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# THE FEED GRAIN MARKET

# IN PAKISTAN

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# THE FEED GRAIN MARKET IN PAKISTAN

by

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## INTRODUCTION

A one word description of Pakistan feed grain marketing is "inadequate." Other words that might be used are "inefficient," "chaotic," or "disorganized." Whatever terms are used, the grain marketing structure remains woefully inadequate compared to needs.

A few of the problems are:

**A lack of**
- infrastructure
- objective quality standards
- market information
- financing
- management skills
- understanding of marketing functions

On the other hand, the grain markets do have --

**An abundance of**
- regulations/restrictions
- taxes and miscellaneous fees
- policy distortions
- biases

## SECTION II

## MARKETS AND MARKETING

The term "market" can be used in several ways. A market can describe either a specific location or an unspecified geographic area in which the forces of supply and demand interact -- the village mandi, the Punjab maize market, or the world wheat market.[1]

Pakistan is predominantly a subsistence oriented agrarian economy as far as grain marketing is concerned. The grains coming to market are largely surplus to the producer's estimates of his family's needs. Of the current wheat crop of about 15 million tonnes, only about half will be sold off farm. Of the half that is sold, 60% to 70% will end up in government stocks. The proportion of maize, sorghum, millet, and other coarse grains that are sold off farm is even smaller. About two-thirds of maize is consumed on the farms where produced. The remainder is contracted for by edible oil and starch producers, or sold in small lots on local markets.

For most Pakistan commodities, the local market or "mandi" is the entry point into the marketing process. The Manual of Agricultural Produce Market Committee Laws refers specifically to barley, bajra, fodders, poultry, fish and livestock products, maize, wheat, and the atta, bran, gluten, and other by-products derived from these commodities. This manual describes the market as "a place where commission agents sit and where the buyers and sellers of goods come together for the transaction of business."[2] The Punjab Agricultural Marketing Ordinance (XXII of 1978) describes in excruciating detail how a mandi is to be organized and function. Unfortunately, few of the marketing committees seem to have read this book.

*Marketing* is the bridge between producer and consumer. It involves many activities that must be performed, regardless of type of society or political philosophy of a nation's leadership. Marketing is expensive and not well understood. Performance of activities or functions such as assembly of small lots, storage, transportation, grading, buying, selling, etc., requires skills and resources. Performing the functions creates value for society. This is something many political and social commentators fail to appreciate.

The subsistence nature of Pakistan's grain marketing brings problems of assembly of grains in small lots. There are variations in quality, opportunities for adulteration, high costs, and many other factors. Sensitive commodities such as

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[1]M. Ali Khan, "On the Languages of Markets," The Pakistan Development Review, 30:4 Part 1 (Winter, 1991) pp. 503-549, lists 12 definitions of markets used in Pakistan.

[2]Malik Irshad Ahmed Arshad, Manual of Agricultural Produce Market Committee Laws, Lahore: Mansoor Book House, 1985, p. 6.

food grains are often monopolized or controlled by government on the assumption that government can eliminate malpractices attributed to middlemen and assure the producer a "fair return." However, governments are often frustrated to find that they must do the very things they sought to eliminate, and the costs of market interventions are greater than anticipated. The wheat subsidy for the last fiscal year exceeded Rs. 8 billion.

Those who engage in marketing agricultural commodities are often castigated as "exploiters of producers" or "profiteering at the expense of consumers." There is a particular bias against ownership rights and storage in the Pakistan economy. The government reserves the right to direct where producers may sell, to whom they may sell, and at what price. There are numerous references in the Food Laws Manual to hoarding as an antisocial activity. The Price Control and Prevention of Profiteering and Hoarding Act, 1977, permits the Federal Government to fix prices, compel the owner to sell a commodity at a fixed price, and set the maximum quantity of a commodity that can be held by a producer or dealer.[3] The Punjab Wheat, Wheat Atta, Maida and Suji Movement (Control); Order 1976, prohibits movement of these commodities across district lines except for government owned stocks and on permits issued by the Director of Food, District Food Controller, or District Magistrates. Use of this law by the Federal government is infrequent.

Provinces impose their own restrictions on grain movement with liberal use of the Code of Criminal Procedures - Temporary Orders in Urgent Cases, (Section 144, N.1). This ordinance permits district magistrates to stop movement of commodities across district boundaries upon request by food authorities. The Federal Cabinet on May 29, 1991, ordered removal of Section 144 bans on wheat movement by provinces. Evidently provinces are free to accept or reject federal orders. Section 144 has been widely imposed by the Sindh and Punjab provinces this year.

Wheat procurement policies nominally make provision for quality/price differentials. In practice, price differentials are not made because there are no objective grading procedures employed. Variety and quality distinctions are made in rice. Government policies favor a single uniform national price. Where government dominates the market as in wheat, open market price differentials seldom deviate from official prices by 15% the year around. This narrow margin is not sufficient to encourage private sector storage. There is a further bias in government policies that prevent publicly owned stocks from being adjusted in quantity or quality - the *No Loss Policy*. From a bureaucratic viewpoint, the concept of the *No Loss Policy* and uniform pricing are simple to administer. From a marketing standpoint, these are open invitations to abuse and quality deterioration.

Another factor is at work in the grains trades. This is one of attitudes. At a recent conference in Faisalabad, a University professor flatly declared, "there has never been a history of caring or concern for feed ingredients we provide to our livestock." He further stated that the prevailing attitude is that any grain

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[3]Food Laws Manual, Lahore: Law Times Publications, 1990.

or meal, regardless of condition, was good enough. Birds and animals presumably can exist on feedstuffs that are unfit for human consumption. The irony of this attitude is that we consume the poultry and livestock products and suffer the ill effects that would have resulted from direct consumption of the contaminated feedstuffs.

Flowing from this attitude are the appalling conditions in many feed mills. Feed mills are overburdened with dust, spilled feed stocks, littered storage areas, insects, molds, toxins, rodents - you name it, it's there. The mill staff works under conditions of poor lighting, absence of safety features on machinery, poor ventilation, sanitation, lack of protective gear and testing equipment, etc. A feed mill supervisor recently told an STDT staff member, "Why should I clean this place - the owner never comes up here" (to the feed mill's mixing room).

This is not simply dust, spilled molasses, fish meal, and rice polishings that are on the feed mill floor - it is the industry's money, profits, reputation, and future that are being trampled. Aflatoxins thrive in unsanitary environments. A year long study of poultry feeds in the Punjab indicated that 42% of 300 feed samples contained aflatoxins. By source, aflatoxins were found in 24% of feed mill samples, 27% in wholesaler and dealer samples, and 57% of the poultry farm samples. In the warmer months, the percentage of samples with aflatoxins was 41%, 47%, and 72%, respectively.[4] Most of the aflatoxin growth was attributed to poor quality feed ingredients, poor storage conditions, and length of storage. Low doses of aflatoxins slow bird growth and production, increase the severity of diseases, reduce feed consumption, conversion ratios, and alter immunological responses.[5] Higher dosages cause death by massive internal bleeding. Death losses, poor feed conversion, and higher labor and management costs for the customer are not offset by lower costs for poor quality feeds.

Fortunately, these attitudes are changing. The message is slowly getting across - "quality pays," "sanitation pays," "safety pays" in consumer satisfaction, employee productivity, lower costs, and repeat sales. In recent weeks STDT has received many inquiries on ways to improve the storage and handling systems in flour, rice, and feed mills. A prominent industry figure has offered support for the creation a grain milling school in recognition of problems facing the industry. Let us hope this milling institute can soon become a reality.

Grades in the Marketing Flow

What is important to realize is that the marketing process is a series of concurrent flows (Figure 1). Product - grains, are constantly moving forward

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[4]Ata-ur-Rehman Rizvi et. al., "Aflatoxin Contamination of Commercial Poultry Feeds in Punjab, Pakistan," Pakistan Journal of Zoology, 22(4) pp. 387-398, 1990.

[5]S. A. R. Rizvi and A. R. Shakoori, "Immunomodulatory Effects of Aflatoxin B1 against Newcastle Disease Virus in Poultry," Pakistan Journal of Zoology, Vol. 24.(1), pp. 53-59, 1992.

toward the ultimate consumer. The market intermediaries, brokers, agents, poultry producers, cattle fatteners, processors, wholesalers, retailers, etc., are, in essence, purchasing agents for their own clientele at the next level in the marketing chain. They must know what their customers want, and how to recognize it in commodities they buy.

When the product flows forward, it is accompanied by information about its characteristics. This information can be in the form of an asking price, visible characteristics such as size, weight, or color, or in product descriptions or grades. In the latter case the buyer must have faith that the descriptions or grades are relevant and accurate.

The return flows are payments and information. Without other information, payments are taken as measures of customer satisfaction. If customer's customers like the end product, they buy it and pay the asking price. No sales, low sales, or reduced price offer mean the consumers (a middleman, processor, or household consumer) do not like certain product attributes. For example, the miller knows that excess foreign materials or moisture reduces product yields and increases milling costs, hence grains with these characteristics are worth less.

When these market signals are interrupted by false information or distorted through government controls or subsidies, the marketing system tends to break down. If the producer knows the government buyer will take a wide range of qualities at the same price, the natural tendency is to deliver the lowest acceptable quality. If the producer is assured that good quality is rewarded and poor quality penalized, quality improves. A processor will not invest in hi-tech systems or employee training for producing better products without assurance that quality raw materials are consistently available. This is why appropriate grades are important for the producer, marketers, processor, and consumer. Without them, trade is handicapped and progress is virtually impossible.

Market Potentials

The Pakistan market has tremendous room for expansion. Pakistanis are moderately well fed in terms of available calories per capita in comparison with other countries. Per capita daily food intake was estimated to be 927 grams for 2360 calories for 1990/91. Food availability was about 331 kg per capita (Table 1). Averages are deceiving however. There is great disparity in distribution of food, both among income levels and within the households themselves. Women require about 2200 calories daily. Adult men need about 2900. The source and composition of calories and protein sources are also a cause for concern. See Tables 2 and 3.

Consumers spend about half of their incomes on food. While cereals account for only 20.6% of food expenditures, they account for 60% of the calories, 64% of protein intake, and 55% of total foods consumed. Meat and poultry provide only 68 calories per day, but consume about 8.9% of food expenditures.

According to FAO standards, the typical Pakistani diet is too heavily dependent upon cereals, sugars, and fats, and deficient in animal products, pulses, fruits, and vegetables. FAO recommendation for food intake from animal sources, including poultry, is nearly 2.5 times present consumption levels.

Markets and Marketing Channels

Our primary concern here today is feed meals. The present system in Pakistan is not as complex as this flow chart might suggest. Figure 5 was prepared by a USAID project investigating the feasibility of establishing sunflower oil production facilities. A complex diagram such as this does not mean the marketing system is costly or inefficient.

There are about 110 feed mills and "in-house" feed mixers for poultry feeds. About 20 of these feed mills are of viable commercial scale. There are only two commercial formulators of cattle feed, one in Sindh, the other in Lahore. In the poultry feed market, the ratio of production between the commercial feed mills and on farm mixers is about 60-40.

