FOOD SECURITY : A DEFINITION EVALUATED

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The Definition

Food security has per definition two pillars on which it stands: the **availability** and **affordability** of food commodities.

We shall briefly evaluate these two pillars separately and then try to summarise deductively.

Availability

The availability of food commodities on a sustainable basis depends not only on the potential of a country to produce the basic food commodities, but to process and distribute them throughout the year.

Agriculture's role in making food commodities available, depends *inter alia* on the ratio of natural agricultural resources to population, the level of technology used, research capacity, etc.

A broad resource base relative to the population size can be indicative of agriculture's potential to produce basic food commodities on a sustainable basis.

The average population density in the ECOSA region is 28 persons per square kilometre. It varies widely from the relative sparsely population areas in the west to the more densely settled areas in the northern and south-eastern parts (Scotney *et al.*, 1990).

With our rapid population growth, increasing pressure is placed on the natural agricultural resources, especially if one considers the limited extent of cropland and the vulnerability of the resource base. It is estimated that over the next few decades the area of arable land per capita will drop well below the accepted norm of 0,40 ha (Scotney *et al.*, 1990).

The nature and distribution of the natural agricultural resources (climate, soil, terrain, vegetation and water) determines the agricultural potential of South Africa. For the purpose of this paper I must forge the link between agricultural potential and availability of locally produced food commodities.

Agricultural potential is defined as a measure of possible productivity per unit area and unit time achieved with specified management inputs. For a given crop and level of management, agricultural potential is largely determined by the interaction of climate, soil and terrain. In general available moisture supply can be regarded as the "driving force" dictating the level of production.

In Figure 1 the production of the five rainfall zones of the ECOSA region was compared in order to establish the influence of the single factor rainfall on agricultural production. This analysis clearly shows that the production potential may increase eight to ten fold as rainfall increases from less than 125 mm to over 750 mm per annum. This figure also confirms the scarcity of high-potential agricultural land in our region. Recent studies on the overall dryland cropping potential in the RSA confirm that less than 14% of the total area is suitable for dryland cropping. Of this area, only about 3% is land of high potential.

High potential land is therefore a critical resource for sustainable food production and should be preserved at all costs (Scotney *et al.*, 1990) - **fact number 1**.

Fact number 2: Apart from the limited extent of high-potential land, water supplies that control the extent of irrigated agriculture are limited and are already overtaxed in some catchments. Water quality is also declining in most parts. The region faces the consequences of an

exponential population growth which will require a major effort in environmental management if the already severe state of degradation is to be curbed.

These two facts must be recognised. There is thus little scope for horizontal expansion over the long-term and the challenge for the future must be to ensure vertical expansion is achieved on a sustainable basis.

By stating this I suggest that we should be careful, but I do not say that South Africa is facing a food supply disaster. The self-sufficiency index in Table 1 shows that during the decade of the 1980s South African agriculture succeeded in producing surpluses. As far as all the most important grain crops are concerned we remain self-sufficient.

Table 1. Average SSI of selected agricultural commodities in South Africa, 1985-1989

Commodity	* SSI
Wheat	115,5
Maize (white & yellow)	121,1
Potatoes	100,3
Vegetables	101,3
Sugar	162,5
Beef	89,9
Mutton, goat's meat & lamb	93,3
Pork	100,9
Chicken	99,4
Eggs	101,7
Deciduous & subtropical fruit	152,3
Dairy products	101,0
Sunflower seed oil	87,5
Citrus fruits (fresh & processed)	254,0

** SSI (self-sufficiency indexs) = Total production/Total consumption x 100*
Source: Food balance sheets of the Directorate of Agricultural Economic Trends of the Department of Agriculture (as processed).

In order to obtain an indication as to how the current situation may change in future, the forecasts of the potential quantities of supply and the demand for commodities were studied (Report, 1990). Relative prices will play a role in determining the quantity demanded.

From Table 2 it may be concluded that, given the role of prices in supply and demand over the long-term, production will generally keep up with the expected expansion in demand. This will result in relative shifts in the quantities supplied and demanded. Some products will still have to be imported, particularly beef, mutton, fish and oilseed products (Report, 1990).

