GLOBALISATION AND REGIONALISATION - EVALUATION OF TWO APARENTLY CONFLICTING TRENDS: THE EXCHANGE RATE AND WESTERN CAPE WHEAT INDUSTRY CASE STUDY

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ABSTRACT

Since the early 1990's agriculture is faced with a new international environment. This is not only true for the South African Agriculture, but also within a global context. Part of this environment is dissolving international boundaries on the one hand, but also increased emphasis on local issues on the other hand. The evaluation of these apparently conflicting trends creates new challenges for agricultural support organisations. It is fortunate that new technological developments facilitate techniques that were not previously possible.

In this paper the wheat industry in the Western Cape Province of South Africa is used as a case study to identify the impacts of a weakening exchange rate on an industry that is perceived not to be focussed on the export market and is under siege from international competition. The first part of the paper investigated the factors influencing the level of tariff protection. It was found that, with the assumption of a Trigo-pan price of $120 per ton for wheat, an exchange rate of R5,975 per USDollar would erode all tariff protection on wheat. In the second part of the paper the spatial implications of a weakening exchange rate on the wheat industry in the Western Cape Province were investigated. This was done with the aid of GIS-based model incorporating financial data obtained the Micro-Combud and Finrec systems. The conclusion was reached that the area in the Western Cape where wheat could be produced with a nett margin of more than R200 per ton increased with 184 percent over the short term. The effect of a weakening exchange rate on the cost of production would however lead to a decrease in the area with high profitability over the medium term. Over the long term secondary and tertiary effects would lead to a return to the status quo. The weakening exchange rate would therefore not ensure the long-term competitiveness of the industry, but will provide a welcome breather for producers to make structural changes to their operations.

1. INTRODUCTION

The South African agriculture was, to a large extent, protected against fluctuations in global markets since the 1930's. However, following the domestic policy shifts towards food security rather than food self-sufficiency accompanied with policy emphasis on market deregulation and trade liberalisation, the local agricultural sector were for the first time in almost seven decades open to the full impact of international trends. Soon after the implementation of these policy changes the global economy were shocked to its foundations by the Asian financial crisis. At farm level in South Africa the impact of this shock were perceived in a weakening of the Rand/Dollar[1] exchange rate and a hike in the interest rate.

These two factors, the weakening of the exchange rate and the increase in the interest rate, lead to wide speculation on possible impacts on the agricultural sector. It was obvious that certain prominent export orientated industries, such as the deciduous fruit and wine industries, would be advantaged over the short term. However, less clear were the impact on those industries, such as the wheat industry, that were not historically export orientated, but which were traditionally more domestically focussed. The apparent lack of international competitiveness of the Western Cape wheat industry, as shown by Street *et al* (1996), were compounded by the quality problems in the crop (Edwards and Leibbrandt, 1998) and the very real possibilities of wheat being imported at prices lower than local production costs. The result is that the Western Cape wheat industry will provide an excellent case study for the evaluation of the impact of global trends on local farming competitiveness.

In this paper the focus will initially be placed on the influence of the weakening exchange rate on the current import tariff. In the next section the focus will be shifted to the influence of the weakening exchange rate and the hike in interest rates on the profitability of wheat production in the Province. As these changes occurred in the middle of a production season, a short and medium term perspective will be introduced.

[1] *When the term "Dollar" ($) is used in this paper it is considered to mean the United States Dollar.*

2. THE IMPACT OF THE WEAKENING EXCHANGE RATE ON TARIFF PROTECTION

At that time (1998) the tariff-mechanism used were in the form of a sliding scale. For a full discussion on the procedure and the different options available, see Troskie (1998: 8 – 23). In essence the agreement reached between the government, millers and producers states that a landed cost of R889 is accepted. From this a fixed cost component of R172,00 is deducted to reach a international guideline price of R717,00 with the free-on-board (FOB) Trigo-pan price for wheat as reference. If the four-week moving average Trigo-pan price of wheat decline below the guideline price, the difference is considered to be the tariff. An example is provided in Table 1.

Table 1: Calculation of the tariff on wheat imports.