Table 4 indicates that use of soybean meal has declined from 1990 levels, but is slowly coming back. Cottonseed meal is the vast majority of meals that are used in feed production. Some cottonseed meal is used in poultry rations, but most of it is fed directly to cattle. Figure 6 shows domestic production in better perspective. Domestic production of soybean meal is extremely small. The common denominator of meals produced in Pakistan is the low and variable quality. Figure 7 shows the relative distribution of poultry feeds among the different end uses.

Figures 8 and 9 show soybean meal use. The difference between Figures 8 and 9 is about 3,000 tons, or the total domestic soybean meal production. About 25,000 tons were imported in 1991 after remaining at 15,000 tons for the prior three years. Cottonseed meal is shown in Figure 10. Current usage is about 1.3 million tons. At present, cottonseed meal seems to be in good supply, although quality may leave something to be desired.

Figure 11 is estimated total grains fed. I am unable to explain the years 1976 to 1984. Current estimated use is about 900,000 tons. Figures 12 and 13 show that wheat and maize constitute the majority of grains fed. In this table, wheat is estimated at 350,000 tons, maize about 475,000 tons. Figure 14 shows recent estimates and projections for maize, sorghum, barley, and millet. Not all of this, perhaps 25% to 35%, will be available for animal feeds.

Maize is the problem. Composite Figure 15 shows the relatively small amounts available per region. Note that the smallest farms are deficit (meaning they must buy or receive payment in kind for labor) for wheat and maize, except for the Punjab. Figure 16 presents a better picture for maize, again showing sales per farm of about 600 kg in 1988 for Punjab, with overall average sales of about 300 kg for all farms. A ten-ton truckload would represent sales by 33 farmers at this rate. No wonder maize is difficult to collect and so variable in quality.

Figure 17 shows maize producers responsiveness to price. Here the r squared is about .81. In last few years, corn production seems to have been particularly sensitive to price changes.

Figure 18 shows why wheat is the feed grain of choice. It is available and costs less than maize. Of course, wheat is not released by Food Departments for

feed, but it can be obtained from direct and indirect sources. Poultry rations are limited to about 40% wheat due to fiber constraints. Wheat is about the only grain - other than rice carried over between crop years. Figure 19 shows the amount of carryover in recent years, and their presumed location. While private sector stocks are presumably greater than government stocks, it is difficult to locate them after November or December. Virtually all these stocks are held on farm, under a variety of conditions - mostly bad.

Wheat utilization (Figure 20) is a cause for concern by government. Human consumption of about 14+ million tons almost matches the current production levels. In this respect, the country is self-sufficient. It is the waste, seed, and other uses that match imports and reserve stocks. The costs of imports are causing a huge drain on public resources. Look at the wheat balance sheet tables (Table 4). The problem is on the demand side labeled "Other Uses." Best estimate of feed use is about 450,000 tons. Where is the excess - used as feed, smuggled to Afghanistan, India, or Iran, or just plain statistical error?

Lastly Table 6 illustrates a problem mentioned in the beginning-a plethora of taxes on imports. Feeds also get hit with octroi, sales taxes, taxes on milling equipment, bags, etc. Further, corporate income tax rates are extremely high. The national budget for the next fiscal year noted the level and complexity of business taxes and some steps were taken to alleviate the situation.

TABLE 1

PAKISTAN: Per Capita Availabilty of Selected Items
PFY 1989/90, to Target for 1992/93

| Item | 89/90 Final | 90/91 Est. | 91/92 Frcst | 92/93 Target |
|---|---|---|---|---|
| Wheat | 132.13 | 118.55 | 115.98 | 122.60 |
| Rice | 20.69 | 15.10 | 16.32 | 21.30 |
| Other grains | 11.92 | 11.52 | 11.80 | 13.10 |
| Pulses | 5.37 | 6.53 | 6.61 | 5.50 |
| Sugar Refined | 18.66 | 19.60 | 18.69 | 20.40 |
| Sugar Raw | 8.35 | 7.79 | 11.29 | 9.90 |
| Vegetable Ghee & Edible Oil | 10.35 | 9.99 | 10.13 | 11.40 |
| Milk | 57.86 | 59.76 | 62.13 | 62.70 |
| Beef | 5.96 | 6.08 | 6.20 | 6.80 |
| Mutton | 5.91 | 6.36 | 6.36 | 6.00 |
| Poultry | 1.76 | 1.95 | 2.14 | 2.00 |
| Fish | 3.64 | 3.60 | 3.63 | 8.20 |
| Eggs(no./yr) | 42.00 | 44.00 | 46.00 | 73.00 |
| Fruits & Vegetables | 68.55 | 69.68 | 69.12 | 76.00 |
| Tea | 0.91 | 0.88 | 0.86 | 0.80 |
| Population | 110.30 | 113.70 | 117.20 | 120.90 |

TABLE 2

PERCENT CONTRIBUTION OF EACH FOOD TO NUTRIENTS

| FOOD | CALORIES % | PROTEIN % |
|---|---|---|
| TOTAL CEREALS | 60 | 64 |
| WHEAT | 53 | 56 |
| ANIMAL | 6 | 15 |
| OTHERS | 33 | 21 |

SOURCE: National Nutritional Survey, 1985-87, Govt of Pakistan

TABLE 3

DAILY FOODS INTAKE

| GROUP | INTAKE (g) | % TOTAL |
|---|---|---|
| TOTAL CEREALS | 502 | 55.41 |
| WHEAT | 439 | 48.45 |
| ANIMAL | 52 | 5.74 |
| OTHERS | 352 | 38.85 |
| TOTAL | 906 | - |

SOURCE: National Nutritional Survey, 1985-87, Govt of Pakistan

TABLE 4.

COMPOUND FEED PROTEIN
(1,000 MT)

| | Poultry | | | Cattle | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | 90 | 91 | 92 | 90 | 91 | 92 | 90 | 91 | 92 |
| Soybean Meal | 43 | 32 | 43 | - | - | - | 43 | 32 | 34 |
| Other Protein Meal | 146 | 179 | 189 | 1316 | 1614 | 1701 | 1462 | 1793 | 1890 |
| Grain | 98 | 100 | 105 | 292 | 300 | 315 | 390 | 400 | 420 |
| Others | 34 | 35 | 36 | - | - | - | 34 | 35 | 36 |

Source: Government of Pakistan, Poultry Research Institute, & AgATT/Islamabad estimates.

TABLE 5

WHEAT BALANCE SHEET

**SUPPLY**

| Market Year | Production | Imports | Opening Stocks | Available Supply |
|---|---|---|---|---|
| 1984/85 | 10,882 | 925 | 4,029 | 15,836 |
| 1985/86 | 11,703 | 1,843 | 2,951 | 16,497 |
| 1986/87 | 13,923 | 482 | 3,267 | 17,672 |
| 1987/88 | 12,016 | 483 | 3,991 | 16,490 |
| 1988/89 | 12,675 | 2,109 | 2,621 | 17,405 |
| 1989/90 | 14,419 | 2,240 | 3,180 | 19,839 |
| 1990/91 | 14,262 | 1,738 | 4,562 | 20,562 |
| 1991/92 | | | 4,696 | |

**DEMAND**

| | Food | Seed | Waste 2.6% | Other Uses |
|---|---|---|---|---|
| 1984/85 | 12,209 | 306 | 317 | 53 |
| 1985/86 | 12,581 | 322 | 327 | |
| 1986/87 | 13,001 | 344 | 338 | |
| 1987/88 | 13,214 | 310 | 344 | |
| 1988/89 | 13,532 | 342 | 352 | |
| 1989/90 | 13,824 | 347 | 359 | 746 |
| 1990/91 | 14,237 | 350 | 370 | 909 |
| 1991/92 | 14,644 | | | |

**BALANCES**

| | Disappearance | Implied Ending Stocks | Govt. Stocks | Private Sector Stocks |
|---|---|---|---|---|
| 1984/85 | 12,885 | 2,951 | 745 | 2,206 |
| 1985/86 | 13,230 | 3,267 | 1,227 | 2,040 |
| 1986/87 | 13,683 | 3,989 | 252 | 3,727 |
| 1987/88 | 13,868 | 2,622 | 1,200 | 1,422 |
| 1988/89 | 14,226 | 3,179 | 1,826 | 1,353 |
| 1989/90 | 15,276 | 4,563 | 1,412 | 3,151 |
| 1990/91 | 15,866 | 4,696 | 900 | 3,796 |
| 1991/92 | | | | |

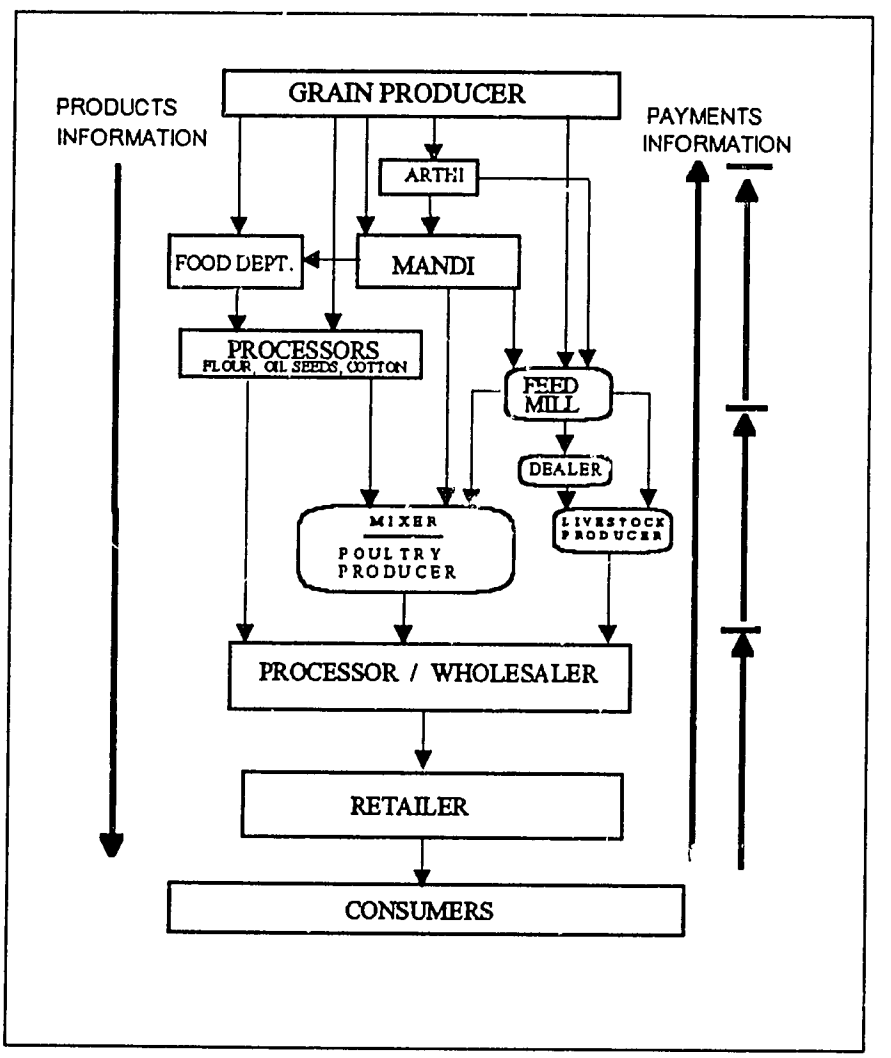
Source: EPA / Economic Wing, MINFA

TABLE 6

PAKISTAN: TARIFFS & IMPORTS FEES ON KEY AGRICULTURAL PRODUCTS

| Commodity | Tariff | 10% Surcharge | 5% Iqra | 12.5% Sales Tax |
|---|---|---|---|---|
| Wheat | | | | |
| Corn | 0 | no | no | no |
| Sorghum | 0 | yes | yes | no |
| Lentils | 0 | yes | yes | no |
| Soybeans | 0 | yes | yes | no |
| Soybean Meal | 0 | yes | yes | no |
| Sunflowerseed | 0 | yes | yes | no |
| Vegetable Oils | 3,000/MT | yes | yes | no |
| Soybean Oil | 1,000/MT | yes | yes | no |
| Sunflowerseed Oil | 3,000/MT | yes | yes | no |
| Palm Oil | 2,500/MT | yes | yes | no |
| Plam Olein | 2,500/MT | yes | yes | no |
| Tallow | 25% | yes | yes | yes |
| Breeding Cattle | 0 | yes | yes | yes |
| Poultry Stock | 0 | yes | yes | yes |
| Milk Powder | 60% | yes | yes | yes |
| Sugar | 35% | yes | yes | no |

