information supplied by many sources. It was also intended to attain a familiarity to Polatlı Folk. A close observation of their behaviour would bring many hidden problems to light. Economic and social findings of the survey have been used in the preparation of the research plan and thesis.

Chapters I and II contain information on the crop, its production and harvest. The marketing activities like storing, transporting, selling and buying are presented in Chapters III, IV and V. Three hypotheses were forwarded and a field study was carried out to test the hypotheses and thus determine the characteristics of the market area. About 4000 farmers were questioned in all. A simple questionnaire with three questions was filled. Conclusions and recommendations are presented in the last chapter.

The material comes solely from the research. I have not come across organized or published material on Polatlı other than a pamphlet printed in 1950 and a paper of a university student on the topographic characteristics of Polatlı.

¹I decided on these villages upon the advice of the President of Chamber of Agriculture. He pointed out that these two villages are economically and socially typical of other Polatlı villages and that he based his selection on 1955 census results.

²In local terminology "hane".

³For the social and economic findings in an edited form: See Appendix.

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Economic and Social Change in Polatlı

Polatlı is a town of 23,000 people, situated in Central Anatolia about 80 klms. southwest of the capital city, Ankara. Beypazarı on the north, Haymana on the east, Sivrihisar on the west, Yumak on the south, borders the town all being administratively connected with Ankara. It lies on the Ankara-Polatlı-Eskişehir and Konya-Polatlı-Eskişehir roads and Ankara-Istanbul railway. It is well-linked to the outside world and markets.

The town itself is one of the medium-sized and developing towns of the Central and Western Anatolia with asphalt roads. The streets are fairly wide, clean and tree-lined. About 15 klms. of asphalt roads runs in the town equal to 35 percent of all roads.¹ Postal services are fairly adequate, if not entirely efficient. With a semi-automatic switchboard, telephone communication with all parts of Turkey and world is possible. Post Office is open around the clock and wireless communication with every part of Turkey is made at any time of the day.

Polatlı has 87 villages and claims 3769 klms.² of area. The population of the town and its villages is 56,260 according to 1960 census results and it is half as much populated as the rest of Turkey.² The villages may be categorized into three groups according to the populace:

¹1966 Senesi Belediye Faaliyet Raporu, Belediye Yayını, Polatlı, 1966

²1960 Census Results, Devlet İstatistik Enstitüsü Yayınları, Ankara 1963.

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- a) Villages with a population more than 1000
- b) Villages with a population between 500 - 1000
- c) Villages with a population less than 500

Two villages fall into the first category, 26 into the second, 57 into the third. Only two villages have population under 100. In all villages there is a school, a store and a source of water. The literacy rate in the region is close to 60 percent, a high and a remarkable rate compared to 35 percent for the whole nation. In the town there is a public library with 5,000 books, two printing presses and a daily newspaper.

There are two middle-schools and eight primary-schools and people of the town are looking forward to the establishment of a lise, which by all means is essential for a town of this stage of development and size.

In 1941 the Artillery School of the Armed Forces of Turkey had been transferred to Polatlı. The town and surroundings were strategically ideal at the time. The selection of Polatlı was also meaningful on the ground that the region had staged the decisive Sakarya Battle of the Independence War.

The Artillery and Missile School contributes to Polatlı economy by 15-20 million T.L. of purchases annually. On the other hand in 1965 the net receipt of all farmers from wheat was estimated at 80 million T.L. for the region. All in all income figure is close to 120 million T.L., including the revenues of other crops, products and services.¹ Income per capita in the region is about 4,000 T.L. The figure when compared with 2,300 T.L. for

¹The Report of Chamber of Commerce prepared for the Mayor of Polatlı.

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the whole nation, indicates a higher standard of living. Compared with many a provincial city in Eastern Turkey with populations 20,000-25,000 and a regional income of 30-50 million T.L., Polatlı is much better off.

Polatlı farmers mainly grow wheat. Highly protein-rich and with a quality very suitable for pastry, the Polatlı wheat is not only known all over Turkey but also in the world markets as well. The "720" or "ekstra ekstra"¹ wheat was awarded a gold medal in Canada in 1956 at an international agricultural fair, for its superb quality. The farmers in the region use an increasing amount of fertilizers, improved seed and have begun utilizing modern agricultural techniques since a decade. Sugar beet, barley and rice are the other cultivated crops. Fruit and vegetable production is hardly mentionable. Livestock raising had once been the greatest source of income but lately with decrease in grazing-lands and in turn livestock, its importance as income source is declining relative to the grain. Nevertheless about 25 percent of the meat for Ankara consumption is still procured from the region.

The central regional climate, the well-known Anatolian type with dry, hot summers and cold, wet winters, prevail in Polatlı. Seeding is normally carried in autumn, it can be delayed until spring but yields in consequence are much lower. Shortage of rains in March has serious effects on annual crops sown in autumn because seed formation takes place at this time. Dry weather during April and May, particularly when accompanied by hot winds, can seriously affect wheat yields because the grain is filling during this period. Early

¹The local name in the market for the highest quality wheat.

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maturing barley, however, is less affected. It can also burn the natural grazing lands so that livestock suffer and milk yields drop.

Rainfall in summer is generally lacking, but when it occurs it is very irregular and consists of heavy down pours of short duration. Moreover the effectiveness of such rains is limited by high temperature and lower relative humidity leading to rapid evaporation.

The land is in the main flat, with occasional hills which are increasingly ploughed at the expense of grazing lands.

There are two flour factories in Polatlı, employing 100 workers together and each has a 50 ton capacity. As to industrial production, simple agricultural tools are manufactured to meet the region's local demand. The manufactured and industrial goods are purchased mostly in Istanbul markets.

CHAPTER II
PRODUCTION OF POLATLI WHEAT

Ploughing in Polatlı

In Polatlı wheat occupy most of the arable area. It accounts for 80 per cent, the barley for 16 percent, the sugar beet for 3 percent, pulse legumes and others for 1 percent. The barleys are mostly feeding type and pulse legumes include broad beans and lentils.

Of 250,000 hectares of cropland in the region 235,000 depend on rainfall for their water. Rainfall in Polatlı is 350-4000 mms.¹ In a region where cropping is carried in rain-fed conditions prevalence of fallow is inevitable, however the ratio of land left fallow to that ploughed is quite high in Polatlı. About 130,000 hectares of land is annually left fallow. The figure accounts for more than half of the land suitable for cultivation. In several countries where rainfall is below 400 mms. less than half or half of the arable land is left fallow.² Dependence on fallow arises of a number of factors. It is the main way in which fertility is preserved because of the shortness of the sowing season. It is also claimed that the fallow is essential in Polatlı, because rainfall of two years' thus becomes available for the crop.

With modern developments in agricultural practice cereal/fallow system can be changed. Mechanization would ensure that all the land could be prepared during sowing season, that is normally a period of five weeks in September and

¹Source: The Brochure of General Directory of Meteorology, 1962.

