

PN. ABL-301

77202

ASPAP/DAI Report No. 194

**MARKET PRICE TRENDS FOR SIX PRINCIPAL STAPLE FOOD CROPS AND THE
IMPLICATION FOR FOOD AVAILABILITY IN THE PREFECTURE OF GITARAMA,
GIKONGORO, BYUMBA, KIBUNGO AND KIBUYE**

Rwandan Agricultural Surveys and Policy Analysis Project

Contract USAID no. 696-0126

by

Dr. James S. Ansoanuur*
ASPAP/DSA, Econometrician and Policy Analyst, DAI**

Kigali, Rwanda
May, 1992

*ASPAP Long-term Econometrician and Policy Analyst at the
Division des Statistiques Agricoles (DSA, formerly SESA),
MINAGRI, Kigali, Rwanda.

** Development Alternatives, Incorporated, 7250 Woodmont Avenue,
Suite 200, Bethesda, Maryland 20814, USA, primary institutional
contractor for ASPAP. USAID Contract No. 696-0126-C-00-7777-00.

INTRODUCTION¹

The attached graphs show monthly market price trends for six principal staple food crops viz:- Dry beans, Sorghum, Sweet potatoes, Cassava, Potatoes and cooking bananas in the Prefecture of Gitarama, Gikongoro, Byumba, Kibungo and Kibuye for 1989 (a drought year), the average of 1986-1991 (normal years) and 1992, a year in which rains started late. The objective of the exercise is to compare the price trend of 1989, a drought year, with the average of 1986-1991 which were normal years and that of 1992, a year in which rains were late. There is also a severe drought in Southern Africa resulting in massive food shortage and starvation. The severe drought in Southern Africa and the delayed rains in Rwanda would have an effect on food availability in Rwanda. Thus the comparison of the monthly price trends for 1989, a drought year, with the average of the normal years 1986-1991 and that of 1992 will help monitor the food situation to ascertain whether there is an imminent food shortage as a result of the drought.

GITARAMA

Dry Beans Price Trend

For the crop production year of 1989, a drought year, dry bean prices stayed steady from September 1988 to March 1989 and from April 1989 they showed an upward trend with a peak in June 1989 and then a slight drop in July and August of 1989. Normally rains and planting for the first crop season starts in mid-September and the crop is harvested from December to February and the second crop season starts in March with harvesting occurring from June to August. With this cropping pattern one would normally expect market prices to be low in December-February and in June-August the two harvest periods and then peak in October-November and April-May the two periods when the crops are in their vegetative state. The 1989 dry bean market prices started rising in April and then peaked in June with a slight drop in July and August. This unusual trend could be the effect of the drought which resulted in less dry beans harvested from June to August and consequently higher market prices during this period.

For the average of 1986-1991, the dry bean market price peaks in November, drops from December to January and thereafter stays steady with a slight rise from April to August. For the year 1992, dry bean market prices appear to follow the same trend as that for the average of 1986-1991 but are higher than those for 1989 and 1986-1991 which could be the result of inflation.

Sorghum Price Trend

In the case of sorghum, the 1989 monthly market prices showed a gradual increase from September 1988 to March 1989 and then a sharp increase in April and May with a sharp peak in May. The price then drops sharply in June, July and August. The average for 1986-1991 also shows a trend which rises gradually with a peak in May but which is less sharp than that for 1989. For 1992, the price started high in September 1991, dropped in October 1991, rose to the September level in November 1991, dropped in December 1991, then rose in January 1992 and stayed steady in February and March and then rose again in the month of April. Thus the 1992 Sorghum market prices have been fluctuating from month to month but the fluctuations are not wide.

¹ The author acknowledges comments by Dr. David Tardif-Douglin and Dr. Scott Loveridge on the preliminary draft of this document.

Sweet Potato Price Trend

Sweet potato is a staple food for the poor and a small proportion goes through the marketing system. Thus any wide fluctuation in its market price is a sign of serious food shortage. The high prices of sweet potatoes could result from the shortage of other staple food crops consumed by the rich thus they have to resort to buying the staple food for the poor there by pushing up the market prices. Thus sweet potatoes is also regarded as a famine food and consumed more by both rich and poor during famine and thus its market price trend can serve as an indicator of famine.

In looking at the graph of the market price trend for sweet potatoes in 1989, a drought year, it indicates there was a wide fluctuation in the monthly market prices, with peaks in November 1988, March 1989 and in June 1989. The graph for the 1986-1991 average monthly market prices indicate that there is very little fluctuation from month to month but with low prices in October, February and July. For 1992, the graph shows that the monthly market prices are below those for 1989 and the average of 1986-1991. This is unusual because one would have expected that inflation would make the 1992 prices much higher than those of 1989 and the average of 1986-1991. This situation could be explained by the fact that the 1989 drought was really severe and thus resulted in the shortage of other food crops in the Prefecture of Gitarama and thus the demand and consumption of sweet potatoes went up there by pushing up the market prices. Incidentally the Prefecture of Gitarama is a major sweet potato producing region so one would expect lower market prices in normal times. Therefore the much lower monthly market prices for sweet potatoes in the Prefecture of Gitarama in 1992 could be an indication that there is no food shortage so far in this Prefecture. However the prices are beginning to rise in April and if this trend continues then there will be cause for concern that there is an imminent food shortage situation in the Prefecture of Gitarama.

Cassava Price Trend

Like sweet potatoes, cassava is another famine food crop so that a sharp rise in its market price is an indication that there is shortage of food. The graph shows that in 1989, the monthly market prices for cassava in the Prefecture of Gitarama have seen a sharp increase from January with a peak in March and thereafter a gradual drop in April and May and then another sharp increase in June much higher than the peak in March. Then dropped sharply in July and stayed the same in August. The average market prices for 1986-1991 are much steadier, increasing gradually to a small peak in June and dropping slightly in July and August. The monthly market prices for cassava in 1992 are also much lower than those for 1989 and 1986-1991 like in the case of sweet potatoes. Whereas average monthly prices were peaking over 30Frw/Kg in 1989 and over 15Frw/Kg in 1986-1991, they are peaking around a little above 10Frw/Kg so far in 1992. Following the same reasoning as advanced under sweet potatoes, one could conclude that there is no serious food shortage in Gitarama currently as compared to same period in 1989, a drought year. However the prices are beginning to rise in April and if the trend continues then there will be cause for concern.

Potato Price Trend

In the case of potatoes, the graph shows that in 1989, the monthly market prices were fluctuating from month to month but not as sharply as other crops. The average of 1986-1991 market prices have also fluctuated moderately and followed the same trend as for 1989 except that average prices were much higher in June, July and August than the corresponding prices for 1989. In 1992, market prices were high in October, dropped moderately in November to December, went up in January, dropped in February, went up again in March and showed a down turn in April. Thus potato market prices in Gitarama are fluctuating moderately. Gitarama is not a major potato producing region thus potatoes are imported from the producing regions into Gitarama. The price trend in 1992 appear to be the

reverse of that in 1989 i.e. some months with low prices in 1989 show higher prices in 1992 and vice versa. However the 1992 prices are generally lower than the 1989 prices. Thus one can conclude that potato supply in 1992 is generally better than in 1989.

Cooking Bananas Price Trend

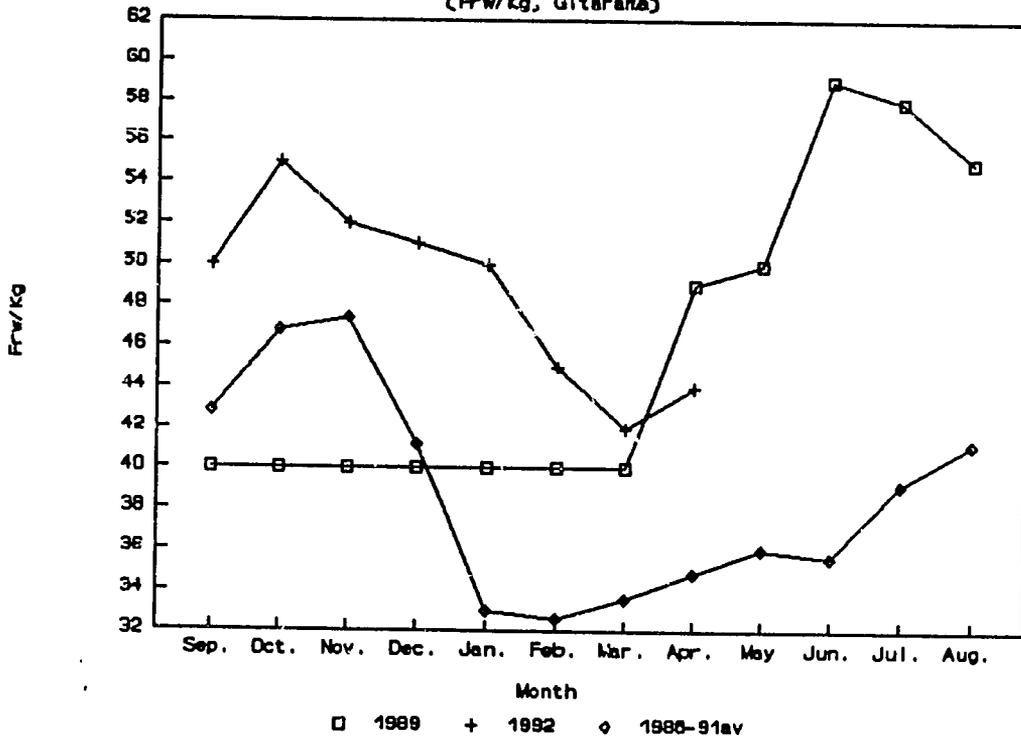
In examining the monthly market price for cooking bananas, it can be observed that 1989 prices are generally higher than those for 1992 and the average of 1986-1991. However the 1989 and 1992 price trends follow the same pattern. The average for 1986-1991 shows a steady but gradually rising trend.

Summary of the food situation in the Prefecture of Gitarama

Judging from the monthly market price trends for the six principal staple food crops one can conclude that there is no famine in the Prefecture of Gitarama. The prices for the two crops of last resort being sweet potatoes and cassava are generally much lower than those for 1989 and the average for 1986-1991 even though inflation has been taken into consideration. The price trend of the two crops do not show any sharp fluctuation from month to month. For dry beans and sorghum, the 1992 monthly market prices are generally higher and fluctuate very moderately from month to month than that for the average of 1986-1991 and 1989. The higher monthly market prices in 1992 could be attributed to inflation resulting from the economic restructuring program and since there is not a sharp fluctuation from month to month, the supply situation for these crops is normal. For the case of potatoes and cooking bananas, the 1992 monthly prices are generally lower than 1989 even with inflation. One can therefore conclude that so far the food situation in the Prefecture of Gitarama has not reached crisis proportions.