Fig. 1. Flows in Grain Marketing



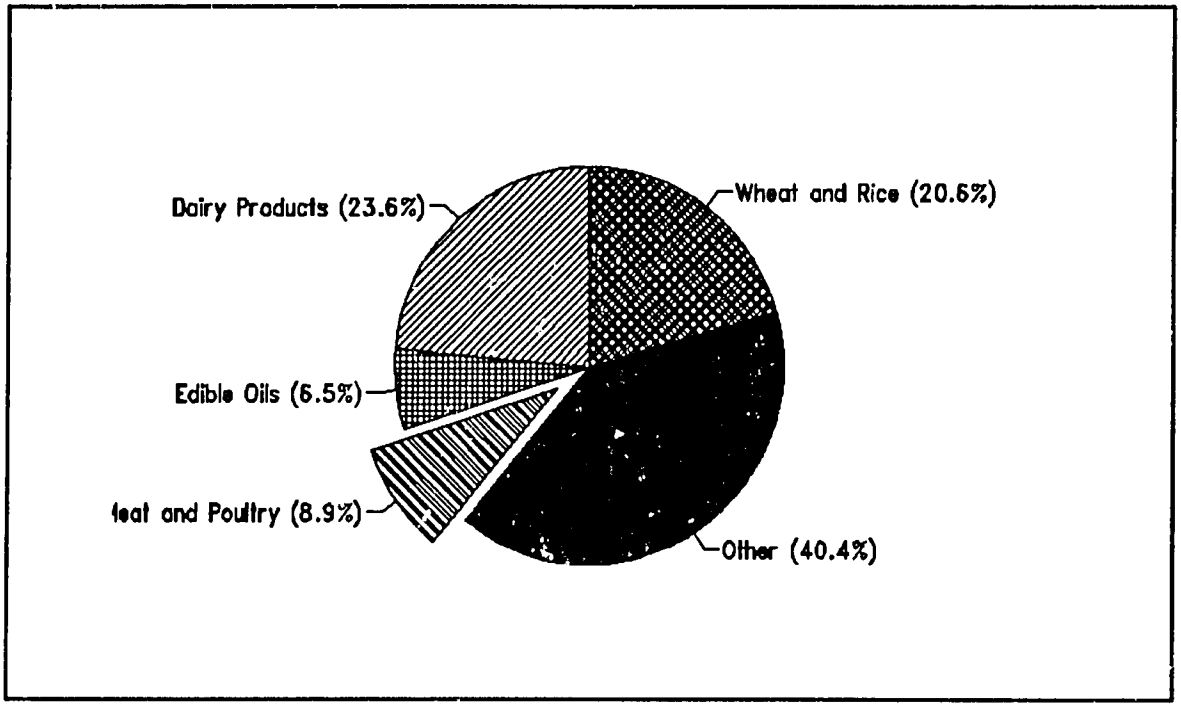



Figure 2. Food Expenditure (%)

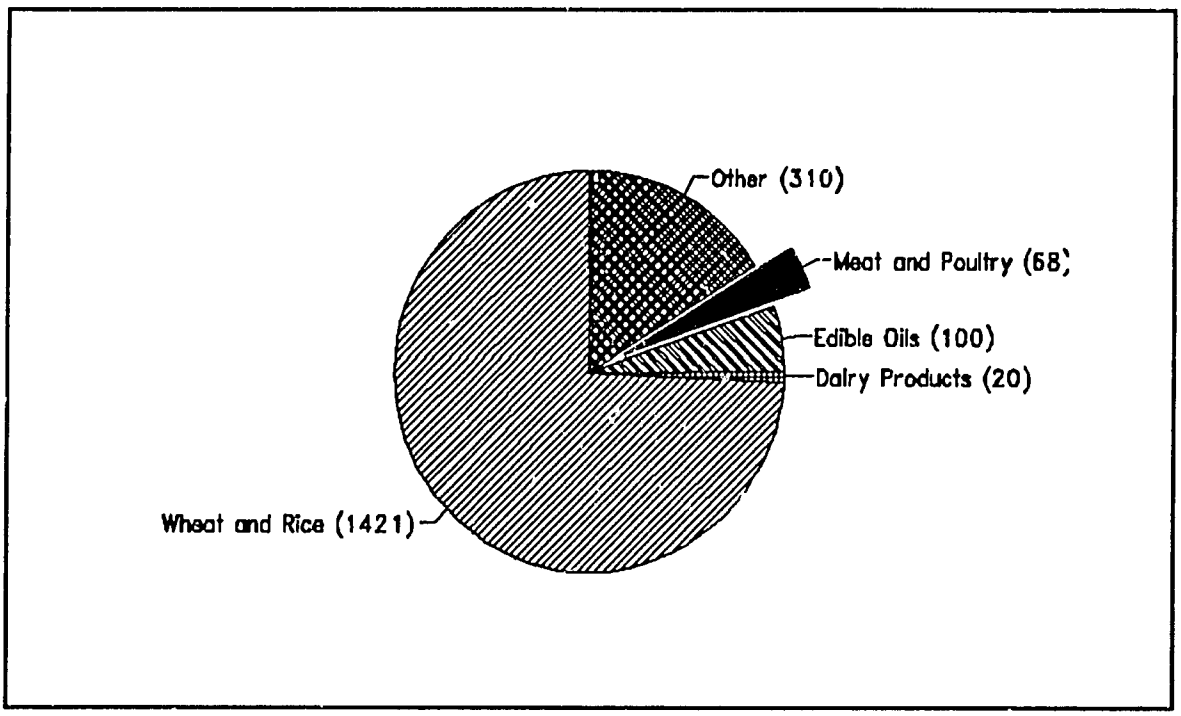



Figure 3. Calories

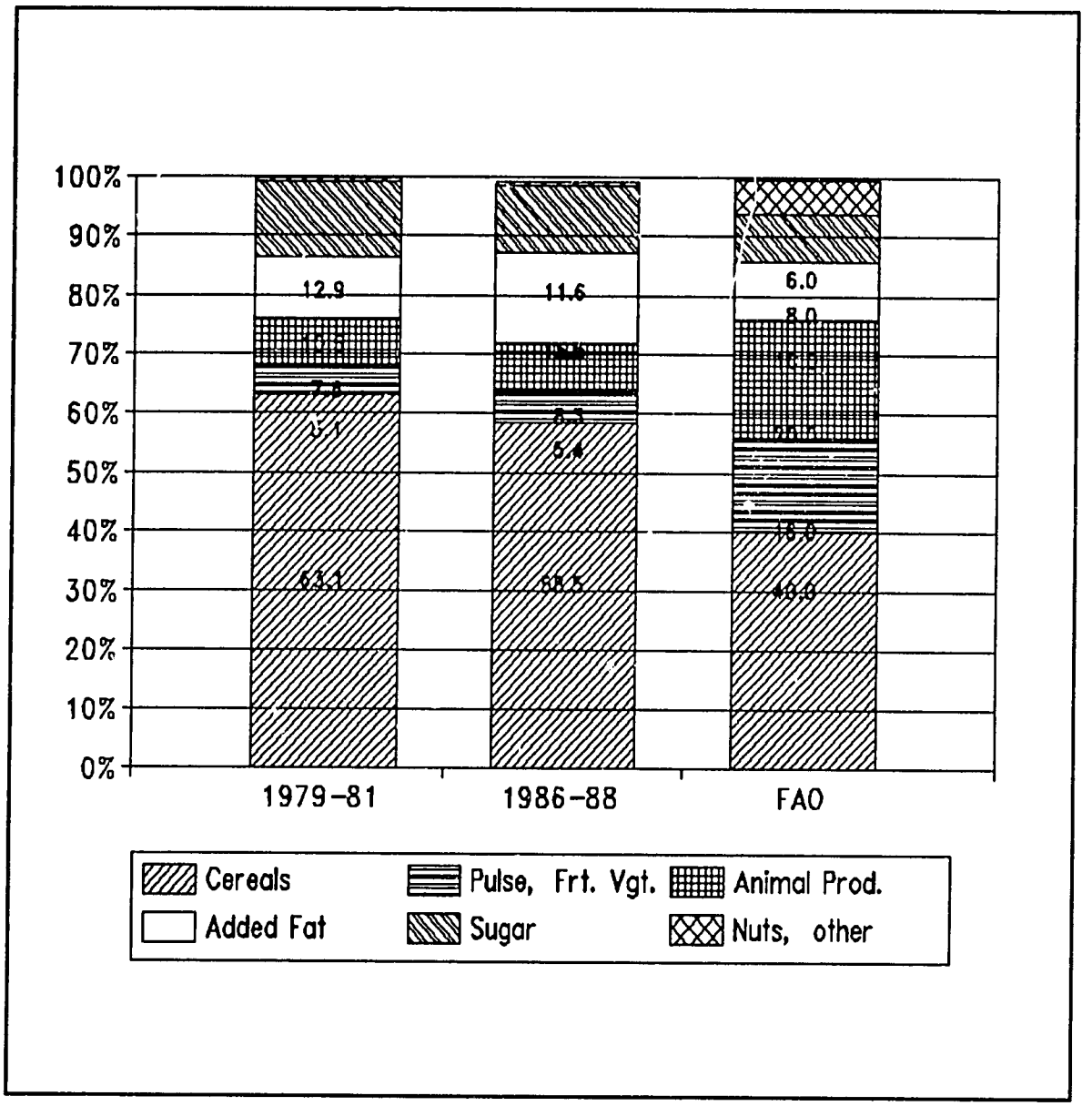
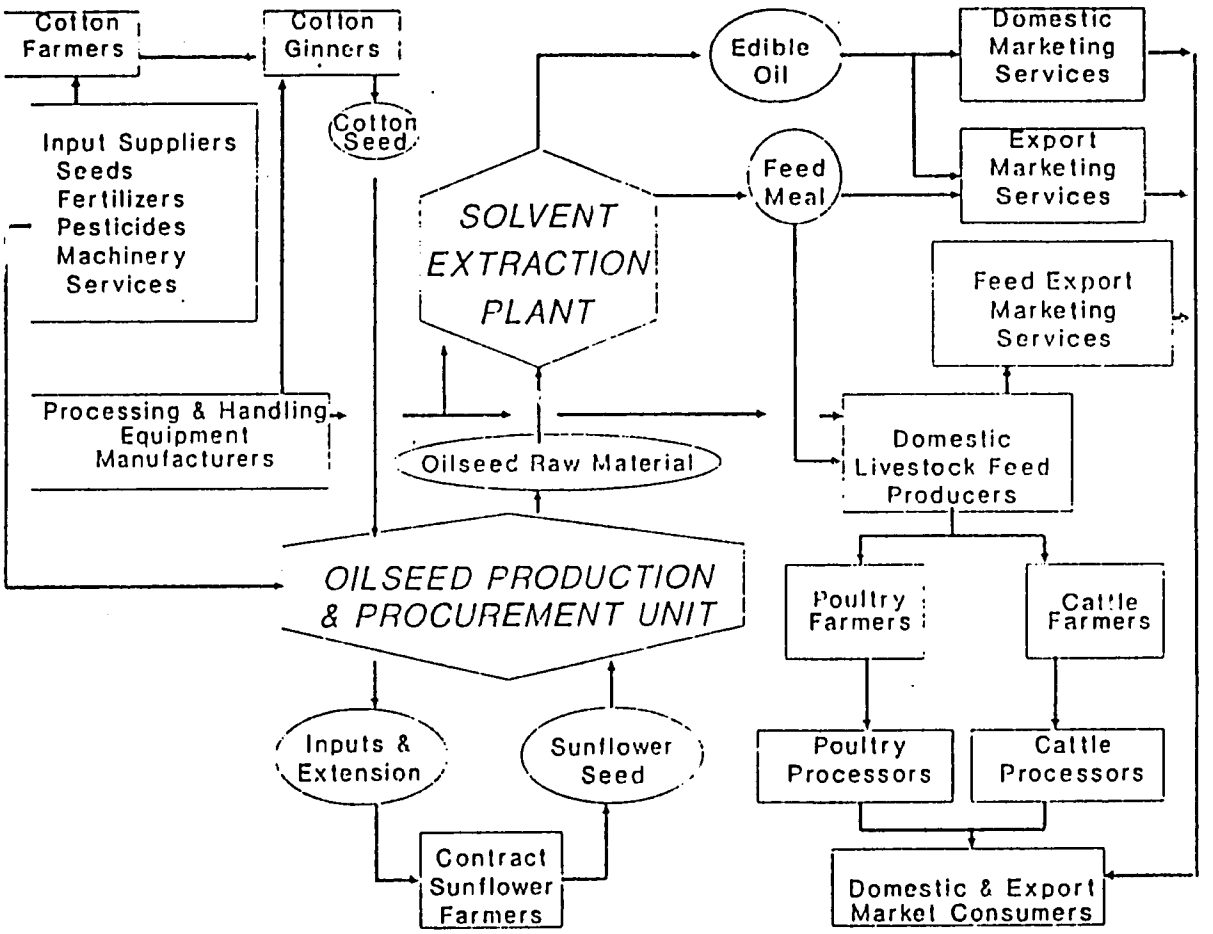