²For Table indicating several countries: See Appendix II

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October. The arguments for fallow which relate to soil fertility are open to question. Agriculturist Loizides states that there is no reason why cropping should not be carried out every year if fertilizers are adequately used.¹

Fertilizer requirements will, of course, be larger under continuous cropping. These results have been confirmed by large number of planting experiments involving various types of rotation and cropping practice. Similar conclusions have been drawn in Morocco in the region of Rabat with rainfall 474 mms. In Italy, Portugal, Israel, Spain and Cyprus fallow is being abandoned in areas with rainfall as low as 350 mms.² In Polatlı, with a comparable rainfall, however, only 5 percent of the arable area is under continuous cropping.

There are two methods of fallowing in Polatlı. They are the uncultivated fallow and worked fallow. With the first method the land remains unploughed after harvesting the cereal crop, and usually remains like this for two or more years. With the second the fallow is worked, that the land is uncultivated in the beginning but in spring -- February or March -- it is cultivated to destroy weeds and sometimes is followed by a further ploughing to control summer weeds. The land then remains until the crop is sown in the following autumn. The uncultivated fallow is almost abandoned in Polatlı, only 3-4 percent of all land is left fallow without any cultivation.

Most agricultural holdings in the region are of medium size, well over half of the land is in holdings of 7-12 hectares. Holdings tend to be smaller when conditions are more favorable and the land more productive. Larger

¹Loizides, P.A., Experiments in Cyprus, Journal of Agriculture, 1958, pp. 25-33.

²Ibid.

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holdings do however exist and nearly 20 percent of the land is in holdings more than 25 hectares. In the villages surveyed about 6 percent of all families own 20 percent of the land, 60 percent own 73 percent and 30 percent own 10 percent of the land, the rest of the houses -- 5 percent -- own no land. There is state-owned land in the villages mostly sown by landless villagers.

Share cropping is not common in the typical meaning of the word where the tenants plough the landlord's area and has to return more than half of his crop to the landlord. In this region the farmer is the tenant with his tractor and machinery. He cultivates and sows the land of the small farmer. The earnings is split half and half between the tenant and the small farmer. This system is efficient in making mechanization and fertilizers available to the land which otherwise would be ploughed with animals in the absence of adequate fertilizers. All costs are borne by the tenant, only land owner puts in his labor. This is a unique way of an agreement that no doubt adds to the productivity in the region.

The irrigated land is about 5 percent of all the arable land. Only in northern Polatlı irrigation is possible with the water of Sakarya river. To the southern Polatlı no use is made out of Sakarya water properly since the methods are primitive. Lack of drainage, irregular channels have resulted in at least 500 hectares of land to become waterlogged and saline in southern part of Sakarya to the west of Polatlı.

The south of Polatlı is being more and more cultivated at the expense of grazing lands since five years. The yield is much higher than west of Polatlı.

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About 1800 kgs. is obtained per hectare as against 1000 kgs. per hectare in the west. All southern plains are called Altın Ovalar - golden plains - for their productivity. Once nomadic tribes, the people in the south are now settled and well-known in the region for their sharpness, hardwork and opportunism. About 300 of all tractors - about 750 tractors in all -, and 200 of all 481 combine harvesters are owned by the farmers living in the south. Their holdings account for 25 percent of all Polatlı farm lands.

West of Polatlı comprises partly of non-productive saline plains. These plains are under cultivation since 70-100 years. Through these years soil lost all its minerals to make it worse it became saline in many parts. North and east of Polatlı, soil is of medium productivity.

Fertilizers, Seed and Equipment

Over the past ten years there had been a considerable expansion in the use of fertilizers in the region (see Table I). The efficiency with which fertilizers are used primarily depend on the availability of moisture. The timing of application is just as important; phosphate, for example, is applied on calcareous soils before sowing it is sometimes wasted because this element is rapidly fixed in the soil. Late application, on the other hand, means that the element is not available at the time of greatest need. Although the problems are not yet solved, the farmers are in the main convinced of the profitability of fertilizer application.

The yield increased up to 50 percent in various regions by the use of fertilizers. Only 4-5 years ago the benefits of fertilizers were open to

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argument, but now more than half of the land is ploughed with fertilizers.

The 3000 tons of fertilizers used five years ago by only a limited number of large land owners is now topping 25,000 tons. This is an impressive figure compared to the 30,000 tons used by the entire Eskişehir region. The yield per hectare is an average 1300-1400 kgs. when fertilizers are used whereas 900-1000 kgs. used to be the normal return 5 years ago.

Cattle dung is mostly burned. Even where animal manure is stored, considerable losses occur because methods of storage is poor. On the other hand whether the return of animal droppings can be substituted for fertilizers is questionable. Frequent applications of stored animal manure are considered essential for irrigated crops on some types of soil, particularly where successive cash crops are taken. In general the stored animal manure should be reserved for the irrigated lands, because its application on unirrigated lands, particularly in the lower rainfall areas, will not yield sufficiently profitable response.¹

Ziraat Donatım Kurumu is the largest distributor of fertilizers. The institution asks for a letter of guarantee of a merchant² when supplying fertilizers with credit. Although such a letter cannot easily be obtained by a small farmer, large and wealthy landowners have no problem in securing such a letter of guarantee. Ziraat Bankası, the second fertilizer distributor, can neither be a dependable supplier for the small farmer. The allocated fertiliz-

¹World Seed Campaign, FAO, Rome, 1959, p. 85.

²The merchant must be registered in the Chamber of Trade of Polatlı.

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er to Polatlı by Ziraat is hardly adequate. The fertilizer distributed by the Bank amounted only to 2000 tons last year.

The increase in the output and improved quality of the Polatlı wheat is partly achieved by the increased use of improved seeds. In the region of Polatlı improved seed now accounts 80 percent of all ploughed seed (see table I).

Table I - Fertilizer and Improved Seed Application in Polatlı

Tons

Years	1961	1962	1963	1964	1965
Fertilizer	8,000	10,000	15,000	20,000	24,000
Improved seed	4,000	5,900	8,300	9,000	11,000

Source: The Chamber of Agriculture

No losses of crop occur in substantial amounts by plant pests and diseases. However weeds raised a serious problem this year. Sarı Ot (Yellow Weed) interfered with the normal growth of the crop but before it has a serious effect farmers pulled them out.

The implements used by some farmers in the region are still simple. The wooden plough is used but now has an iron point. In the main, however, the agriculture in Polatlı has mechanized during the last 8-10 years. The number of tractors, mechanic sowers and combine harvesters have soared to an alltime high of 1800. It is one of the regions of Turkey where mechanization has made its greatest impact. It made the leap from sickle to the combine harvester without the intermediate stages of scythe, mower, binder and thresher.

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Through this mechanization new lands have been opened up, with new settlements especially in the south. The advantage of mechanization is that deeper ploughing is possible. The yield of the areas ploughed with tractor is higher by 30 percent than those where tractors are not used.¹

The problem common to almost all of Turkey is not irrelevant for Polatlı, too. Since several makes of machinery were imported, availability of spareparts posed a problem; as a consequence they have been laying idle in parts of the town. Finally operation and maintenance standards are low, owing to the insufficient training of drivers, and the lack of trained mechanics to service the machinery.