A second factor determining sustainable food availability at the farm gate is research and the adoption of the resulting technology and other practices by the farmer.

At present South Africa has a well developed research infrastructure in the Agricultural Research Council, Universities, private companies and institutes. Technically the top 20% of the commercial farmers are excellent. However, means and ways must be devised and brought into play to lead the emerging new generation of farmers in this direction. An enabling environment must be sustained and developed to ensure that this generation of farmers will not be part of a possible problem of food availability but of the maintenance of the present positive self-sufficiency index.

Table 2. Production of selected food commodities for different scenarios (growth rates), in proportion to consumption, if relative prices are maintained

Commodity	Production relative to consumption			
	2000		2010	
	Scenario A (3%)	Scenario B (1%)	Scenario C (3%)	Scenario D (1%)
Wheat	1,082	1,057	1,022	0,978
Maize	1,159	1,089	1,131	0,982
Potatoes	1,111	1,093	1,203	1,203
Oilseeds	0,911	0,949	0,823	0,905
Vegetables	1,019	1,085	1,024	1,179
Citrus	2,302	2,661	2,078	2,858
Deciduous & sub-tropical fruit	1,393	1,597	1,264	1,715
Sugar	1,669	1,693	1,724	1,782
Beef	0,758	0,639	0,639	0,789
Mutton	0,824	0,725	0,725	0,870
Pork	1,099	1,187	1,187	1,338
Chicken	1,103	1,221	1,221	1,551
Dairy products	0,963	0,910	0,910	1,111
Eggs	1,004	0,984	0,984	1,217

In general, South Africa must be careful not to slip into the pattern of most of the sub-Saharan countries. I quote Uma Lele (1992), one of the most knowledgeable researchers on international food security. She is referring to Africa: *"There is a tremendous deterioration of agricultural research, extension, infrastructure, credit and import supply facilities that is limiting the supply response that (potential international) price reforms should prompt."* Words in brackets tie the quote to another statement made by Lele. In this quote she actually describes the elements of an enabling environment for agriculture.

The rate of urbanisation is tremendous. In 1985 more than 55% of the South African population were classified as urban. Food products at the farm gate is no insurance that it is available to the "urbanites" and "ruralites". The action between the farm gate and the consumer is of major importance. (Blignaut, 1988).

Food is produced seasonally, but demand remains all year round. Depending on the nature of consumer demand, the basic farm product must be serviced with utilities of time, place and form.

These utilities have specific infrastructural demands that must be supplied by the marketing process through different marketing functions and institutions, *inter alia* storage, transport, processing, distribution, wholesaling, retailing, etc. It is only when these processes have been accomplished successfully that the level of availability can be assessed.

One of the first institutions in line is the marketing boards. In total we have 21 control boards, 16 of which can be seen as handling or administering food products and are important links in the food chain. Apart from their influence on the prices they organise the concentration and dispersal of the basic product. They do service the products with *inter alia* grading, storage, partial processing, etc. The co-operatives are the main agents for the control boards and are dispersed through out the rural areas.

Some of the co-operatives are in the food processing business with local outlets to the farming community, e.g. the milling of maize for human consumption. There are 35 grain co-operatives, at least 14 with maize mills. SASKO is the central wheat milling co-operative and supplies co-operatives with wheat flour.

The co-operatives are thus important links in the food chain that has a positive effect on the availability of certain food products in rural areas.

The latest data available (1989) has it that more than 22 938 retail establishments forge the final link in the food distribution chain (Table 3). This information is not readily available on a regional basis. The data in Table 4 serves as an estimate of the dispersal of institutions dealing in food products. In general one can say that the availability of food poses no problem. This must be qualified by stating that although there seems to be a well developed food retail system, the accessability is not equal for all communities. Instances can be quoted where the road and transport systems and conditions are serious limitations to the availability of food. These systems and conditions are also cost increasing and lead us to the second part of the definition of food security, namely affordability.

Bekostigbaarheid

Voorgenoemde rolspelers, te wete die boere, hulle instellings, voedselverwerkers en verspreiders speel almal 'n belangrike rol in die bekostigbaarheid van voedsel.