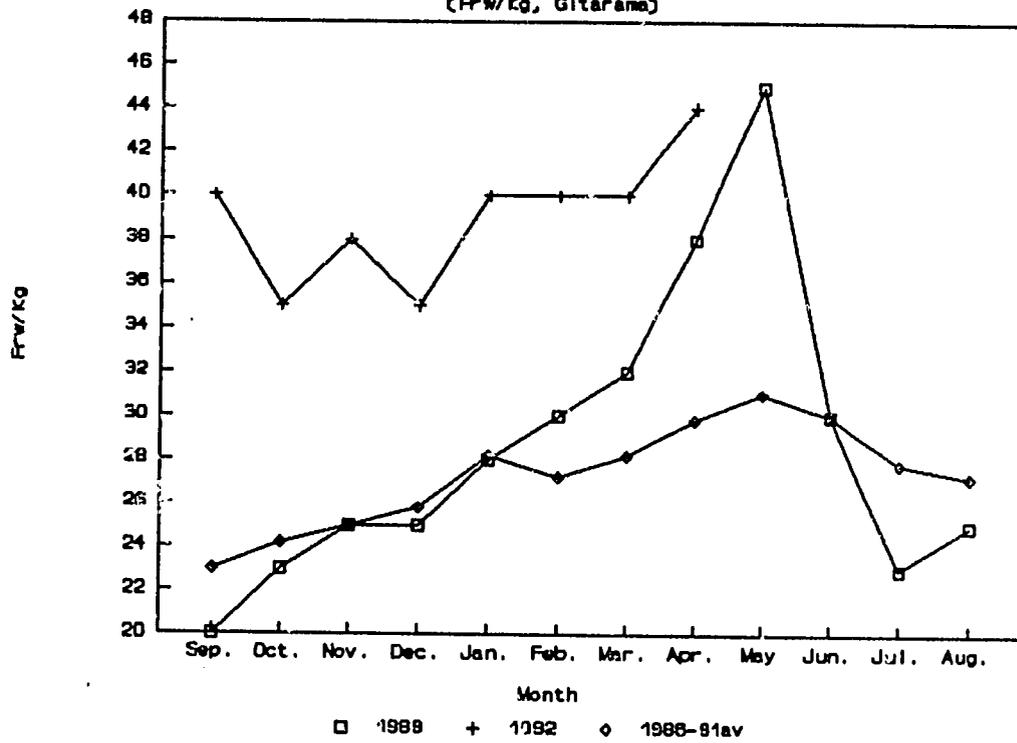
BEAN PRICE TREND

(Frw/Kg, Gitarana)



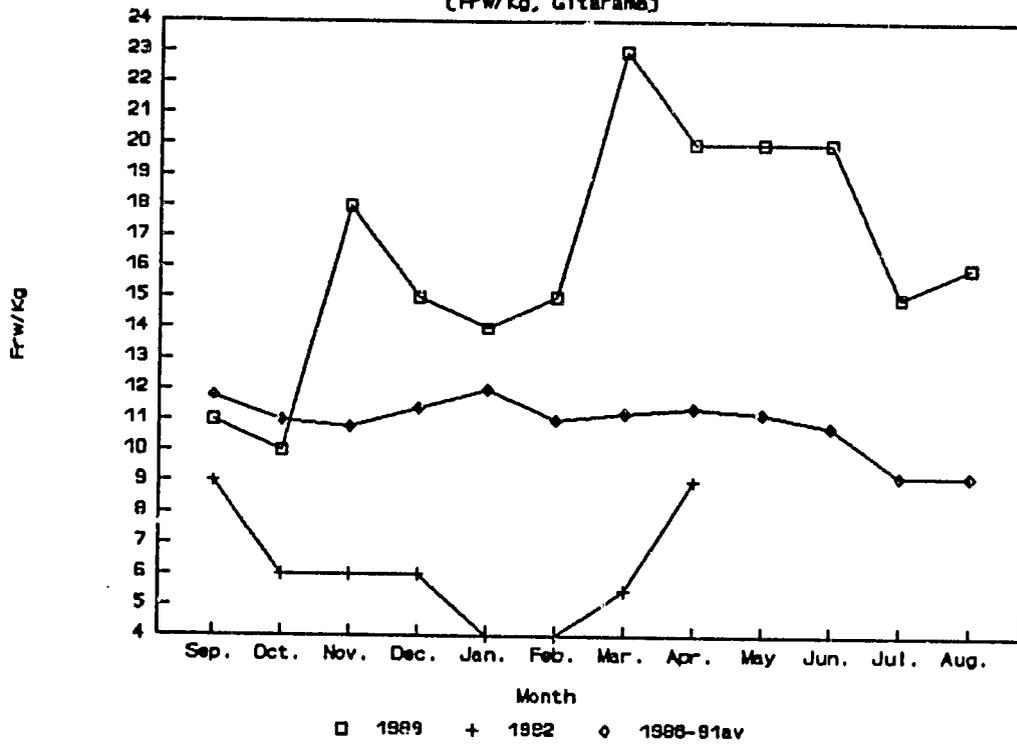
SORGHUM PRICE TREND

(Frw/Kg, Gitarama)



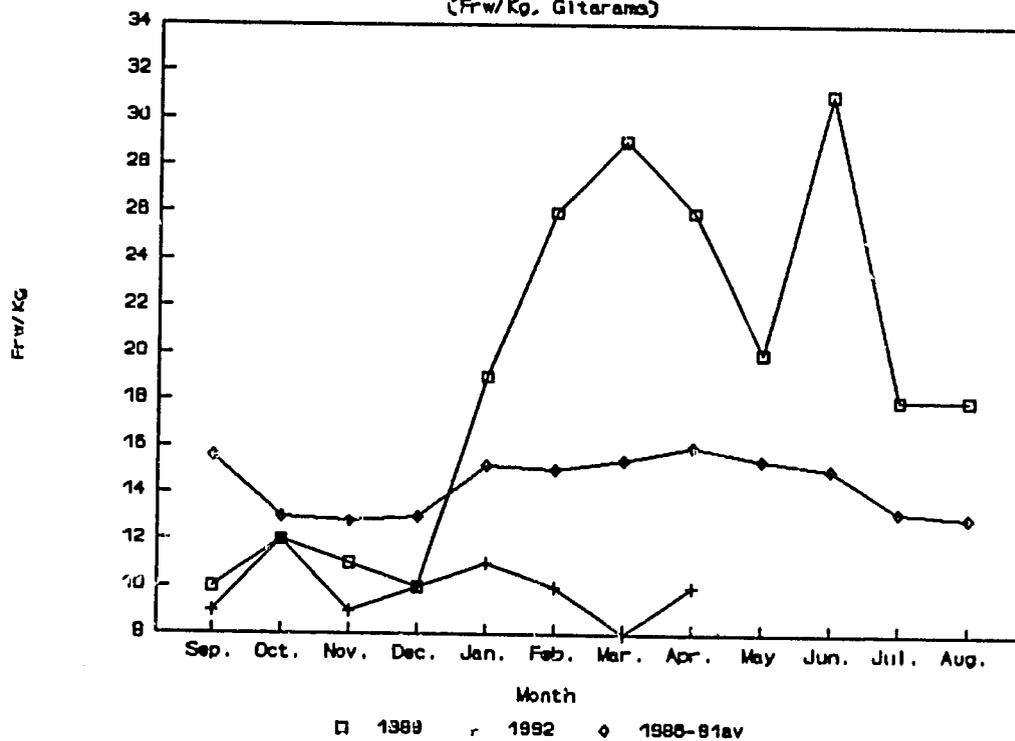
SW. POTATO PRICE TREND

(Frw/kg, Gitarano)



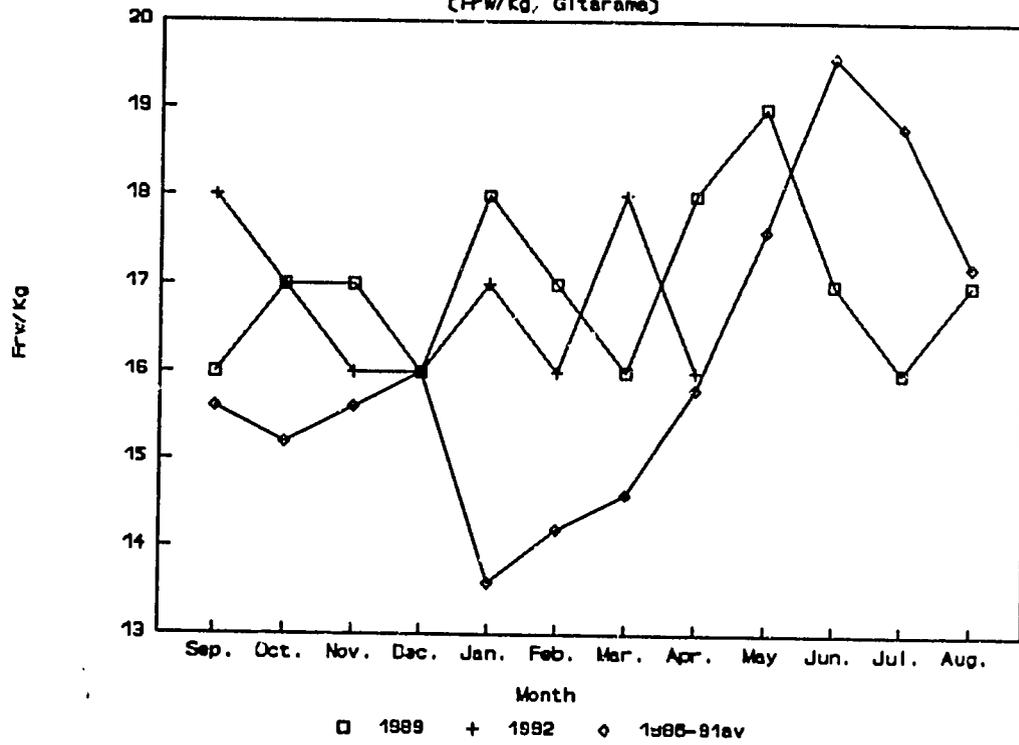
MANIOC PRICE TREND

(Frw/Kg. Gitarana)



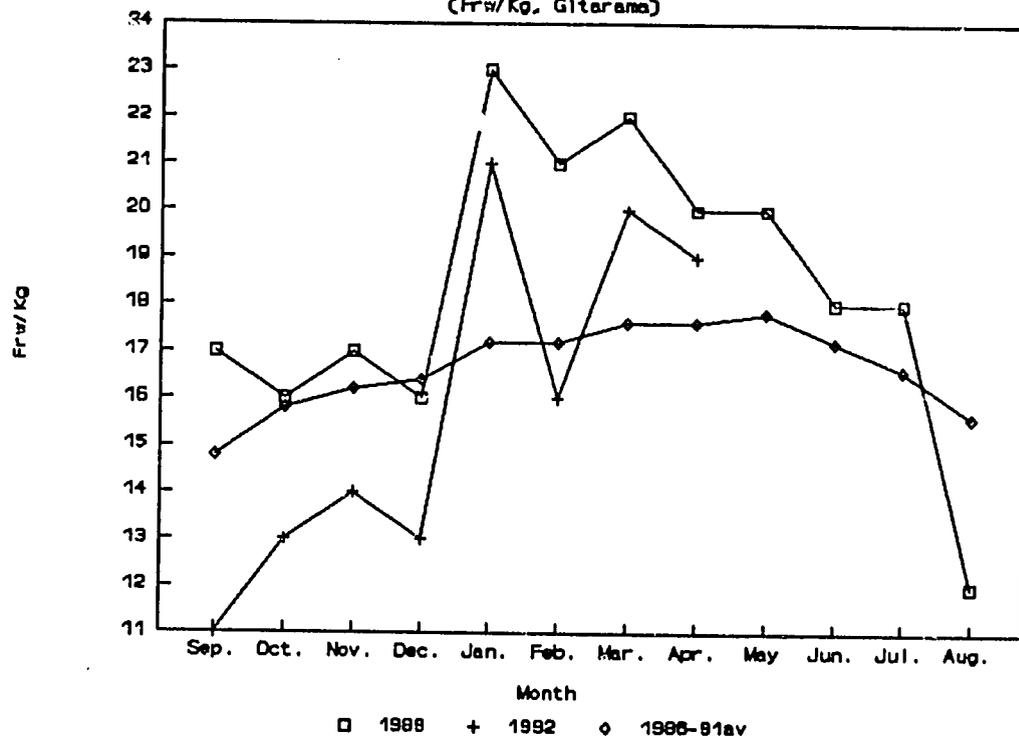
POTATO PRICE TREND

(Frw/Kg, Gitarama)



BANANA PRICE TREND

(Frw/Kg. Gitarana)



GIKONGORO

Dry Beans Price Trend

In the Prefecture of Gikongoro, dry beans prices in 1989 were steady from September 1988 to December 1988, then dropped moderately in January 1989. They started rising from March 1989 and reached a peak in June 1989 and then dropped slightly in July and August. The average for 1986-1991 rose slightly from September to October, stayed steady until February, and then dropped moderately in January and then showed a slight rise from May with a peak in July. The 1992 monthly market prices are higher than those of 1989 and the average of 1986-1991, which is expected because of inflation. The 1992 prices followed the same trend as that for 1989, but are higher. They suggest a trouble ahead for Gikongoro, but only the next few months will tell whether we are witnessing a 1989 type situation or something just slightly out of the ordinary.