Harvesting in Polatlı

Harvesting begins 1-10 July and it continues till mid-August. The combine harvesters of the neighbouring regions swarm over Polatlı during the period and 1000-1500 of these help the farmers harvest. Almost all of the villagers use combine harvesters, either of their own or on lease basis. The rate charged varies with the quality and the yield of the crop. During favorable years 6 krş. is charged per one square meter of land. This figure drops to 4 krş. in bad harvest years. A combine harvester harvests 15-25 hectares of land a day, turning 15-30 tons of wheat.

The traditional method of helping each other's harvesting² is no longer a common practice, especially after combine harvesters became increasingly

¹The report of Chamber of Agriculture of Polatlı.

²In local terminology this kind of cooperation is "İmece".

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available.

Harvesting is completed in about two months. In July most of the produce and by mid-August about all is harvested, with the exception of wheat on the hills or windy slopes.

CHAPTER III

FINANCING AND TRANSPORTATION OF THE PRODUCE

Advance Purchases and Credit Arrangements

A number of farmers in Polatlı region sell their crop before the harvest. Under this arrangement terms of the trade is generally dictated by the buyer which include service of the buyer, risk of crop failure, price fluctuations, etc. Along the most common reasons why farmers resort to pre-harvest sale are the pressing need to pay debts and the money needed for harvesting the crop. It is not very unusual for some farmers to buy the seeds and fertilizers on credit. The interest rate of the private lenders vary between 50-70 percen, situations however arise to force the farmer to borrow or resort to the sale of his crop before harvest.

Government credits are far from meeting the need of the farmers.

There are two major credit sources in Turkey for farmers:

- a) Agricultural Credit Cooperatives (Ziraat Kredi Kooperatifleri)
- b) Agricultural Bank (Ziraat Bankası).

The failure of both these institutions for supplying farmers with adequate credit has lately been aggravated. A suggestion has been made by the Union of Chambers of Commerce whereby Agricultural Credit Cooperatives would receive saving deposits and permit these funds to be used to make farm loans. To this end a draft has been made and is now before the Grand National Assembly pending enactment.

In Turkey according to the laws setting interest rates, individuals or

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firms wishing to extend agricultural or commercial credit have to get the authorization of the government. In the field of agricultural credit, as of now, there are practically no firms or individuals who have such an authorization.¹ There are, however, many lenders who usually do business at exorbitant rates. They demand nearly 50 percent of the produce in return for the loan. "This practice is not uncommon in our country because the need of the Turkish farmers for credit is so pressing and sources of adequate credit is so few."² The lines above were directly quoted from an article written by an expert of the Agricultural Bank, the very institution that has been established to solve the credit problem.

Polatlı wheat growers are on the whole bitter at the attitude of Agricultural Bank and Agricultural Credit Cooperatives. During a visit to a village a farmer told how one lender robbed him almost all of the income of his crop during a year with late harvest. The farmer borrowed from a certain lender³ at 30 percent⁴ for a period of six months (January 20 - July 20). In that year the crop was late due to heavy May rains and at the expiration date of the loan the crop was still too green to be harvested. This lender was delicate enough to understand the situation and gleefully proposed a new loan for two more months now at 20 percent rate on the cumulative sum. The farmer, having no choice accepted the offer. A calculation of the annual rate of the loan would

¹Travelling Seminar for Increased Agricultural Production, Cento, Ankara, 1962, p. 156.

²Ibid., p. 149

³One of the notorious lenders of Polatlı.

⁴It makes 60 percent on annual basis.

show not an exorbitant rate but a ruthless rate of 92 percent.

About 9 houses out of 126 in Eski Karsak and İğciler had borrowed from individual lenders in 1965. The debtors were all keeping their fingers crossed for the possibility of another credit source. Only two houses were not as unhappy as the rest of the debtor houses out of a reason they never disclosed. I think these families were too frightened to talk.

As for the credit from the government institutions, the present system is not in the benefit of the small farmers. The Agricultural Credit Cooperatives make loans only to their members. The Agricultural Bank had been helpful in distributing seed and fertilizer on credit and by also direct loans to individual farmers (see table II).

Table II - Types of Agricultural Loans
Made by the Bank in 1962

Types of Loans	Amount (1000 T.L.)	Percentage
Direct loans to individual farmers	1,135, 714	47.1
Loans to credit cooperatives	454,135	18.8
Loans to marketing cooperatives	690,423	28.8
Loans to government equipment agency	22,369	1.0
Credit for seed distribution	<u>109,010</u>	<u>4.5</u>
	2,411,652	100.0

Source: Rural Development, CENTO, Ankara, 1963.

The present total agricultural credit available is about 40 percent of the annual minimum needed according to a study entitled "Time Cost Schedule of Agricultural Investment in Turkey."¹ Even this limited effort is handicapped through abuses. Certain farmers apply for more than their needs. Once they get the extra seed and fertilizer it is immediately sold for cash. Such a practice has adverse effects in two directions. On one hand the farmer suffers a material loss in selling the seed or fertilizer he acquired on credit in as much as he sells it very cheap, and secondly the Bank is forced to turn down requests of needy farmers before long not to overrun the Polatlı quota.

Transportation of the Produce to Polatlı Wheat Market

The wheat is mostly transported to Polatlı market by trucks - about 75 percent of the output of the region -. About 10-15 percent of the output is transported by tractor and trailer, the rest 10 percent by carts.¹ The villages are generally at a distance more than 5 klms. to the two main Polatlı-Ankara and Polatlı-Konya roads. Except these two main roads others in the region are of low grade, potholed, muddy at ankle deep during the late autumn and winter. The difficulty of transportation of especially fertilizers and improved seed during the rainy sowing season calls for the storing of these goods in advance which in turn entails complex storage problems.

The villagers have only a limited storage space, either in the rear of their houses or at the basement of it. Most of the space is allocated to hay essential for livestock. Only a limited number of farmers have sizeable ware-

¹The Report of Chamber of Agriculture of Polatlı

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houses where they can keep in stock the fertilizers and improved seeds as well as their produce in anticipation of higher prices. The storage spaces of villagers and warehouses are both inadequate with no ventilation and protection against vermin and other pests.

The average charge for truck transportation is 50 krş. per ton for a klm. The farmer calls on the owner of the truck in a certain coffee-house in Polatlı. There usually goes on some bargaining about the fee. The farmer already informed by his neighbours of the average fee in general does not pay more than his neighbour and if he notices there are many truck drivers in the coffee-house he does even bargain for a lower fee. Under such circumstances he usually gets it.

A different method of arrangement for transportation of wheat is just as common. It happens when a truck arrives at the village for the transportation of the produce of a farmer. Then the neighbouring farmers arrange for the transportation of their produce on the coming days.

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CHAPTER IV

THE WHEAT MARKET AND ITS PROCEDURES

Market Place

The wheat market of Polatlı is not very far from the centre of the town. It is to the south of the railway and the main Ankara-Polatlı-Eskişehir asphalt road. It is about three miles from the outskirts of Polatlı. The location of the market had changed several times since the emergence of the place as a settlement area. The wall-surrounded market is about 5000 m.² and has a square shape. Inside there is a coffee-house where merchants and commissioners wait for the farmers. The moment the truck enters through the market entrance, a narrow aperture hardly for one truck at a time, 20-30 commissioners rush to the truck and plunge their hands in and take a handful of sample. Following an inspection that lasts less than 10 seconds they whisper their prices to the ear of the farmer.