Figure 4. Percent of Calories by Food Groups, 1979-81, 1985 Surveys & FAO Recommendations.

Figure 5.

# The Pakistan Oilseed Commodity System



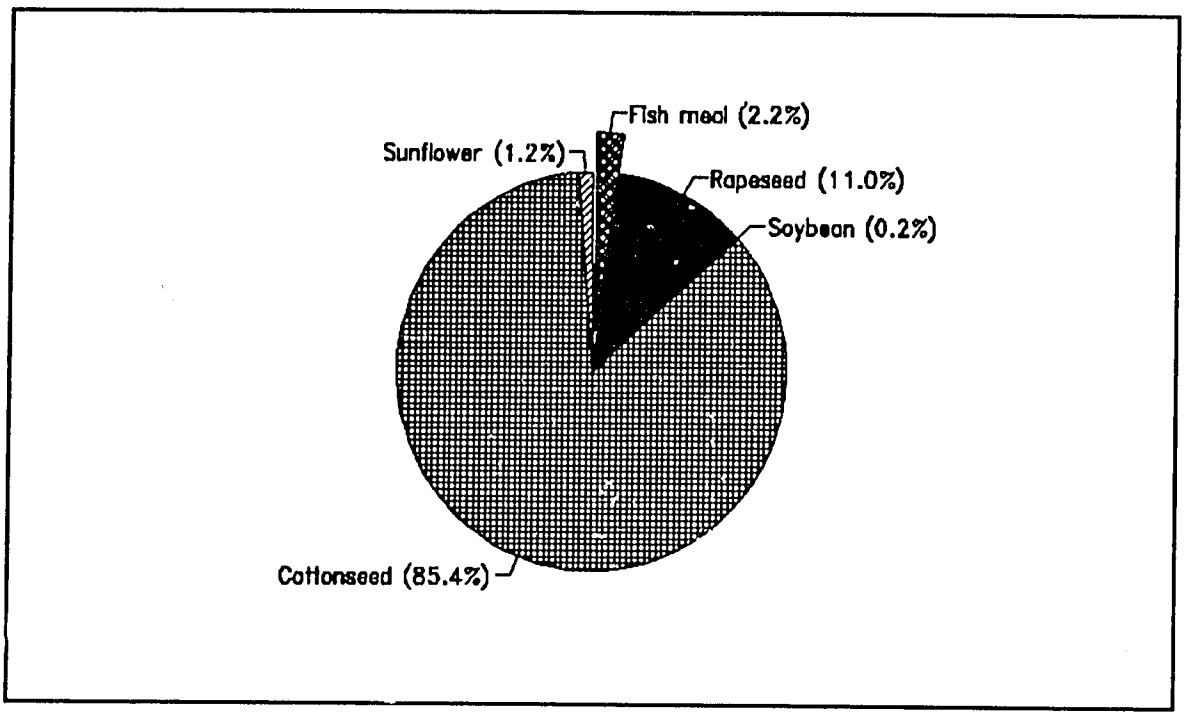



Figure 6. Production of Meals in Pakistan 1989/90

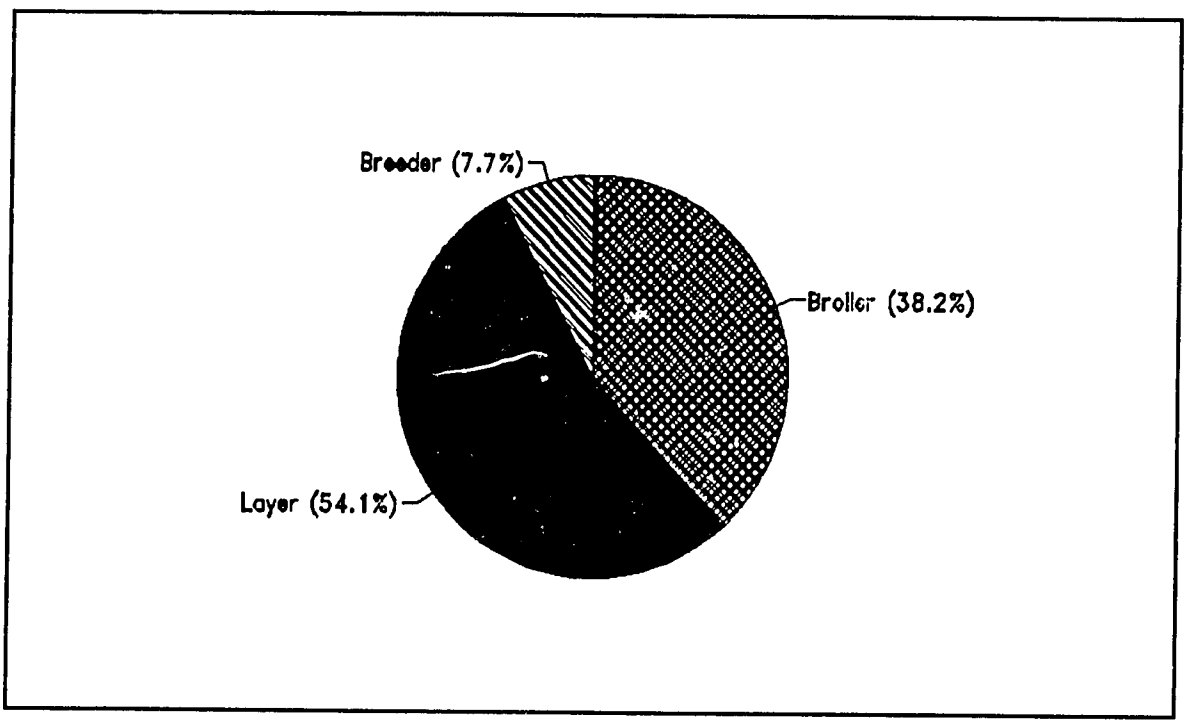



Figure 7. Poultry Feed Market for 1989

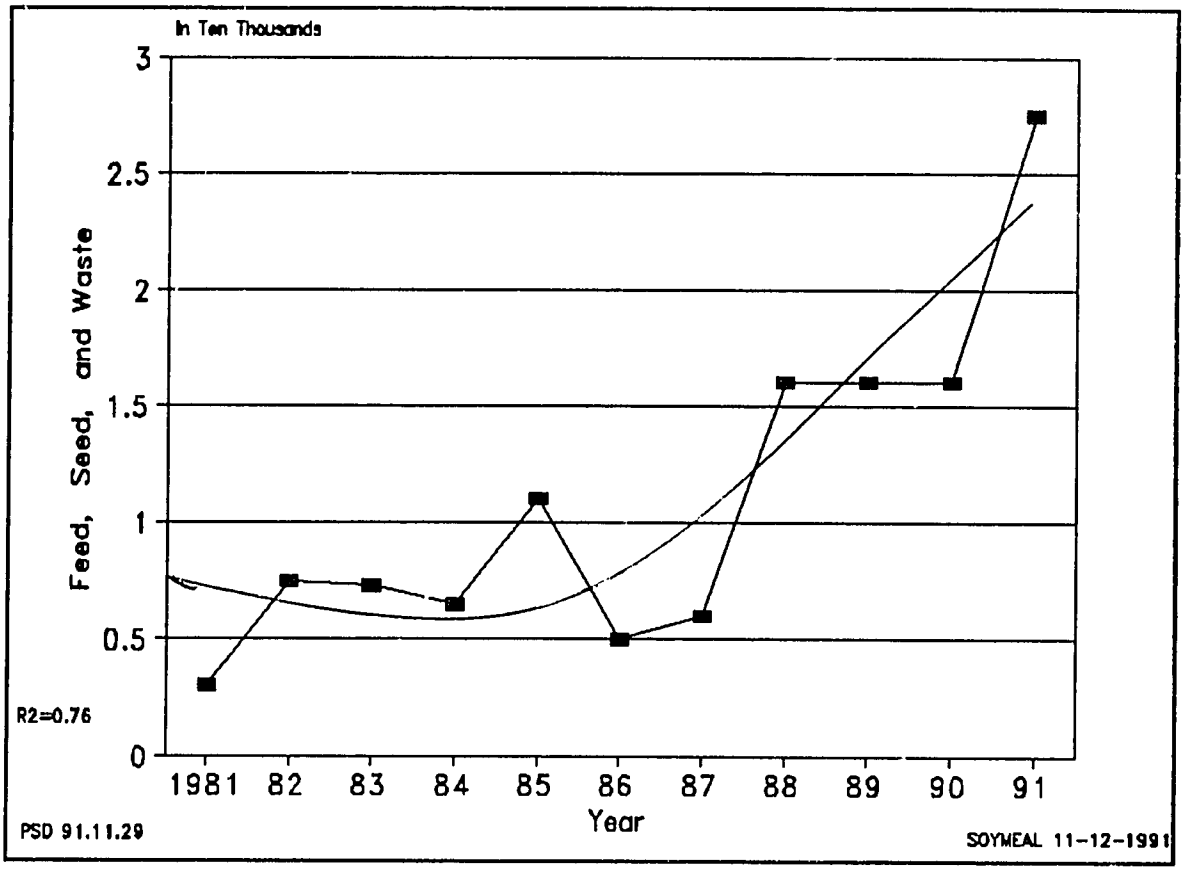