ITEM	AMOUNT
Landed costs (R)	R889,00
Fixed costs (R)	R172,00
Guideline price (R)	R717,00
Trigo-pan price ($)	$120,00
Exchange rate (R/$)	R5,00
Trigo-pan price (R)	R600,00
Tariff (R)	R117,00
Tariff ($)	$23,40
Tariff (%) ($) FOB	19,50%

Source: Calculated from SAGIS (1998)

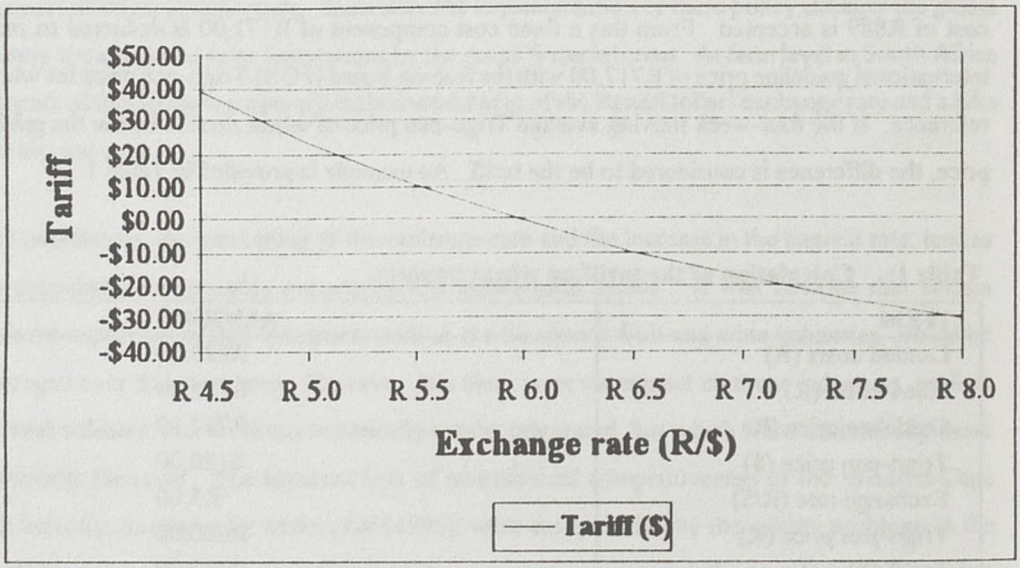
In the example in Table 1 it is assumed that the average of the Trigo-pan price of wheat over the previous four weeks were $120,00 per ton and that the current Rand/Dollar exchange rate was R5,00. The value in Rand of the Trigo-pan price of wheat would therefore be R600,00, or R117,00 ($23,40) below the guideline price. This difference would also be the tariff, which can be expressed as 19,50% in percentage terms. Important to note that the tariff will be collected irrespective of the true origin or price of the imported wheat.

Following the example it is clear that the two most important factors influencing the tariff levels on imported wheat are the Rand/Dollar exchange rate and the Trigo-pan price of wheat. The relationship between the exchange rate and the tariff level is graphically represented in Figure 1. Note that, although a negative tariff level is illustrated, such a tariff would not be implemented in practice. The graphic illustration shows that, within the framework of the assumptions used, a

weakening of the exchange rate to R5,975 would lead to a total erosion of the tariff protection local farmers receive from imported wheat.

Figure 1: The relationship between the Rand/Dollar exchange rate and the tariff level on imported wheat assuming a four week moving average Trigo-pan price of $120,00 per ton.

Source: Calculated from the data in Table 1.



The second factor influencing the tariff level is the FOB Trigo-pan price of wheat. As can be expected inter and intra seasonal movement of prices will occur. These movements of prices were originally the rational behind using the four week moving average of the Trigo-pan price in calculating the tariff level and thus minimising short term fluctuations. However, from May to July 1998 the futures price (July 1998) of Trigo-pan wheat declined from $230,00 to $116,00 per ton. Over the same period the spot-price of declined from $128,00 to $118,00 per ton (SAGIS, 1998). The impact of these changes on the local tariff levels is graphically represented in Figure 2. Again it must be noted that, although negative tariff levels are illustrated, it will not be realised in practise. With the *ceterus paribus* assumptions of *inter alia* a constant Rand/Dollar exchange rate of R6,00 a reference price of $119,50 will lead to the erosion of the tariff protection