Sorghum Price Trend

In the case of Sorghum, the monthly market prices in 1989 remained steady from October 1988 to February 1989 and thereafter rose to a peak in May 1989 and then declined in June, July and August. The average for 1986-1991 has been fairly steady with only a small peak in May and June and then dropped moderately in July and August. Between October and February the average 1986-1991 prices were slightly higher than the prices for the same period in 1989. In 1992, the monthly market prices for sorghum in Gikongoro rose sharply from October to November and then dropped in January and remained steady with a moderate increase in April. Thus the 1992 prices started out high then dropped and are beginning to move up again which thus reflects the supply situation of sorghum in Gikongoro during this period. If the prices continue with the upward trend then this will suggest lower supplies of sorghum in the Prefecture of Gikongoro.

Sweet Potato Price Trend

Monthly market prices for sweet potatoes in 1989 have showed a moderate upward trend from January 1989 and reached a peak in May, dropped in June and peaked again in July. This trend reflects the supply situation of sweet potatoes in Gikongoro in 1989. With peak prices corresponding to lower supplies and lower prices corresponding to higher supplies. The average of the monthly prices for 1986-1991 were higher than the 1989 prices from September to February and then lower than the 1989 prices from March to August. On the whole the 1986-1991 average prices fluctuated moderately and peaked in December and May. In 1992, monthly market prices were higher than those in 1989 and the average of 1986-1991 from September to January and then lower from February to April. Generally, the 1992 monthly market prices are following the same trend as that for the average of 1986-1991 with a peak in December and dropping thereafter and showing a moderate rise again in March. If this trend continues then one can conclude that the food supply situation in the Prefecture of Gikongoro is good because the prices of sweet potatoes a famine food, are much lower than those of 1989 but there is, nonetheless, greater fluctuation than normal.

Cassava Price Trend

For cassava there was a wide fluctuation in the monthly market prices in 1989 and thus there was a crisis situation for staple food supplies in Gikongoro in 1989 a drought year. The average of the 1986-1991 market prices have also fluctuated from month to month but moderately. For 1992, monthly market prices were slightly high in October and have shown a downward trend thereafter and they are lower than the prices for 1989 and the average of 1986-1991. If this trend should continue

then one can conclude that the food situation in the Prefecture of Gikongoro has not reached crisis proportions as was the case in 1989.

Potato Price Trend

In the case of potatoes, the monthly market prices in 1989 only went up slightly from October to November and stayed fairly stable thereafter. The average prices for 1986-1991 have followed the same trend as that for 1989 but are lower than the 1989 prices from November to August. In 1992, monthly market prices for potatoes were higher than 1989 prices in September and October but lower in November, December, January, February, March and April. After February, prices are following a downward trend. A continuation of this trend will indicate that potato supplies in Gikongoro are much better in 1992 than was the case in 1989.

Cooking Bananas Price Trend

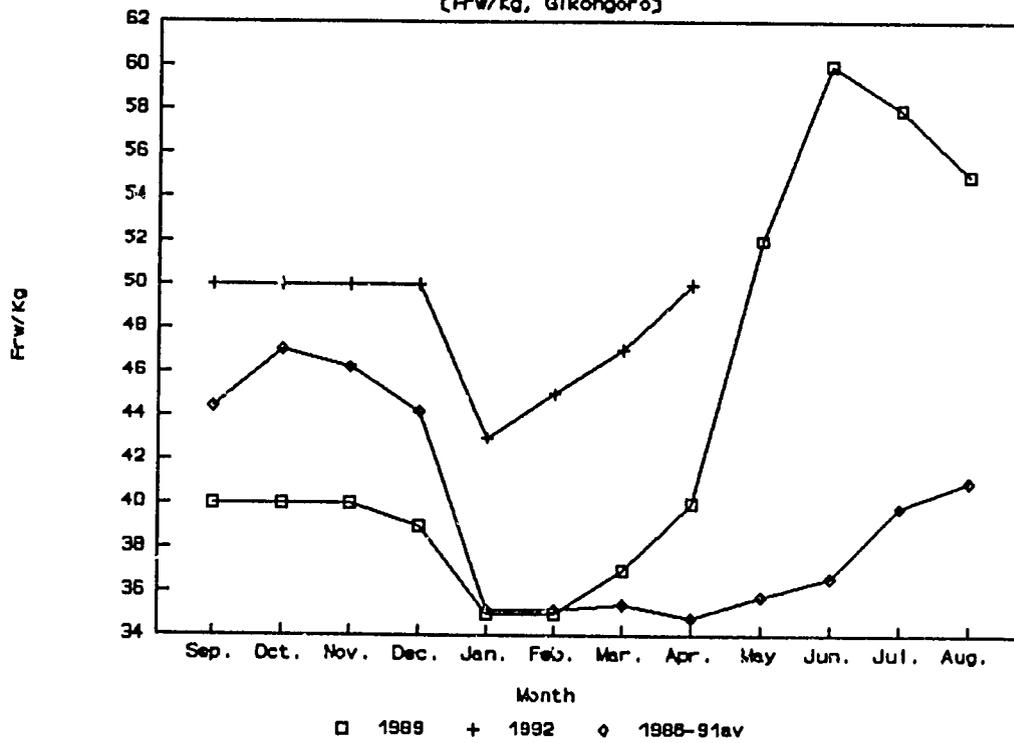
The monthly market prices for cooking bananas in the Prefecture of Gikongoro fluctuated moderately in 1989 and reached a peak in June. The average for 1986-1991 also showed the same trend but lower than the 1989 prices from December to June. The 1992 prices are higher than both the average price for 1986-1991 and 1989 prices from November to March which should be expected because of inflation. The prices rose to a peak in January and showed a downward turn thereafter. If this trend continues then the supply of cooking bananas will be much better than the situation in 1989.

Summary of the food situation in the Prefecture Gikongoro

If the trend of the 1992 monthly market prices as shown in the graphs continue then one can conclude that the staple food supply situation in the Prefecture of Gikongoro has not reached a crisis situation.

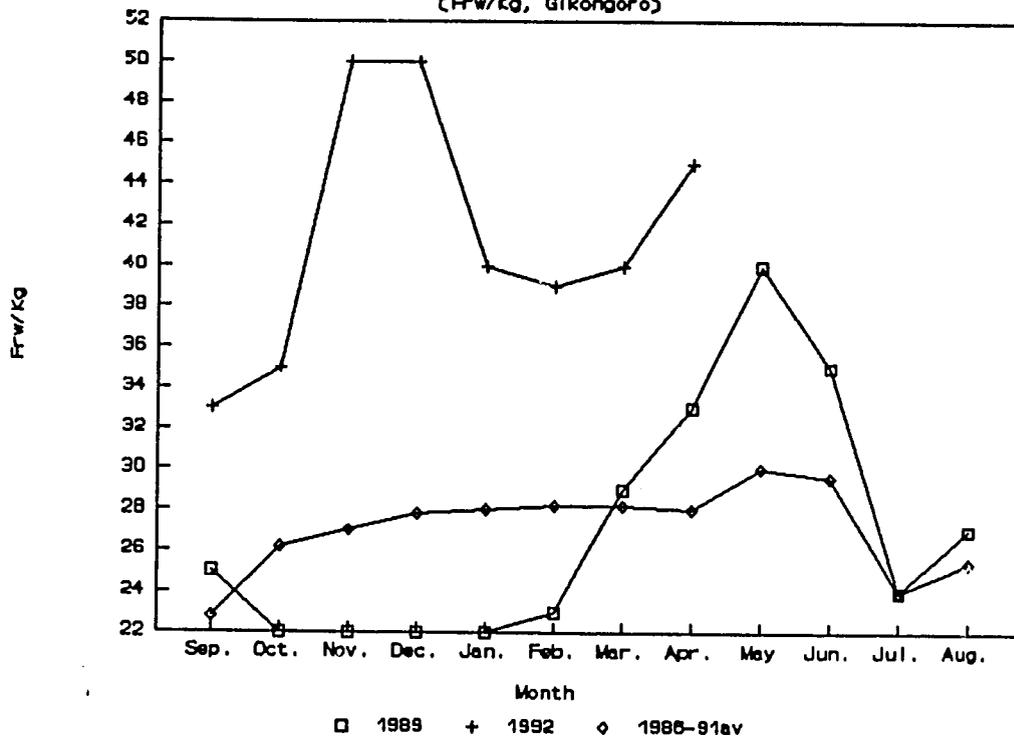
BEAN PRICE TREND

(Frw/Kg, Gikongoro)



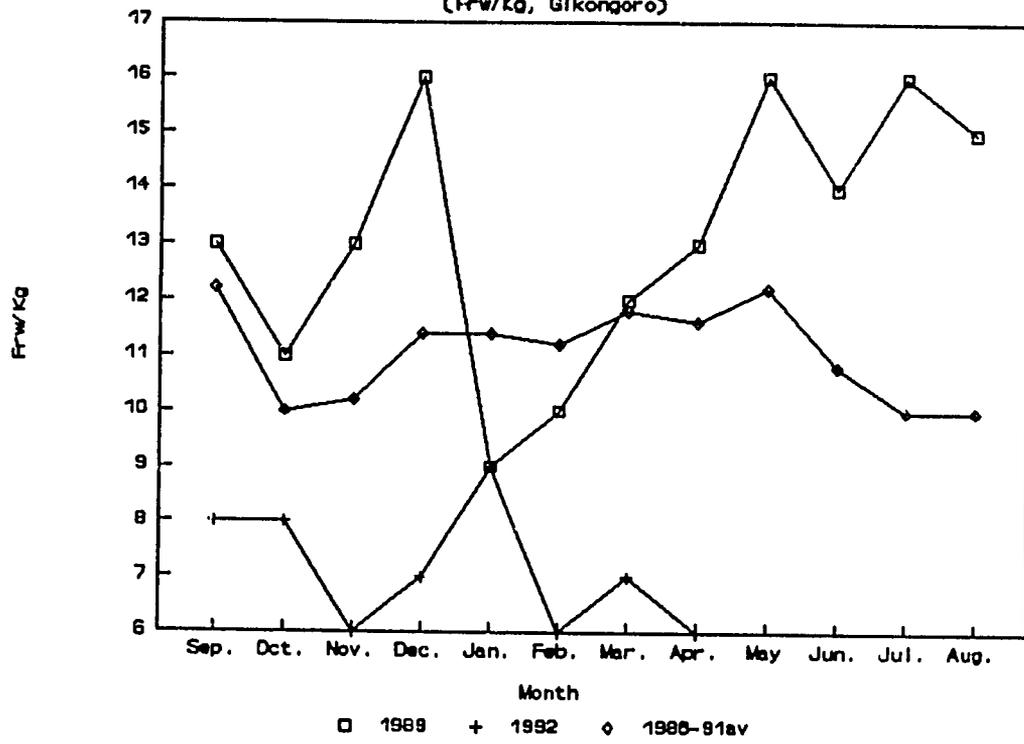
SORGHUM PRICE TREND

(Frw/Kg, Gikongoro)