By elke breekpunt in die voedselketting word 'n prys gevorm met die finale verbruiker se beursie in gedagte. Dit is heeltemal korrek dat elke verkoper/produsent vir hom/haar die hoogs moontlike prys sal wil beding sonder om slaaplose nagte oor die heil van die volgende verwerker in die ketting te hê (Hattingh, 1991).

Table 3.Food establishments registered for GST, 1989

	Quantity
Butchers	3 989
Dairies and dealers in dairy products	449
Grocers and other dealers in foodstuffs	3 550
Cafes	14 950

Source: Receiver of Revenue, Pretoria.

Table 4. Number of food manufacturing establishments per development region, 1985

Development Region		Number of establishments Food
A	Cape Coastal Region	378
B	Karoo	62
C	OFS Central to South	174
D	OFS South and Eastern Cape	137
E	Natal	250
F	Eastern Transvaal	115
G	Northern Transvaal	101
H	PWV	500
J	Western Transvaal	60
	Totaal	1 786

Source: Central Statistical Service (1985) : Census of manufacturing, 1985. Report no. 30-01-02 (1985). Pretoria.

Ook is dit 'n feit dat die voedselmark nie 'n homogene mark is nie. Vir 'n basiese produk is daar binne die voedselmark verskillende aanwendings- en verwerkingsmoontlikhede; elk met 'n bepaalde verwerkingskoste wat deur 'n spesifieke marksegment in die finale prys geabsorbeer kan word. Vergelyk byvoorbeeld ongesifte koringmeel vir tuisgebak teenoor hoogs verfynde banketmeelblom met spesiale bakkwaliteite wat vir 'n klein segment van die mark vervaardig word.

Deur die toepassing van mark- en prysdifferensiasie kan die voedselverwerker sy produkmengsel aan die eindverbruiker gebruik om sy koste "deur te gee". Hierdie vermoë van die voedselverwerkingsbedryf noop sommige boereleiers om met hernieude ywer te pleit dat landbouprodukpryse ook so bepaal of vasgestel moet word, dat die styging in die boer se produksiekoste deurgegee moet word aan die verbruiker, of anders gestel, aan die volgende skakel in die voedselketting. So 'n eis kan deur oningeligtes as lawwigheid afgemaak word. Dat dit lawwigheid is, is korrek, maar wat beweeg die boere om sulke stellings te maak en wat is die verband met die bekostigbaarheid van voedsel?

In Figuur 2 word die bekende ruilvoet van landbou weergegee. Dit illustreer 'n baie bekende feit, naamlik die ruilvoet van landbou verswak alreeds vir etlike jare. Koppel dié verswakkende ruilvoet aan die droogte in veral die somersaaigebiede en 'n mens begin meer begrip toon vir die boere se eis. 'n Antwoord hierop is dat die ruilvoet van baie ander bedrywe presies dieselfde verloop, indien nie erger nie, vertoon. Dink byvoorbeeld aan die goudmynbedryf.

Figuur 3 se twee lynfigure vertoon die verloop van die verbruikersprysindeks vir voedsel en die produsenteprysindeks vir voedselprodukte; dit is wat die boer kry (PPI) en wat die verbruiker (VPI) betaal.

Die al groter wordende gaping tussen die twee lynfigure bevestig vir die boer sy argument dat die voedselverwerkers, onder andere, in staat is om sy kostestygings aan die verbruiker deur te gee.

Baie slim en tegnies korrekte argumente kan aangevoer word om die groter wordende gaping tussen die PPI en VPI te verduidelik. Aan die einde van die argument sou die boere dalk oortuig wees dat hulle argumente wel lawwigheide is. Twee ander feite sal egter dan nog steeds bly staan:

1. Die VPI styg onrusbarend vinnig.

2. Die onrusbarende vinnige toename in die VPI kan nie voor landbou se deur gelê word nie. (Vgl. ook Blignaut, 1991.)

Voordat 'n derde feitelike afleiding gestel word, let op die volgende inligting.