Figure 8. Pakistan Soybean Meal Feed, Seed, and Waste

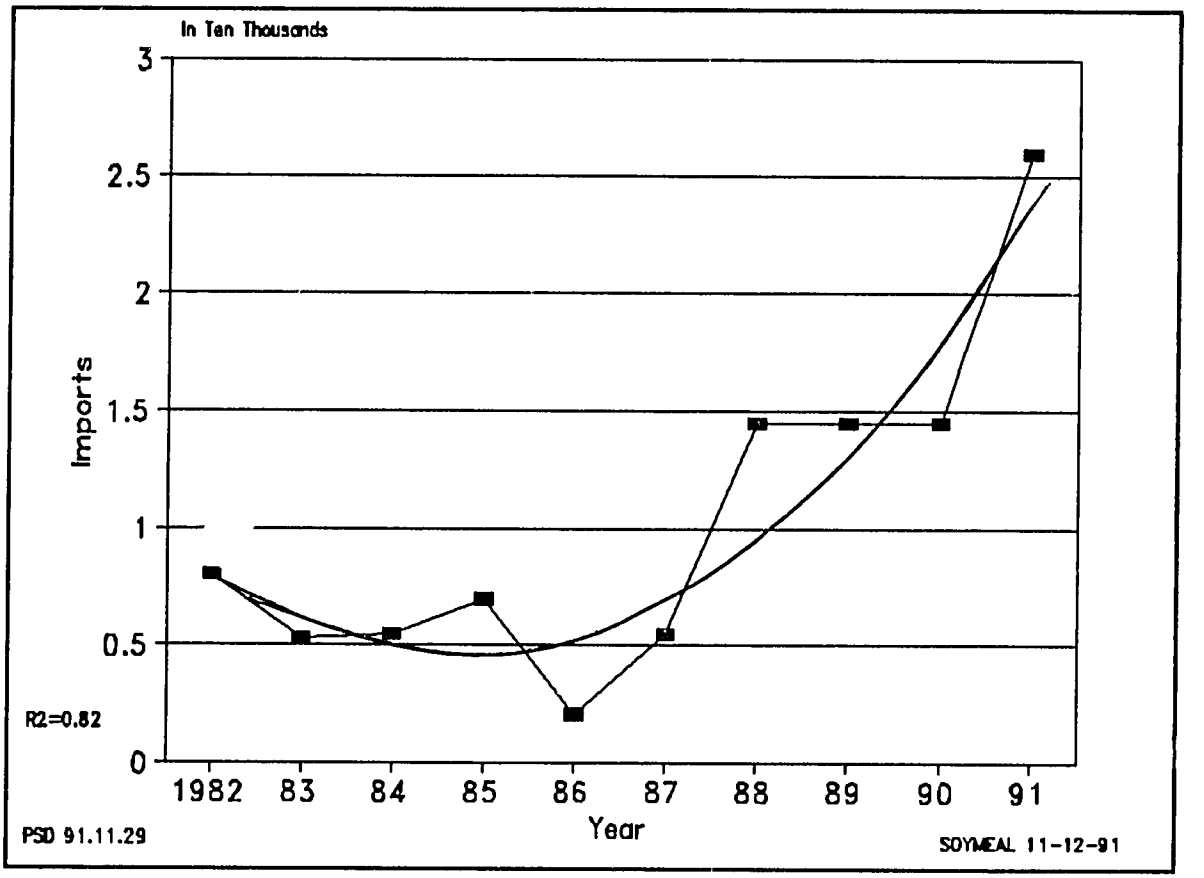



Figure 9. Pakistan Soybean Meal Imports

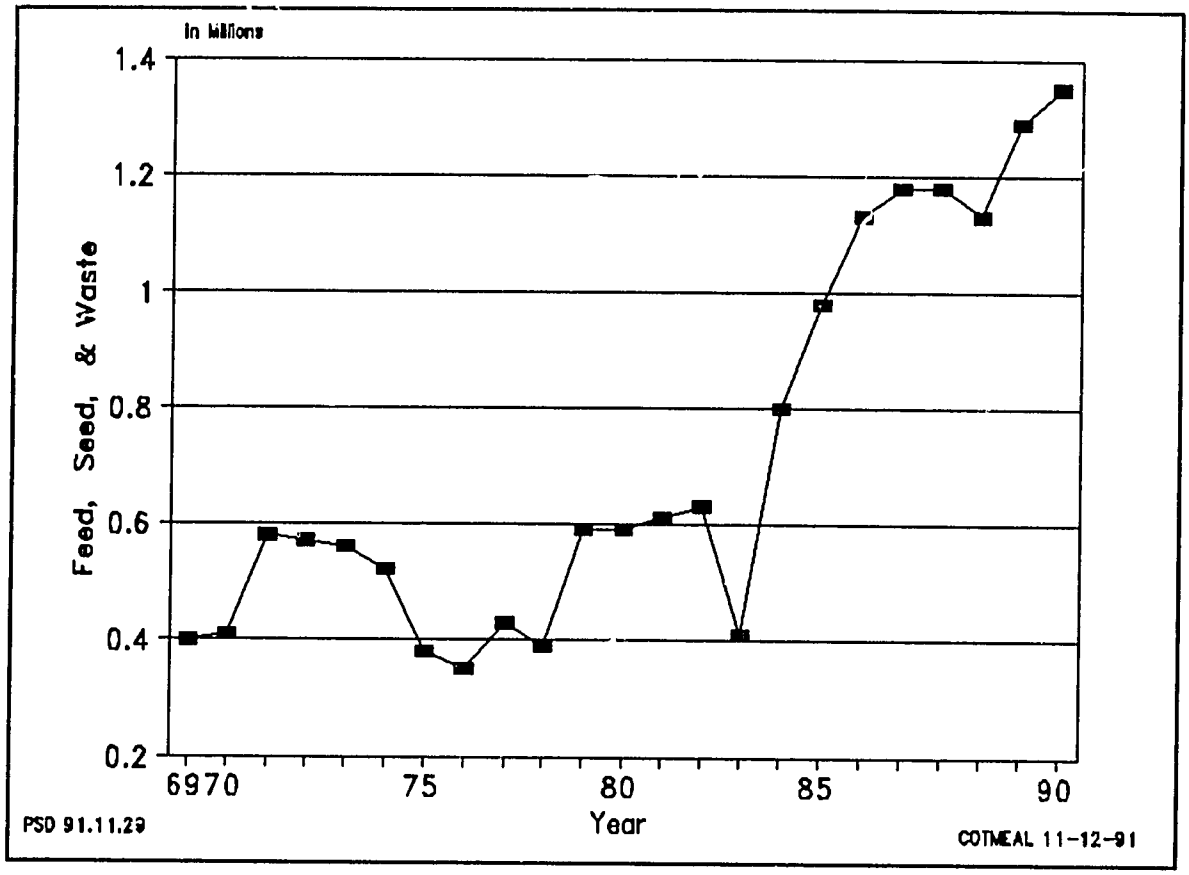



Figure 10. Pakistan Cottonseed Meal, Feed, Seed, and Waste.

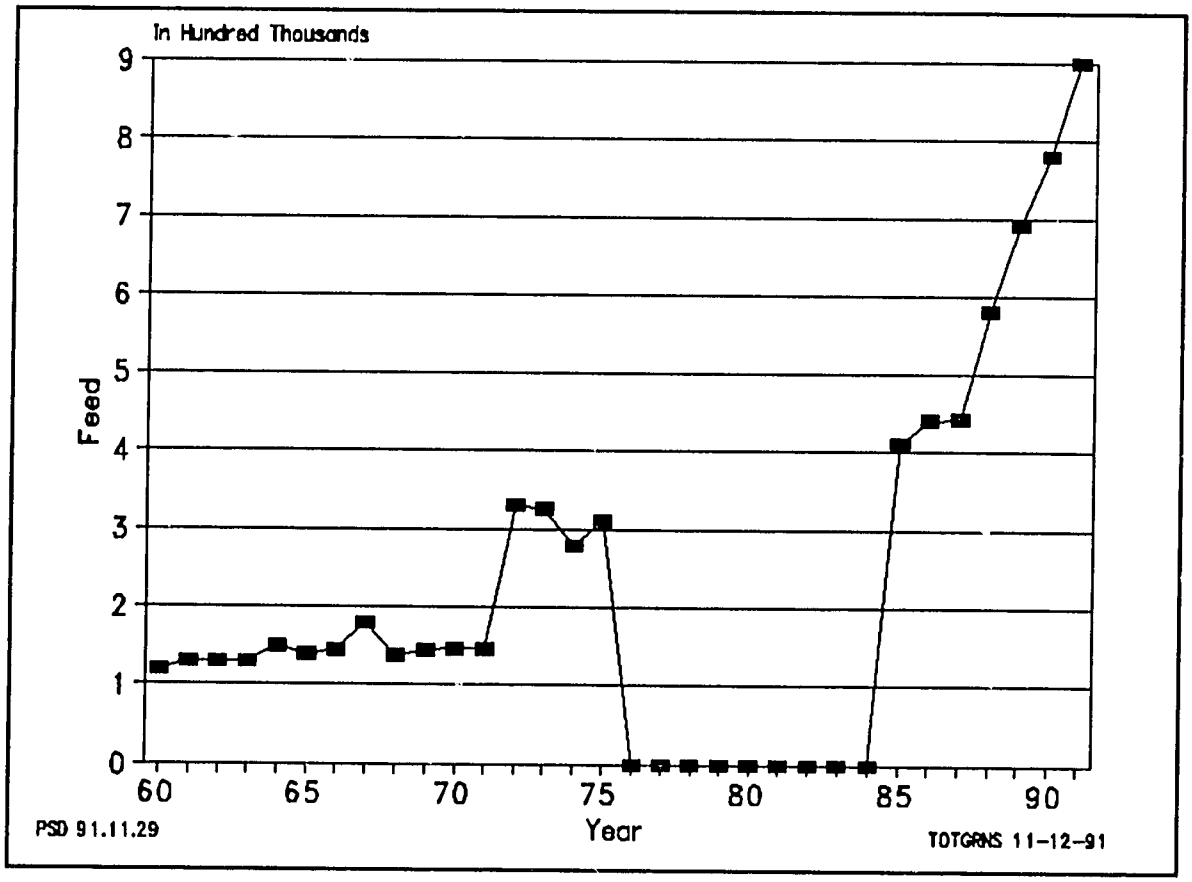



Figure 11. Pakistan Total Grains Feed.