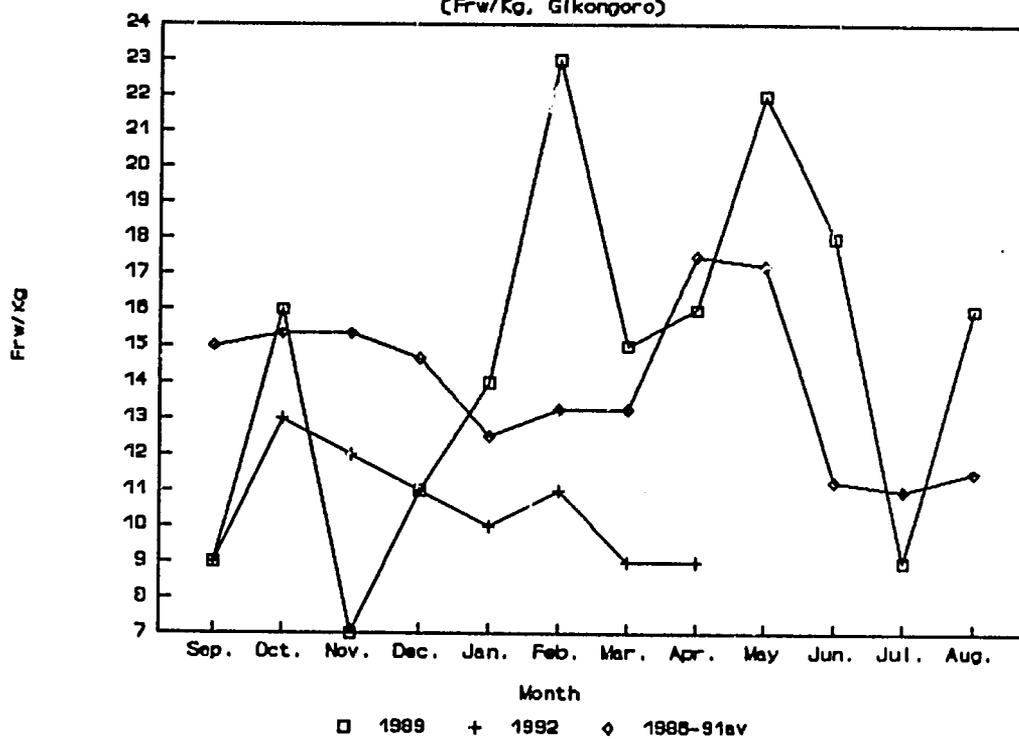
SW. POTATO PRICE TREND

(Frw/Kg, Gikongoro)



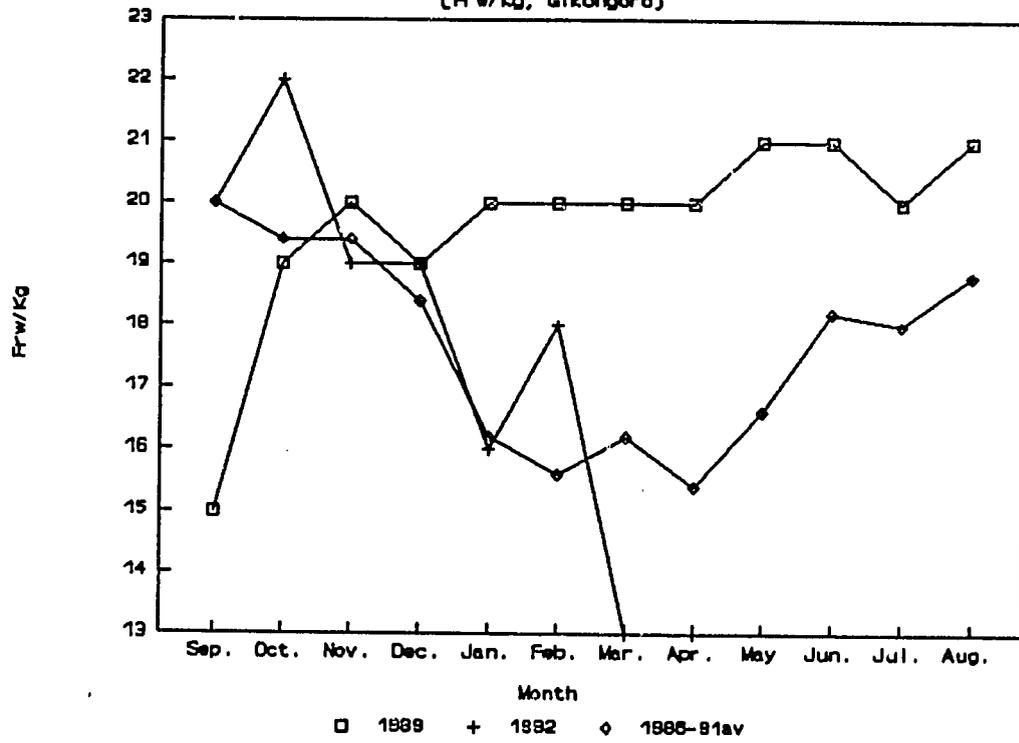
MANIOC PRICE TREND

(Frw/Kg, Gikongoro)



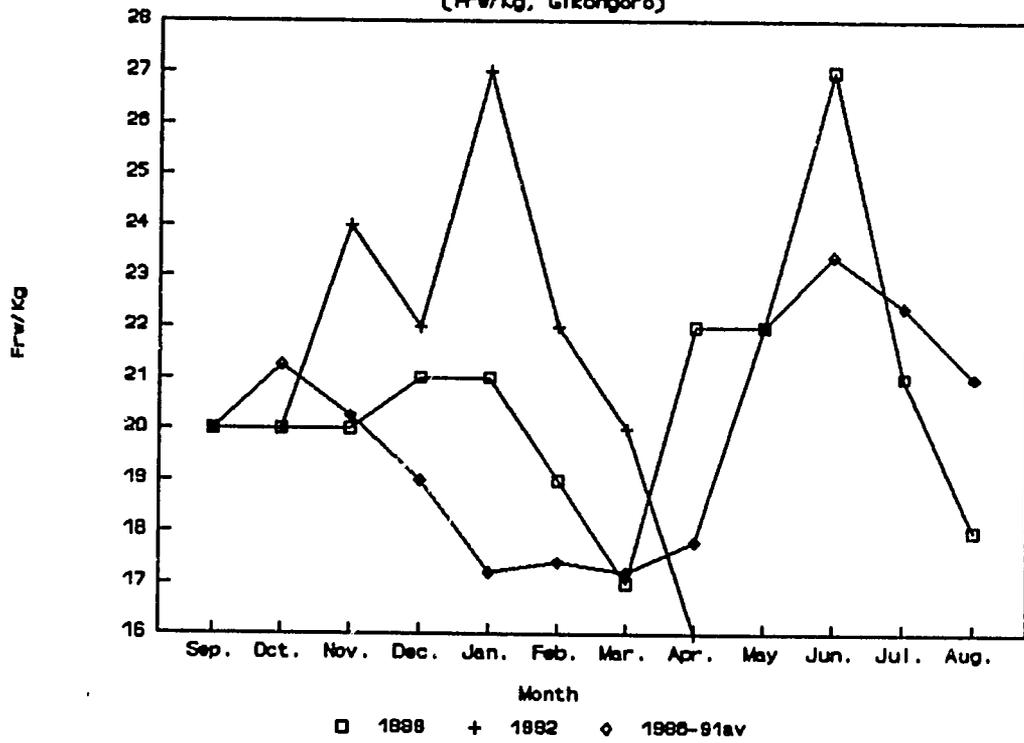
POTATO PRICE TREND

(Frw/Kg, Gikongoro)



BANANA PRICE TREND

(Frw/Kg, Gikongoro)



BYUMBA

Dry Beans Price Trend

For the Prefecture of Byumba, the 1989 monthly market prices fluctuated moderately from September 1988 to March 1989 and increased dramatically in April and May of 1989. They then showed a downward turn in June, rising slightly in July and dropping in August. The average prices for 1986-1991 have fluctuated moderately with a slight peak in November and dropped moderately in January and remained fairly steady thereafter with only a slight rise April and August. The 1992 monthly market prices are slightly higher than those for 1989 and the average of 1986-1991 from September to March and below these in April. Generally they have fluctuated moderating so far with a slight drop in April to around the level in February.

Sorghum Price Trend

Sorghum price was high in September 1988 and then dropped in October, stayed steady until March and then rose moderately to a peak in April, dropped slightly in May and then the lowest level in June and then rose again in July and August. The average prices for 1986-1991 was steady between September and December, rose moderately in January and stayed at the same for the rest of the year with only a slight increase in June. The September 1992 price was above the average but below the corresponding 1989 price. From October, the prices have remained steady and above both the average and the 1989 prices.

Sweet Potato Price Trend

In the case of sweet potatoes, there was a moderate fluctuation from September 1988 to January 1989, went up in February, dropped in March, April then rose substantially in May to reach a peak in June, dropped in July and rose again to around the June price in August. The 1986-1991 average prices fluctuated moderately with very small peaks in September, May and July. The 1992 prices were between the 1989 prices and the average prices from September to March and rose above the two prices in April.

Cassava Price Trend

The 1989 fluctuated considerably, rising to a high in October, stayed at the same level between October and December, dropped to the lowest in January and then peaked again in March and July. The average 1986-1991 prices fluctuated moderately between September and December, went up in January and remained at the same level in February and March. Then average prices dropped in April and varied only slightly between April and August. The average prices between January and March were much higher than the corresponding prices in 1989. The 1992 prices are relatively lower than both the 1989 and average prices between September and December and in March. In general they have fluctuated moderately with a slight peak in October but the April price is the highest and if this trend continues then there should be concern that food supplies are getting scarce.

Potato Price Trend

The 1989 potato prices peaked moderately in December and remained fairly steady thereafter. The average 1986-1991 prices were fairly steady between September and April and went up to a slight peak in June and dropped thereafter. The 1992 prices started out below both the 1989 and the average prices and then rose above both to a peak in December, dropped to a much lower in March than when

it started in September. The price rose again in April to a level slightly above the December peak price.

Cooking Banana Price Trend

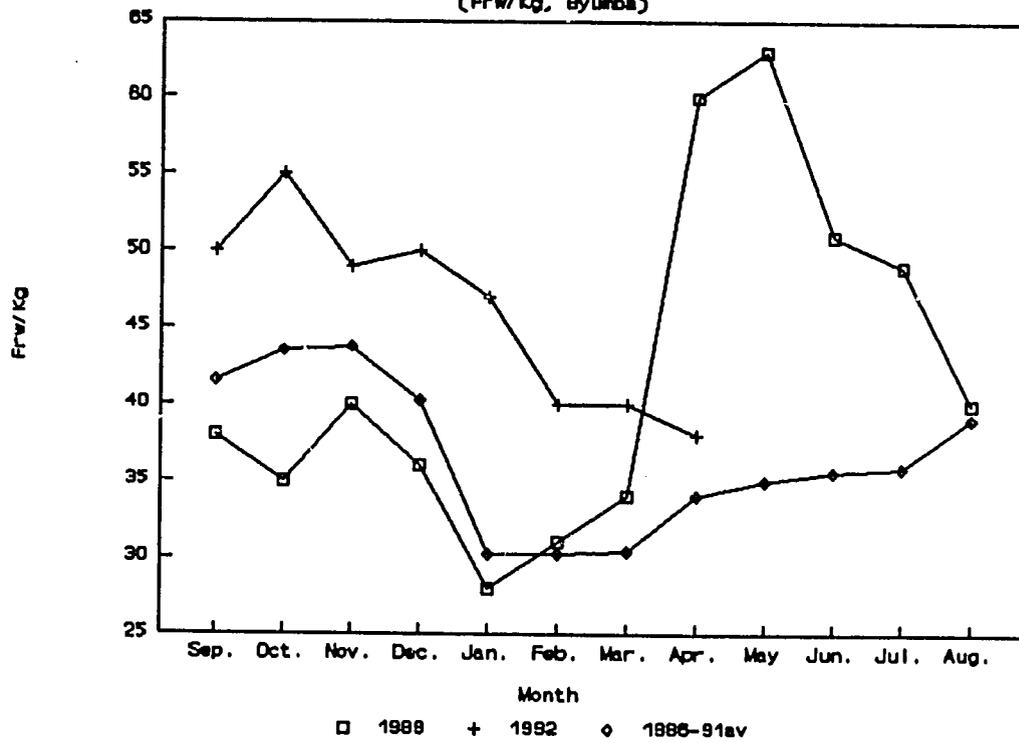
The 1989 banana prices varied moderately and were above the average 1986-1991 prices between October and December and again between April and August. The average 1986-1991 prices started out high in September, dropped in October and remained the same until January when they rose to slightly below the September level and dropping again in April and remained steady thereafter with only moderate rise in July and August. The 1992 prices have remained at the same level between September and February, went up slightly in March and then much higher in April. The April is much higher than both the 1989 prices and the average of 1986-1991.