Die SNO (FRD, 1992) stel dat 50% van die Suid-Afrikaanse bevolking se inkomste laer as die minimum bestaansinkomste vir Suid-Afrika is en dat dit in die geval van die swart bevolking tot so hoog as 66% styg. In landelike gebiede is die inkomste van bykans 80% van die inwoners minder as die minimum bestaansinkomste.

Volgens ramings van die Instituut vir Toekomsnavorsing van die Universiteit van Stellenbosch sal die Suid-Afrikaanse verbruiker in die jaar 2000, selfs teen 'n 5% groeikoers vir die ekonomie, oorwegend swart en arm wees (Blignaut, 1992).

Antropometriese navorsers bevind verskeie betekenisvolle verskille tussen verskillende gemeenskappe wat aan die nadelige gevolge van onder- en wanvoeding toegeskryf word en wat inkomste verwant is (Kotzé, J.P. *et al.*, 1986; Kotzé, J.P., 1988; Kotzé, J.P. *et al.*, 1982).

Die derde feitlike afleiding is dat 'n baie groot persentasie van die Suid-Afrikaanse bevolking tans en in die toekoms nie voldoende kos om gesond te groei en te ontwikkel, sal kan bekostig nie.

Die bekostigbaarheid van voedsel is in gedrang - dit is 'n feit. Waaraan dit toegeskryf moet word kan vrugbare ammunisie vir mense in al die baie kampe in Suid-Afrika vorm: Die voor- en die teenstanders van sanksies, van apartheid en die kleed op Tafelberg is aandadig - dit is 'n feit.

'n Maklike en voor-die-handliggende oplossing is om prysbeheer op die boer se produk en die verbruikerspryse in te stel. Of gooi die landsgrense oop en laat toe dat hoogs gesubsidieerde voedselkommoditeite in Suid-Afrika gedump word.

Sulke programme sou natuurlik die voedselbekostigbaarheidsprobleem oor die kort termyn oplos, maar die werkloosheidsprobleem en die probleem van lae ekonomiese groei dramaties aanhelp en die ekonomie terugvoer na baie van die sosialistiese ekonomiese wanpraktyke wat geheers het.

Hoekom so?

Sonder om ingewikkelde antwoorde te verskaf kan volstaan word met die stelling dat dit juis sulke programme was wat grootliks daartoe bygedra het dat landbou in Sub-Sahara Afrika misluk het. Die Wêreldbank skryf soos volg: *"Large state monopolies, controlled prices, and centrally allocated credit and foreign exchange have been common. The departure from market prices and the resulting inefficiency in resource allocation have grown worse as governments have tried to use administrative measures to cope with tightening foreign exchange and shortfalls in public revenue. .."*

"These price distortions cause longer-run damage, too. Farmers chose not to invest in soil fertility ..." (The World Bank, 1989).

Landelike gemeenskappe, waar alternatiewe werkgeleenthede buite die landbou onder normale ekonomiese toestande skaars is, word op die oomblik vanweë die droogte ernstig gestrem. 'n Beleid om gedumpte voedsel die land te laat inkom sal hierdie gemeenskappe verder laat swaarkry en dalk permanent skaad.

Landbou se voor- en rugwaartse skakeling in die ekonomie is belangrik. Die indiensnemings-/produksievermenigvuldiger is die grootste van al die sektore. Met ander woorde, word landbouproduksie geknou, dan sal die werkloosheidprobleem vererger (Van Zyl, J. *et al.*, 1988). 'n Amptelike raming van die indeks van volume van landbouproduksie is tans nog nie moontlik nie. Dit kan verwag word dat die groter vrugte-oes as verlede seisoen en die druk slagtings vanweë die droogte die produksievolume van landbou kan verhoog. Alle aanduidings in die somersaaigebied dui daarop dat die oesverlies 70% van 'n normale langtermyn gemiddelde gaan wees. Vir doeleindes van vandag, raam ek dat die volume indeks vir 1992 tussen 60 en 90 kan varieër met 1985 = 100. 'n Veertig persent afname in landbouproduksie vanjaar as gevolg van die droogte teenoor dié in 1985 se effek op die totale ekonomie soos verteenwoordig deur die 1985-produksiestruktuur, kan 5,0% wees.