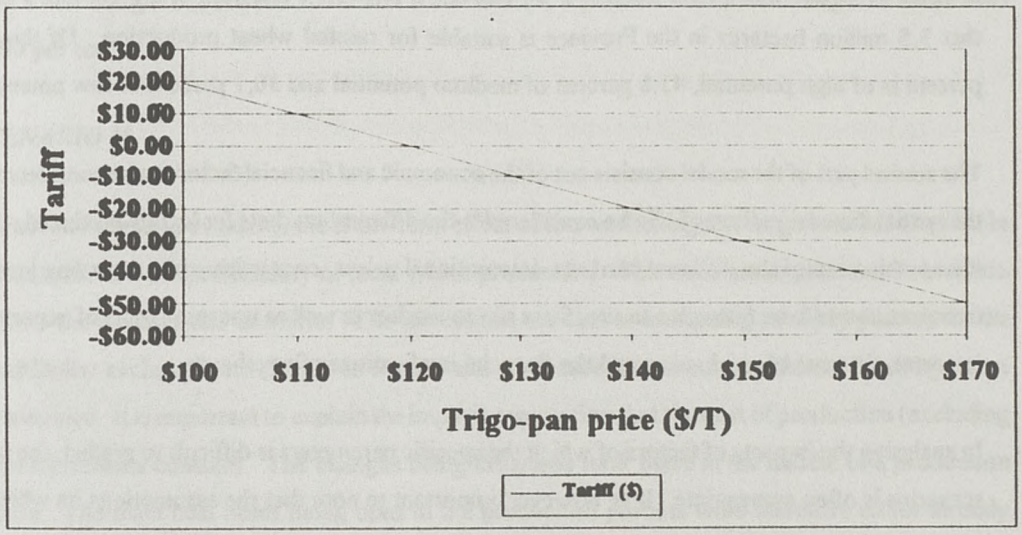


Figure 2: The relationship between a changing Trigo-pan price of wheat and the tariff level on imported wheat assuming a Rand/Dollar exchange rate of R6,00.

Source: Calculated from the data in Table 1.

It follows from the discussion in this section that the last bastion of the protection of local wheat farmers against international competition, namely import tariffs, were eroded as a result of circumstances that developed in far-off Asia. Circumstances over which the local farmer has no control whatsoever. It is now appropriate to turn to the next section of the paper, that is, the influence of these global changes on the on-farm profitability of the local wheat producer.

3. THE IMPACT OF GLOBAL TRENDS ON ON-FARM PROFITABILITY

One of the unstated assumptions usually used when the impacts of global trends on local agriculture are being investigated is that a region is being reduced to a single spot on a map. With the aid of modern technology this assumption can be negated. The full particulars of the model that will be used in this section is described in Troskie *et al* (1998: 29 – 32), but for the benefit of the reader it can be stated that the model consist out of a number of inter-linked facets.

The first of these is the production potential of wheat under rainfed conditions in the Western Cape Province. With due consideration of soil and land characteristics, precipitation and the distribution thereof, minimum and maximum temperatures and daylight length, a map representing the potential

of rainfed wheat production in the Province were produced. This map is available in a computerised geographic information system (GIS). From the GIS component of the model it can be deducted that 3,5 million hectares in the Province is suitable for rainfed wheat production. Of this 26,1 percent is of high potential, 43,8 percent of medium potential and 30,1 percent of low potential.

The second part of the model consists out of the economic and financial factors to be considered and the spatial dimension thereof. To be considered is the different markets for locally produced wheat, the combination of the different markets, international prices, competitiveness regarding imports, transport costs (from farm gate to silo, from silo to market as well as transport costs of exports and imports), the cost of production and the financial implications of overheads.

In analysing the impacts of factors of which the specific parameters is difficult to predict, the use of scenarios is often appropriate. It is, however, important to note that the assumptions on which the scenarios are based are often as important as the scenario results themselves. In this paper three scenarios were developed. The first scenario represents the situation before the financial crisis in the Asian markets developed. The second and third scenarios represent respectively the short and medium term implications of the external shock.