Summary of the food situation in the Prefecture of Byumba

Judging by the price trends and particularly those for the two famine foods (sweet potatoes and cassava), one can conclude that the food situation now in Byumba is worse off than it was at the same time in 1989, a drought year, and the prices are even going higher from April and if this trend continues then there should be much concern for the food supply situation in the Prefecture of Byumba.

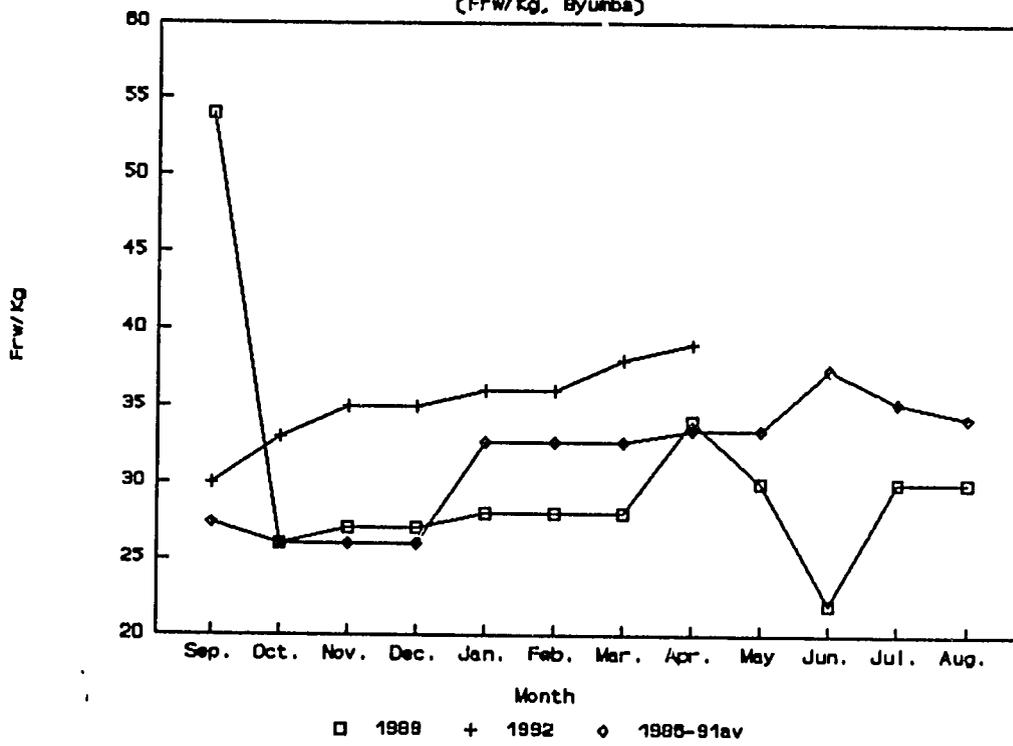
BEAN PRICE TREND

(Frw/Kg, Byumba)



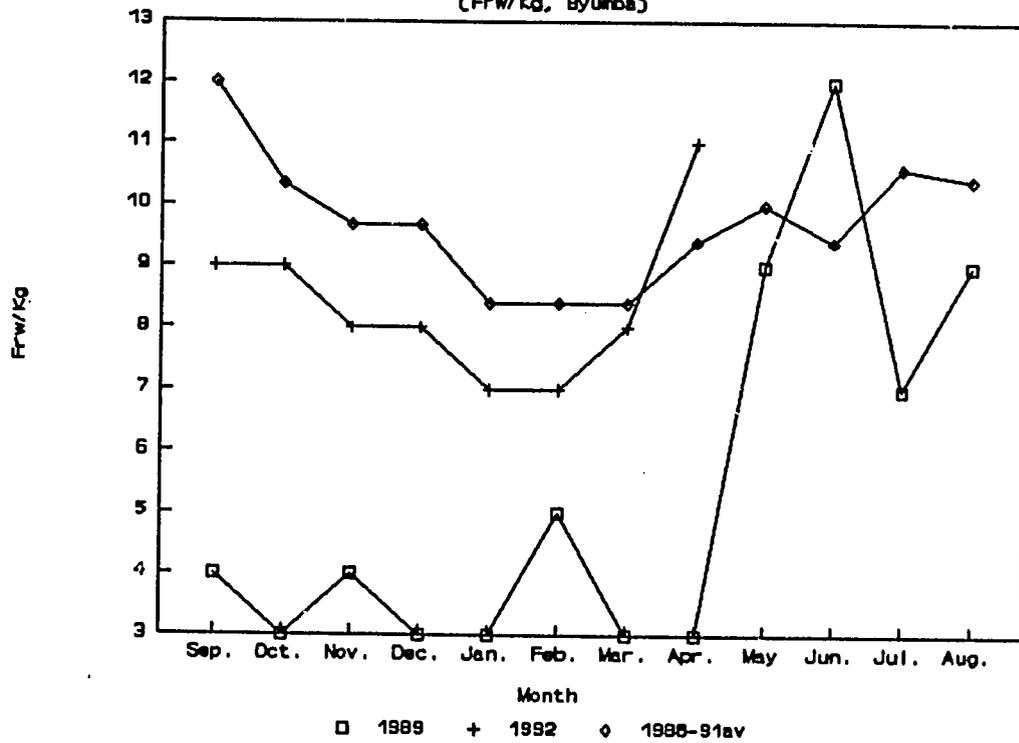
SORGHUM PRICE TREND

(Frw/Kg. Byumba)



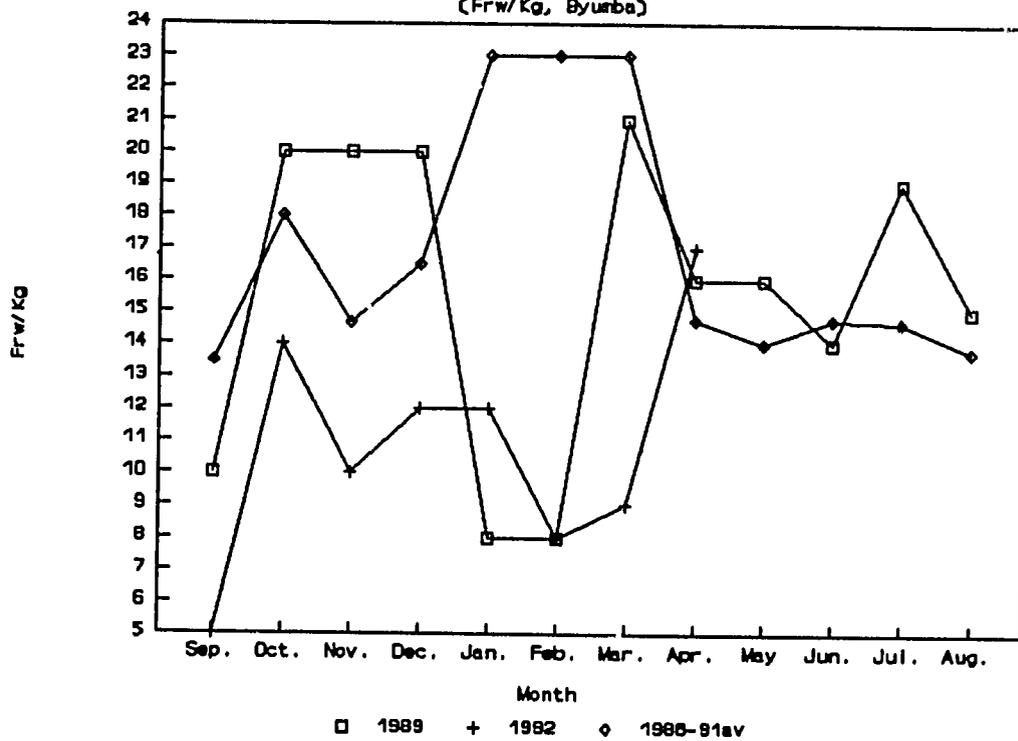
SW. POTATO PRICE TREND

(Ffw/Kg, Byumba)



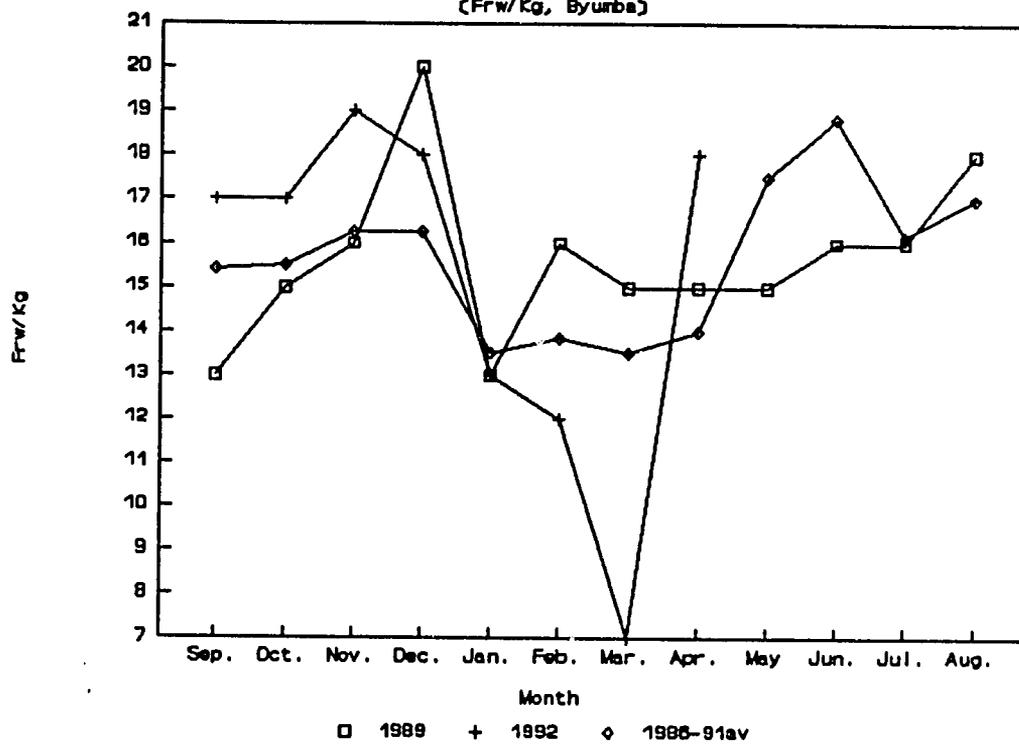
MANIOC PRICE TREND

(Frw/Kg, Byumba)