Voordat die droogte in sy felheid toegeslaan het, was die raming vir die groei in die ekonomie 2½ tot 38% - nou met die droogte in berekening, word geen tot 'n negatiewe groeikoers verwag.

Die effek van 'n potensiële vernietiging van landbou via 'n goedkoop voedselbeleid op die plattelandse gemeenskap sal katestrofies wees en voedselsekerheid in die platteland vernietig.

Die vraag is hoe gaan die land uit hierdie dilemma van voldoende maar onbekostigbare voedsel ontsnap?

Wat in die handel en nywerheid ten opsigte van die snelle toename in die VPI van voedsel gedoen kan word, is die Raad op Mededinging en die Raad vir Handel en Nywerheid getaak om bepaalde aspekte te ondersoek. Daaroor wil ek my nie veel uitlaat nie. In die algemeen net die volgende. Die vraag na voedseldienste se inkomste-elastisiteit is hoog en was tesame met ander faktore soos diefstal, looneise sonder gepaardgaande verhoging in produktiwiteit, ensovoorts, oorsake vir die groeiende gaping tussen die PPI en VPI, asook die sneller vir die vinnige toename in die VPI as sulks.

Ten opsigte van landbou se rol in die beskikbaarheid en bekostigbaarheid van voedsel voel ek my meer tuis.

Die dilemma van die landboubeleidmaker is om uit die doodloopstraat van voortgesette landbouproduksie met 'n verswakkende ruilvoet wat in lae landbouverdienste uitloop plus 'n dalende koopkrag van landbou se verbruikers, los te kom.

Die oplossing van die landbou-inkomeprobleem lê op die ekonomiese terrein. Dit gaan om die

6herverdeling van produksiefaktore binne die landbou en ook tussen die landbou- en die nie-landbousektore; die landbou-inkomeprobleem is in wese 'n prysverhoudingsaangeleentheid want die krag agter die beweging van hulpbronne is hul vergoeding. Dit sny aan by die vraagstukke van "vrye mark" en "markgerigtheid". Groot versigtigheid moet egter aan die dag gelê word dat die **landbou-imkomeprobleem** nie verander in 'n **landbouvoedselprobleem** nie; dit is wanneer te min kos geproduseer word as gevolg van te min hulpbronne in die landbou. 'n Situasie wat sal ontstaan as die vrye mark opgeskort en landbou as 'n welsynsorgaan beskou word (Blignaut, 1972).

Onthou welsynsprobleme moet met welsynsmaatreëls redemieer word en nie met ekonomiese maatreëls nie. As boere 'n wins maak produseer hulle doelbewus surplusse bo huisverbruik, met ander woorde, vir die stedeling. Dit sal die beskikbaarheid van voedsel verseker.

Die tweede deel van die dilemma, te wete die bekostigbaarheid lê ten dele ook op die ekonomiese terrein. Die verbruikers se inkomste is laag vanweë werkloosheid, vanweë geen tot swak ekonomiese groei. Die regstel van die ekonomie is 'n ekonomiese aangeleentheid net soos die plaasinkomeprobleem. Oornag sal die ekonomie nie herstel nie en word werkloosheid 'n maatskaplike probleem wat deur die Staat en gemeenskap met maatskaplike maatreëls hanteer moet word. Sulke maatreëls is byvoorbeeld geteikende voedselhulp aan bepaalde dele van die gemeenskap wat die swaarste deur werkloosheid getref word. Voorbeelde is sogende kinders, verwagtende en lakterende moeders en ou mense. (Vlg. ook Blignaut, 1988.)

'n Beleid van voedselsekerheid, aanvaar deur die Staat en breër gemeenskap, kan beteken dat die boer in 'n omgewing van vrye mededinging en markgerigte produksie in staat moet wees om 'n wins te maak. Die verantwoordelikheid om die geïdentifiseerde voedselnoodleidendes te voed, lê dan by die parlement.