Commissioners of the wheat market are of essentially three types:

a) Commissioners who buy for wheat market outside of Polatlı on behalf of traders. These traders are speculators in a sense. In their depots they store the wheat up to six months¹ or eight months¹ period and they obtain an invariable 12-13 krş. profit a kilo. Assuming an average of 79 krş. a kilo purchase price, the profit is about 25 percent on annual basis. This is a very safe business in as much as the wheat prices always increase once the harvest

¹The place also serves as livestock market. On Thursdays in the far end of the market livestock is sold. Municipality charges 25 krş. for each animal sold.

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season is over.

There have been witnessed abuses by the commissioners. They offer prices, on the basis of an agreement among themselves, of course, lower than what the produce is worth. It all begins by tearing the farmer into pieces. They say there is much foreign material in his crop if there is any trace of it, or it is too dry, or it too wet depending on the quality of the produce.¹ When the employee of The Office of Soil Crops (Toprak Mahsulleri Ofisi) is around, the commissioners usually quit the bidding for government-fixed-price of the Office is high and above that of the commissioners. During a thirty day period when I was in the market place Office employee whose job was also to bid for the wheat of the farmer, frequently chose to stay in his room out of a reason difficult to determine. Under these conditions the farmers were left at the mercy of the dishonest commissioners.

b) Commissioners who buy for wheat factories located mostly in Ankara and Eskişehir, and also for macaroni factories located in Istanbul and İzmir.

c) Traders in the market making purchases in anticipation of price-increase that would definitely come after a period.

The last two groups of commissioners² are honest and usually not involved in the agreement against farmers. When the Office employee was questioned and reminded about the ill-consequences of his absence the answer given is as follows: "But I have to eat, rest and do all sorts of things." However it is

¹In local terminology it is "Topuklamak" of the farmer.

²They are all called commissioners in the market, although the third group is buying on their own.

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obvious that all these things would occupy not half of his day.

It was noted that farmers had no choice than to sell once the truck went in through the entrance. The truck is automatically directed to the giant municipal-scale and is weighed.¹ About all left to farmer then is to decide whom he would sell his crop. If he happens to mention the Office a bellicose commissioner snaps that he has to pay the scale fee anyway and to prevent the loss he should presently decide to which commissioner he would sell the wheat. He even lies that Office does not buy this year or would apply to this low quality wheat excessive reductions. He is known to have said that the Office had filled its monthly, weekly or even daily quota if it understood that the farmer is naive or is from a far village and desperate to return.

The Office makes purchases of wheat at the government-fixed price, 80 krş. per kilo. The foreign material in the wheat is tolerated up to 1 percent. Over the 1 percent ceiling, proportional reductions are made in the purchase price. Assuming that the foreign material is determined at 2 percent, then the price is computed as follows:

¹This giant scale in the market is operated by the municipality. It weighs trucks up to 15 tons. A form is inserted through the front slit of the scale and is automatically imprinted with the weight of the truck pulled up onto the scale. The truck loaded with the produce is first weighed and after emptied it is again weighed. The net produce is thus correctly determined without any doubt on the part of the farmer and buyer. The form imprinted with the amount is the basis for payment. At the peak season about 700 trucks are weighed, which corresponds to approximately 5000 tons of wheat a day. It is not rare to see a farmer on the truck just before it is weighed turning his pockets inside out or searching the sole of his shoes for more wheat. The scale fee is 50 krş. per ton of produce and 625 krş. municipality fee for every truck.

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2 percent Foreign material	80.0 krş. Office price
<u>1 percent Tolerance</u>	<u>0.8 " 1 percent of 80 krş.</u>
1 percent Reduction on the purchase price	79.2 " Paid price

Office purchases the produce in front of its modern steel silo. The silo is next to the railway and has a capacity of 20,000 tons. Unlike the wheat market no fee is taken for weighing the produce.

A number of farmers bring their crop to the silo directly. Still a larger group of farmers pull up their trucks to the wheat market in anticipation of an Office employee there, to bid for their crop. Theoretically an Office man is assigned to the job but as stated before he is not available. Another group of farmers stated they would never sell to Office. In their opinion it is totally unreliable. Of the 200 farmers¹ who never considered the Office as a buyer, 20 percent claimed it underpriced their crop. 64 percent hold that they are never in the market. 11 percent contend commissioners are either their old friends or relatives, for that reason they will get the highest possible price and would not be cheated. The remaining 5 percent were so cynical about the integrity of the Office employee that they had always chosen to deal with the individual commissioners.

About 30-35 commissioners are in the market. They are all talkative and if necessary bellicose experts who can speedily judge the quality. When I questioned if it is just and honest to underprice the crop with covert agree -

¹200 farmers were surveyed to ascertain the reasons why they never sell to the Office.

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ments, they rejected the idea of agreements and justified the underpricing as a sound and clever opportunism based on market conditions.

The Problem of Interpreting Prices

Prices or price bid are difficult to interpret. The particular price realized at any sale depends on the regional supply and demand, as well as before-the-sale arrangements among the buyers. In anticipation of a high profit, it is not unlikely that commissioners forego such before-the-sale agreements. In a market in which the approximate number of orders to be filled and the coming supplies is generally available guesses about the correct price are possible, but at Polatlı market the daily demand is secret and if commissioners hold off because they underestimate the total demand, they will find themselves during the close of the day bidding high to comply with the orders. On the other hand if they have over estimated the total demand, at the end of the day or the expiration of the period¹ they will witness falling prices to their chagrins since all of them would have filled their orders at higher prices.²

The price fluctuations set in four months after harvest following the withdrawal of the Office from the market just because its price could no longer compete with that^{of} the individual buyers.

Another element of unpredictability arises from the absence of

¹Since commissioners have to meet their commitments against the traders by the end of the delivery period, the same situation arises on the last day of the period.

²Daily price variations are in general half to two krş. per kilo. Since no data on daily price fluctuations was available for the earlier years, statistical analysis was not feasible.

standard grades of the produce. This not only stems from the lack of a standard grading system but equally from the degree of variation of loads of the same crop. Incoming truckloads of wheat are not characterized by uniformity. There are variations of quality from many different kinds of handling and cultivation. There are also variations in the content of the seed, or grains from similar but not identical strains of the same crop. Thus each pile must be evaluated separately.

After the sale the buyers cannot easily tell whether the price was exceptionally high (or low) because the quality was exceptionally good (or bad). The farmer cannot tell whether he is getting a higher (or lower) price than he would in other markets or would have by selling at a different time.

During four months following harvest Office ceiling price set by Council of Ministers is the dominating price in the market. It is usually set after reliable estimates of the country's wheat production are obtained. Past experience indicates that political considerations play as much role as economic ones in setting prices.

Seasonal Variations in Price

Charts depicting the arrival of wheat and prices for the year 1965-1966 are indicating a negative correlation (Charts I and II).