SCENARIO I

In the first scenario, which can be dubbed the point of departure, it is assumed that approximately forty percent of the wheat produced in the Western Cape is consumed within the boundaries of the Province. An additional forty percent is transported to the markets in Gauteng and there consumed while the balance is exported via the Cape Town harbour to markets in the Far East. In addition it is assumed that the interest rate at which loans can be secured (natural and legal persons with the appropriate security and credit history) is fifteen percent and that no tariff is collected on imported wheat. The FOB price of wheat comparable to the quality of Western Cape wheat and loaded in the Gulf of Mexico, is assumed to be $140,00 per ton. A Rand/Dollar exchange rate of R5,00 is taken as point of departure.

The spatial result of this scenario is attached to this paper. With this set of assumptions wheat can be produced at a profit on 2 537 262 hectares (72%) of the area suitable for rainfed wheat production in the Western Cape Province. This can be broken down into 2,3 percent of the area on which wheat can be produced with a nett margin of less than R100 per ton, 44,5 percent of the area

with a nett margin of between R100 and R200 and 25, 3 percent with a nett margin of more than R200 per ton.

SCENARIO II

The second scenario evaluates the short-term effect of the weakening exchange rate and the hike in interest rates on the profitability of local wheat production. The same assumptions as in scenario I forms the basis of this scenario. The exceptions are that a weakening of thirty percent in the Rand/Dollar exchange rate (R5,00 to R6,50) and a increase in interest rates from 15 to 18 percent are assumed. It is important to explain the implicit assumption that the cost of production (excluding interest) remains constant. The changes being discussed took place in the middle of a production season. The main cost items being used in the production process were therefore either already purchased or imported. Thus the assumption that the production costs in the specific season would remain constant could be made with a certain measure of confidence.

The spatial result of this scenario is again attached to the paper. It is shown that the area on which wheat could be profitably produced increased to approximately 3,5 million hectares, or, close to the total area suitable for rainfed wheat production. It can be expected that, assuming reasonable management practices, approximately 72 percent of the area can be farmed with a nett margin exceeding R200 per ton. This area is 184 percent larger than is the case in scenario I. The total area where a positive margin could be realised increased with 38,4 percent.

SCENARIO III

In the final scenario the medium-term effect of the two independent variables were evaluated. The same assumptions as in scenario II form the basis of this scenario. The only exception is that the effect of a weakening exchange rate on the cost of production is included in the set of assumptions. In quantifying this assumption there were heavily relied on the work of van Schalkwyk *et al* (1995). It was found that, over the medium-term, a thirty percent weakening of the exchange rate would lead to a 12,87 percent increase in the production cost of wheat in the Western Cape Province.

As could be expected, and is shown by the attached spatial results, the area where wheat could be profitably produced declined from the results of scenario II to the results of this scenario. Wheat production on approximately 701 200 hectares (19,9 percent) of the area suitable for rainfed wheat

production would result in negative nett margin. On 72,2 percent of the area a positive nett margin could be expected, but this is approximately 20 percent less than is the case in scenario II.

It is important to compare the results of scenarios I and III. It is shown that the area where wheat could be profitably produced increased with 10,8 percent over the medium-term. Also important is the fact that area where wheat could be produced with a fairly high level of profitability (a nett margin of more than R200 per ton) increased by 171,8 percent.

4. CONCLUSION

The objective of this paper was to evaluate the impact of global trends on the profitability of local producers. With this objective in mind the wheat industry in the Western Cape Province was used as a case study. It was shown that the last bastion of protection against global competition would be eroded by a weakening exchange rate. However, on the positive side the changes would probably lead to an increase in the international competitiveness of the local industry. Over the medium-term the area where wheat can profitably be produced would however start to decrease. Important, however, to note that the secondary and tertiary effects of the weakening exchange rate would probably, over the longer term, lead to a situation comparable to that in scenario I.

Where does this leave us? Two important results, one methodological and the other contextual, can be deduced from this paper. The methodological result is situated in the combination of spatial technical and economic/financial data to provide an indication of the impact of macro-economic factors on farm-level productivity. The second result is that, against some expectations, the changes described would allow local producers a welcome breather from the pressures they experienced. Farmers often utter the words "...but if only somebody warned me earlier about the hard times ahead...". Harsh reality uttered the warning, but that same reality also provided an opportunity to make the necessary structural adjustments that may lead to long-term competitiveness. Guidelines to the needed structural adjustments could be found in Smit and van Zyl (1998) on alternative production processes while Troskie (1998b) describes alternative uses for wheat. Arckoll (1998) provides a comprehensive list of alternative crops to be cultivated on land extracted from wheat production.