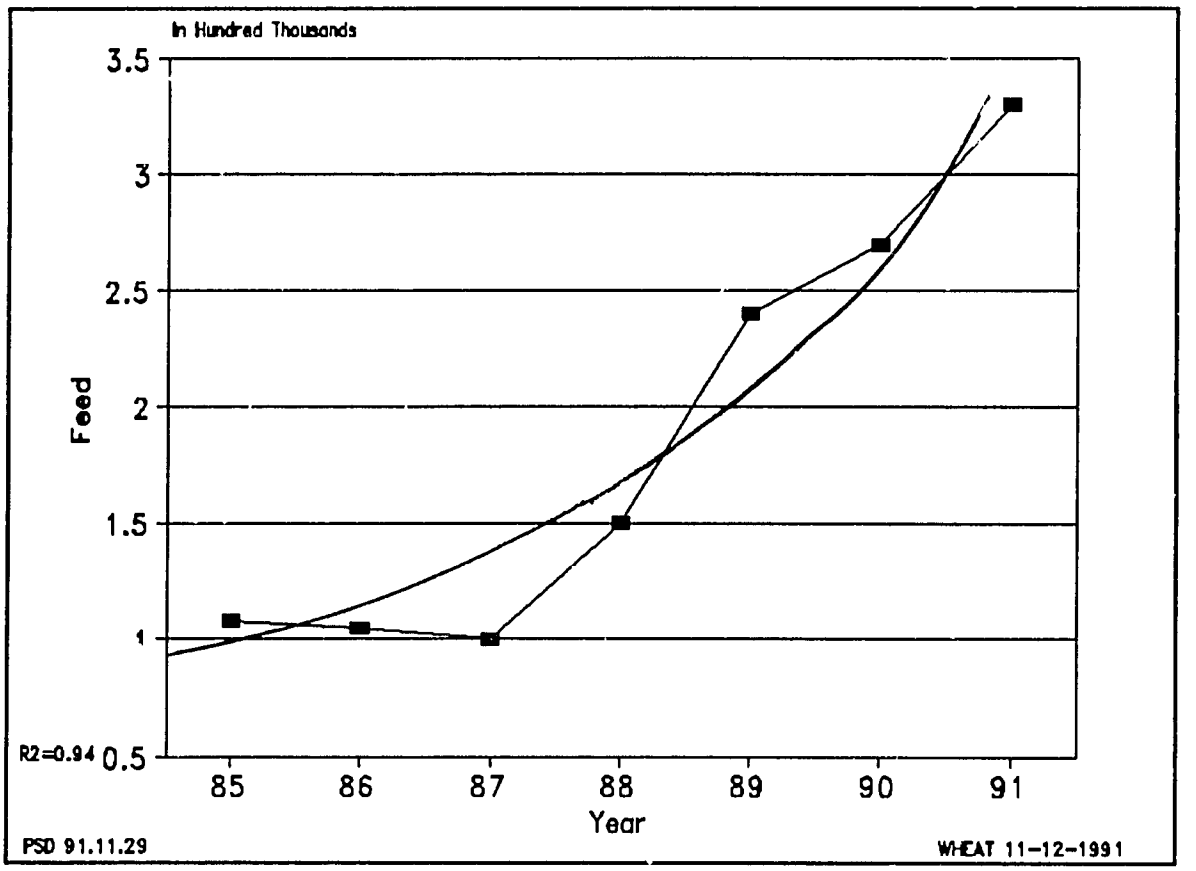



Figure 12. Pakistan Wheat Feed.

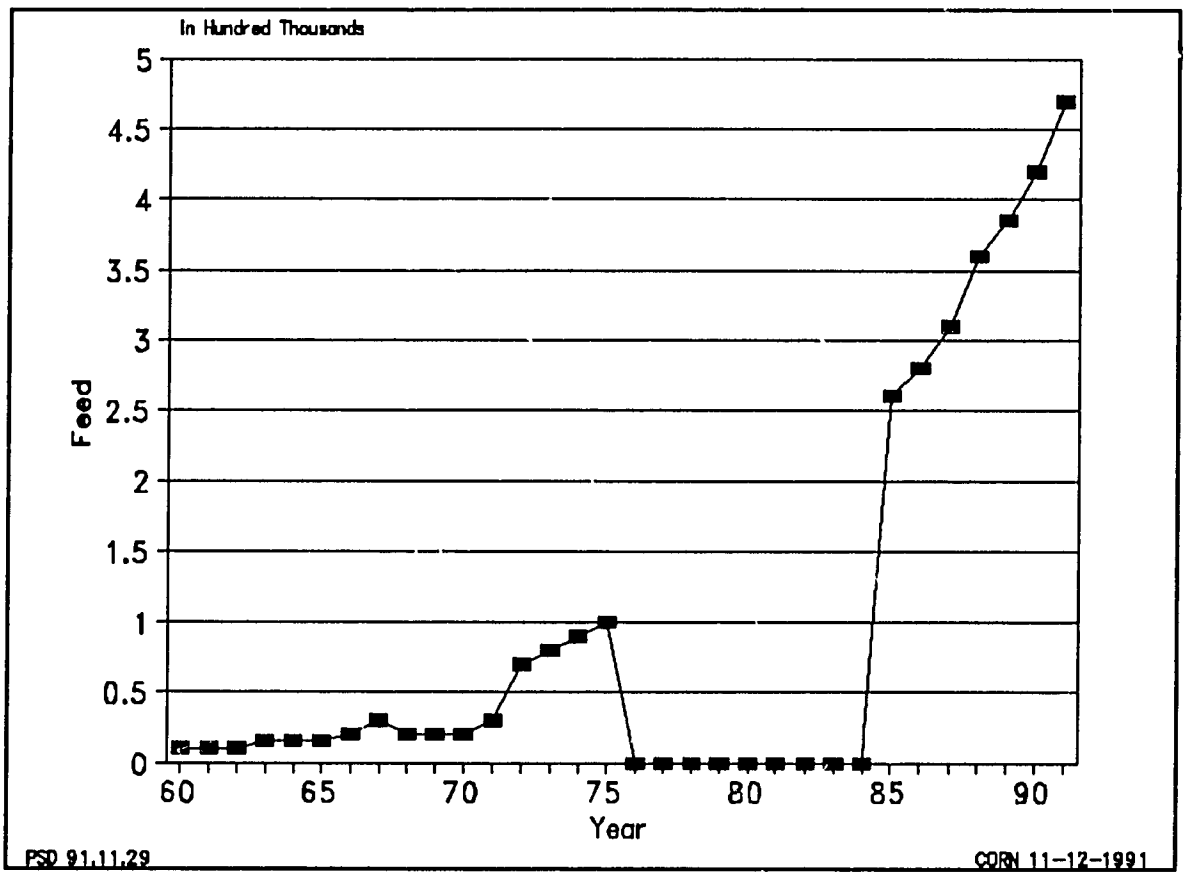



Figure 13. Pakistan Corn Feed.

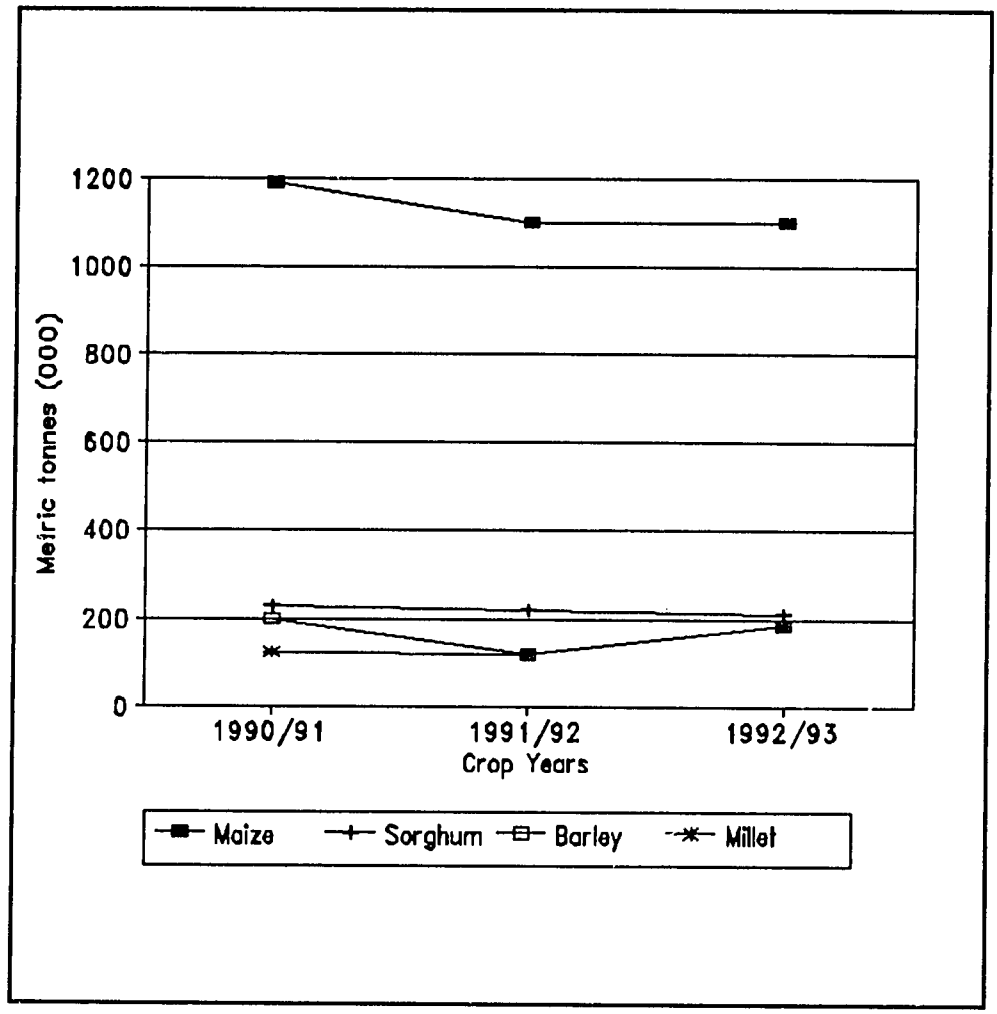



Figure 14. Production of Coarse Grains, 1990, 1992 estimated, 1993 Forecast.