The prices hit a low from 90 krş. to 78 krş. during the first month of the harvest season. A correspondence is observed in May when deliveries are low and prices are peaking. It might well be the case that a shift in marketing at Polatlı to the months of high price would reward the farmers the cost of

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c, but if marketing

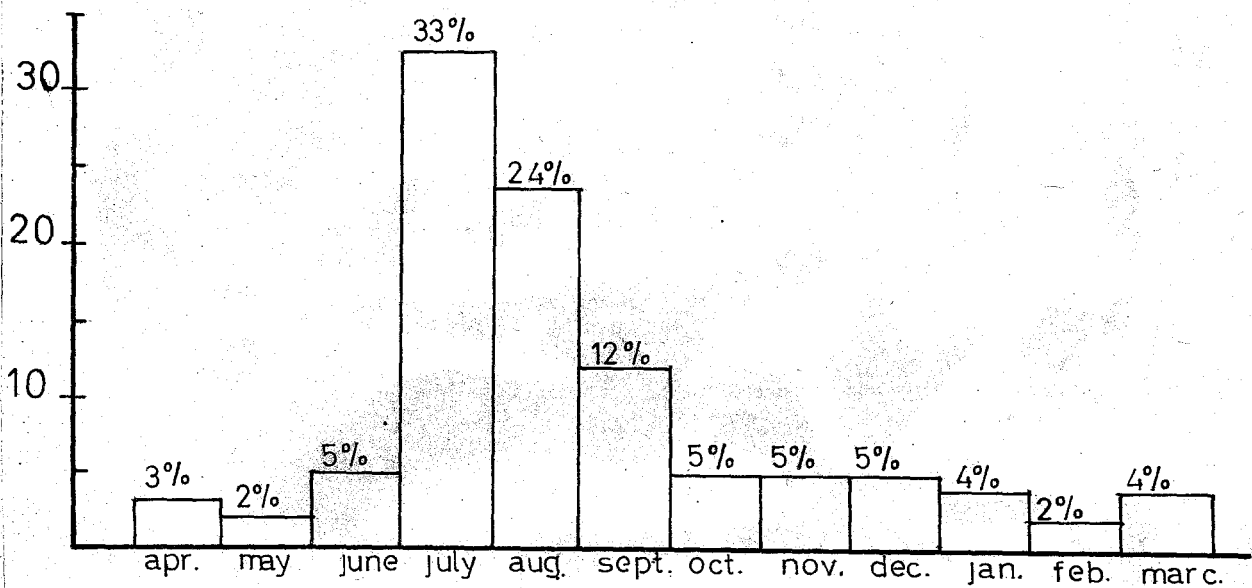
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CHART I

MONTHLY ARRIVALS OF WHEAT (3 years average)



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storage, but if marketings are generally this light in this region during these months, then a general shift to later marketings might so reduce the price that storage by the farmers would not be worthwhile.

CHAPTER V

THE GEOGRAPHY OF THE MARKET

Who Comes, from Where, and with What

My major effort was devoted to the geographical sources and pattern of deliveries of crops to the market, what I shall thereafter call "market arrivals." For purposes of analysis I set up hypotheses of rational behaviour and tested against the data from the sample of 4000 farmers.

The hypotheses were as follows:

1. If the market is situated in an area with no topography whatsoever the area commanded by the market (the service area) will be circular.¹ But another market towns surrounding Polatlı and competing with it would set up blocks and in analogy from physics would so distort the field that it would flatten on the side facing a competing market. The pattern would also be affected by the size of the pull of the surrounding markets as well as access to roads and ease of transportation.

2. If the market is situated in area with no topography whatsoever, a map of marketing intensities would show concentric circles of decreasing (or increasing) intensities. In other words:

a) The total amount of arrivals would vary inversely with the distance from the center.

b) The frequency of arrivals would vary inversely with the distance from the center.

¹R.E. Dickinson, City Region and Regionalism, London: Kegan Paul, 1947 pp. 30-35.

c) The size of load of one arrival would vary directly with the distance from the center.

3. Intensities would rise where soil was fertile and water plentiful, simply because the crop yield would be larger in those areas and would fall where fertility is low.

Sampling and Measurement Procedures

The maps are drawn upon a sample of arrivals during the busier season, specifically in the busiest month (see Table III) July. The receipts are recorded by amount, price and village from which the farmer came. It was decided to take arrivals in the busiest month July from 3 to 24 that is for three weeks. About 4000 farmers were questioned. From these receipts the total weight and number of all arrivals from each village was computed. Since villages vary in size (both area and population) I found it essential to deflate the total and

Table III - Percent of Total Arrivals of Wheat by Weight
Coming in During Busy Months^a

Number of Busy Months	Percent of Total Arrivals by Weight
During the busiest 3 months	69 ^b
During the busiest 2 months	57
During the busiest month	33

a- Based on data for three years

b- All other arrivals scattered evenly over the year except June with practically no arrivals at all.

Source: Municipality records kept in the wheat market.

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because the acreage was more convenient and the available data of population was 11-year old, I decided to deflate by the acreage of each village rather than population and express the intensities per 100 hectares. This, of course, makes no allowance for differences in fertility, arable area and irrigation. It was not, however, clear to me as to how I could have made allowance for this difficulty except getting information on the potential marketable surplus of each village and the amount of produce marketed in Polatlı, or the proportion of the surplus marketed by each village in the various markets. Only in that case could the relative importance of each village be perfectly discovered and the effect of productivity be eliminated.¹ I therefore decided to keep the method relatively simple, with the expectation that some interesting results would be hidden but that the pattern on the maps would reveal the most important determinants of geographical distortion. In computing indices of frequency and intensities of total arrivals from each village or groups of villages, I simply added the weights of produce incoming the market.

The Shape of the Market Shed

To the northwest of Polatlı (see Map I) the land is poor, along Sakarya river greatly salined as a result of primitive irrigation practices. The land south and southeast of Polatlı is very fertile. It is under cultivation for only 5-10 years as against 70-80 years of cultivation of the lands west of Polatlı. Once grazing lands, the vast southern plains now yield up to 1500-1800 kilos per hectare.

¹This, as a matter of fact, necessitated not a year's but about 3-4 years' work considering the time spent on this thesis.