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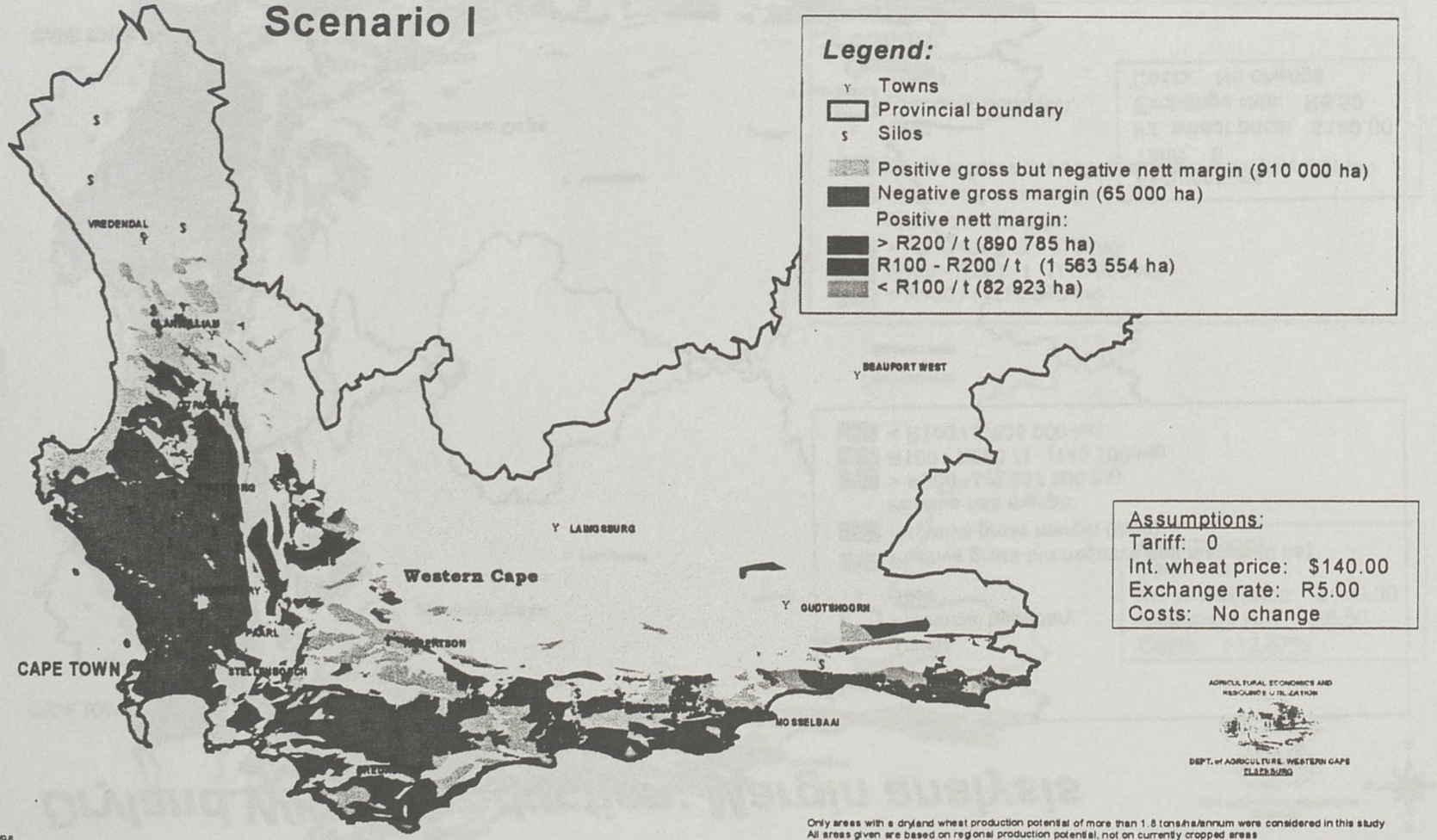
Dryland Wheat Production: Margin analysis