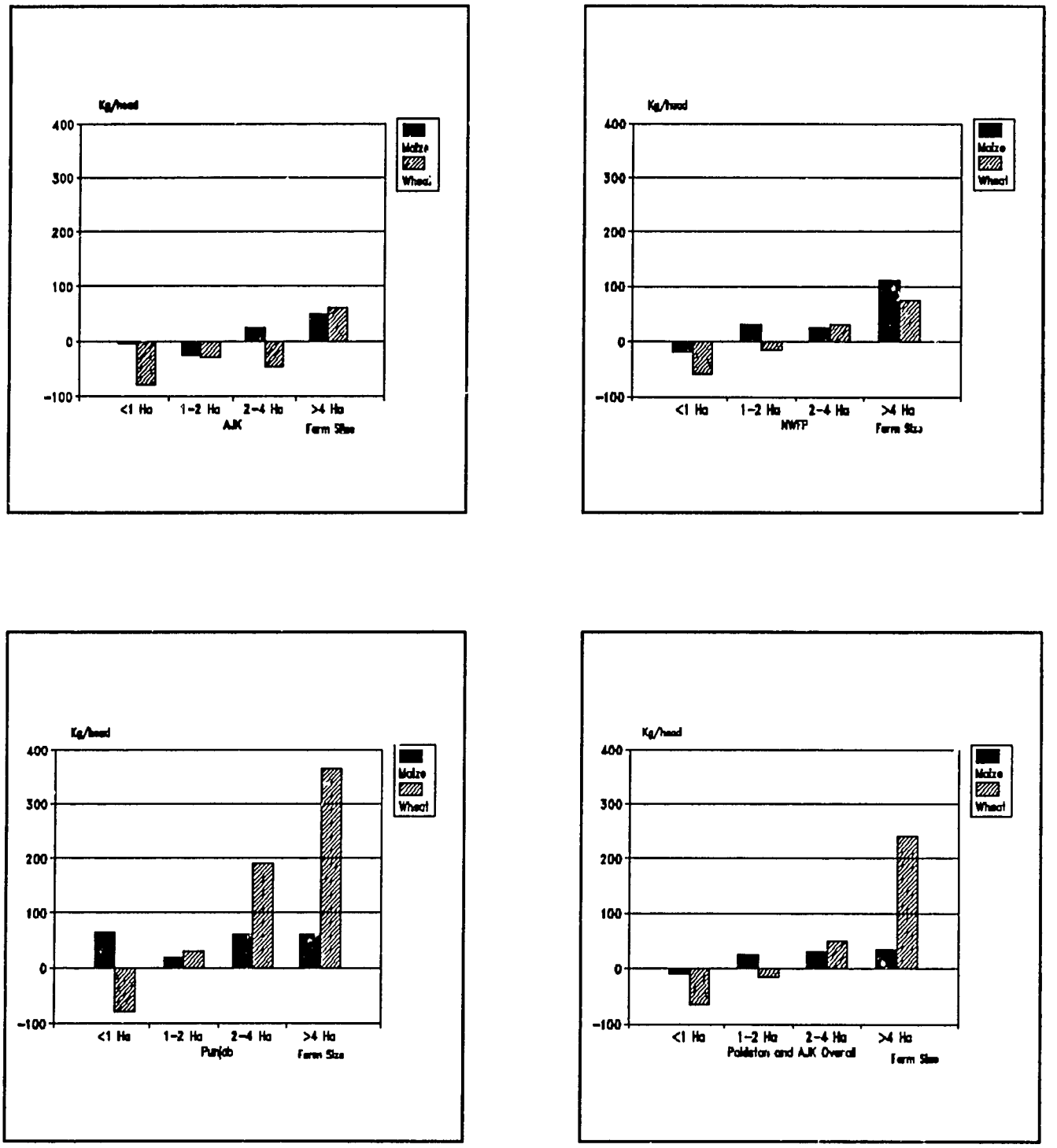



Figure 15. Grain Surplus Per Head, by Region.

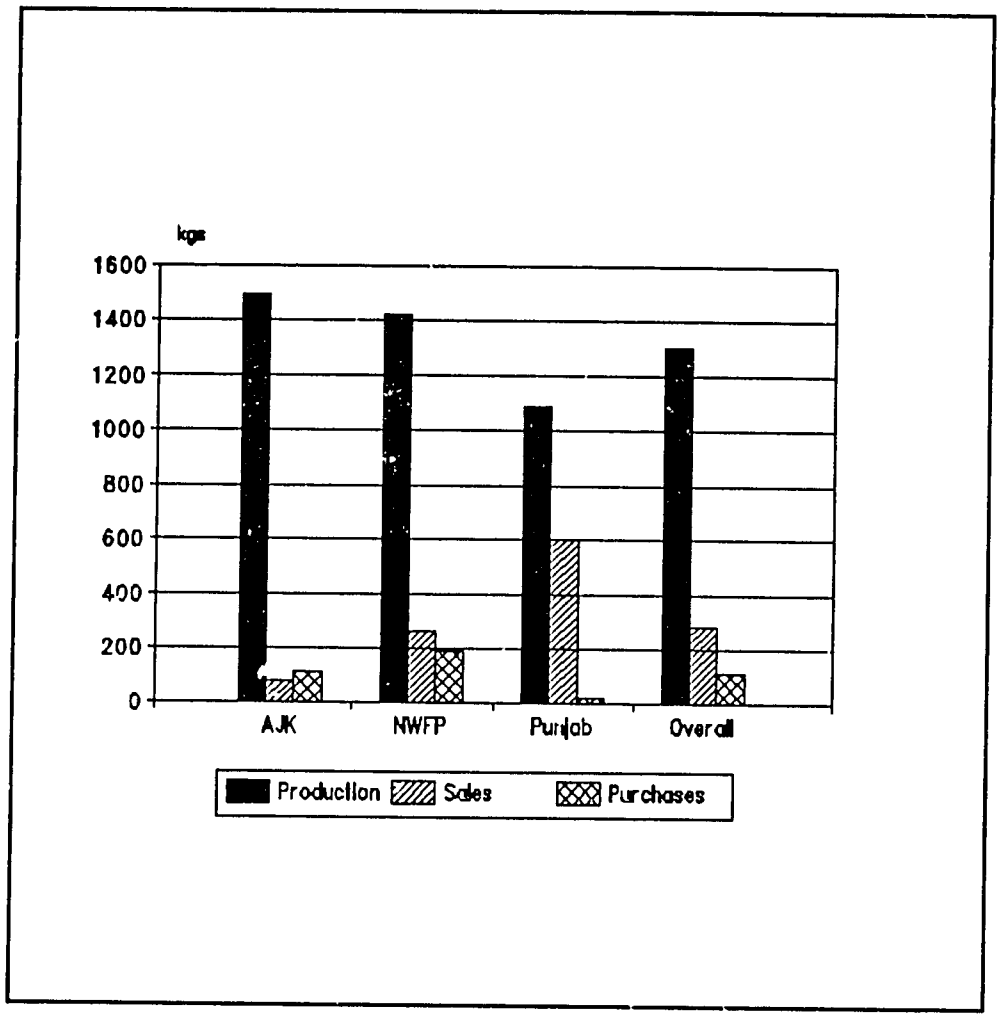



Figure 16. Average Maize Production, Sales and Purchases per Farm, 1988

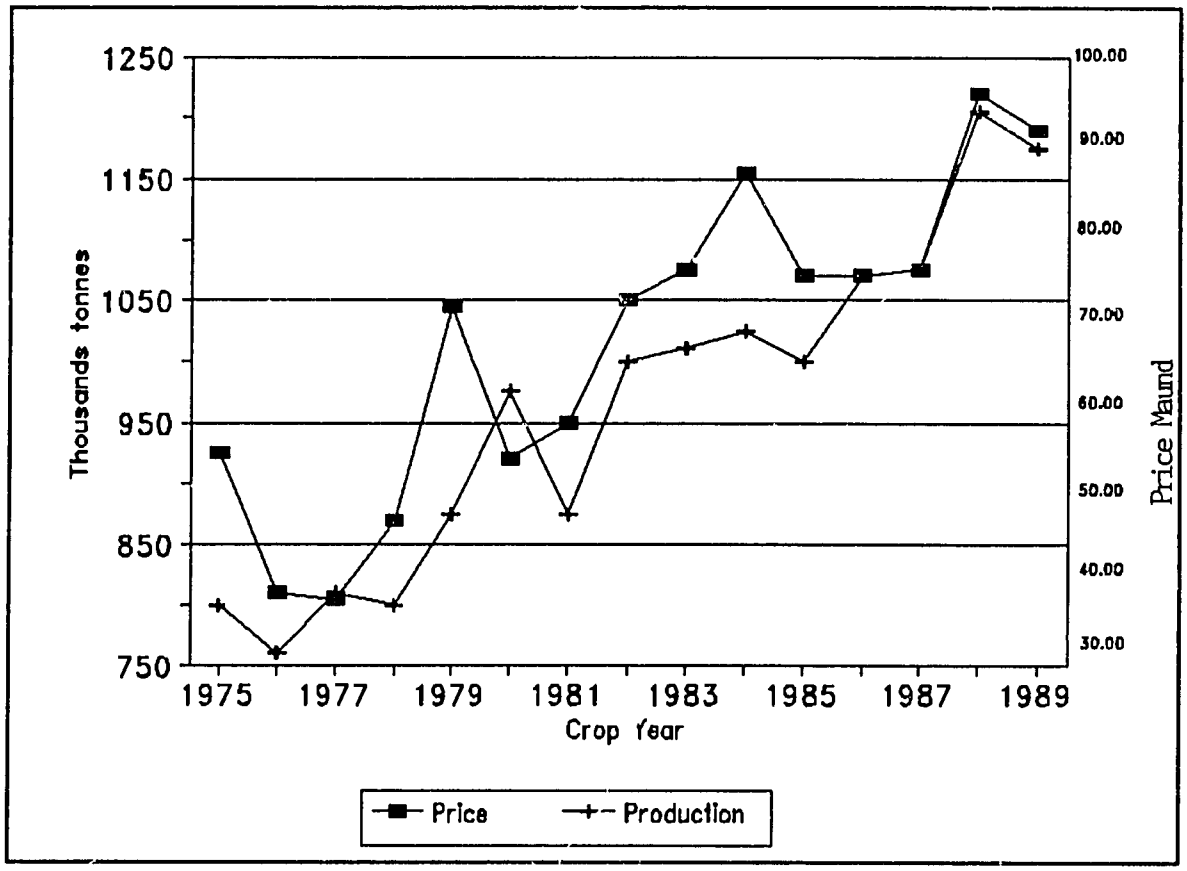



Figure 17. Maize Production and Price, 1975-1989 Crop Years.