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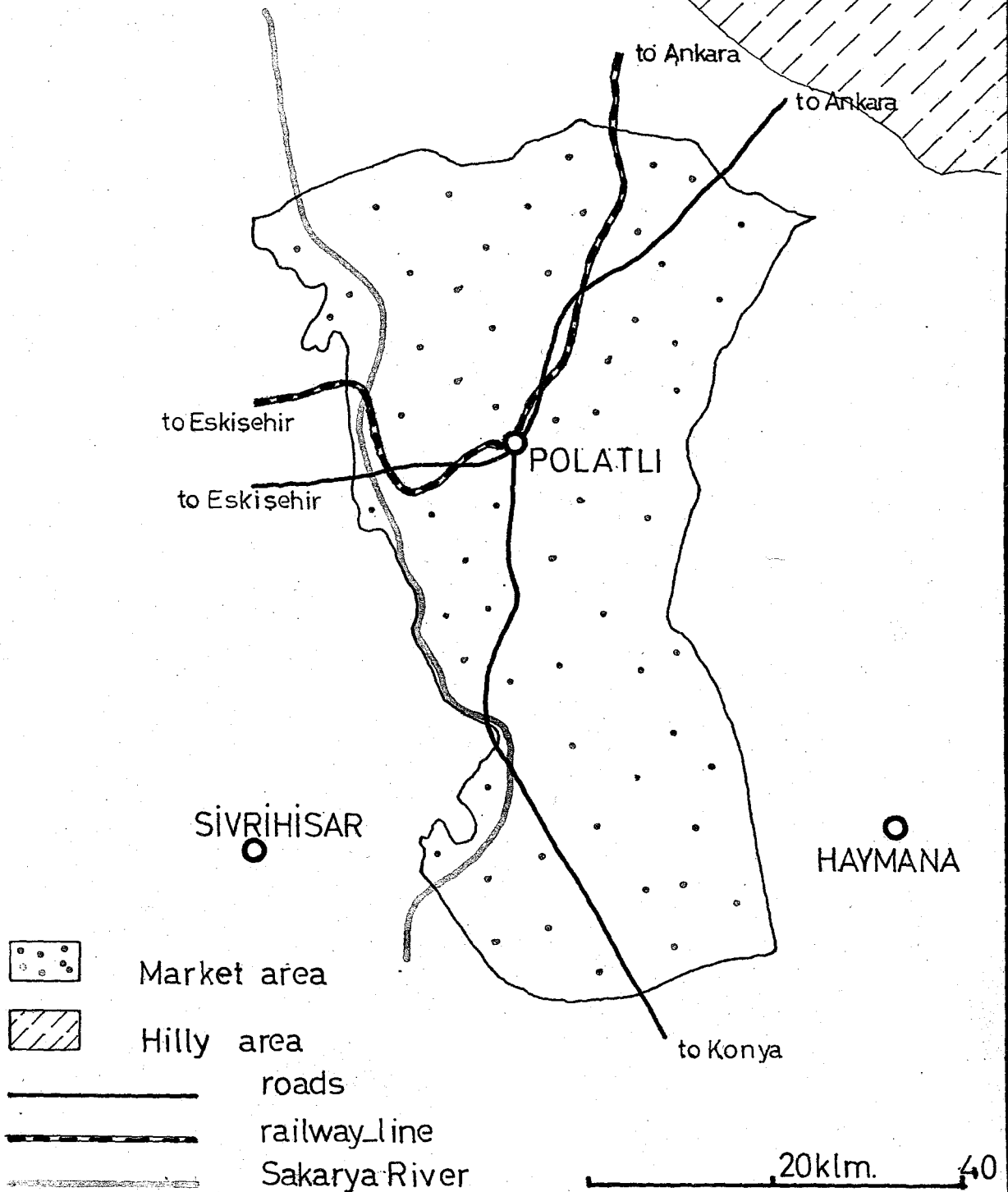
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POLATLI

LOCATION AND MARKET AREA

MAP 1



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Map II (intensity of Arrivals) shows most of the produce comes from south of Polatlı. The proposition that more will arrive from the areas closer to Polatlı - the hypotheses of decreasing intensity with distance - is partially upheld by the small degree of intensity on the northern and southern fringe of Polatlı. However, the correspondence between hypotheses and observation is small, since intensity is light immediately around the town. The heavy intensity on the south extending about all over is associated with the fertility of the land.

In mapping the market patterns, I have used the boundaries of the villages that form a continuous block as the outer limits of the market shed. An increased fragmentary pattern therefore was avoided.

My major doubt about the accuracy of the marketing pattern introduced by my sampling did not arise from the arbitrary elements of picking three weeks or of constructing intensities by dividing by village acreages. I did, however, wonder whether a somewhat larger sample, perhaps using the results of busiest month July of 3-4 years, might have altered the results in one of two opposite directions. First, the islands of heavy intensities lying within low intensities to the west and the islands of light intensities lying among high intensities to the south might have been a sampling error, it just happening that villages in these areas delivered more or less than usual during this month. Secondly the pockets might have been reinforced by a larger sample.

While these would have been desired through a much longer research, the number of arrivals investigated was so large -4000 farmers were questioned- that I have no doubt the pattern of heavy concentration of intensity is an

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POLATLI INTENSITY OF ARRIVALS MAP 2

WHEAT MARKETING PER
HECTARE IN KILOS



ABOVE 80



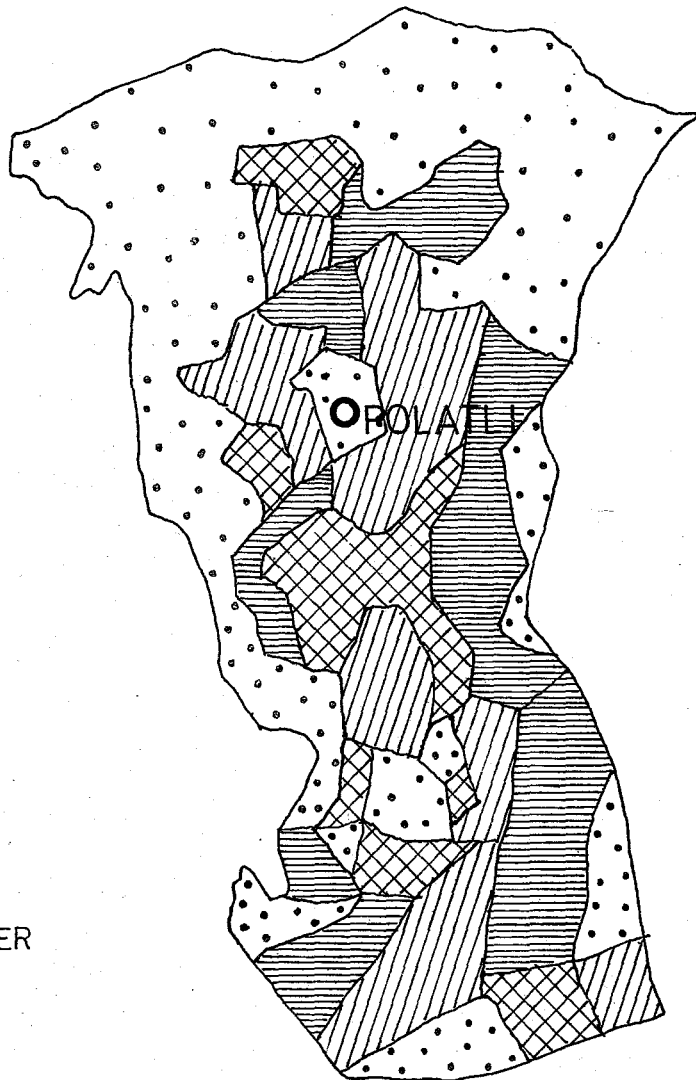
60 _ 79.9



40 _ 59.9



20 _ 39.9



20 40 KLM.

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accurate reflection of the pattern of marketing.

The Maps and Hypotheses Compared

When the map of total arrivals of wheat is compared with hypotheses forwarded, I was somewhat disappointed. The Pattern of distortion southward and southeastward conforms with the hypotheses that natural difficulties of transport and fertility lack will move the intensities away from the hilly north into the fertile south, but it does not accord with my assumption made earlier that mandate transport facilities will concentrate intensities or that the existence of competitive markets will limit the marketing area.