Scenario I



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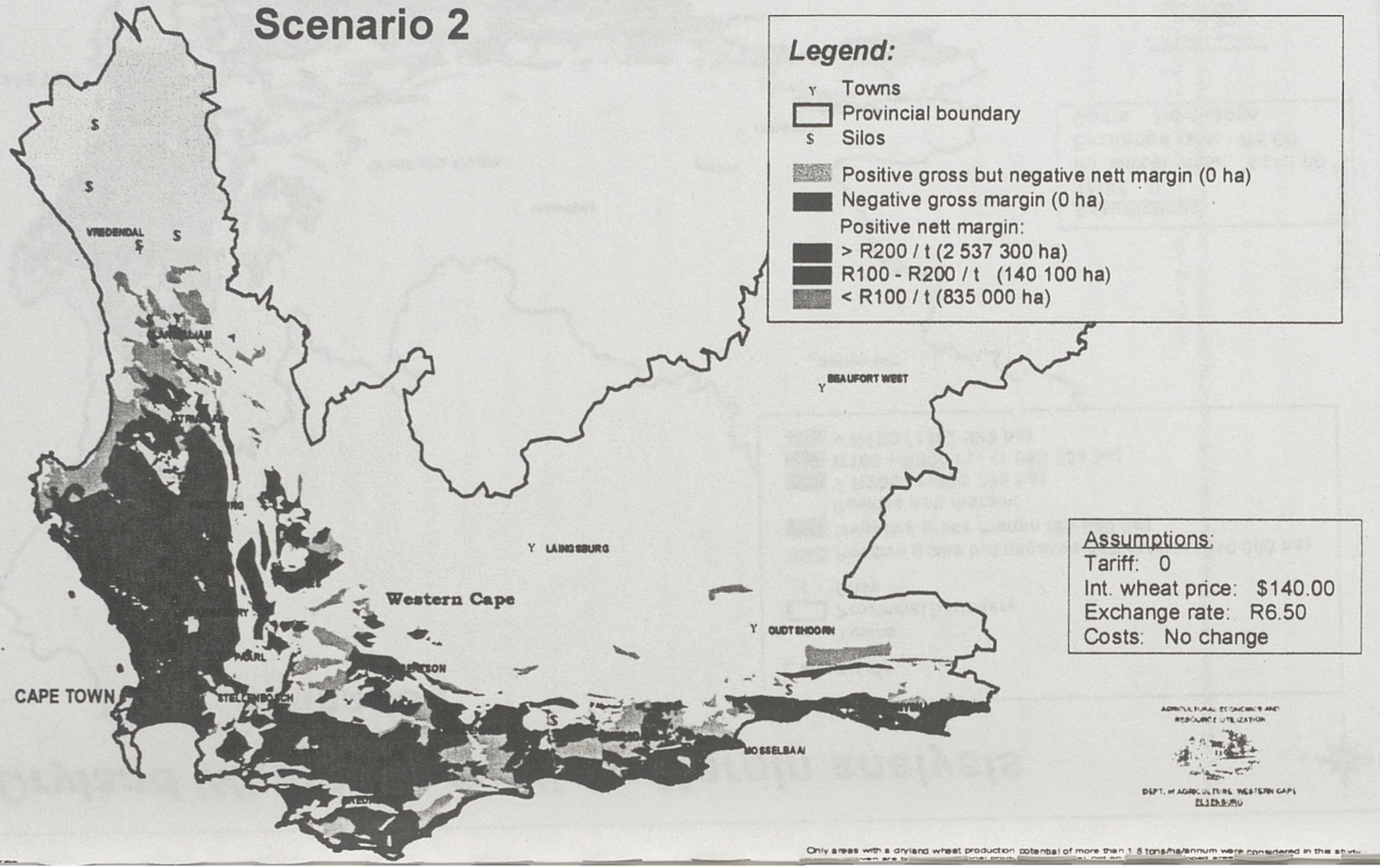
Only areas with a dryland wheat production potential of more than 1.8 tons/ha/annum were considered in this study
All areas given are based on regional production potential, not on currently cropped areas