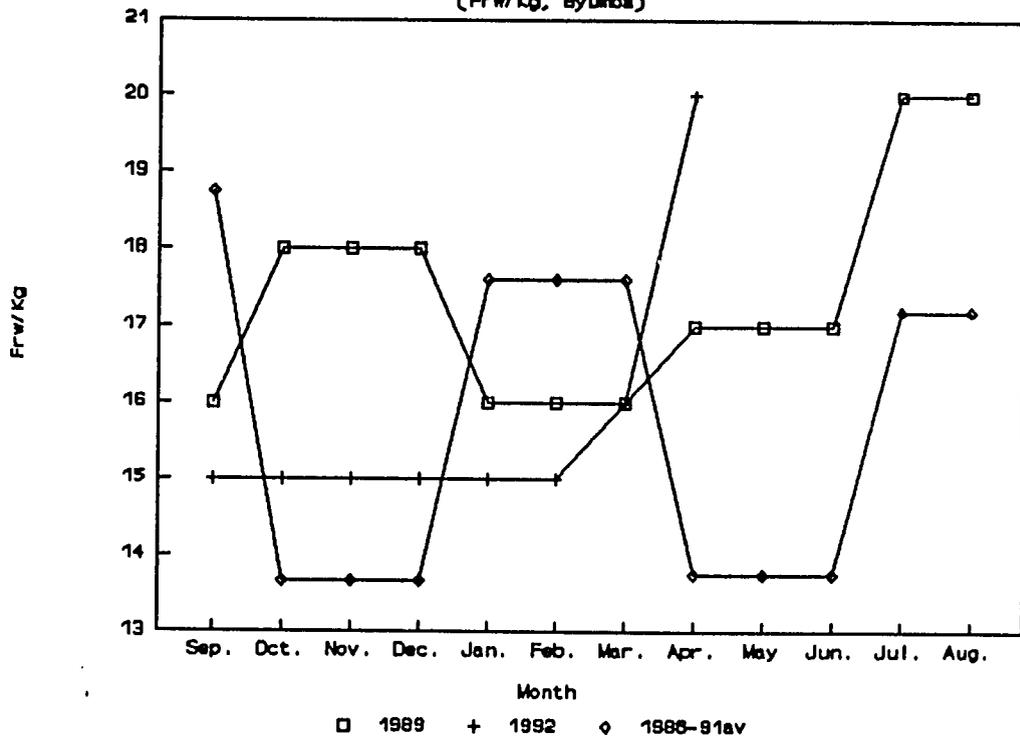
PODT MARKET PRICE TREND

(Frw/Kg, Byumba)



BANA PRICE TREND

(Frw/Kg. Byumba)



KIBUNGO

Dry Beans Price Trend

In the Prefecture of Kibungo in 1989, dry beans prices showed a downward trend between September and December and then fluctuated between February and August with a substantial peak in June. The average 1986-1991 prices fluctuated moderately with slight peaks in October and August. The 1992 prices are reached a peak in November and December and dropped in January and have remained steady thus far. The 1992 prices were above the average and the 1989 prices between September and February and March and April they are above the average but below the 1989 prices.

Sorghum Price Trend

For sorghum the 1989 prices went up moderately to a peak in May and then followed a downward trend thereafter. The average prices have fluctuated only moderately and were above the 1989 prices between September and February and below the 1989 prices from March to July. The 1992 prices are higher than both the 1989 prices and the average of 1985-1991, which is expected because of inflation. However the 1992 price trend is following the same pattern as that for 1989, the drought year.

Sweet Potato Price Trend

In the case of sweet potatoes the 1986-1991 average prices are higher than both the 1989 and 1992 prices. The 1992 prices are also much lower than both the average and the 1989 prices. One would have expected these to be higher because of inflation. Thus the lower than usual prices in 1992 suggests that the supply of sweet potatoes in the Prefecture of Kibungo is good and even better than the average.

Cassava Price Trend

Manioc prices have a similar trend as that for sweet potatoes where the 1989 and 1992 prices are below the average of 1986-1991 and with the 1992 prices being the lowest of them all and fluctuating only moderately. This further confirms the favorable food supply situation in the Prefecture of Kibungo.

Potato Price Trend

For potatoes, the 1989 prices have fluctuated moderately with a peak in March much higher than the average of 1986-1991. Except for the price in March, the 1989 prices are below the average of 1986-1991. The 1992 prices started out higher than both the 1989 prices and the average and dropped below both of these in November and January. They were between the two prices in March and went above the two in April. If the upward trend continues then potato supplies are getting scarcer in the Prefecture of Kibungo.

Cooking Banana Price Trend

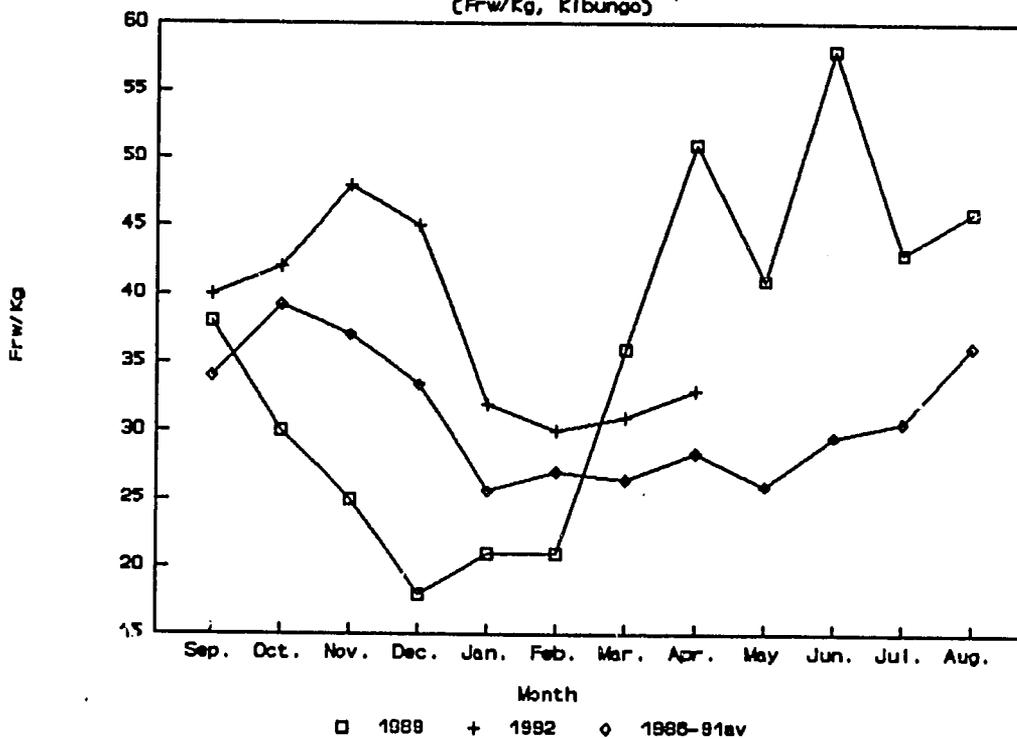
Banana prices have fluctuated considerably in 1989 but were below the average from January to June and again in August. The 1992 prices started below both the 1989 and the average prices in September and October, went up to the 1989 level in November, dropped below the average in December and has followed an upward trend thereafter and is much higher than both 1989 and average price in April.

Summary of the food situation in the Prefecture of Kibungo

The food price trends in the Prefecture of Kibungo, particularly those for sweet potatoes and manioc, suggest that food supply in Kibungo is not precarious and if this trend should continue there should be no cause for alarm.

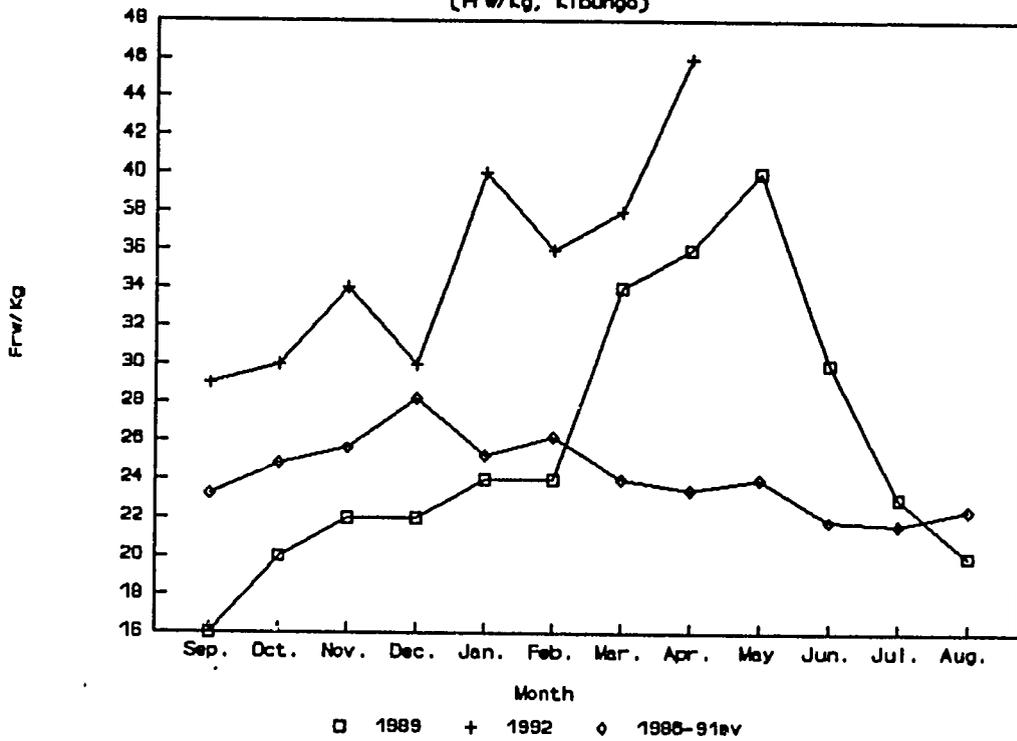
BEAN PRICE TREND

(Frw/Kg, Kibungo)



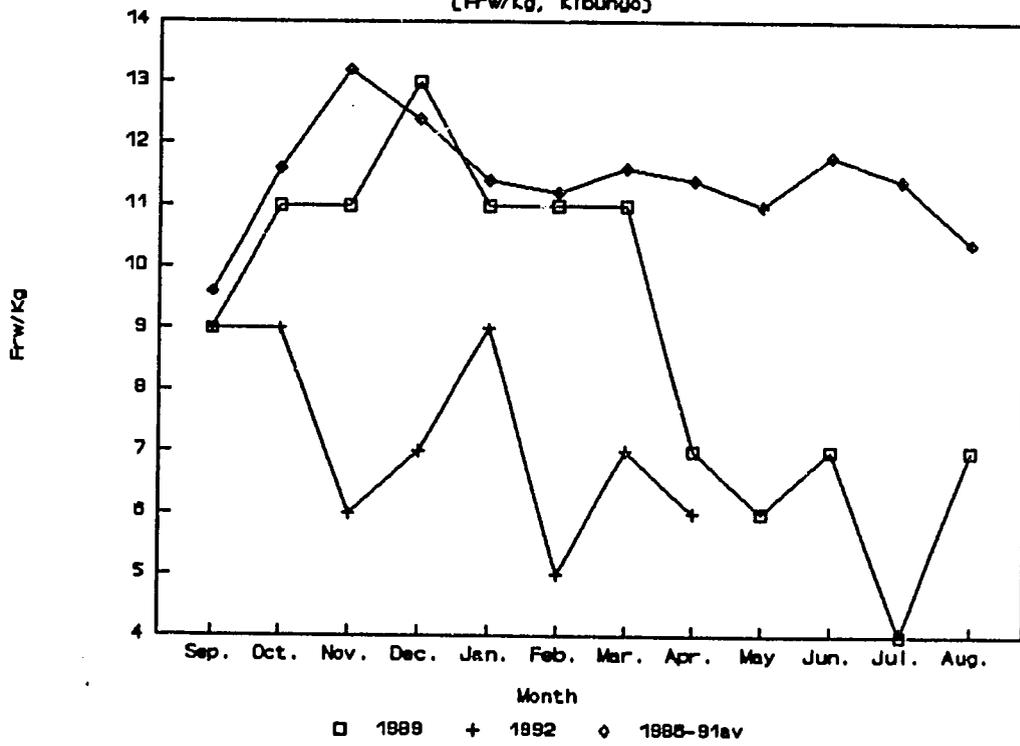
SORGHUM PRICE TREND

(Frw/Kg, Kibungo)