Opsommend

Die geskiedenis in Afrika het bewys dat daar 'n graadverskil is tussen die landbou-inkomeprobleem en landbouvoedselprobleem. Ons het reeds 'n landbou-inkomeprobleem in sommige vertakkinge. Ons moet versigtig wees dat dit nie 'n landbouvoedselprobleem word nie, want reeds het ons in terme van voedselsekerheid 'n bekostigbaarheidsprobleem; dan het ons beide naamlik ook 'n beskikbaarheidsprobleem.

Laat ons die Here dank vir die kos wat ons wel op ons tafels het en Hom smeek vir wysheid om so te werk en op te tree, dat ons kan meehelp dat daar ook kos op die tafels, van die wat nie het nie, sal kom.

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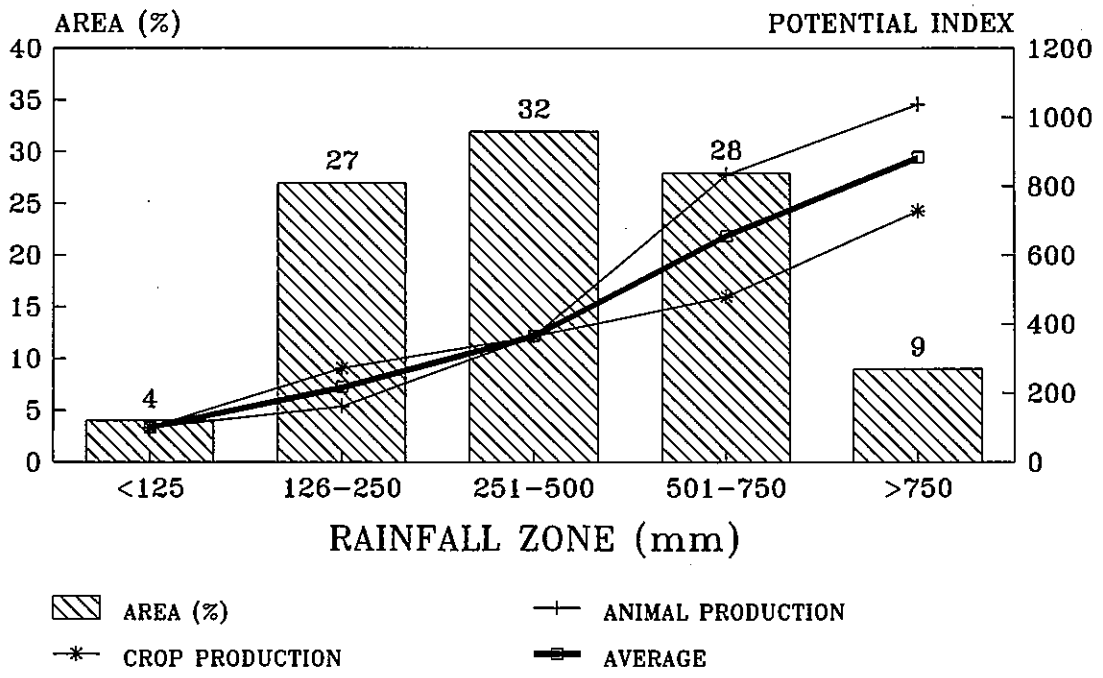
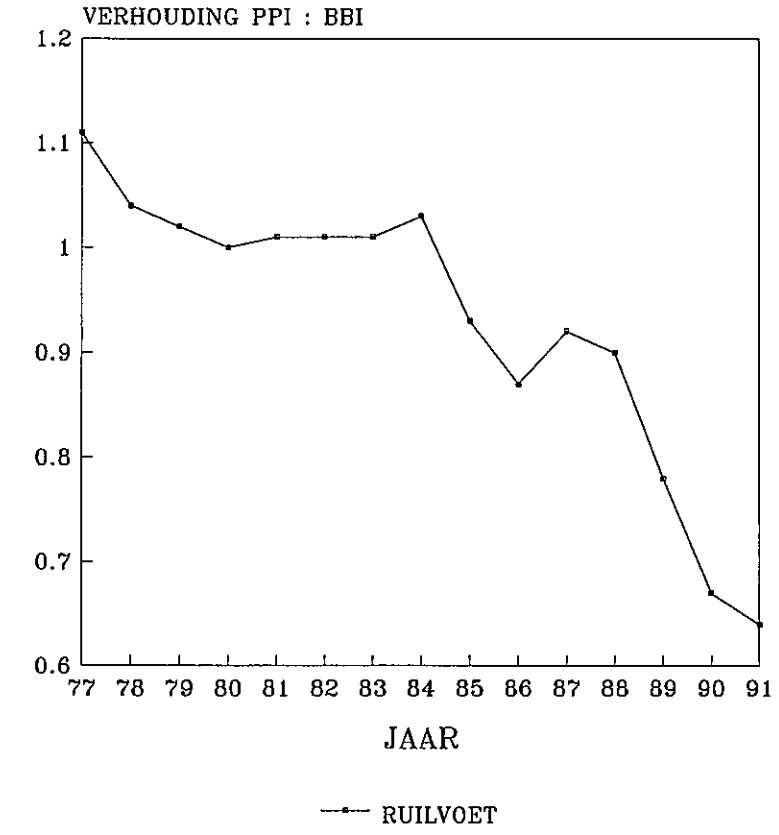