Dryland Wheat Production: Margin analysis

Scenario 2



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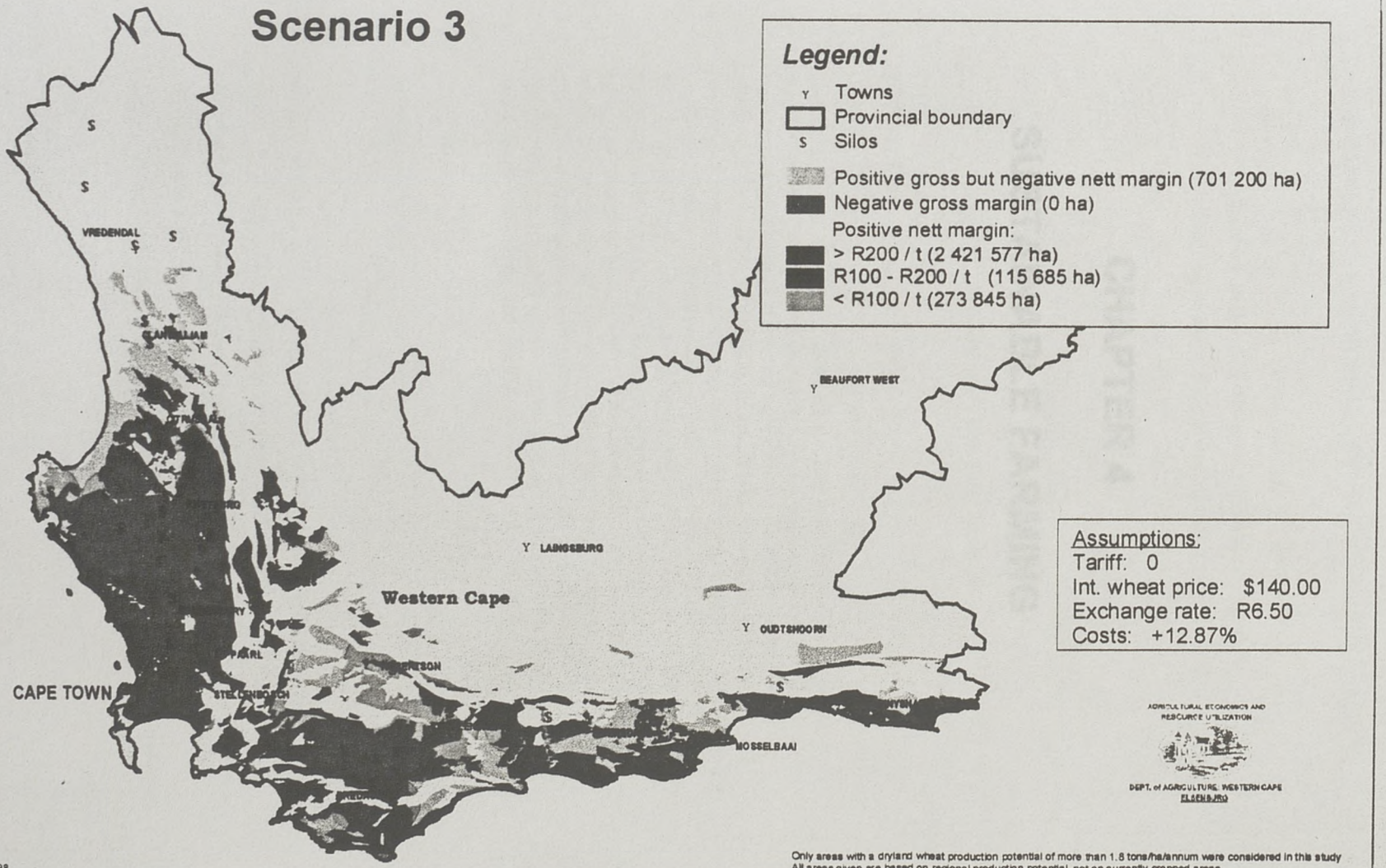
Dryland Wheat Production: Margin analysis



Assumptions:
Tariff: 0
Int. wheat price: $140.00
Exchange rate: R6.50
Costs: +12.87%

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Only areas with a dryland wheat production potential of more than 1.8 tons/ha/annum were considered in this study
All areas given are based on regional production potential, not on currently cropped areas

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