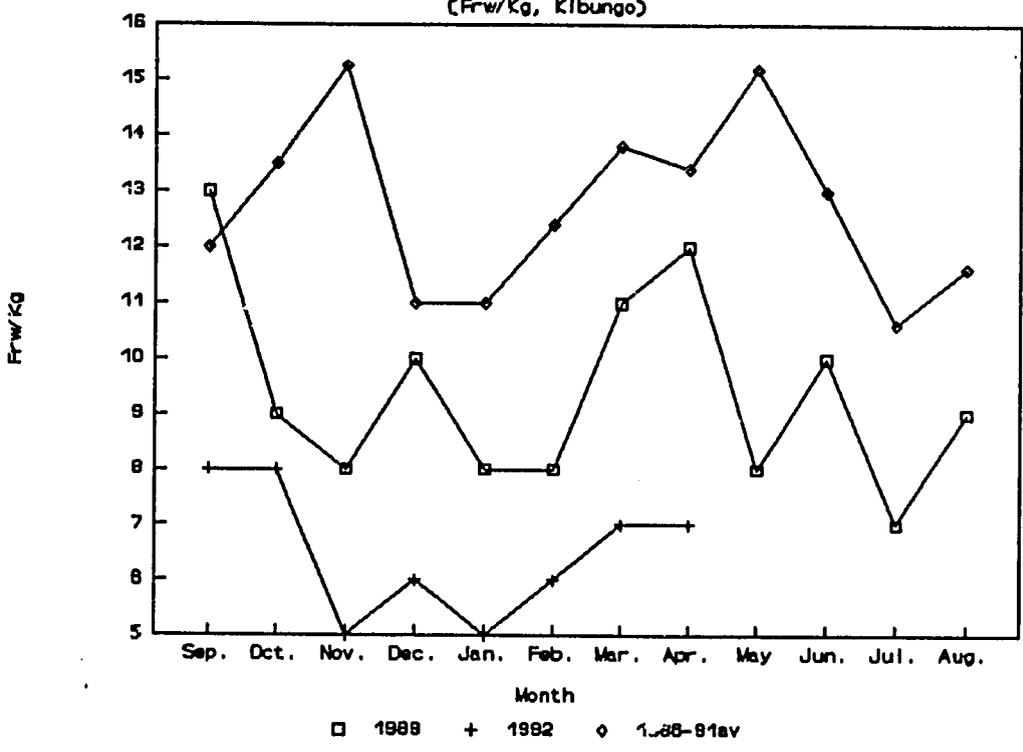
SW. POTATO PRICE TREND

(Frw/Kg, Kibungo)



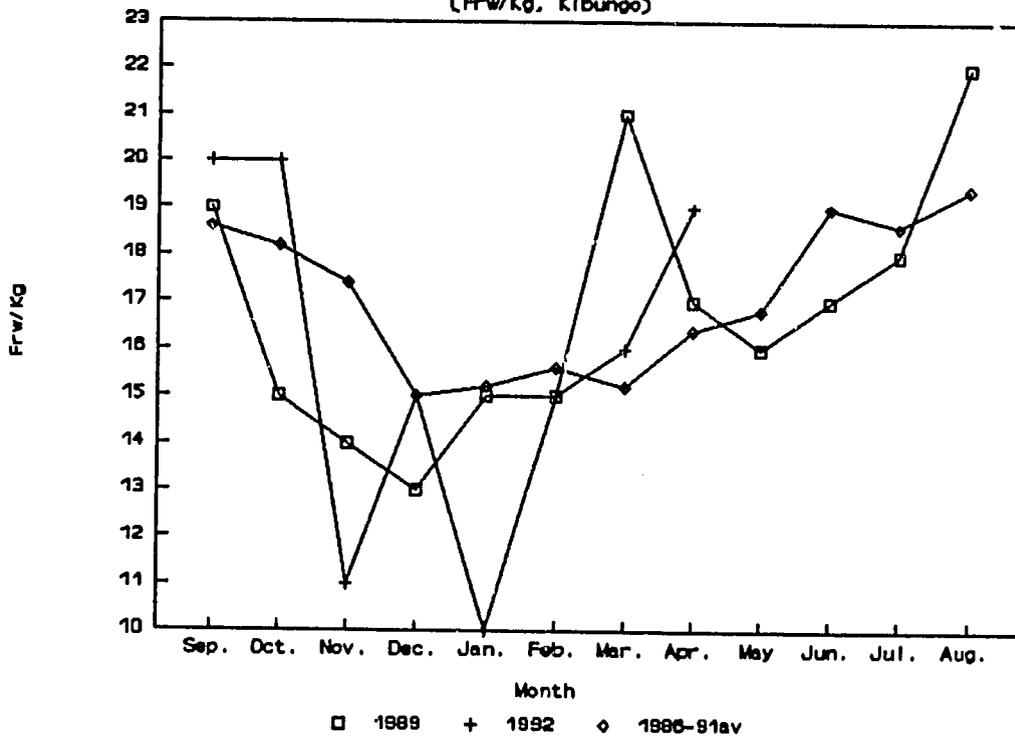
MANIOC PRICE TREND

(Frw/Kg, Kibungo)



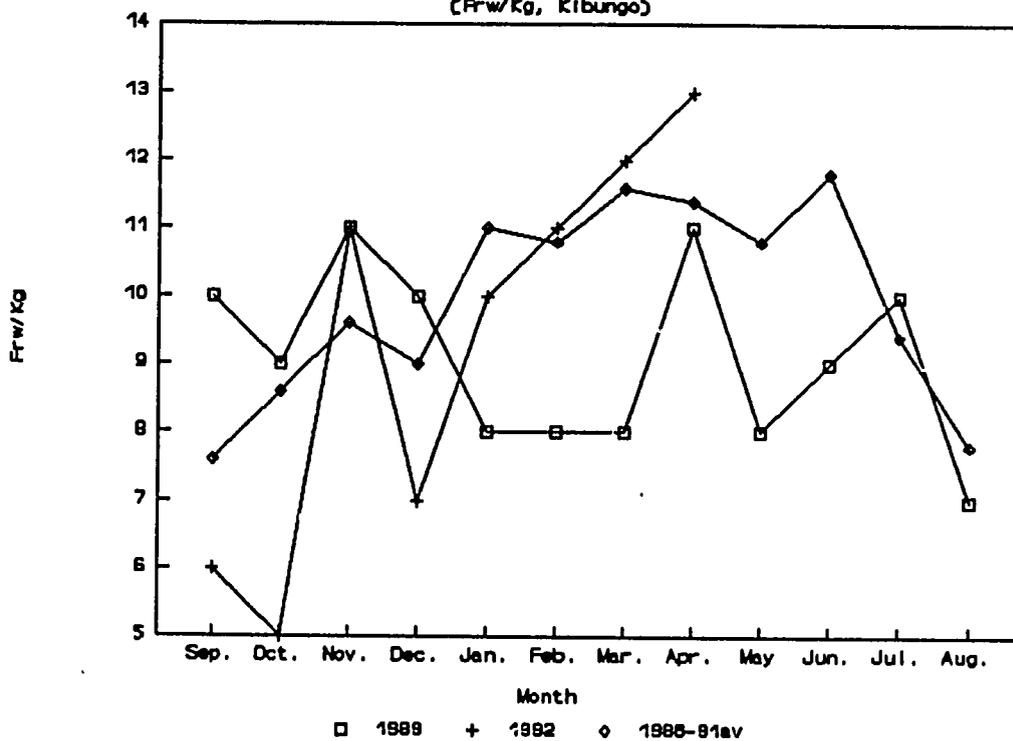
POTATO PRICE TREND

(Frw/Kg. Kibungo)



BANA PRICE TREND

(Frw/Kg, Kibungo)



KIBUYE

Dry Beans Price trend

In the Prefecture of Kibuye dry beans prices in 1989, a drought year, were below the average prices for 1986-1991 from September to February, rose above the average in March and stayed the same thereafter with a peak in July. The 1992 prices were higher than both the 1989 price and the average in September and was between the two in November, December and March but have stayed above the two in January, February and April. Generally, the 1992 prices have remained the same between November and April.

Sorghum Price Trend

For sorghum, the 1989 prices were below the average from September to December, then in February, July and August. Generally, the 1989 prices have fluctuated moderately, starting out low and moved up gradually to a peak in June and then dropped in July and August. The 1992 prices are generally higher than the average and the 1989 prices and attained a peak in March and have turned downwards in April.

Cassava Price Trend

In the case of cassava, the 1989 prices were below the average from September to June but fluctuated moderately during this period and then increased sharply in July. The 1992 prices followed a similar trend as for 1989 from September to January but lower price levels in February and April. The 1992 prices are generally below the average. If the 1992 prices continue to follow a downward trend then there should be no cause for concern. But, it was only beginning July, with the poor harvest of other crops, that prices of manioc skyrocketed in 1989. That could happen again in 1992.

Sweet Potato Price Trend

For sweet potatoes, the 1989 prices have fluctuated moderately and were above the average 1986-1991 prices at the peak points. In 1992, the prices were below the average and the 1989 prices in September and October but rose above the two to a peak in November. Thereafter they have dropped moderately and reached a level in April which is much lower than that in September.

Potato Price Trend

For the potatoes, the 1989 prices are generally above the average for 1986-1991 from September to June and slightly below the average in July and August. Generally the 1989 prices have stayed steady with only mild fluctuations. The 1992 prices started out below the average of 1986-1991 in September and October and then swung upward between October and December and turned downwards thereafter. The 1992 prices were higher than the 1989 prices and the average for 1986-1991 in November, December and January and have remained above the average but below the 1989 prices between February and April.

Cooking Banana Price Trend

The 1989 banana prices were below the average of 1986-1991 from September to January and from May to July. They were above the average in March and April. Generally, the 1989 banana prices fluctuated moderately with a peak in August. The average for 1986-1991 prices have shown a steady trend with only moderate fluctuation. The 1992 prices started out below the average but above the 1989 prices in September and October and rose above the two thereafter to a peak in January and

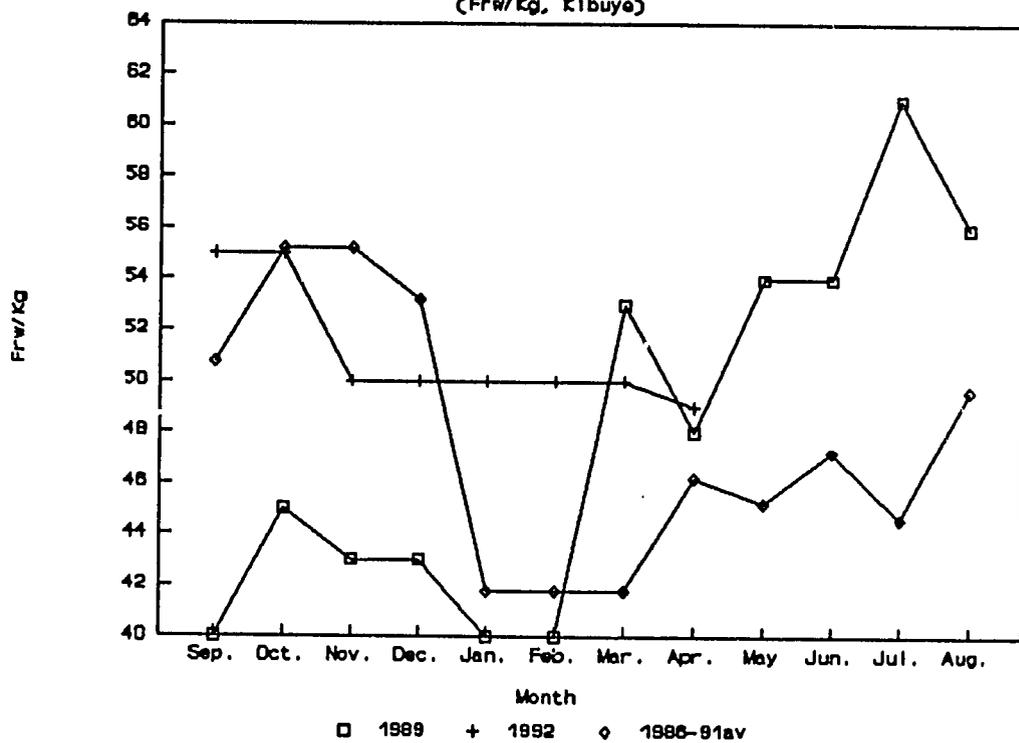
dropped moderately in February and then turned upwards in March and April. If this upward trend continues then the Prefecture of Kibuye is short in cooking bananas.