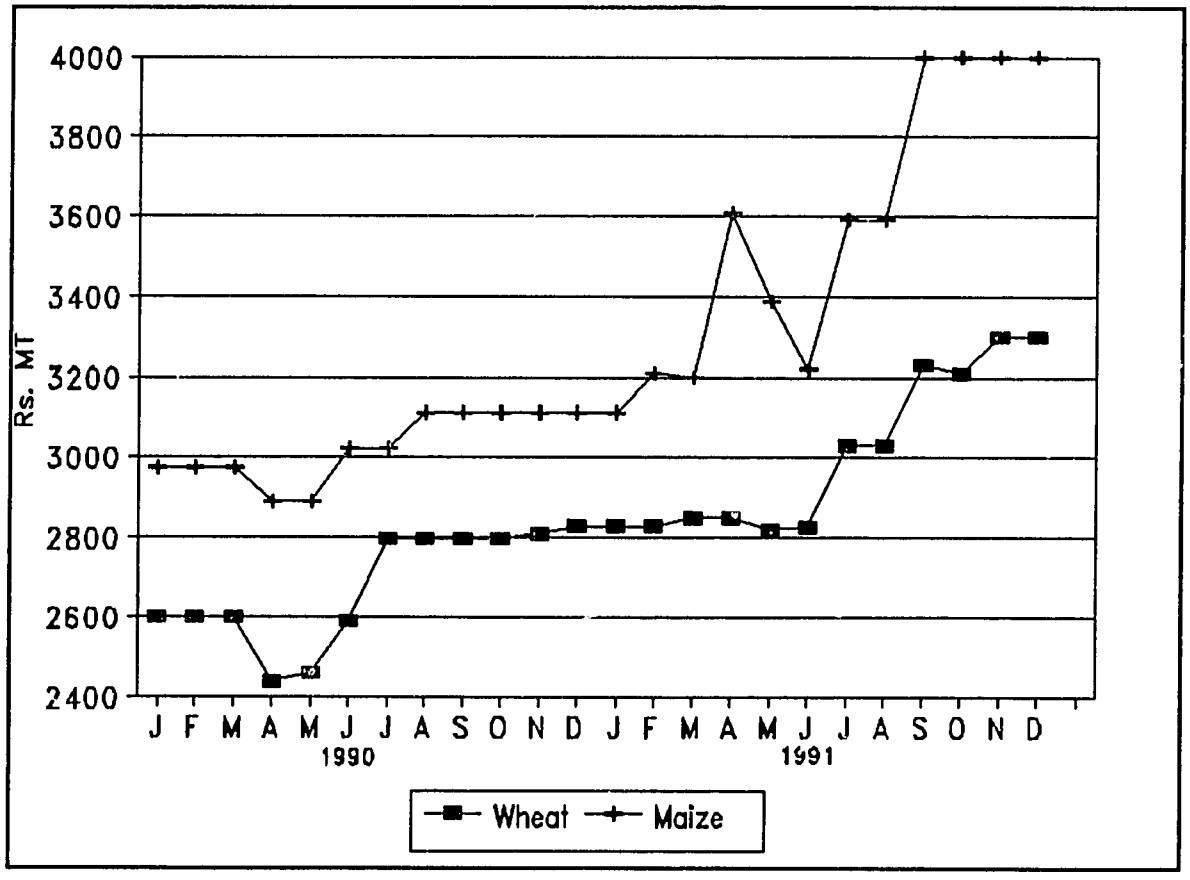



Figure 18. Market Price of Wheat and Maize, 1990-1991 in Rs. per Metric Ton.

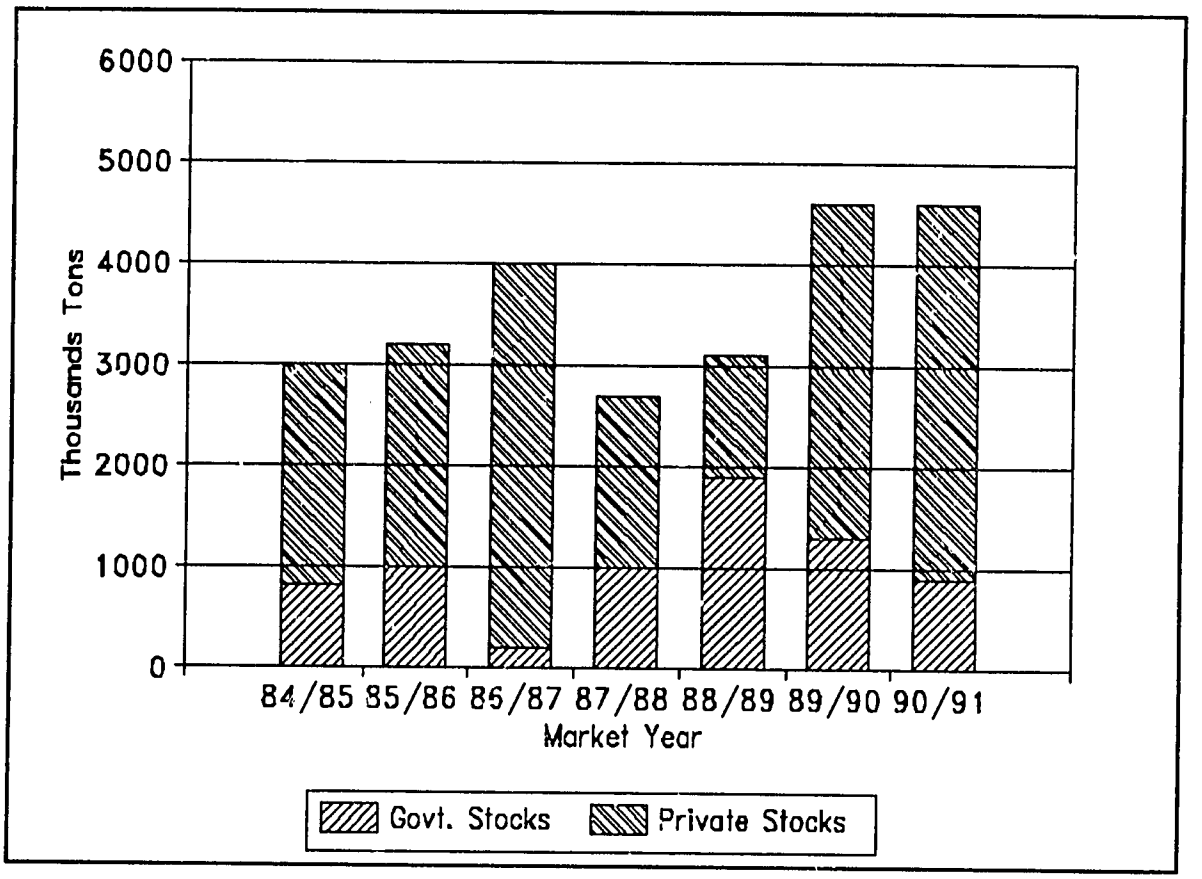



Figure 19. Wheat Carryover, Market Years 1984-1990.

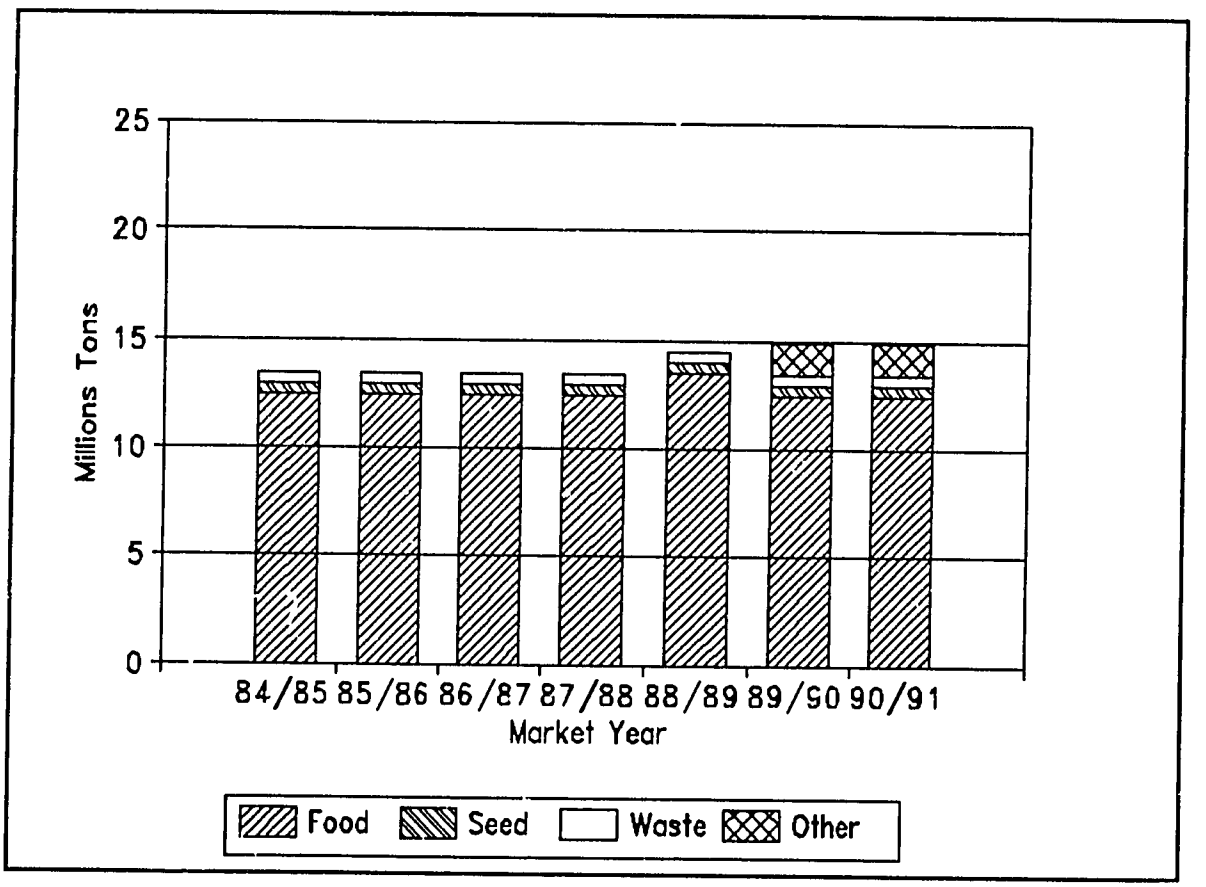



Figure 20. Wheat Utilization, Market Years 1984-1990.

## SECTION III

## SUMMARY

The feed industry has enormous potential - providing problems can be solved simultaneously. Foremost is a consistent government policy that will permit long range planning and investment in proper milling and storage facilities. Second is problems of quality control, in feed grains, feed ingredients, the processed feeds, the birds and animals that consume the feed, and the processed meat and poultry items.

There is urgent need for private-sector grain storage and merchandising firms - organizations that are willing to buy, store, condition, and sell any grain at anytime. This requires capital, management, and supportive government policies. The issues are too complex to discuss fully here, but grain merchandisers are needed and coming perhaps sooner than we think.

Perhaps the most urgent need of all is a change in attitude. An attitude of concern and caring about the future of the feed industry, a concern for trained and motivated employees, and for processing practices that ensure a consistent product at a fair price.

## APPENDIX I

## REFERENCES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