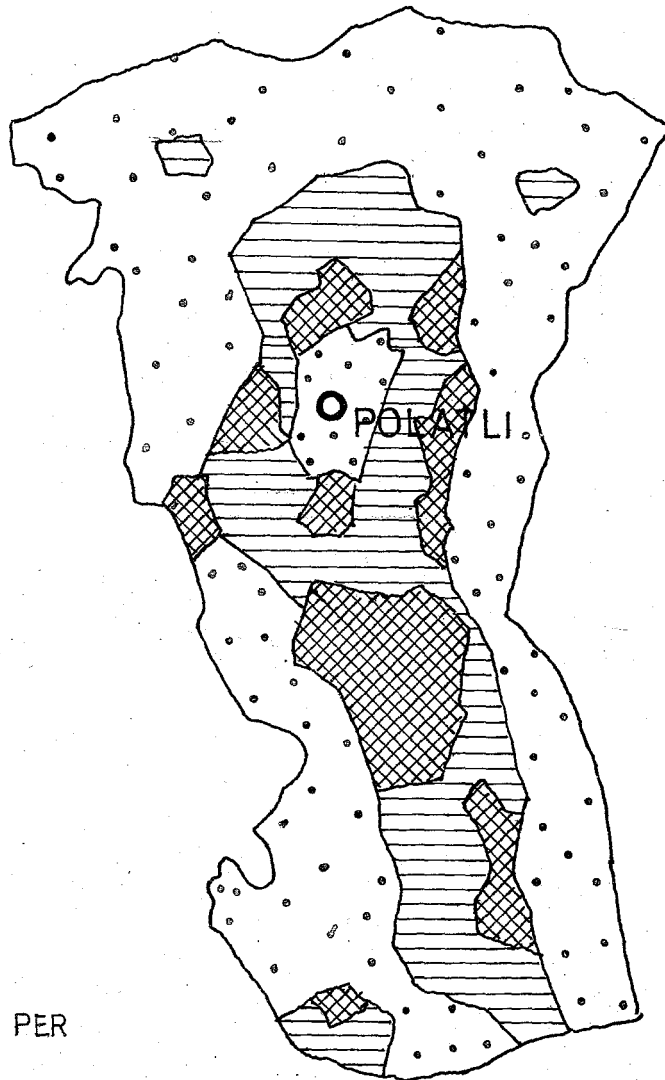
Competing Markets

To the west of Polatlı lies Sivrihisar, a town about half as large as Polatlı and with a smaller market. The edge of the Polatlı market lies closer to Sivrihisar than it does to Polatlı in accordance with the expectation based upon the size of Sivrihisar market. To the east, Haymana is another major market. In this case too, the edge of the Polatlı market is closer to Haymana than it is to Polatlı, in accordance with an expectation based upon the size of Haymana market, but not in accordance with an expectation based upon comparison of populations. The rational explanation of Haymana's small "pull" is the absence of railroads and its distance from the main Ankara-Eskişehir road (Map I).

The Maps and the Roads

When the roads and areas of greater intensity are compared, highest intensities lie not on the Ankara-Eskişehir road, but south of it. The highest intensities of all arrivals cluster at distances from the main road. It is noted

POLATLI
FREQUENCY OF ARRIVALS
MAP 3



NUMBER OF ARRIVALS PER
100 HECTARES



1.7_5



0.8_1.6



0.1_0.7

20KLM. 40

that relatively higher intensities are in north of the road. A look at the arrivals map would especially indicate low intensities close to Ankara-Polatlı-Eskişehir road. It appears that this road far from attracting marketing activities repels it.

The area of higher intensity of arrivals lies within a circle of 25 klms. radius, in the Polatlı region. This is significant, for Christaller who has investigated the market places of southern Germany and was primarily interested in the area selling to a market town, found a radius of 10-15 klms. the most effective distance.¹ At Polatlı the distance is twice as much. The market area forms a continuous block around Polatlı, so did it around south Germany markets as far as Christaller's book is concerned. Discrepancy between Polatlı and effective market areas of south Germany may be accounted for by the existence of larger and more potential markets in a smaller area in south Germany than in Polatlı region.

Distance and Frequency of Arrivals

The hypotheses about the distortion in the patterns of frequency of arrivals and average weight in each arrival to the market were held out by the intensities on Map III (Frequency of Arrivals) and Map IV (Average Weight per Arrival). As expected the largest number of farmers bringing produce to Polatlı are found near Polatlı. The pattern on Map III remains roughly concentric, and in this case the distortion attributable to roads is what one would

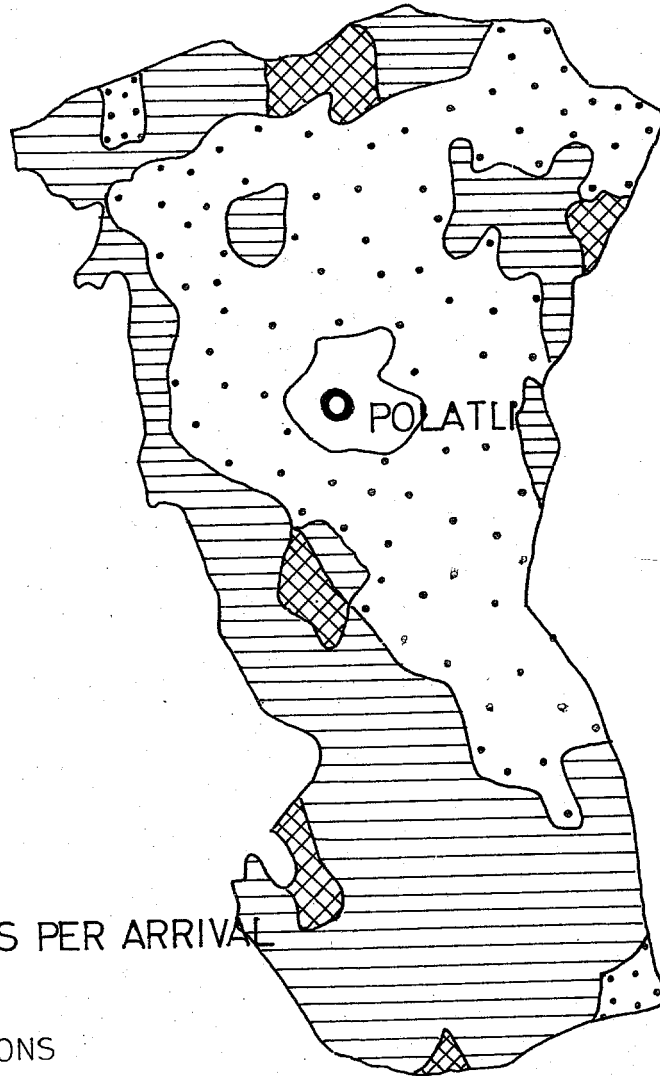
¹Christaller, Walthar, The German Peasant in Prosperity and Debt, Fourth Ed., London: Oxford University Press, 1954, pp. 30-31.