Summary of the food situation in the Prefecture of Kibuye

In looking at the price trends for the staple foods in the Prefecture of Kibuye, particularly those for sweet potatoes and cassava which are foods of last resort, one can conclude that there is not a food crisis situation in Kibuye. However it remains to be seen how prices react to the upcoming beans and sorghum harvest.

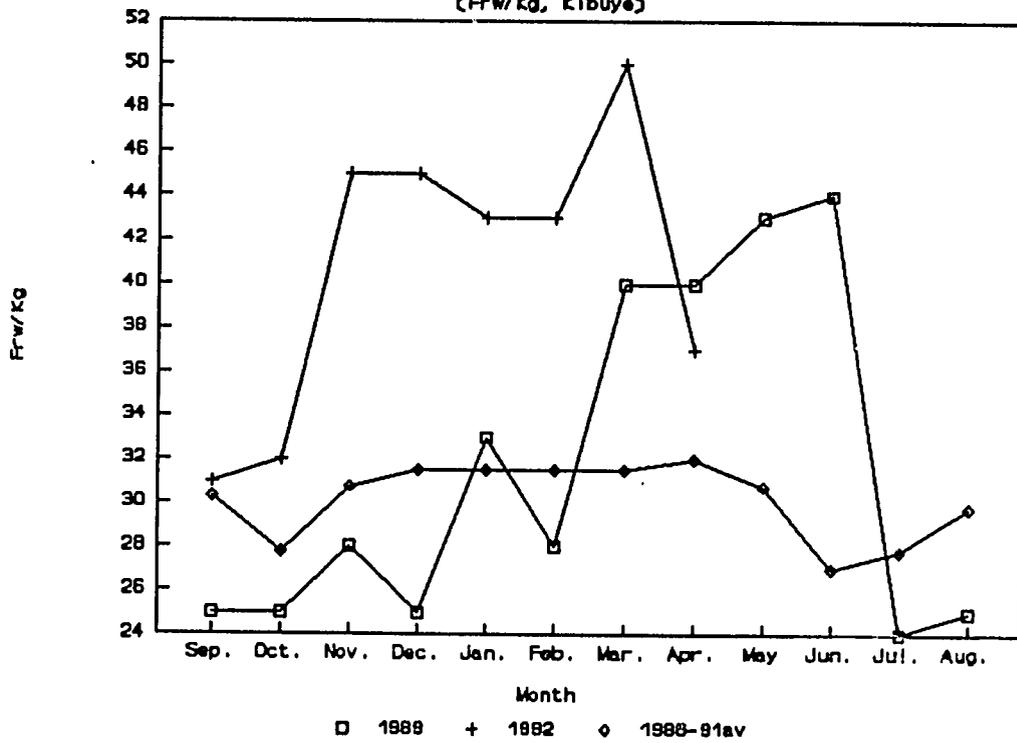
BEAN PRICE TREND

(Frw/Kg, Kibuye)



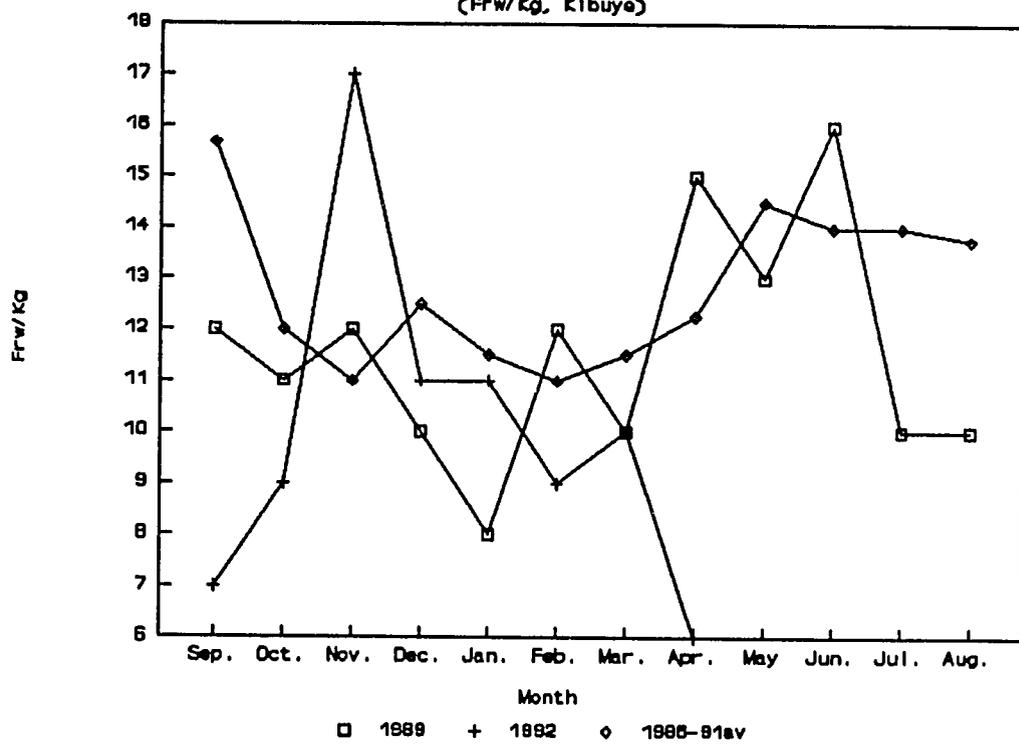
SORGHUM PRICE TREND

(Frw/Kg, Kibuye)



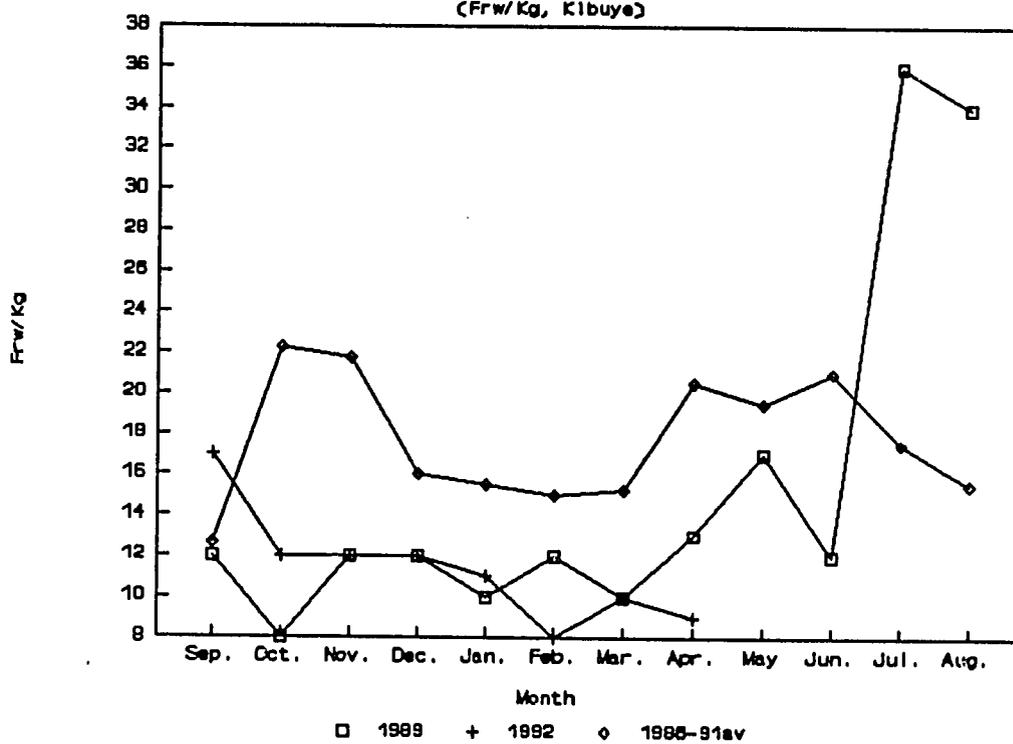
SW. POTATO PRICE TREND

(Frw/Kg. Kibuye)



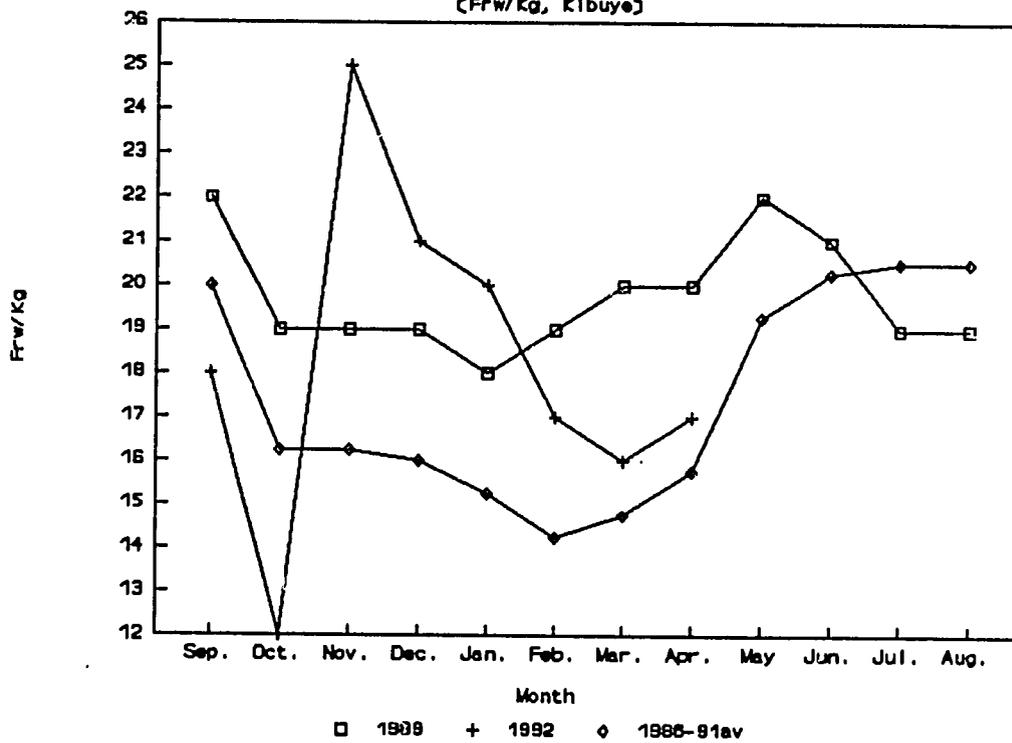
MANIOC PRICE TREND

(Frw/Kg, Kibuye)



POTATO PRICE TREND

(Frw/Kg, Kibuye)



BANA PRICE TREND

(Frw/Kg, Kibuye)