Relative production potential index:
Rainfall zone (<125) = 100

Fig. 1. Relative production potential of different rainfall zones, including an indication of the relative importance of each zone



PPI = PRODUSENTEPRYSINDEKS
BBI = BOERDERYBENODIGDHEDEPRYS

Fig. 2. Ruilvoet in die Landbou

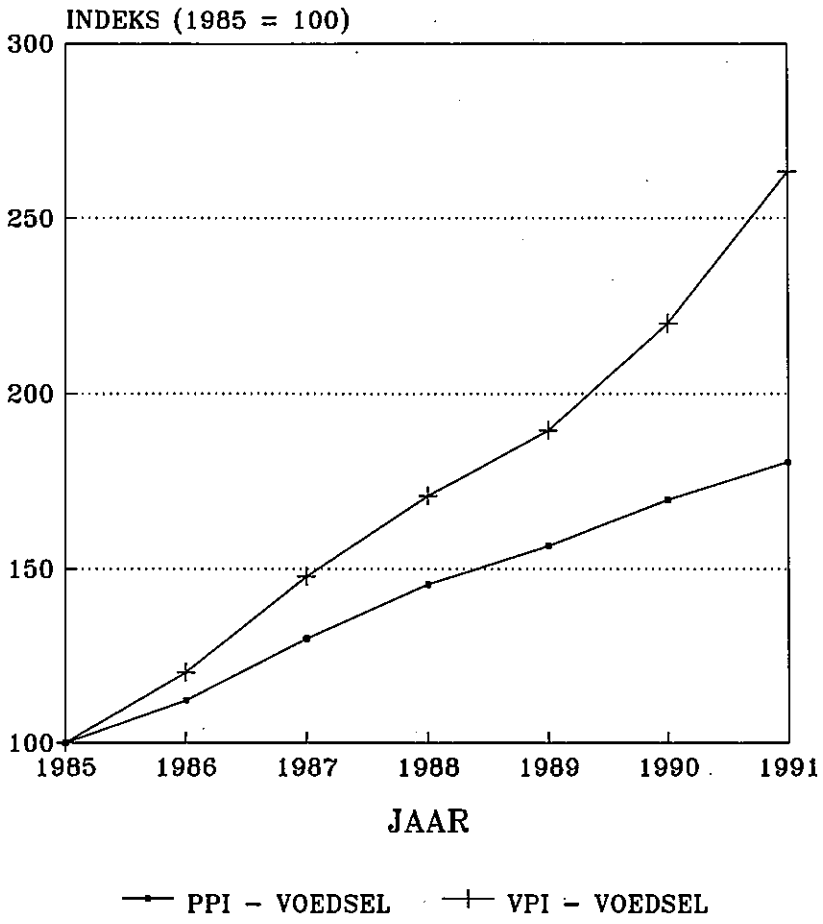


Fig. 3. Produsente- en verbruikersprysindeks