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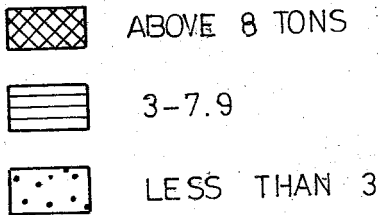
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POLATLI AVERAGE WEIGHT PER ARRIVAL MAP 4



WEIGHT IN TONS PER ARRIVAL



20 40 KLM



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expect -higher intensities on Konya-Polatlı road. Also there is a sharp drop in frequency as one approaches north. The concentricity is even more marked on Map IV where with one clear exception all the heaviest loads arrived from the fringes of the market area. Here the conclusion seems safe that people near the market do come more than people distantly situated, and that people distantly situated bring larger loads when they come. But, the seller employs something we call the "Strategy of Selling" also.

The Size of the Load

The cost of transportation accounts for the infrequent arrivals from the borderlands of Polatlı area. The time a trip takes is also another factor, if not as important as the cost of transportation. The farmer, for these reasons, brings to market as full a load as he can with infrequent trips. The more interesting, because it is more difficult to explain, phenomenon is the frequent arrivals of small loads from nearby villages. From the beginning, I assumed that this would be the case as expected of the ease of transportation,¹ but there was also the possibility that farmers came from nearby because it made an interesting opportunity to go shopping, to meet friends and to gossip. As another reason it is my conviction that farmers brought small loads when they could in order to test the market, "to discover what prices were."

¹When situated nearby the market, carts might be used with no cost giving rise to frequent arrivals with smaller loads.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The result of the study was in one way surprising in the other, tended to support the popular marketing views of what happens and why. I was somewhat surprised to find that the distortions in the hypothetical pattern of concentricity were largely those expected from topography and natural conditions and only slightly those expected from the road network and competition of other markets. If one may draw a lesson from the results, it is that fertility is more important than roads and location.

Of the various methods employed in the research, the most satisfying were the development and mapping of indices of market intensities. The mapping procedure allowed me to test the hypotheses.

Statistical techniques proved less satisfactory because there were some gaps in the data, if at all. They have been recorded and kept only since 1962 and 1963. Time series analysis was not fruitful without any data before 1960, and a proper analysis of seasonal patterns and their relationship to prices was impossible without prices before 1962. In the end I settled for the rougher characterizations in the Chapters IV and V.

One result does run counter to current views, the farmers do not seem to be as badly off in the market as would appear from reading newspapers or even books on the subject. They can increasingly withhold the produce from the market,¹ parallel to improvements in warehouse facilities.

¹It is stated, in the Report of Chamber of Agriculture of Polatlı, that

There are still many farmers abused by commissioners and creditors but conditions are improving and would be even more improved if the three functions of credit, marketing and purchase can be combined under one organization. Thus a farmer may borrow from this organization for purchase of fertilizers, seed and other production requirements and contract for delivery of the crop at a market time. This combination may give the member savings in purchasing, interest rates and advantages in marketing, and consequently greater net returns. This organization thus will have a cooperative character.

They may play a useful role by influencing their members through publications, technical meetings and study groups, and by stimulating a co-operative approach to common problems. At the same time, these organizations can help the Department of Planning (Devlet Plânlama Dairesi) by conveying the needs and views of the producers. Various kinds of cooperative organizations are already operating in Turkey. They are grouped in thirteen marketing unions dealing with almost all types of nation's agricultural produce (Ziraat Kredi Kooperatifleri). Their funds, however, are very limited not to mention their failure in meeting other objectives explained in the foregoing. The law to be enacted whereby these cooperatives would receive saving deposits is aimed to enhance their lending capacity. The extension of a cooperative's operations will bring great benefit to the producers, giving them greater security and thus providing the stability which will be essential to future agricultural development.

five years ago 85 percent of all arrivals were in busiest two months as against 57 percent this year.

On the other hand, the Office employee in the market should stay on duty more, or a second expert ought to be assigned to the job. Considering the market is open around the clock it is essential to have a second and very desirable a third Office employee in the market.

Farmers generally seem to have lost their faith in the Office of Soil Crops. This stems from the maltreatment of farmers by the Office employees and the government-fixed prices which in two months would fall short of the market prices. For the first two-month period, however, Office prices are always higher than those of the individual buyers. In as much as more than 50 percent of all arrivals concentrate in these two months, farmers on the whole may extract more income if they sell during this period. Effort must be made to convince the farmers of the advantage of selling to the Office.

Keeping a three-expert team in the market is said to be economically impossible on the grounds that one expert can keep up with the reduced work after September. A couple of Office personnel in Ankara can be temporarily transferred to the market during the busy months who in turn may be replaced at a low cost by university students ever eligible for summer jobs.

Agricultural Bank has not penetrated into the country. They could stop the abuses by farmers in filling-out applications for extra fertilizer and improved seed. The application of all farmers must be thoroughly checked on basis of the land they could possibly sow in that year. Agricultural Bank could achieve this by more penetration into the country.

APPENDIX

The name of the villages	: İğciler and Eski Karsak
Number of houses ¹	: 132 ²
Population	: 785
Houses moved out of the village	: 12
Houses moved into the village	: 10
<u>Total sown land</u>	: 1150 hectares
Land wheat sown	: 900 "
Land barley sown	: 144 "
Land sugar beet sown	: 67 "
Vineyards and land all pulse legumes sown	: 39 "
State owned land	: 20 "
<u>Land ownership among farmers:</u>	
Up to 5 hectares	: 40 houses
Between 5-15 hectares	: 77 "
More than 15 hectares	: 8 "
<u>Cattle Ownership:</u>	
30 or more cattles	: 11 houses
Between 10-29	: 20 "

¹In local terminology "hane".

²Sum of the figures of both villages.

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3-9 cattles : 45 houses

Houses owning livestock but no cattles : 28 "

Sheep ownership:

1000 or more sheep : 3 houses

Between 500-999 : 7 "

Between 100-499 : 34 "

Less than 100 sheep : 69 "

Goat ownership:

400 or more goats : 4 houses

Between 100-399 : 12 "

Between 10-99 : 13 "

Less than 10 goats : 29 "

Horse ownership:

Between 2 and 13 horses : 45 houses

Between 2 and 8 donkeys : 31 "

Raw wool marketed: : 21 tons

Raw mohair marketed: : 13 tons

Wheat marketed: : 700 tons

Barley marketed: : 130 tons

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<u>Pulse legume producers and sellers:</u>	15 houses
<u>Borrowers from individuals (pre-harvest loans):</u>	8 "
<u>Owners of combine harvesters:</u>	11 "
<u>Owners of tractors:</u>	35 " (3 own three tractors 8 own two tractors)
<u>Area of grazing land:</u>	1300 hectares
<u>Percentage of land using fertilizers:</u>	75 percent
<u>Average yield per hectare (with fertilizers):</u>	1500 kgs.

About all of the houses own poultry. All the clothings are bought in Polatlı except socks, handkerchiefs and underwear. They mostly buy on credit (about 85 percent of the houses). Both villages have school, mosque and a source of fresh water.

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7. Director of Department of Industry in Polatlı
8. Director of Department of Sugar Beet in Polatlı
9. President of Esnaf Kefalet Kooperatifi of Polatlı
10. President of Ziraat Bankası Teşkilâtı in Polatlı
11. Director of Halk Bankası of Polatlı
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13. Director of Toprak Mahsulleri Ofisi in Polatlı
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